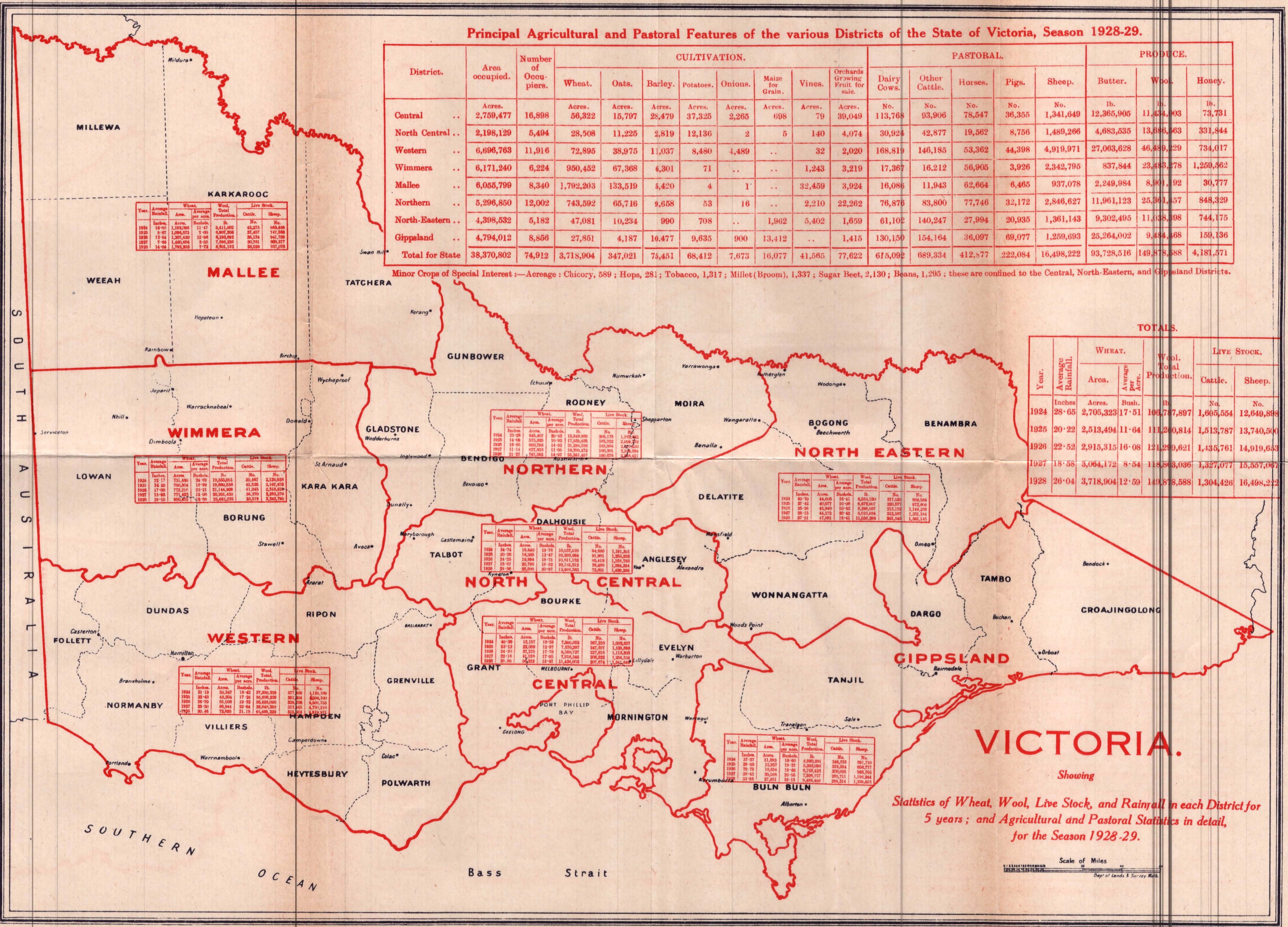
Principal Agricultural and Pastoral Features of the various Districts of the State of Victoria, Season 1928-29.

District.	Area occupied.	Number of Occupiers.	CULTIVATION. Wheat.	Oats.	Barley.	Potatoes.	Onions.	Maize for Grain.	Vines.	Orchards Growing Fruit for sale.	PASTORAL. Dairy Cows.	Other Cattle.	Horses.	Pigs.	Sheep.	PRODUCE. Butter.	Wool.	Honey.
	Acres.		Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	No.	No.	No.	No.	No.	lb.	lb.	lb.
Central ..	2,759,477	16,898	56,322	15,797	28,479	37,325	2,265	698	79	39,049	113,768	93,906	78,547	36,355	1,341,649	12,365,905	11,434,003	73,731
North Central ..	2,198,129	5,494	28,508	11,225	2,819	12,136	2	5	140	4,074	30,924	42,877	19,562	8,756	1,489,266	4,683,535	13,686,563	331,844
Western ..	6,696,763	11,916	72,895	38,975	11,037	8,480	4,489	..	32	2,020	168,819	146,185	53,362	44,398	4,919,971	27,063,628	46,489,229	734,017
Wimmera ..	6,171,240	6,224	950,452	67,368	6,301	71	..	..	1,243	3,219	17,367	16.212	56,905	3,926	2,342,795	837,844	23,483,278	1,259,562
Mallee ..	6,055,799	8,340	1,792,203	133,519	5,420	4	1	..	32,459	3,924	16,086	11,943	62,664	6,465	937,078	2,249,984	8,901,192	30,777
Northern ..	5,296,850	12,002	743,592	65,716	9,658	53	16	..	2,210	22,262	76,876	83,800	77,746	32,172	2,846,627	11,961,123	25,361,457	848,329
North-Eastern ..	4,398,532	5,182	47,081	10,234	990	708	..	1,962	5,402	1,659	61,102	140,247	27,994	20,935	1,361,143	9,302,495	11,038,398	744,175
Gippsland ..	4,794,012	8,856	27,851	4,187	10.477	9,635	900	13,412	..	1,415	130,150	154,164	36,097	69,077	1,259,693	25,264,002	9,484,468	159,136
Total for State	38,370,802	74,912	3,718,904	347,021	75,451	68,412	7,673	16,077	41,565	77,622	615,092	689,334	412,877	222,084	16,498,222	93,728,516	149,878,588	4,181,571

Minor Crops of Special Interest :—Acreage : Chicory, 589 ; Hops, 281 ; Tobacco, 1,317 ; Millet (Broom), 1,337 ; Sugar Beet, 2,130 ; Beans, 1,295 ; these are confined to the Central, North-Eastern, and Gippsland Districts.



Mallee

Year.	Average Rainfall.	Wheat. Area.	Wheat. Average per acre.	Wool, Total Production.	Live Stock. Cattle.	Live Stock. Sheep.
	Inches.	Acres.	Bushels.	lb.	No.	No.
1924	16·08	1,192,096	11·47	5,411,802	43,273	668,466
1925	9·87	1,096,673	7·00	6,907,306	37,457	747,983
1926	12·64	1,307,430	12·96	8,193,692	36,134	941,759
1927	7·66	1,460,656	3·35	7,596,236	30,761	809,377
1928	14·04	1,792,203	7·72	8,901,192	28,029	937,078

Wimmera

Year.	Average Rainfall.	Wheat. Area.	Wheat. Average per acre.	Wool, Total Production.	Live Stock. Cattle.	Live Stock. Sheep.
	Inches.	Acres.	Bushels.	lb.	No.	No.
1924	22·17	731,480	24·69	19,355,001	50,467	2,126,938
1925	16·20	700,304	18·99	19,880,558	43,535	2,167,452
1926	17·00	772,216	22·21	21,144,909	41,045	2,318,318
1927	13·93	771,425	13·08	20,201,450	36,270	2,293,270
1928	19·10	950,452	18·58	23,483,278	33,579	2,342,795

Northern

Year.	Average Rainfall.	Wheat. Area.	Wheat. Average per acre.	Wool, Total Production.	Live Stock. Cattle.	Live Stock. Sheep.
	Inches.	Acres.	Bushels.	lb.	No.	No.
1924	23·29	645,407	20·42	15,549,989	208,175	1,975,483
1925	14·09	575,835	10·92	17,935,635	185,922	2,098,292
1926	16·85	660,798	14·92	21,296,558	185,864	2,407,830
1927	11·14	637,833	11·05	18,709,272	160,301	2,535,094
1928	21·27	743,592	14·97	25,361,457	160,676	2,846,627

North Eastern

Year.	Average Rainfall.	Wheat. Area.	Wheat. Average per acre.	Wool, Total Production.	Live Stock. Cattle.	Live Stock. Sheep.
	Inches.	Acres.	Bushels.	lb.	No.	No.
1924	40·70	44,603	16·41	6,553,530	217,025	866,584
1925	27·42	40,077	10·06	6,672,007	220,577	972,606
1926	35·36	43,940	10·62	8,298,087	213,152	1,144,239
1927	26·15	44,372	20·43	8,010,894	213,587	1,331,184
1928	37·21	47,081	16·41	11,038,398	201,349	1,361,143

North Central

Year.	Average Rainfall.	Wheat. Area.	Wheat. Average per acre.	Wool, Total Production.	Live Stock. Cattle.	Live Stock. Sheep.
	Inches.	Acres.	Bushels.	lb.	No.	No.
1924	34·74	16,640	19·76	10,037,010	94,680	1,191,301
1925	20·26	16,385	12·47	10,203,684	91,901	1,253,392
1926	24·25	19,994	18·75	10,811,132	85,419	1,358,783
1927	18·67	20,796	18·92	10,122,312	76,680	1,384,354
1928	29·56	28,508	20·97	13,686,563	73,801	1,489,266

Central

Year.	Average Rainfall.	Wheat. Area.	Wheat. Average per acre.	Wool, Total Production.	Live Stock. Cattle.	Live Stock. Sheep.
	Inches.	Acres.	Bushels.	lb.	No.	No.
1924	40·30	13,157	18·59	7,560,052	267,210	1,002,627
1925	23·12	22,059	12·97	7,670,297	247,697	1,135,898
1926	24·20	37,275	17·78	8,360,727	227,816	1,113,303
1927	22·16	41,578	17·95	7,918,346	206,322	1,256,334
1928	29·86	56,322	13·67	11,434,003	207,674	1,341,649

Western

Year.	Average Rainfall.	Wheat. Area.	Wheat. Average per acre.	Wool, Total Production.	Live Stock. Cattle.	Live Stock. Sheep.
	Inches.	Acres.	Bushels.	lb.	No.	No.
1924	31·13	50,247	18·42	37,390,229	377,909	4,126,789
1925	22·43	48,204	17·24	36,608,229	367,304	4,506,100
1926	26·70	55,008	19·22	36,426,090	338,236	4,506,755
1927	23·20	66,944	22·84	38,848,399	317,445	4,750,210
1928	30.46	72,895	21.18	46,489,229	315,504	4,919,971

Gippsland

Year.	Average Rainfall.	Wheat. Area.	Wheat. Average per acre.	Wool, Total Production.	Live Stock. Cattle.	Live Stock. Sheep.
	Inches.	Acres.	Bushels.	lb.	No.	No.
1924	37·37	11,693	18·60	4,990,284	346,815	691,710
1925	29·69	13,957	19·37	5,383,098	319,394	858,777
1926	29·72	18,654	19·48	6,768,426	308,095	968,766
1927	28·43	20,568	26·55	7,396,127	285,711	1,196,244
1928	33·98	27,851	18·13	9,484,468	284,314	1,259,693

TOTALS.

Year.	Average Rainfall.	Wheat. Area.	Wheat. Average per Acre.	Wool. Total Production.	Live Stock. Cattle.	Live Stock. Sheep.
	Inches	Acres.	Bush.	lb.	No.	No.
1924	28·65	2,705,323	17·51	106,787,897	1,605,554	12,649,898
1925	20·22	2,513,494	11·64	111,260,814	1,513,787	13,740,500
1926	22·52	2,915,315	16·08	121,299,621	1,435,761	14,919,653
1927	18·58	3,064,172	8·54	118,863,036	1,327,077	15,557,067
1928	26·04	3,718,904	12·59	149,878,588	1,304,426	16,498,222

VICTORIA.

Showing

Statistics of Wheat, Wool, Live Stock, and Rainfall in each District for 5 years; and Agricultural and Pastoral Statistics in detail, for the Season 1928-29.

PRODUCTION.

LAND SETTLEMENT, ETC.

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

	Acres.
Lands alienated in fee simple	26,017,176
Lands in process of alienation	8,759,668
Crown lands	21,468,916
Total	56,245,760

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	314,368
Reserves for Agricultural Colleges, &c.	87,062
Reserves in the Mallee	410,000
Other reserves	349,153
Roads	1,794,218
Water frontages, beds of rivers, lakes, &c.; unsold land in cities, towns, and boroughs	2,160,028
Land in occupation under—	
Perpetual leases	91,460
Other leases and licences	55,940
Temporary grazing licences	7,862,817
Unoccupied	3,708,904
Total	21,468,916

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 during the last three years. 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, 1926 TO 1928

Year.	Area of Crown Lands Sold.			Crown Lands alienated in Fee Simple.	
	Absolutely, at Auction, &c.	Conditionally to Selectors.		Area.	Purchase Money.
		Mallee.	Other.		
	Acres.	Acres.	Acres.	Acres.	£
1926 ..	2,832	388,559	93,469	125,765	87,740
1927 ..	3,824	214,609	85,409	214,173	203,414
1928 ..	5,807	344,571	68,686	213,519	188,339

Amount realized by sale of Crown lands.

From the period of the first settlement of the State to the end of 1928 the amount realized by the sale of Crown lands was £35,115,215, which represents an average of £1 0s. 2d. 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.

Lands remaining for disposal.

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

CROWN LANDS REMAINING FOR DISPOSAL ON 31ST DECEMBER, 1928.

Location.	Classification.						Total.
	Agricultural and Grazing.					Auriferous.	
	First.	Second.	Third.	Fourth.	Unclassed.		
County.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Buln Buln	5,099	29,718	75,782	..	..	..	110,599
Croajingolong ..	2,510	1,756	560,915	..	837,400	13,850	1,416,431
Dargo	..	..	99,765	..	431,900	72,000	603,665
Tambo	..	..	216,010	..	364,450	900	581,360
Tanjil	..	..	108,090	..	361,650	67,000	536,740
Wonnangatta ..	..	39	150,992	..	942,100	..	1,093,131
Bogong	838	11,749	140,530	..	158,724	97,112	408,953
Benambra	..	403	283,884	..	313,684	87,920	685,891
Delatite	350	17,569	184,737	13,000	295,750	60,849	572,255
Moira	546	149	9,801	..	..	..	10,496
Anglesey	..	3,823	58,689	..	..	3,040	65,552
Bourke	..	162	..	..	..	..	162
Dalhousie	..	283	1,234	..	..	1,055	2,572
Evelyn	19	5,110	391	..	..	993	6,513
Mornington	..	897	8,584	..	..	..	9,481
Bendigo	176	837	3,312	..	..	4,135	8,460
Rodney	..	88	..	..	..	2,234	2,322
Borung	..	502	63,966	..	..	4,803	69,271
Gladstone	905	1,736	2,258	..	..	12,915	17,814
Lowan	..	699	197,995	35,005	10,343	..	244,042
Kara Kara	86	166	2,757	..	..	3,640	6,649
Talbot	297	751	561	..	..	41,047	42,656
Tatchera	20	70	..	..	..	..	90
Heytesbury ..	..	830	158,017	..	..	..	158,847
Polwarth	16,252	16,236	27,928	142	..	..	60,558
Grant	..	175	26,195	..	..	8,744	35,114
Grenville	..	311	..	..	..	8,547	8,858
Ripon	..	380	23,526	..	..	3,546	27,452
Normanby	..	..	111,985	..	8,810	..	120,795
Dundas	..	..	89,472	4,799	15,754	..	110,025
Villiers	..	..	1,268	..	..	..	1,268
Follett	..	1,871	145,317	..	29,436	..	176,624
Karkaroo	..	39	..	..	..	..	39
Gunbower	158	..	..	..	..	..	158
Total ..	27,256	96,349	2,753,961	52,946	3,770,001	494,230	7,194,843
Throughout the State	Swamp or reclaimed lands						1,078
" " ..	Lands which may be sold by auction						6,877
	Mallee lands available for selection						103,302
The north-western portion of the State	" " (such as are suitable to be eventually classified for selection)						4,265,626
Total area remaining for disposal							11,571,721

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

Pastoral occupation of Crown lands. The particulars of Crown lands for which licences had been issued for pastoral occupation on 31st December, 1928, are as follows :—

Number of Licences	5,622
Area (acres)	7,862,817
Annual Rental	£28,260

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 1928 there were submitted 341 applications to have brought under the Act land amounting to 16,341 acres in extent, and to £655,816 in value; while the land actually brought under the Act during the year by application was 19,894 acres valued at £963,794. Up to the end of 1928 there had been brought under the Act 3,168,501 acres valued at £67,909,056.

Assurance Fund. When application is made to have land brought under the Transfer of Land Act, a contribution to the assurance fund of ½d. 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 1928–29 comprised contributions £4,028, interest on

stock £4,992, and interest on £75,073—advanced under *The Protection of Public Buildings Act* 1885—£3,003. During the year £254 was paid out of the fund in settlement of claims, and £5,095 as interest on securities under the *Special Funds Act* 1920, No. 3067. The balance at the credit of the assurance fund on 30th June, 1929, was £187,381. The amount paid up to 30th June, 1929, as compensation and for judgments recovered, including costs, was £8,664.

CLOSER SETTLEMENT.

Closer Settlement.

Under the provisions of the Closer Settlement Act the Closer Settlement Board is empowered to expend up to an amount of £11,250,000 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, also for making advances to settlers, and for the purchase of building materials, implements, live stock, seeds, plants, etc., 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 29, Act No. 3656. 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 fee of £5 towards the cost of

valuation by valuers appointed by the Board, except where the person desiring to acquire the land is a discharged soldier holding a qualification certificate, and, in the event of a valuation being obtained, such fee shall not be refunded. 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 36½ 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 46½ 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 80 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 allotment 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 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* 1928, No. 3656, 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 24th December, 1925, 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* 1928.
(*b*) Licensees of agricultural or grazing allotments under the *Land Act* 1928, and lessees of such allotments during the first six years of the term of their leases.
(*c*) Licensees under Section 86 of the *Land Act* 1928 or corresponding sections of any repealed Act.
(*d*) Conditional purchase lessees under the *Land Act* 1928; or
(*e*) Conditional purchase lessees under the Murray Settlements Act, now Section 245. *Land Act* 1928.
(*f*) Selection purchase lessees under Sections 44, 50, and 199, *Land Act* 1928, during the first twelve years of the term of the leases.
(*g*) Perpetual lessees under Section 53, *Land Act* 1928.
(*h*) Discharged soldiers holding garden site licences under Section 129, *Land Act* 1928.

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 should 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 *Wire Netting Act* 1928.

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, 1929, 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, 1929.

A summary of the lands acquired, exclusive of estates purchased for discharged soldiers' settlement (*vide* page 514), is given in the following statement :—

CLOSER SETTLEMENT LANDS ACQUIRED AT 30TH JUNE, 1929.

——	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.	
Dry Areas.	acres.	£	£	Number.	Number.	Number.	acres.
Lands purchased (Farms)	825,111	5,633,370	5,880,650	3,171	..	149	8,827
Crown lands taken over (Farms) ..	26,383	21,287	27,192	47	..	17	1,255
Repurchased lands (Workmen's Homes)	628	63,133	94,544	..	976	..	..
Crown lands taken over (Workmen's Homes)	362	7,034	9,210	..	93	..	4
Total Dry Areas ..	852,484	5,724,824	6,011,596	3,218	1,069	166	10,086
Irrigable Areas.							
Repurchased lands (Farms)	174,904	2,267,921	2,423,438	2,206	..	147	8,568
Crown lands taken over (Farms) ..	922	4,397	4,543			..	..
Total Irrigable areas	175,826	2,272,318	2,427,981	2,206	..	147	8,568
Total acquired at 30th June, 1929	1,028,310	7,997,142	8,439,577	5,424	1,069	313	18,654
Less area disposed of under Discharged Soldiers Settlement Acts	72,828	716,029	716,029	..	..	..	..
Total (net) ..	955,482	7,281,113	7,723,548	5,424	1,069	313	18,654

* Includes (*a*) Purchase money, £7,997,142; expenses prior to disposal, £83,143; public works, £318,679; and interest capitalized, £40,613.
† Not including 683 lessees of farm allotments disposed of under the Discharged Soldiers Settlement Acts.

Up to 30th June, 1929, the Board and Commission had acquired 306 properties, with a total area of 1,028,310 acres, (including 27,677 acres of Crown lands), of which 18,654 acres were then unallotted.

Portions of estates amounting in the aggregate to 54,974 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, 1929, had received £857,201 for approved settlement schemes at Childers, Katandra, and Maffra-Sale.

Extent of Closer Settlement. The extent of the settlement effected by the Board up to 30th June, 1929, is given in the next statement :—

SUMMARY OF CLOSER SETTLEMENT TO 30TH JUNE, 1929.

Classification of Holdings.	Number.	Average Capital Value.	Average Area.	Total Area.
Dry Areas.	No.	£	Acres.	Acres.
Areas settled—				
Farms	3,214	1,579	234	751,248
Agricultural Labourers' Allotments	166	158	16	2,694
Workmen's Homes	1,073	89	¾	786
Allotments disposed of under Discharged Soldiers Settlement Acts	247	1,213	169	41,827
Public Competition, Auction, &c.	..	..	..	44,205
Total area of land settled				840,760
Area of land available for—				
Farm Lands and Agricultural Labourers' Allotments				10,073
Workmen's Homes				14
Public Competition, Auction, &c.				605
Area of land acquired but not yet available				3
Loss of area on subdivision (roads, channels, reserves, &c.)				1,029
Total dry areas acquired				852,484
Irrigation Areas.	No.	£	Acres.	Acres.
Areas settled—				
Farms	2,206	790	54	120,151
Agricultural Labourers' Allotments	147	116	6	892
Allotments disposed of under Discharged Soldiers Settlement Acts	436	955	71	31,001
Public Competition, Auction, &c.	..	..	..	10,769
Total area of land settled				162,813
Area of land available for—				
Farm Lands and Agricultural Labourers' Allotments				8,567
Public Competition, Auction, &c.				481
Area of land acquired but not yet available				2,364
Loss of area on subdivision (roads, channels, reserves, &c.)				1,601
Total irrigation areas acquired				175,826
TOTAL AREAS acquired to 30th June, 1929				1,028,310

Financial statement of Closer Settlement.

The liabilities and assets of Closer Settlement at 30th June, 1929, are shown hereunder :—

FINANCIAL STATEMENT OF CLOSER SETTLEMENT AT 30TH JUNE, 1929.

		£
Liabilities—		
For Loans, Advances, and Interest (accrued)		9,310,737
Crown Lands taken over		13,571
Discharged Soldiers Settlement for land taken over		1,029,515
Sundry Creditors		55,183
Reserves, &c.		282,062
		10,691,068
Assets—		
Balance of purchase money not accrued due by lessees and others		5,429,015
Land on hand		244,749
Balance of advances on improvements not accrued due		2,283,182
Government Securities		100,000
Cash (including balance at credit of Closer Settlement Fund)		408,927
Sundry assets (including Interest accrued but not yet payable)		695,544
Arrears on land and advances (less £34,069 bad debts written off)—		
Principal—	£	
Land	273,222	
Advances	368,573	
Interest—		
Land	683,381	
Advances	204,474	
		1,529,650
		10,691,067

At 30th June, 1929, payments by settlers on land and advances amounted to £6,450,236, of which amount £3,300,517 was paid on account of principal and £3,149,719 on account of interest.

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

Arrears secured by improvements	£1,006,878
Arrears secured by principal repaid on land	73,067
Arrears secured by stock mortgage, lien on crop, or unsecured	365,803
Deficiency on vacated allotments	83,902
Total	£1,529,650

The sum of £7,594,570 had been paid to the Closer Settlement Fund up to 30th June, 1929. Of that amount £3,777,630 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 £3,193,547 had been utilized for redemption and cancellation of stock and for capital and working expenditure, the balance at the credit of the fund on 30th June, 1929, being £395,020. The balance of unredeemed securities is now £8,819,054, on which the interest payable amounts to £379,219 per annum. Up to 30th June, 1929, 15,111 persons had received advances aggregating £3,986,818, to effect improvements, or upon improvements already effected, and 5,510 persons had received advances amounting to £226,106 for the purchase of wire netting.

Discharged Soldiers Settlement.

The first Discharged Soldiers Settlement Act was passed in 1917. In this and subsequent Acts, now consolidated under the *Closer Settlement Act* 1928, No. 3656, 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* 1928, are managed by the State Rivers and Water Supply Commission.

Up to 30th June, 1929, the Closer Settlement Board and the State Rivers and Water Supply Commission had acquired for the settlement of discharged soldiers 2,500,852 acres at a cost of £14,612,651, including 72,828 acres of Closer Settlement land taken over and disposed of under the Discharged Soldiers Settlement Acts. Of these lands 185,735 acres were transferred to civilians under Closer Settlement Acts.

The following is a summary of the lands acquired :—

LANDS ACQUIRED FOR DISCHARGED SOLDIERS SETTLEMENT TO 30TH JUNE, 1929.

—	Area.	Cost.
	acres.	£
Land specially purchased (3,503 properties) ..	1,762,547	13,355,563
Crown Lands taken over	665,477	541,059
Closer Settlement Lands taken over	72,828	716,029
Total area and cost of purchase	2,500,852	14,612,651
Expenses prior to disposal	..	111,679
Public Works effected	..	862,499
Interest capitalized	..	149,760
Total cost to 30th June, 1929	..	15,736,589
Less land transferred to civilians under Closer Settlement Acts	185,735	1,908,442
Total net area and cost	2,315,117	13,828,147

Extent of Soldier Settlement.

The extent of settlement at 30th June, 1929, is given in the table which follows :—

SUMMARY OF DISCHARGED SOLDIERS SETTLEMENT TO 30TH JUNE, 1929.

—	Dry Areas.	Irrigation Areas.
	acres.	acres.
Area of land settled—Soldiers	1,993,919	45,688
Area of land settled—Civilians (Closer Settlement Acts)	163,456	22,279
Area of land available	5,280	1,542
Area of land acquired but not yet available ..	782	19,091
Sales by Auction, &c.	220,057	28,758
Total land acquired to 30th June, 1929 ..	2,383,494	117,358
Farms, Number of—		
Soldier Settlers	6,062	934
Civilians	718	566
Total	6,780	1,500
Average area—acres	318	45
Average capital value	£1,685	£739

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

On land purchased by the Closer Settlement Board ..	6,976
On land purchased by the State Rivers and Water Supply Commission	2,113
On Crown Lands—Ordinary and Mallee Areas	1,259
On Crown Lands—Merbein and Nyah Irrigation Areas ..	161
Soldiers receiving assistance from the Closer Settlement Board, on share farming, leasing agreements and freehold land	768
Total	11,277

There were 145 blocks available under ordinary Closer Settlement, conditions, for which returned soldiers get preference.

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, 1929.

Liabilities—	£
For Loans, Advances, and Interest	24,000,242
Crown Lands taken over	542,112
Closer Settlement for land taken over	204,390
Sundry Creditors	10,464
Reserves, Trust Land, &c.	157,903
	24,915,111

Assets—		£
Balance of purchase money not accrued due by lessees and others		12,603,631
Land on hand		104,168
„ „ (sold under Conditional Purchase Leases and subsequently vacated)		746,216
Balance of advances on improvements not accrued due		4,581,158
Cash (including balance at credit of Discharged Soldiers Settlement Fund)		12,159
Concession of Interest and Administration expenses (State and Commonwealth)		3,502,158
Sundry assets (including Interest accrued but not yet payable)		284,262
Arrears on land and advances (less £196,421 bad debts written off and £32,235 interest concessions allowed)—		
Principal—		
Land	205,609	
Advances	785,302	
Interest—		
Land	1,336,873	
Advances	505,146	
		2,832,930
Suspense Accounts		248,429
		24,915,111

At 30th June, 1929, payments by soldier settlers on land and advances amounted to £6,556,853, of which amount £4,184,370 was paid on account of principal and £2,372,483 on account of interest, and the amount of assistance rendered by the Board by way of advances was £9,213,346 to 11,277 soldier settlers.

Concessions granted by the State Government (£3,636,800) and the Commonwealth Government (£3,462,388)—representing interest, administration charges, and losses—have relieved the settlers to the extent of £7,099,188.

Inquiry into Soldier Land Settlement.

The condition of Soldier Land Settlement, in Australia, has been the subject of an inquiry by His Honour Mr. Justice Pike. He estimated that the total loss sustained by Victoria was £7,721,891, to which must be added, when ascertained, further losses due to providing home maintenance areas and to the further writing down of indebtedness.

Three Boards have been appointed by the Government to deal with the question of "Home Maintenance" in the following classes of farming:—

(*a*) Wheat and sheep in the Mallee.
(*b*) Wheat and sheep, other than the Mallee.
(*c*) Grazing.

As far as practicable, blocks which became vacant in recent years were subdivided and allotted to adjoining settlers to increase their areas.

Further particulars will be found in the Report of the Closer Settlement Board for the year ended 30th June, 1929.

WATERWORKS.

Victorian 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-fourth 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, 1929.

Controlling Bodies.	Purposes of Supply.	Capital Expenditure and Advances by State.
		£
State Rivers and Water Supply Commission—		
Coliban System	Domestic and Mining	1,561,860
Broken River Works	Stock and Domestic	14,853
Goulburn-Waranga (including Goulburn main channels)	Irrigation, &c. ..	3,050,162
Eildon Reservoir	,, ,, ..	1,496,497
Kow Swamp Works	,, ,, ..	187,944
Loddon River Works	,, ,, ..	167,636
North-west (Kerang) Lakes	,, ,, ..	22,996
Long Lake Pumping Works	Stock and Domestic	27,346
Lake Lonsdale Reservoir	,, ,, ..	49,054
Lower Wimmera Compensation Works ..	,, ,, ..	8,558
Wimmera Storages	,, ,, ..	430,548
Bellarine Peninsula Scheme	,, ,, ..	145,557
Maffra-Sale Scheme (including Glenmaggie Reservoir and channels)	Irrigation, &c. ..	1,104,097
Bacchus Marsh and Werribee Scheme ..	,, ,, ..	224,901
Red Cliffs Scheme	,, ,, ..	763,410
Irrigation and Water Supply Districts (distributary works)	,, ,, ..	3,604,833
Carried forward	.. .. ..	12,860,252

WATERWORKS—CAPITAL EXPENDITURE AND ADVANCES BY STATE TO 30TH JUNE, 1929—*continued.*

Controlling Bodies.	Purposes of Supply.	Capital Expenditure and Advances by State.
		£
State Rivers and Water Supply Commission—		
Brought forward	.. .. ..	12,860,252
Millewa Waterworks Scheme	Stock and Domestic	480,886
Waterworks Districts (distributary works)	„ „ ..	3,231,878
Flood Protection Districts	.. .. ..	419,115
Surveys, &c.	.. .. ..	253,499
Other expenditure	.. .. ..	184,933
River Murray Agreement Works (Commission the constructing authority) ..	Irrigation, &c. ..	1,927,440
Total State Rivers and Water Supply Commission	.. .. ..	19,358,003
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	1,917,780
Municipal Corporations	„ „	809,118
Free Grants to Local Authorities ..	.. .. ..	147,046
Melbourne and Metropolitan Board of Works	Domestic	9,673,168
Geelong Waterworks and Sewerage Trust ..	„	854,511
Total	.. .. ..	32,912,162

NOTE.—For capacities of storages, vide page 525.

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 consolidat d 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 167, 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., £430,153.

State Expenditure on Waterworks.

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 TO 30TH JUNE, 1929.

—	Expenditure by State.	Capital Written Off.	Payments towards Redemption.	Free Headworks and Advances.	Amount standing at Debit, 30th June, 1929.
State Rivers and Water Supply Commission—	£	£	£	£	£
Free Headworks	1,217,939	..	420	1,217,519	..
Other Main Supply Works (including Coliban)	8,518,366	..	1,602	..	8,516,764
Irrigation and Water Supply Districts	3,604,833	575,152	31,156	..	2,998,525
Waterworks Districts	3,231,878	175,055	49,762	..	3,007,061
Flood Protection Districts ..	419,115	..	..	..	419,115
Surveys, &c.	253,499	..	..	..	253,499
Other expenditure	184,933	..	..	36,139	148,794
	17,430,563	750,207	82,940	1,253,658	15,343,758
River Murray Agreement Works ..	1,927,440	..	..	..	1,927,440
Total State Rivers and Water Supply Commission	19,358,003	750,207	82,940	1,253,658	17,271,198
First Mildura Irrigation and Water Supply Trust and Mildura Urban Trust	119,782	..	8,745	..	111,037‡
Abolished Irrigation and Water Supply Trusts (8)	32,754	32,724	30	..	..
Waterworks Trusts	1,917,780*	316,537	271,607	..	1,329,636
Municipal Corporations	809,118†	163,760	132,373	..	512,985
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
Total	26,034,010	1,263,228	3,985,864	1,400,704	19,384,214

* 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 (*vide* Act No. 1625 of 1899) 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, 1929, amounted to £24,296, viz., £17,438 against the First Mildura Trust, £5,541 against Waterworks Trusts and £1,317 against Municipal Corporations.

IRRIGATION.

Progress of 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 entrusted with the management of all irrigation works, except those controlled by the First Mildura Trust. This authority is embodied in the *Water Act* 1928—which consolidates the Water Acts of 1915, 1916, and 1918, the *Ballarat Water Commissioners Act* 1921, and Section 5 (2) of the *Closer Settlement Act* 1922. 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, 1929.
Irrigation Districts—		
Number of Districts administered	10	33
Number of Districts having Water Rights ..	Nil	25
Total of such Water Rights	Nil	398,000 ac. ft
Area under Irrigated Culture	108,000 acres	472,000 acres
Valuation for Rating purposes	£196,000	£763,000
Rural Waterworks Districts—		
Number of Districts administered (excluding Coliban)	3	30
Valuation for Rating purposes	£125,000	£1,729,000
Urban Districts—		
Number of Districts administered	1	68
Valuation for Rating purposes	£5,600	£523,000

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	..	15,387
South Shepparton	..	3,698
Rodney	32,356	56,104
Stanhope	2,000	12,044
Tongala	3,006	17,242
Rochester	500	37,973
Echuca North	..	3,937
Dingee	..	3,417
Tragowel Plains	20,000	45,705
Supplied from the Murray—		
Leitchville (four years) ..	..	3,749
Cohuna	12,000	18,613
Gannawarra	7,825	19,065
Koondrook	5,029	16,733
Swan Hill	5,410	17,558
Nyah	569	2,731
Red Cliffs (one year) ..	..	10,270
Merbein	202	7,522
Third Lake (three years) ..	..	3,176
Mystic Park	..	1,945
Tresco	..	1,389
Fish Point (two years) ..	..	1,942
Supplied from the Werribee—		
Bacchus Marsh	31	2,551
Werribee	..	6,783
Supplied from the Macallister—		
Maffra (one year)	..	6,349
Sale (one year)	..	2,660
Total	88,922	318,543

The area under irrigated culture in the whole State, in 1928-29, for all kinds of crop, was 471,695 acres. Although this area is 5,805 acres less than the area irrigated in the previous year, it is 86,139 acres above the average of the previous five years, and 121,460 acres above the average of the previous ten years. The area irrigated last year

includes 17,700 acres watered under yearly permits granting authority to divert water from streams throughout the State.

Total area irrigated.

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 :—

IRRIGATED AREAS: HOW UTILIZED.

Crop.	1909–10.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
	acres.	acres.	acres.	acres	acres.	acres.
Cereals	23,715	45,215	57,987	40,655	91,538	60,880
Lucerne	24,124	103,200	116,753	119,721	121,540	122,441
Sorghum and other annual fodders ..	8,094	30,683	37,340	29,476	60,104	41,130
Pastures	50,541	119,563	51,345	131,725	118,153	154,459
Vineyards and orchards	17,524	66,780	69,108	69,042	71,043	70,681
Fallow	4,988	4,863	5,102	9,992	6,727	11,120
Miscellaneous ..	785	5,199	6,050	5,921	8,395	10,984
Total .	129,771	375,503	343,685	406,532	477,500	471,695

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 1928–29—471,695 acres—the percentages devoted to different purposes were as follows :—Pastures, 33 ; cereals, 13 ; lucerne, 26 ; vineyards, orchards, and gardens, 15 ; sorghum and other annual fodder crops, 9 ; fallow, 2 ; 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. The decrease in the area watered in 1928–29 was almost entirely in the irrigation of cereal and other annual crops ; the position in regard to permanent crops under irrigated culture being maintained, and even increased.

Closer Settlement in Irrigation Districts.

During 1928–29 the Commission approved of 261 applications, as compared with 241 in the previous year, and 239 in 1926–27. Those successful included 137 local applicants, 27 discharged soldiers, and 6 oversea settlers, for new allotments, and 91 established settlers (55 of whom were discharged soldiers), who were granted additional areas from vacated allotments.

Portion of the new Calivil Settlement, comprising 3,780 acres, was made available to 26 applicants, 940 acres being held in reserve for future subdivision. Applicants were greatly in excess of the allotments available, and those approved were experienced men with an average capital of £1,000 each. At Katandra, 1,640 acres were allotted to 25 applicants, and, at Hallam Valley, 1,440 acres are being held pending the completion of reclamation works.

Applications for transfers of holdings in old districts numbered 104.

The following statement shows the land purchased and subdivided by the State, and the extent of settlement on each estate :—

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.	Subdivided into— Average Area in Acres.	Number of Closer Settlement Blocks now occupied.	Present Increase in Number of Families.
Shepparton	14,170	14,170	33	29	384	34	369	340
East Goulburn	13,400	13,400	21	20	162	74	160	140
Rodney	3,230	3,230	8	5	55	57	43	38
Stanhope	21,500	21,500	7	13	279	66	264	251
Kyabram	4,600	4,600	10	12	69	62	63	51
Tongala	19,090	19,090	41	36	309	60	296	260
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	124	70	119	111
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	17	16
Calivil	4,800	3,860	8	6	26	149	26	20
Cohuna	12,000	12,000	29	10	142	80	120	110
Koondrook	9,060	9,060	14	10	129	64	88	78
Swan Hill	12,500	12,500	34	16	325	36	312	296
Nyah	3,800	3,800	8	1	236	15	232	231
Merbein (Crown) ..	8,300	8,300	..	..	418	20	413	413
Red Cliffs	33,000	18,000	1	3	689	17	679	676
Bacchus Marsh	70	70	1	..	2	36	2	2
Werribee	10,000	10,000	1	11	229	36	224	213
Hallam	3,300	1,860	7	4	96	19	89	85
Maffra-Sale	10,570	8,970	23	22	175	48	173	151
	216,630	197,650	304	232	4,164	59	3,982	3,750
Properties acquired under Section 29, *Closer Settlement Act* 1928, outside above Estates, *vide* page 507	19,540	..	..	..	..	..	203	..
	236,170							

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, 1929, 236,170 acres had been purchased, and 4,185 families settled, or over 17 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 irrigated areas being devoted to lucerne and other fodder crops (35 per cent.) and to vines and fruits (15 per cent.), which require watering to a great extent, irrespective of wet or dry seasons, has further helped to stabilize the settlements. The extension of the lucerne area, in particular, has resulted in a much greater carrying capacity per acre. Consequently, farmers on these areas have been enabled to increase their flocks and herds at a time when, in the remainder of the State, they have either remained stationary or decreased.

During 1928–29, in the dried fruit irrigation districts, despite the vines having been severely damaged by frosts, an average yield of grapes

of nearly 2 tons per acre was obtained, and the total yield for Victoria was over 48,000 tons, exclusive of spirit or grapes sold fresh in the open market. A campaign towards obtaining better grades was eminently successful at Red Cliffs, but not to so great an extent at Nyah or Woorinen, owing to a poorer drying season at those places.

The outlook for canned fruits has greatly improved following its successful introduction into Canada. It is estimated that about 40,000,000 tins of canned fruit is now produced in Australia each year, and, of this, it is estimated that 60 per cent. is processed by co-operative canneries in irrigation districts. The pioneer cannery, at Shepparton, has arranged to pay off its debt to the Government, and, in future, to carry on without any Government guarantee.

During the year the Department of Agriculture purchased a block of 100 acres at Tatura to establish an irrigation experimental orchard, and this should greatly assist fruit growers in the Goulburn Valley.

Severe frosts experienced throughout the whole State caused a setback to citriculturists, and, in many cases, growers lost heavily. Settlers at Gonn Crossing are carrying out experiments with the object of evolving a method of preventing damage by frost; the Commission and the Meteorological Bureau are assisting.

Progress in the poultry industry, which has been rapid during the last few years, was retarded somewhat by the fall in egg prices last year. Prices have again been stabilized, and further progress reported.

The Irrigation Research Committee, comprising representatives of the Department of Agriculture and the State Rivers and Water Supply Commission, has continued manurial and other experiments at Cohuna, Stanhope, Rochester, and Tongala, and experimental plots have been laid out at Murrabit. Special work on salted land at Tresco has been continued and the improvements maintained.

Supply of water for domestic and stock purposes.

In addition to waterworks for purposes of irrigation, 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 23,953 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:—89 towns of a total population of 119,200 supplied by the Commission, 111 towns with a total population of 192,600 supplied by Waterworks Trusts, and 18 towns with a total population of 75,000 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 1,267,520 acre feet, and, when the Wimmera Storages and Glenmaggie

and Pykes Creek Reservoirs are complete, the total capacity will be about 1,350,920 acre feet. The Hume Reservoir, in course of construction will also contain 2,000,000 acre feet (*vide* page 532), half of which can, subject to the provisions of the River Murray Agreement, be credited to the State of Victoria. The following statement sets out the capacities of the various storages in the State :—

EXISTING STORAGES.

	Capacities in Acre Feet.	
Goulburn System—		
Goulburn Weir	20,700	
Waranga	333,400	
Eildon (200,000 acre feet during repair)	306,000	
		660,100
Murray-Loddon System—		
Hume Reservoir (part of 2,000,000 acre feet—half share)	50,000	
Kow Swamp	40,860	
Laanecoorie	14,000	
Kerang North-west Lakes	92,000	
Lake Boga	28,000	
Long Lake	3,820	
		228,680
Wimmera-Mallee System—		
Lake Lonsdale	45,480	
Wartook	23,800	
Fyans Lake	17,100	
Taylors Lake	30,000	
Pine Lake (part of 62,000 acre feet)	52,000	
Lower Wimmera Weirs	2,870	
Batyo Catyo (Avon Regulator)	5,000	
Lake Whitton	1,300	
Earthen Storages, Township Reservoirs, and Mallee Tanks	5,530	
		183,080
Maffra-Sale System—		
Glenmaggie Reservoir (part of 150,000 acre feet)		104,500
Coliban System—		
Upper Coliban	25,700	
Malmsbury	12,300	
Subsidiary Reservoirs	6,910	
		44,910
Werribee System—		
Pykes Creek (part of 21,000 acre feet)	16,200	
Melton	17,000	
		33,200
Bellarine Peninsula System—		
Wurdee Boluc	9,500	
Service Basins	260	
		9,760
Mornington Peninsula System—		
Beaconsfield, Frankston, and Mornington Reservoirs	1,560	
Service Basins	180	
		1,740
Miscellaneous—		
Wonthaggi		1,550
Total capacity of existing Storages		1,267,520

ADDITIONAL STORAGES BEING PROVIDED BY WORKS IN COURSE OF CONSTRUCTION.

	Capacities in Acre Feet.	
Wimmera-Mallee System—		
Pine Lake (balance of 62,000 acre feet)	10,000	
Green Lake	20,000	
		30,000
Maffra-Sale System—		
Glenmaggie Reservoir (balance of 150,000 acre feet)		45,500
Werribee System—		
Pykes Creek (balance of 21,000 acre feet)		4,800
Mornington Peninsula System—		
Eumemmerring Valley Reservoir (first stage)		3,100
Murray System—		
Hume Reservoir, at junction with Mitta River, half-share of balance of 2,000,000 acre feet		950,000
Total capacity of storages when works in hand are completed		2,300,920

Goulburn Irrigation System.

The storage and regulation headworks of the Goulburn System, the largest of the State's irrigation schemes, comprise the Eildon 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 23½ miles) from the Goulburn Weir to the Waranga Reservoir.

The Eildon 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 Eildon Reservoir (*vide* page 632), 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 (64,000 acres), and Katandra (14,500 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 4¼ 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 4½ 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 4½ 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 432,100 acres. This channel has been extended westward to supplement the northern portion of the Wimmera-Mallee System. The Tandarra–Calivil channel, which branches off from the Waranga–Western just beyond the Rochester District, serves the Tragowel Plains Irrigation District (212,750 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).

Wimmera Storages. 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 he 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 for filling 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 5,720 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 36 towns directly controlled by the Commission.

The rainfall on the Wimmera catchment during the last few years has been so light that the watering has had to be commenced from 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, has extended the Waranga Western Main Channel north-westerly for about 130 miles west of the Loddon River to near the Yarriambiack Creek, 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 commands 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.

Northern Mallee Water Supply.

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.

Coreena Waterworks District.

A scheme (constituted the Coreena Waterworks District) to supply an area of 204 square miles between Tyntynder Waterworks District and the River Murray, but too high to be commanded by the Wimmera–Mallee Irrigation System, has been put in operation. 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 107 miles of main and distributary channels will distribute supplies for domestic and stock purposes. The maximum lift will be 91 feet.

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 Millewa Waterworks District, and a fourth lift, of 145 feet, to command the higher level channel system which supplies the Central Millewa Waterworks District of 205,000 acres. The length of channels actually constructed is 670 miles. The total area served (at present wholly within the 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 they are made available for settlement.

Carwarp Waterworks Districts.

The Carwarp Waterworks District, of 200,000 acres, lying to the south-east of 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, form 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 construction of a storage reservoir in the Eumemmerring Valley, three miles north-east of Dandenong, was commenced. It is proposed to build the first stage of this reservoir to a capacity of 3,100 acre feet. Provision has been made to enable future enlargement of the reservoir being carried out to a maximum final capacity of 60,000 acre feet.

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 Waurn 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 completed. The main inlet channel has also been completed for a length of 42 miles, including 12 miles of subsidiary channels and 2 miles 40 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 recent laying of 3 miles of 24-in. pipe main from the Waurn Ponds Pipe-head Basin to the branch main which serves Geelong has made supplies available for that city.

Goulburn Irrigation Areas.

Following the completion of the Eildon 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; 64,000 acres, now constituted the North Shepparton Irrigation District; and 14,500 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 528).

Loddon-Murray Irrigation Areas.

In the districts administered from the Cohuna and Kerang centres, the abnormally dry conditions during the last few years have created an exceptionally heavy demand for water, which has been 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 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

includes a total area of 23,000 acres, and Sale, 15,000 acres. 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 practically all of which is in bearing. The yield of dried fruit for 1929 was 15,000 tons.

Flood Protection Schemes.

The Commission has carried out 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 main drains, feeders and subsidiary works which have been completed provide the landholders 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.

River Murray Waters.

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, 1929, on the portion of the scheme completed and in course of construction was £7,118,513.

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.)

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).

This conference also decided that, in order to co-ordinate present and future development of irrigation and production in the basin of the River Murray and its tributaries, an Advisory Committee (now termed the River Murray Advisory Committee) be appointed, consisting of two representatives of each of the States of New South Wales, South Australia, and Victoria, and a representative of the Commonwealth Government, and of the Development and Migration Commission, the last of whom was to be Chairman.

The duties assigned to this Committee were (1) the collation of information regarding production in all States, and the areas and suitability of lands available for settlement in the basin of the River Murray and its tributaries; (2) the investigation of markets for irrigable products in Australia and abroad; (3) the advising on the

co-ordination of production and future development in existing and new areas; and (4) the bringing under the notice of the Council for Scientific and Industrial Research, problems requiring scientific investigation. This Committee was duly appointed, and, at the request of the Commonwealth Government, is considering the question of the most economic capacity for the Hume Dam, and will report to that Government, the Federal Loan Council, and the interested States. In the meantime expenditure has been curtailed, and arrangements made for a part storage of, at least, 100,000 acre-feet until the ultimate capacity has been determined.

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 the main work carried out has been the installation of the valves and the raising of the main wall to make possible the storage of 100,000 acre-feet of water. On the Victorian side the construction of the main embankment was continued by the Water Commission. The height of the embankment, extending from the Victorian bank of the river for about 1,000 feet, is now about 43 feet above the flats. The remaining portion of the embankment to the high ground on the Victorian side is approximately 75 feet above the natural surface level. 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 ½ 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 Weir and Lock No. 10, at Wentworth, has been completed by the New South Wales Constructing Authority, and is now in operation. As a result of the reduction of the estimated annual expenditure, the New South Wales Authority found it necessary to suspend operations on the Weir and Lock No. 15 at Euston. In the South Australian section, Weir and Locks Nos. 1, 2, 3, 4, 5, and 9 have been completed, and good progress has been made with the work on No. 6. The storage works at Lake Victoria were fully completed by the Constructing Authority for South Australia, and maintenance work was carried out during the year.

During last 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.
100	280	Feet. 46,700	Feet. 54,500

* At 31st December, 1928.

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 1929.*

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	,,	13,950	1929	,,		15,300

* 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 1929 in the same area it had risen to £6,492,660. The receipts and payments of the Mildura Irrigation Trust during the year ended 30th June, 1929, were as follows :—

RECEIPTS AND PAYMENTS OF FIRST MILDURA IRRIGATION TRUST, 1928–29.

Receipts.	£	*Payments.*	£
Horticultural Rates	40,779	Wages and Salaries	17,375
Special Waterings, &c.	3,939	Firewood	9,532
Miscellaneous	4,227	Interest, Sinking Fund and Depreciation	1,891
		Miscellaneous	7,444
Total	48,945	Total	36,242

The extent of watering done represented 22,876 water acres in 1917–18, 39,212 acres in 1924–25, 42,230 acres in 1925–26, 42,134 acres in 1926–27, 48,536 acres in 1927–28, and 52,726 acres in 1928–29.

METEOROLOGY.

Meteorological Records.

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 1926, 1927, and 1928, and the average yearly amount of rainfall deduced from all available records to December, 1928, 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, 1928.
	1926.	1927.	1928.	
	Inches.	Inches.	Inches.	Inches.
Glenelg and Wannon Rivers ..	27.13	22.33	29.86	26.34
Fitzroy, Eumeralla, and Merri Rivers	27.76	24.11	28.10	27.98
Hopkins River and Mt. Emu Creek..	24.04	19.45	28.53	24.83
Mt. Elephant and Lake Corangamite	20.42	19.91	28.17	25.74
Cape Otway Forest	38.52	34.36	42.28	39.18
Moorabool and Barwon Rivers ..	19.00	17.05	25.92	23.86
Werribee and Maribyrnong Rivers ..	18.47	16.53	24.77	23.30
Yarra River and Dandenong Creek ..	30.68	25.22	33.71	33.94
Koo-wee-rup Swamp	29.09	25.82	34.18	35.75
South Gippsland	33.24	31.69	41.66	38.83
Latrobe and Thomson Rivers ..	34.72	30.84	40.68	38.17
Macallister and Avon Rivers ..	21.64	20.37	24.64	24.34
Mitchell River	22.48	24.21	29.29	26.11
Tambo and Nicholson Rivers ..	22.93	25.22	27.80	27.47
Snowy River	31.08	35.18	35.79	34.44
Murray River	17.46	10.43	20.88	16.80
Mitta Mitta and Kiewa Rivers ..	36.47	30.29	33.45	33.34
Ovens River	37.29	25.97	37.98	33.60
Goulburn River	24.66	18.14	29.62	26.30
Campaspe River	18.83	14.77	27.56	22.74
Loddon River	17.40	12.94	23.98	20.11
Avoca River	14.48	11.28	18.92	17.02
Avon and Richardson Rivers ..	13.84	11.41	16.73	15.31
Eastern Wimmera	20.70	15.82	21.71	21.26
Western Wimmera	17.73	16.09	20.09	19.85
Mallee	11.79	6.85	12.79	12.56
Weighted Averages ..	22.52	18.58	26.04	24.17

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 12.56 inches per annum, as compared with 24.17 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 1928 and the quarterly averages up to 1928 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	838	366	699	785	748	898	701	585
Fitzroy, Eumeralla, and Merri Rivers	773	431	704	822	633	934	700	611
Hopkins River and Mt. Emu Creek	987	425	711	705	518	775	637	578
Mt. Elephant and Lake Corangamite	1,023	463	688	701	462	800	644	610
Cape Otway Forest	1,042	601	1,057	1,158	978	1,317	1,151	842
Moorabool and Barwon Rivers	1,240	480	510	641	338	678	504	587
Werribee and Maribyrnong Rivers	1,401	521	466	591	215	625	395	593
Yarra River and Dandenong Creek	1,222	696	837	865	508	926	804	907
Koo-wee-rup Swamp	986	687	952	977	516	1,000	964	911
South Gippsland	1,325	794	956	1,067	840	1,129	1,045	893
Latrobe and Thomson Rivers	1,092	731	967	972	932	1,108	1,077	1,006
Macallister and Avon Rivers	1,491	646	411	542	231	595	331	651
Mitchell River	1,507	686	571	582	318	677	533	666
Tambo and Nicholson Rivers	1,454	719	579	645	283	669	464	714
Snowy River	1,540	822	1,067	891	401	905	571	826
Murray River	1,123	332	466	488	280	483	219	377
Mitta Mitta and Kiewa Rivers	1,476	622	693	892	623	1,034	553	786
Ovens River	1,545	566	967	984	687	1,087	599	723
Goulburn River	1,236	479	766	749	488	796	472	606
Campaspe River	1,269	425	701	671	368	709	418	469
Loddon River	1,126	366	547	593	347	618	378	434
Avon and Richardson Rivers	894	290	364	516	336	538	298	358
Avoca River	851	258	301	457	292	495	229	321
Eastern Wimmera	780	302	517	646	443	714	431	464
Western Wimmera	462	252	541	617	539	693	467	423
Mallee District	631	232	279	360	208	383	161	281
The whole State	1,033	449	621	676	456	733	494	559

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	29·969	29·923	30·080	30·077
Monthly range of pressure of air—Inches	0·893	0·767	0·817	0·978
Mean temperature of air in shade—°Fahr.	57·7	66·6	59·3	50·0
Mean daily range of temperature of air in shade—°Fahr.	18·7	21·1	17·3	13·9
Mean relative humidity. Saturation=100	66	60	70	76
Mean rainfall in inches	7·24	5·92	6·53	5·76
Mean number of days of rain	38	24	34	42
Mean amount of spontaneous evaporation in inches	10·29	17·33	7·89	3·65
Mean daily amount of cloudiness—Scale 0 to 10	6·0	5·2	5·9	6·4
Mean number of days of fog	1	1	6	12

In the subjoined statement are shown the yearly averages of the climatic elements in Melbourne for 1928 and for the last 73 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 1928.	Average for 73 Years.	Extremes between which the Yearly Average Values have oscillated in 73 years.	
			Highest.	Lowest.
Mean atmospheric pressure (inches)..	29·989	30·012	30·106	29·945
Highest ,, ,, ,, ..	30·603	30·606	30·770	30·488
Lowest ,, ,, ,, ..	29·113	29·250	29·495	28·942
Range (inches)	1·490	1·356	1·719	1·104
Mean temperature of air in shade (°Fahr.)	59·7	58·4	59·9	57·3
Mean daily maximum .. (°Fahr.)	68·4	67·3	69·0	65·4
Mean daily minimum .. ,,	50·9	49·6	51·2	47·2
Absolute maximum .. ,,	104·0	105·1	111·2	96·6
Absolute minimum .. ,,	31·7	30·8	34·2	27·0
Mean daily range .. ,,	17·5	17·7	20·4	15·0
Absolute annual range .. ,,	72·3	74·3	82·6	66·0
Solar Radiation (mean maxima) ,,	*	117·8	127·6	106·0
Terrestrial Radiation (mean minima) .. .. (°Fahr.)	44·1	43·9	46·8	39·5
Rainfall (in inches)	24·09	25·45	38·04	15·61
Number of wet days	151	138	171	102
Year's amount of free evaporation (in inches)	45·40	39·16	45·66	31·59
Percentage of humidity (saturation =100)	63	68	76	61
Cloudiness (scale 10 = overcast, 0 = clear)	5·6	5·9	6·4	4·8
Number of days of fog	29	20	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 graduates of the School may be appointed by the appropriate Ministers to probationary positions in the Departments of Agriculture and Education, and in the service of the State Rivers and Water Supply Commission.

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.

The Department of Agriculture conducts research and experimental work at the State Research Farm at Werribee (1912), the Rutherglen Experimental Farm (1911), the Longerenong Agricultural College, and at the School of Primary Agriculture, Burnley. In addition, there are experiments and demonstrations conducted on 43 selected farms throughout the State.

At the State Research Farm, Werribee, the main work is the improvement of wheat and other cereals, grasses, clovers and various economic plants, investigations into the methods and problems relating to irrigated

agriculture, and the breeding and feeding of dairy cattle, horses, sheep and poultry.

The area sown in Victoria in 1929–30 to wheats bred at the Research Farm, Werribee, totalled 1,600,000 acres, representing 41 per cent. of the total acreage sown. The irrigation section of the Werribee Research Farm is the centre of research for the various irrigation districts of the State.

Work at the Rutherglen Farm, which serves as a research station for the North-East, includes various aspects of cereal growing and pasture improvement. It was here that the initial experiments were conducted (1911–1918), which resulted in the widespread adoption of the topdressing of pastures with phosphates. At the substation at Longerenong experiments are conducted on wheat and oat cultivation for Wimmera conditions. At the School of Primary Agriculture, Burnley, a Plant Research Laboratory mainly devoted to plant pathological and entomological research has been established. Extension research work on the breeding and selection of grasses and clovers is also carried on.

The Government experimental plots on selected farms embrace investigations into pasture improvement, grazing trials, the cultivation of wheat, oats, potatoes, maize, broom millet and vegetables, and horticultural problems.

The pasture experiments are largely responsible for recent rapid advances made in pasture improvement throughout Victoria, in which, approximately 1,000,000 acres are now annually topdressed with an estimated increase of approximately 50 per cent. in carrying capacity.

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.

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, 1928.

Particulars.	Central Research Farm, Werribee.	Rutherglen Farm, &c.	Dookie Agricultural College.	Longerenong Agricultural College.	Burnley School of Primary Agriculture, &c.
	No.	No.	No.	No.	No.
Professional Staff	1	2	14	8	4
Hands employed	40	37	35	18	7
Students	..	10	98	45	148
	£	£	£	£	£
Value of plant and machinery	3,152	2,413	8,230	6,599	160
Value of produce for year	7,340	2,833	10,875	5,226	1,200
Receipts—					
Government Grant	11,464	5,778	8,210*	6,410*	2,272*
Fees	..	..	5,325	2,527	118
Sale of produce, &c.	7,340	2,833	9,482	3,898	1,019
Other	133	32	..	..	1
Total receipts	18,937	8,643	23,017	12,835	3,410
Expenditure—					
Salaries—					
Professional Staff	372	779	5,558	2,909	1,361
General Staff	6,663	4,857	5,349	2,820	1,340
Buildings and maintenance	2,398	1,731	12,110	7,106	709
Other	1,997	1,033	..	..	..
Total expenditure	11,430	8,400	23,017	12,835	3,410
Area under—	acres.	acres.	acres.	acres.	acres.
Cereals for Grain	400	265	635	509	..
Hay	350	115	203	296	1
Fruit trees, &c.	..	1½	14	20	9
Vines	..	101	..	5	½
Green fodder	110	2	72	123	3
Other crops	100	12	..	..	½
Total area under crop	960	496½	924	953	14
Area of land in fallow	780	183½	540	472	3
Area under artificially sown grasses	350	180	..	32	5
Area resting	60	218	836	470	..
New ground broken up	..	..	..	50	2
Total area of arable land	2,150	1,078	2,300	1,977	24
Balance of area	61	275	3,655	409	9
Total area of farm	2,211	1,353	5,955	2,386	33
	No.	No.	No.	No.	No.
Live Stock—					
Horses	120	47	94	49	2
Dairy cows	134	18	60	27	3
All other cattle	22	22	79	27	7
Sheep	1,400	697	4,041	691	..
Pigs	..	32	180	98	..

* 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 mountain grey 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 (ceased operations, 31st August, 1928), 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 1928–29 was £129,684, and the expenditure was £240,191—£106,075 of which was paid out of the Consolidated Revenue, £59,124 under the Forests Loan Act No. 3386, and the balance—£74,992—from the Forestry Fund. The balance at the credit of the Fund at 30th June, 1929, was £14,292.

The various Acts relating to forests are now consolidated under the Forests Act 1928, No. 3685.

It is estimated that the quantity of timber produced in the rough, from Crown Lands, in 1928–29 was 7,528,924 cubic feet. In addition, 293,270 tons measurement (11,750,820 cubic feet) of fuel timber was produced.

Particulars of sawn timber and firewood, from all sources, will be found on page 619 of this volume.

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., 1924-25 TO 1928-29.

——	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Expenditure.	£	£	£	£	£
Administrative Branch ..	13,240	14,093	14,620	13,770	13,142
Agricultural Branch	17,625	21,412	31,270	38,018	36,330
Horticultural Branch ..	27,938	30,168	32,984	31,763	31,740
Stock and Dairy Branch	53,527	69,210	85,853	89,077	99,232
Maffra Beet Sugar Factory ..	105,680	85,825	55,891	89,941	73,288
Technical Agricultural and Viticultural Education, &c. ..	30,570	31,461	29,418	27,294	27,009
Development of Export Trade	50,679	48,362	60,875	60,946	62,625
Rabbit and Vermin Extermination	84,368	88,874	91,929	85,200	81,377
Advances to Settlers for losses by bush fires, floods, &c. ..	1,190	18,587	32,987	21,150	14,004
Grants to Agricultural and Horticultural Societies, &c...	875	675	675	675	675
Miscellaneous	6,239	5,369	12,355	488	2,222
State Forests and Nurseries ..	179,278	95,555†	101,380†	122,232†	106,075†
Total	571,209	509,591	550,237	580,554	547,719
Revenue.					
Department of Agriculture—					
Maffra Beet Sugar Factory ..	129,732	137,997	79,435	58,900	84,183
Victoria Dock Cool Stores ..	29,365	27,886	32,455	28,205	52,558
All Other..	52,322	49,661	52,985	50,432	58,908
State Forests and Nurseries ..	162,786	161,608	156,700	140,715	129,684
Total	374,205	377,152	321,575	278,252	325,333

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

Included in the expenditure on State Forests and Nurseries, in 1926-27, was a net payment of £6,333 into the Forestry Fund. In 1924-25, 1925-26, 1927-28, and 1928-29, owing to increased expenditure, £21,968, £91,619, £11,602, and £14,162 respectively—not included in the above statement—were paid out of the Fund, and, in 1925-26, 1926-27, 1927-28, and 1928-29, amounts of £87,527, £151,633, £86,601, and £59,124, 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 1928–29 was £1,422,113—£458,127 having been expended on discharged soldiers' land settlement, £785,069 on closer settlement, £55,198 on wire netting, £122,716 on cultivation advances, £3 on the Maffra Beet Sugar Factory, and £1,000 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 29 per cent., as against slightly less than 5 per cent. in 1891–92. The area under cultivation in the Mallee in 1928–29 for all purposes was 3,272,464 acres.

The area cultivated in the State in 1928–29 was 8,189,113 acres, as against an annual average of 7,156,446 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 £2,983,490; milk and cream from £5,455 to £1,341,463; and meats from £502,285 to £1,498,279.

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 74 years :—

ACREAGE CULTIVATED ANNUALLY, 1855 TO 1929.

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
1928–29	5,505,651	2,683,462	8,189,113

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 nine seasons are given in the next table :—

ANNUAL ACREAGE OF FIVE PRINCIPAL CROPS, 1855 TO 1929.

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	492,356	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	77,649	908,804
1928–29 ..	3,718,904	347,021	75,451	68,412	1,005,063

* For grain.

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 nine seasons were as follows :—

ANNUAL PRODUCTION OF PRINCIPAL CROPS, 1855 TO 1929.

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
1928–29 ..	46,818,833	5,602,409	1,556,118	140,158	1,267,437

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, 1928–29.

Districts.	Percentage in each District of Area under—					
	Wheat.	Oats.	Barley.	Potatoes.	Hay.	Other Crops.
Central	1·51	4·55	38·10	54·57	14·25	30·65
North-Central	0·77	3·23	3·74	17·74	5·57	2·35
Western	1·96	11·23	14·63	12·39	12·92	6·27
Wimmera	25·56	19·41	8·35	0·10	19·35	1·73
Mallee	48·19	38·48	7·18	0·01	23·27	15·14
Northern	19·99	18·94	12·80	0·08	15·64	17·99
North-Eastern	1·27	2·95	1·31	1·03	3·71	6·17
Gippsland	0·75	1·21	13·89	14·08	5·29	19·70

NOTE.—For counties contained in each District, see table on page 552.

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, 1928–29.

Districts.	Percentage of Area under all Crops devoted to—					
	Wheat.	Oats.	Barley.	Potatoes.	Hay.	Other Crops.
Central	15·20	4·26	7·76	10·07	38·66	24·05
North-Central	24·27	9·56	2·40	10·33	47·62	5·82
Western	26·08	13·94	3·95	3·03	46·48	6·52
Wimmera	77·67	5·50	0·51	0·01	15·90	0·41
Mallee	81·13	6·04	0·25	0·00	10·59	1·99
Northern	72·30	6·39	0·94	0·00	15·28	5·09
North-Eastern	41·21	8·96	0·86	0·62	32·64	15·71
Gippsland	17·13	2·57	6·45	5·92	32·70	35·23
Total for Victoria ..	67·55	6·30	1·37	1·24	18·26	5·28

NOTE.—For counties contained in each District, see table on page 552.

Principal crops compared with population.

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, 1924–25 TO 1928–29.

Year ended March—	Wheat.	Oats.	Barley.	Potatoes.	Hay.
	Area per Head of Population.				
	acres.	acres.	acres.	acres.	acres.
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
1929	2·11	·20	·04	·04	·57
	Produce per Head of Population.				
	bushels.	bushels.	bushels.	tons.	tons.
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
1929	26·59	3·18	·88	·08	·72

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.
	£	£	£	£	£
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
1928-29	8,364,675	627,521	222,504	1,189,349	3,502,862
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Value per acre 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
„ „ 1928-29	2 5 0	1 16 2	2 19 0	17 7 8	3 9 8

The value of the five principal crops was £13,906,911 in 1928-29, as against £9,782,309 in 1927-28, £15,887,440 in 1926-27, £12,446,359 in 1925-26, and £17,604,464 in 1924-25.

Wheat production.

On the experience of the last five seasons the area under wheat for grain represented 61 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 nine seasons :—

WHEAT PRODUCTION, 1860 TO 1929.

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
1929	3,718,904	46,818,833	12·59

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 13·72 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, 135,718 acres of wheat were cut for hay last season, so that the total area under wheat in 1928–29 was 3,854,622 acres.

The production of wheat in the other Australian States in 1928–29 was as follows :—New South Wales, 49,182,600 bushels; South Australia, 26,826,094 bushels; Western Australia, 33,790,040 bushels; Queensland, 2,515,561 bushels; and Tasmania, 524,000 bushels. The total production for the Commonwealth was 159,657,128 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.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
	acres.	acres.	acres.	bushels.	bushels.	bushels.	bush.	bush.	bush.
Central—									
Bourke ..	15,266	15,440	17,569	261,510	270,998	187,705	17·13	17·55	10·68
Grant ..	19,787	21,931	28,473	348,533	372,044	334,394	17·61	16·96	11·74
Mornington..	1,989	3,939	9,796	47,312	97,177	241,735	23·79	24·67	24·68
Evelyn ..	233	268	484	5,432	5,998	5,906	23·31	22·38	12·20
Total ..	37,275	41,578	56,322	662,787	746,217	769,740	17·78	17·95	13·67
North-Central—									
Anglesey ..	1,142	1,006	1,233	19,076	23,420	21,712	16·70	23·28	17·61
Dalhousie ..	2,239	2,376	2,778	39,292	49,020	44,360	17·55	20·63	15·97
Talbot ..	16,613	17,414	24,497	316,494	320,930	531,674	19·05	18·43	21·70
Total ..	19,994	20,796	28,508	374,862	393,370	597,746	18·75	18·91	20·97
Western—									
Grenville ..	8,632	11,741	14,393	165,902	265,754	222,574	19·22	22·63	15·46
Polwarth ..	172	182	192	4,080	3,919	3,855	23·72	21·53	20·08
Heytesbury	19	37	129	350	769	2,882	18·42	20·78	22·34
Hampden ..	11,305	13,945	15,208	178,105	317,640	304,866	15·75	22·78	20·05
Ripon ..	29,973	34,601	35,315	621,057	798,140	858,593	20·72	23·07	24·31
Villiers ..	1,514	2,279	2,286	28,834	53,072	47,695	19·04	23·29	20·86
Normanby ..	1,315	1,432	1,689	23,928	32,178	34,227	18·20	22·47	20·26
Dundas ..	1,766	2,348	3,227	28,567	51,060	62,232	16·18	21·75	19·28
Follett ..	312	379	456	6,512	6,706	7,296	20·87	17·69	16·00
Total ..	55,008	66,944	72,895	1,057,335	1,529,238	1,544,220	19·22	22·84	21·18
Wimmera—									
Lowan ..	185,638	194,984	244,527	3,805,448	3,058,292	4,987,673	20·50	15·68	20·40
Borung ..	440,049	430,174	535,993	10,384,649	4,936,717	9,733,168	23·60	11·48	18·16
Kara Kara	146,529	146,267	169,932	2,962,471	2,097,317	2,942,927	20·22	14·34	17·32
Total ..	772,216	771,425	950,452	17,152,568	10,092,326	17,663,768	22·21	13·08	18·58
Mallee—									
Millewa ..	45,636	116,028	182,497	544,269	16,991	626,812	11·93	0·15	3·43
Weeah ..	181,342	196,772	229,109	2,277,975	829,774	1,893,443	12·56	4·22	8·26
Karkarooc ..	678,484	708,307	848,101	8,711,989	2,826,285	6,608,066	12·84	3·99	7·79
Tatchera ..	401,968	439,549	532,496	5,415,076	1,224,703	4,706,895	13·47	2·79	8·84
Total ..	1,307,430	1,460,656	1,792,203	16,949,309	4,897,753	13,835,216	12·96	3·35	7·72
Northern—									
Gunbower ..	42,923	56,904	50,859	579,318	204,945	560,229	13·50	3·60	9·84
Gladstone ..	129,554	121,205	151,151	2,200,078	1,327,972	2,303,107	16·98	10·96	15·24
Bendigo ..	143,968	133,796	160,727	2,093,201	1,133,701	2,516,889	14·54	8·47	15·66
Rodney ..	95,944	81,599	98,644	1,377,819	858,107	1,648,880	14·36	10·52	16·66
Moira ..	248,409	244,329	282,211	3,608,748	3,524,600	4,166,493	14·53	14·43	14·76
Total ..	660,798	637,833	743,592	9,859,164	7,049,225	11,130,598	14·92	11·05	14·97

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

Districts and Counties.	Year ended March.								
	Area.			Produce.			Average per Acre.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
	acres.	acres.	acres.	bushels.	bushels.	bushels.	bush.	bush.	bush.
North-Eastern—									
Delatite ..	8,686	8,623	9,091	113,805	170,842	137,554	13·10	19·81	15·13
Bogong ..	34,874	35,488	37,698	348,040	729,722	630,317	9·98	20·56	16·72
Benambra ..	380	261	281	4,828	5,864	4,469	12·71	22·47	15·90
Wonnangatta	..	..	11	..	..	240	..	..	21 82
Total ..	43,940	44,372	47,081	466,673	906,428	772,580	10·62	20·43	16·41
Gippsland—									
Croajingolong	3	9	5	58	134	70	19·33	14·89	14·00
Tambo ..	80	146	493	1,328	3,435	8,533	16·60	23·53	17·31
Dargo ..	538	1,141	1,562	11,251	27,281	30,391	20·91	23·91	19·46
Tanjil ..	16,379	16,845	21,109	314,749	456,906	380,310	19·22	27·12	18·02
Buln Buln ..	1,654	2,427	4,682	35,936	58,401	85,661	21·73	24·06	18·30
Total ..	18,654	20,568	27,851	363,322	546,157	504,965	19·48	26·55	18·13
Total (State)	2,915,315	3,064,172	3,718,904	46,886,020	26,160,814	46,818,833	16·08	8·54	12·59

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, 1919-20 TO 1928-29.

Districts and Counties.	Average Yield of Wheat per Acre (in Bushels) during Year ended March—									
	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
Western District—										
Ripon	16·26	21·74	19·63	19·62	15·33	19·37	17·18	20·72	23·07	24·31
Wimmera District—										
Lowan	13·47	20·94	21·53	21·17	17·48	22·87	17·71	20·50	15·68	20·40
Borung	15·76	23·79	28·05	22·72	23·65	26·23	20·68	23·60	11·48	18·16
Kara Kara ..	14·10	21·25	22·05	19·12	18·10	22·60	15·43	20·22	14·34	17·32
Mallee District—										
Weeah	3·43	14·28	8·89	8·75	10·49	11·23	7·80	12·56	4·22	8·26
Karkarooc ..	3·29	13·42	10·88	8·14	12·36	11·12	6·92	12·84	3·99	7·79
Tatchera ..	4·60	13·65	13·13	7·41	13·01	12·33	6·91	13·47	2·79	8·84
Northern District—										
Gunbower ..	8·96	15·27	15·76	10·71	12·58	16·72	10·60	13·50	3·60	9·84
Gladstone ..	12·08	18·72	18·65	14·66	13·07	21·68	9·79	16·98	10·96	15·24
Bendigo ..	9·30	14·56	17·25	12·59	13·82	18·76	9·76	14·54	8·47	15·66
Rodney ..	6·85	15·79	15·77	13·65	14·68	20·29	11·29	14·36	10·52	16·66
Moira	4·79	17·46	16·83	12·34	16·13	21·15	11·92	14·53	14·43	14·76
Total State ..	7·75	17·19	16·80	13·50	15·40	17·51	11·64	16·08	8·54	12·59

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. The resultant classification is shown in previous issues of this work.

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 four 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 (approximately 70 per cent. replied) are given in the appended tables :—

VARIETIES OF WHEAT SOWN IN VICTORIA.

Variety.	1926-27.		1927-28.		1928-29.		1929-30.	
	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.	Relative Order of Importance.	Percentage (according to acreage) of total area in the State.
Free Gallipoli ..	14	1·33	5	5·47	2	10·56	1	22·20
Federation ..	1	44·76	1	38·42	1	33·41	2	19·80
Ranee ..	13	1·39	3	5·95	3	10·10	3	12·74
Currawa ..	2	9·89	2	9·51	4	7·76	4	7·02
Major ..	3	6·49	4	5·62	6	4·52	5	5·38
Penny ..	4	5·42	6	4·44	5	4·58	6	4·22
Nizam ..	22	·33	16	1·41	7	3·28	7	3·69
Sepoy ..	48	·03	21	·31	17	·88	8	2·95
Joffre ..	11	2·37	10	2·66	10	2·69	9	2·48
Rajah ..	7	3·06	7	3·46	8	2·95	10	2·44
Yandilla King ..	8	2·76	9	2·77	13	2·00	11	1·90
Bald Early ..	5	3·51	8	3·14	9	2·80	12	1·75
Wannon ..	15	1·18	14	2·01	11	2·19	13	1·63
Gluyas ..	6	3·16	11	2·47	12	2·05	14	1·61
Mac's White ..	9	2·57	12	2·15	15	1·42	15	1·57
Nabawa ..	38	·07	29	·17	19	·47	16	1·34
Huf's Imperial ..	10	2·45	15	1·96	14	1·85	17	1·13
Turvey ..	12	1·70	13	2·09	16	1·30	18	·94
Strongbolt ..	31	·15	25	·23	27	·15	19	·49
Waratah ..	45	·04	22	·25	18	·47	20	·48
Ghurka ..	46	·04	32	·16	31	·13	21	·29
Bena ..	91	·01	43	·05	25	·18	22	·29
Graham ..	21	·45	18	·45	22	·32	23	·25
Yanward ..	19	·51	19	·44	21	·35	24	·23
Sultan ..	56	·02	33	·12	26	·17	25	·22
Other Varieties ..	..	6·31	..	4·29	..	3·42	..	2·96
Total ..	..	100·00	..	100·00	..	100·00	..	100·00

In all, over 130 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.

ESTIMATED PERCENTAGE OF TOTAL AREA UNDER WHEAT, AND SEED AND MANURE USED, 1929–30.

District.	Percentage (according to acreage) of total area in the State.	Weight per acre of—	
		Seed Sown.	Manure Used.
	per cent.	lbs.	lbs.
Central	1·68	92	101
North Central	1·05	89	95
Western	2·85	86	129
Wimmera	24·41	76	94
Mallee	48·14	57	67
Northern	19·87	70	87
North Eastern	1·20	73	88
Gippsland	0·80	84	90
Total State	100·00	67	81

The rate of sowing, in the principal wheat growing counties, ranged from 44 lbs. of seed per acre in the County of Millewa to 90 lbs. in Talbot. Manure used varied from 45 lbs. per acre in Millewa to 139 lbs. in Ripon.

Wheat standard.

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 61·425 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 1918-19 :—

F.A.Q. WHEAT STANDARD, 1920 TO 1929.

Season ended March—	Weight of Bushel (f.a.q.).	Season ended March—	Weight of Bushel (f.a.q.).
	lbs.		lbs.
1920	62	1925	62½
1921	60½	1926	61½
1922	60	1927	61¾
1923	61¼	1928	61¾
1924	61	1929	62

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 1929.

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
1929 „ „	4,362,300	1,090,100	5,452,400

Oats. In 1928-29 the area harvested for oats in Victoria was 347,021 acres, from which a yield of 5,602,409 bushels was obtained, giving an average of 16·14 bushels to the acre. The appended statement shows the harvest results for this crop for each of the last nine seasons, and for periods prior thereto back to 1865 :—

OATS PRODUCTION, 1865 TO 1929.

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
1929	347,021	5,602,409	16·14

In addition to the area for grain shown for last season there were 845,731 acres of oats cut for hay, so that the total area sown with oats was 1,192,752 acres. During 1928-29 there were exported from Victoria to oversea countries 43,792 bushels of oats and 61,639 lbs. of oatmeal, etc.

Varieties of Oats. Enquiries in regard to the different kinds of oats sown for the 1929–30 season showed that, of those growers who supplied the information, 91 per cent. planted principally Algerian, and 5 per cent. Mortgage Lifter oats.

Barley. The area under barley in 1928-29 was 75,451 acres, of which 49,345 were under malting, and 26,106 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, 1924-25 TO 1928-29.

Year ended March—	Area under Crop.		Produce.		Average per Acre.		
	Malting.	Other.	Malting.	Other.	Malting.	Other.	Total.
	acres.	acres.	bushels.	bushels.	bushels.	bushels.	bushels.
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
1929 ..	49,345	26,106	945,865	610,253	19·17	23·38	20·62

During 1928-29, 1,949,480 bushels of barley were used locally in the production of 1,936,820 bushels of malt.

Potatoes. The area planted with potatoes in 1928-29 was 68,412 acres, and the production was 140,158 tons, which represented a yield of 2·05 tons per acre, as compared with 2·97 tons in the previous season, 2·46 tons in 1926-27, 2·54 tons in 1925-26, and 2·27 tons in 1924-25. The following table shows the potato returns for the last thirty-nine years :—

POTATO PRODUCTION, 1890 TO 1929.

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
1929	68,412	140,158	2·05

The estimated value of the potatoes produced last season was £1,189,349 as against £388,537 in 1927-28, £671,673 in 1926-27, £1,309,470 in 1925-26, and £682,878 in 1924-25.

Hay. In 1929 the production of hay amounted to 1,267,437 tons, as against 1,001,251 tons in 1928, 1,387,971 tons in 1927, 929,068 tons in 1926, and 1,492,588 tons in 1925. The quantity of straw returned for the season 1928-29 was 26,014 tons as against 31,118 tons for the previous year. The hay returns for decennial periods from 1890 to 1920, and each of the last nine seasons, are shown in the table which follows :—

HAY PRODUCTION, 1890 TO 1929.

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
1929	1,005,063	1,267,437	1·26

The estimated value of the hay crop was £3,502,862 for 1929, as compared with £3,683,272 for 1928, £4,719,925 for 1927, £3,497,253 for 1926, and £3,639,496 for 1925. Of the total hay produced in 1929, 1,076,128 tons were oaten, 153,285 tons were wheaten, and 38,024 tons were made from lucerne and other crops; the yields per acre of these varieties of hay were 1·27, 1·13, and 1·61 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, 1920 TO 1929.

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.		
1920 ..	7 8½	5 7¼	6 7¾	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 0¾	4 0¼	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 1¼	3 9¼	3 2¼	72 0	111	0	53	0	
1925 ..	5 0¾	1 11½	5 3¾	4 0½	48 9	121	0	94	0	
1926 ..	4 6¾	2 9	3 4¾	3 0	75 3	194	0	158	0	
1927 ..	3 9¼	2 5¼	3 0	2 6¾	64 9	170	0	69	0	
1928 ..	3 1½	2 5¾	4 0½	3 1½	70 0	84	0	28	0	
1929 ..	3 3	2 0	3 0	2 1½	52 0	158	0	169	0	

NOTE.—Prior to 1925, only freight and handling charges were deducted; but, for 1925 to 1929, the cost for bags and seed, and, for 1927 to 1929, manure also, was deducted from the F.O.B. charges.

Other Crops. The area under other than principal crops and the production since March, 1926, are shown in the subjoined table:—

OTHER THAN PRINCIPAL CROPS, 1926-27 TO 1928-29.

Crop.	Area.	Production.	Area.	Production.	Area.	Production.
	1926-27.		1927-28.		1928-29.	
	acres.	bushels.	acres.	bushels.	acres.	bushels.
Maize, for grain	20,046	685,407	17,645	757,780	16,077	679,810
Rye	864	10,443	791	11,122	711	10,994
Peas	10,431	198,947	10,615	139,621	6,743	108,607
		tons.		tons.		tons.
Mangel-wurzel ..	690	6,715	568	9,451	429	5,301
Beet, Carrots, Parsnips and Turnips	286	1,994	207	1,629	243	2,079
Onions ..	8,471	43,928	7,659	32,936	7,673	29,700
Green Forage ..	87,241	..	94,895	..	107,351	..
		bushels.		bushels.		bushels.
Grass and Clover Seeds ..	854	5,876	758	4,852	1,486	20,844
		cwt.		cwt.		cwt.
Hops ..	196	1,169	294	3,843	281	3,676
Tobacco ..	1,154	3,454	1,176	9,055	1,317	†
Vines—Grapes	40,612	3,587,224	40,988	2,275,770	41,565	4,117,757
Flax	388	†	46	cwt. 100 fibre 83 tow	109	cwt. 826 seed 236 fibre 239 tow
Gardens and Orchards ..	83,215	..	81,397	..	79,322	..
Minor Crops ..	8,161*	..	9,450*	..	8,863*	..
Land in Fallow	2,569,021	..	2,692,044	..	2,683,462	..
Lucerne‡ ..	117,190	..	118,461	..	127,175	..
Artificial Grasses‡	835,049	..	887,052	..	1,027,543	..

* For details see page 568. † Not available. ‡ Not cut for seed or hay.

Maize. The area under maize for grain in 1928-29 was 16,077 acres, and the production was 679,810 bushels, which represented a yield of 42·28 bushels per acre, as compared with 42·95 bushels in 1927-28, 34·19 bushels in 1926-27, 35·08 bushels in 1925-26, and 38·57 bushels in 1924-25. Of the total production for last season 90 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 nine seasons and for periods prior thereto back to 1890:—

MAIZE PRODUCTION, 1890 TO 1929.

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
1929	16,077	679,810	42·28

On the average of the last five seasons the yield per acre was 38·29 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 1928–29 was 711 acres, from which 10,994 bushels of grain were obtained. The production was 11,122 bushels in 1927–28, 10,443 bushels in 1926–27, 10,788 bushels in 1925–26, and 13,000 bushels in 1924–25. Rye was grown principally in the counties of Bogong, Dalhousie, Delatite, and Talbot last season. The area under this crop in the four counties mentioned was about 57 per cent. of the total for the whole State.

Peas. The area under peas in 1928–29 was 6,743 acres, and the return, 108,607 bushels, as compared with 10,615 acres and 139,621 bushels for the previous year. Last season peas were grown to some extent in all districts. The counties from which the largest returns were obtained and the yields of these counties were as follows:—Grant, 28,539 bushels; Buln Buln, 21,191 bushels; Mornington, 15,354 bushels; and Bourke, 12,113 bushels. The production of peas in the four counties mentioned was equal to 71 per cent. of the total for the whole State.

Mangel-wurzel. In 1928–29 there were 429 acres under mangel-wurzel, as against 568 in 1927–28, 690 in 1926–27, 1,046 in 1925–26, and 736 in 1924–25. The production last year was 5,301 tons, as compared with an annual average of 10,018 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, showed an increase in area of 36 acres as compared with the previous season. In 1928–29 the extent of land sown was 243 acres, as against 207 acres in 1927–28, 286 acres in 1926–27, 624 in 1925–26, and 238 in 1924–25. The produce for last year was 2,079 tons, as compared with 1,629 tons in 1927–28, 1,994 tons in 1926–27, 2,758 in 1925–26, and 1,847 in 1924–25.

Onions. Onions are grown in nearly every county south of the Dividing Range. The returns for last season show that in Villiers, the yield was 7,285 tons from 1,560 acres; in Bourke, 5,478 tons from 961 acres; in Grenville, 5,263 tons from 1,766 acres; in Polwarth, 4,883 tons from 1,078 acres; in Buln Buln, 3,161 tons from 878 acres; in Mornington, 1,661 tons from 355 acres; and in Grant, 1,581 tons from 947 acres. The following statement shows the area and yield for each of the last five years :—

ONION PRODUCTION, 1924–25 TO 1928–29.

Year ended March—	Area.	Produce.
	acres.	tons.
1924–25	4,504	26,555
1925–26	5,379	21,728
1926–27	8,471	43,928
1927–28	7,659	32,936
1928–29	7,673	29,700

The value of onions grown was £187,233 in 1928–29, as compared with £188,186 in 1927–28, £110,839 in 1926–27, £267,793 in 1925–26, and £209,803 in 1924–25.

Green forage. The area devoted to green forage in 1928–29 was 107,351 acres, 94,895 in 1927–28, 87,241 in 1926–27, 107,873 in 1925–26, and 99,531 in 1924–25.

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, 1924–25 TO 1928–29.

Year ended March—	Number of Farms on which made.	Number of Silos (Pits and Stacks).	Materials used.
			tons.
1925	106	149	6,667
1926	113	150	6,092
1927	94	110	6,132
1928	75	97	6,037
1929	89	116	7,775

Grass and clover seed.

The area harvested for grass and clover seed last season was 1,486 acres, as compared with 758 in 1927–28, 854 in 1926–27, 1,290 in 1925–26, and 1,424 in 1924–25. The production in 1928–29 was 20,844 bushels, as against 4,852 in 1927–28, 5,876 in 1926–27, 7,330 in 1925–26, and 8,597 in 1924–25.

Hops.

The hop-growing industry attained its maximum development in 1883–84, when 1,758 acres yielded 15,717 cwt. In 1928–29 the return from 281 acres was 3,676 cwt. Delatite, Bogong, and Polwarth were the only counties in which hops were grown last season.

Flax.

Since the winding up of the Commonwealth Flax Committee in 1924, various efforts have been made to place the growing of flax, and the treatment thereof, on a satisfactory basis. Up to date, these have not been very successful. The areas sown in the last five years were as follows :—130 acres in 1924 ; 154 acres in 1925 ; 388 acres in 1926 ; 46 acres in 1927 ; and 109 acres in 1928. For particulars of New Zealand flax, *vide* page 568.

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 1922–23 the area planted each year has remained fairly constant. The area devoted to this product last year was 1,317 acres, of which 696 were in Delatite, and 496 in Bogong. Particulars relating to the cultivation of tobacco for each of the last five years are as follows :—

TOBACCO PRODUCTION, 1924–25 TO 1928–29.

Year ended June—	Area.	Produce.
	acres.	cwt. (dry).
1924–25	1,228	3,199
1925–26	1,179	7,871
1926–27	1,154	3,454
1927–28	1,176	9,055
1928–29	1,317	*

* Not available.

Vine Production.

During the period 1904 to 1915 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 3,439,253 cwt. of grapes; Swan Hill, 478,575 cwt.; Rutherglen, 92,468 cwt.; and Rodney, 17,206 cwt. At Mildura the crop is principally dried for raisins and currants. The results of five years' operations are given below :—

VINE PRODUCTION, 1925 TO 1929.

Year ended June—	Number of Growers.	Area.		Produce.				
		Bearing.	Not Bearing.	Grapes gathered.	Wine made.	Raisins made.		Currants made.
						Lexias.	Sultanas.	
		acres.	acres.	cwt.	gallons.	cwt.	cwt.	cwt.
1925 ..	2,999	31,723	10,744	2,142,349	1,368,765	70,695	296,304	104,948
1926 ..	2,876	36,091	4,621	2,253,884	1,637,274	54,021	297,485	123,733
1927 ..	2,832	37,340	3,272	3,587,224	2,346,314	75,296	582,418	135,464
1928 ..	2,774	37,974	3,014	2,275,770	2,353,890	75,672	326,649	73,101
1929 ..	2,746	38,689	2,876	4,117,757	1,942,701	94,520	676,599	189,985

Of the total quantity of grapes gathered in 1929, it is estimated that 275,929 cwt. were used for making wine and spirits, 3,763,654 cwt. for raisins and currants, and 78,174 cwt. for table consumption and export. Of the 676,599 cwt. of sultanas made, 576,458 cwt. were from Mildura, and 97,180 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 683,000 cwt. of the production in 1929 were available for interstate or oversea export. A year's consumption of currants is about 30,000 cwt., which would enable approximately 160,000 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 7,119 in 1928–29, as against 7,209 in 1927–28, 7,425 in 1926–27, 7,673 in 1925–26, and 7,414 in 1924–25. The area under orchards in each of these years was 77,622, 79,293, 81,301, 80,251, and 83,369, acres respectively. The orchards are distributed over the whole State. The counties having the largest areas last season were as follows :—Mornington, 14,915 acres; Bourke, 11,732 acres; Evelyn, 10,813 acres; Rodney, 9,738 acres; Moira, 8,114 acres; Talbot, 3,903 acres; and Bendigo, 3,134 acres.

The following is a statement of the number of bearing and not-bearing fruit trees and plants for the seasons 1925–26 and 1928–29 :—

RETURN SHOWING THE NUMBER OF FRUIT TREES, PLANTS, ETC., IN ORCHARDS AND GARDENS WHERE FRUIT WAS GROWN FOR SALE, 1925-26 AND 1928-29.

Fruit.	Number of Trees, Plants, &c.					
	1925-26.			1928-29.		
	Bearing.	Not Bearing.	Total.	Bearing.	Not Bearing.	Total.
Apples ..	2,281,817	751,046	3,032,863	2,358,422	740,772	3,099,194
Pears ..	803,344	247,341	1,050,685	814,847	200,517	1,015,364
Quinces ..	77,950	15,733	93,683	83,991	7,875	91,866
Plums ..	305,348	64,826	370,174	306,585	57,438	364,023
Prunes ..	74,118	46,019	120,137	83,292	23,343	106,635
Cherries ..	112,324	29,228	141,552	93,408	34,118	127,526
Peaches ..	876,635	222,333	1,098,968	926,060	270,587	1,196,647
Apricots ..	397,402	67,532	464,934	406,864	51,628	458,492
Nectarines ..	13,539	3,570	17,109	16,676	4,318	20,994
Oranges ..	338,290	259,710	598,000	411,502	154,650	566,152
Lemons ..	130,634	64,881	195,515	141,895	47,246	189,141
Limes ..	360	58	418	*	*	*
Grapefruit ..	1,597	5,959	7,556	*	*	*
Pomelo - Shaddock ..	350	114	464	*	*	*
Loquats ..	3,346	1,092	4,438	3,334	963	4,297
Medlars ..	71	15	86	*	*	*
Figs ..	31,967	6,050	38,017	28,834	5,725	34,559
Guavas ..	68	67	135	*	*	*
Pomegranates	69	59	128	*	*	*
Persimmons ..	535	205	740	581	135	716
Total Large Fruits ..	5,449,764	1,785,838	7,235,602	5,676,291	1,599,315	7,275,606
Raspberries ..	351,201	..	351,201	319,425	..	319,425
Loganberries ..	147,901	..	147,901	218,168	..	218,168
Strawberries ..	3,662,153	..	3,662,153	4,574,587	..	4,574,587
Gooseberries ..	196,494	20,114	216,608	160,776	..	160,776
Mulberries ..	858	259	1,117	896	135	1,031
Olives ..	1,576	300	1,876	1,244	38	1,282
Currants (Red, White, and Black) ..	36,369	7,444	43,813	25,627	1,118	26,745
Passion-fruit ..	54,245	35,019	89,264	82,041	32,593	114,634
Almonds ..	23,272	16,287	39,559	30,176	7,024	37,200
Walnuts ..	7,382	4,481	11,863	6,287	3,680	9,967
Filberts ..	259	502	761	157	423	580
Chestnuts ..	462	254	716	443	330	773
Total Nuts ..	31,375	21,524	52,899	37,063	11,457	48,520

* Not collected.

Census of Fruit Trees. 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,

published a detailed statement of each variety in each county in the State, and copies may be had on application thereto. Briefly summarized results will be found in previous issues of this work.

Orchards growing fruit for sale.

The area of orchards growing fruit for sale in 1928-29 —77,622 acres—showed a decrease of 1,671 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,
1924-25 TO 1928-29.

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.
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	29,817
1928	7,209	79,293	3,712,350	1,058,481	115,606	231,728	79,481	47,795
1929	7,119	77,622	626,294	772,216	76,868	165,658	76,237	51,765

	Large Fruits Gathered—*continued*.							
	Peaches.	Apricots.	Oranges.	Lemons.	Figs.	Nectarines	Passion.	Other.
	bushels.	bushels.	bushels.	bushels.	bushels.	bushels.	bushels.	bushels.
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	378,101	162,860	18,125	23,142	22,072	3,608
1929	1,043,840	468,536	†	†	18,776	12,451	38,105	1,656

	Small Fruits Gathered.					Nuts Gathered.			
	Raspberries.	Strawberries.	Gooseberries.	Loganberries.	Other.	Almonds.	Walnuts.	Filberts.	Chestnuts.
	cwt.	cwt.	cwt.	cwt.	cwt.	lbs.	lbs.	lbs.	lbs.
1925	3,665	5,856	4,281	4,527	2,808	70,217	23,199	615	14,469
1926	3,548	4,022	4,675	3,653	2,557	71,480	61,845	201	16,793
1927	1,283	1,877	1,322	1,364	346	68,315	31,254	59	15,495
1928	3,295	4,958	4,449	4,859	1,760	66,783	30,236	148	26,066
1929	2,210	6,522	3,038	3,403	1,269	115,835	47,094	205	22,965

* Included in Plums. † As the season for citrus fruits ends later than that for other fruits details are not yet available.

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 most cases, the yield for 1928–29 was very low, the apple crop, in particular, being little more than that for the 1926–27 season.

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 1928-29:—Melons, 8,048 cwt.; rhubarb, 11,425 dozen bundles; and tomatoes, 119,473 bushels. There were also 1,700 acres laid down in gardens growing fruit for private use; the value of the produce from these was estimated at about £8,500.

Value of fruit sold.

According to prices received by growers the value of fruit which reaches market was estimated to be £1,091,508 in 1924–25, £1,247,700 in 1925–26, £970,831 in 1926–27, £1,189,356 in 1927–28, and £1,093,434 in 1928–29. 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.

Market gardens.

The area under market gardens in the year 1928–29 was 18,630 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 £931,500. 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.

Dried fruit (exclusive of Raisins and Currants).

The quantity of dried fruit (weight after drying) was first collected in 1895–96, when 179,460 lbs. were returned. During 1928–29 the quantity produced was 1,568,128 lbs., which was 30 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 564, is shown in the following statement for each of the last five seasons:—

DRIED FRUIT, 1924–25 TO 1928–29.

Year ended June—	Apples.	Prunes.	Peaches.	Apricots.	Figs.	Pears.	Nectarines.	Total.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
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
1929 ..	2,194	760,216	136,033	586,140	7,685	71,591	4,269	1,568,128

Features of the returns for the season 1928-29, as compared with those for the previous year, are the large increase in apricots and the large decrease in peaches.

Minor crops.

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, 1927-28 AND 1928-29.

Crop.	1927-28.		1928-29.	
	Area.	Produce.	Area.	Produce.
	acres.		acres.	
Artichokes	†	..	4	12 tons
Beans	1,561	20,894 bushels	1,295	17,353 bushels
Chicory	576	646 tons (dry)	589	353 tons (dry)
Flowers	226	..	358	..
Garlic	42	43 tons	28	43 tons
Flax—New Zealand ..	90	*	70	*
Herbs and Scent Plants ..	†	..	3	..
Millet—Broom ..	2,059	9,341 cwt. fibre 11,532 cwt. seed	1,337	4,465 cwt. fibre 3,729 cwt. seed
„ Japanese ..	30	500 „ „	370	1,840 „ „
Nurseries	906	..	1,216	..
Pumpkins	1,401	9,303 tons	1,204	5,416 tons
Seeds—Agricultural and Garden ..	64	..	119	..
Sugar Beet	2,353	25,438 tons clean beet, producing 2,352 tons marketable sugar	2,130	15,237 tons clean beet, producing 2,108 tons marketable sugar
Sunflowers	142	1,057 cwt.	140	1,451 cwt.
Total	9,450	..	8,863	..

* Only cut every third year. † Not collected.

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 four years was as follows :—

LAND IN FALLOW.

Year ended March—	Acres.	Year ended March—	Acres.
1901	602,870	1926	2,457,136
1906	1,049,915	1927	2,569,021
1911	1,434,177	1928	2,692,044
1916	1,358,343	1929	2,683,462
1921	1,935,747		

Nearly all of the fallowed area is devoted to wheat production. Of the 2,683,462 acres in fallow last season, 824,556 were in the Wimmera, 1,063,367 in the Mallee, and 560,748 in the Northern District. The total for these three districts represented 91 per cent. of the land fallowed in the State.

Manure used.

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 43,962, 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 three years:—

MANURE USED FOR FERTILIZATION, 1901 TO 1928.

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
1928	43,962	5,753,116	114,345	257,498

NOTE.—The average weight of manure used per acre in each district will be found on page 555.

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 1928-29 the quantity of fertilizers imported into Victoria from oversea countries was 252,004 tons valued at £621,578. This included 242,013 tons of rock phosphates valued at £564,630, most of which came from the Pacific Islands.

Characteristics of Victorian soils.

This subject is fully dealt with in the *Year-Book* for 1915-16, page 740.

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, 1924 TO 1928.

Year.	Males.	Females.	Total.
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
1928	98,296	14,508	112,804

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 1928–29. The information has been furnished by the occupiers of holdings.

WAGES, AGRICULTURAL AND PASTORAL, 1928-29.

Occupations.	Range.	Prevailing Rate.
Ploughmen	30s. to 70s. per week ..	45s. per week
Farm labourers	25s. to 60s. per week ..	40s. per week
Threshing machine hands ..	1s. to 1s. 6d. per hour..	1s. 3d. per hour
Harvest hands	10s. to 15s. per day ..	13s. 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 90s. per week ..	60s. per week
Female servants	20s. to 40s. per week ..	27s. 6d. per week
Shearers, hand (without rations)	35s. to 45s. per 100 sheep	40s. per 100 sheep
„ machine (without rations)	40s. to 50s. per 100 sheep	40s. per 100 sheep
Gardeners, market	30s. to 60s. per week ..	40s. per week
„ orchard	35s. to 70s. per week ..	40s. per week
Vineyard hands	35s. to 80s. per week ..	40s. 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 1929 :—

LIVE STOCK IN VICTORIA, 1861 TO 1929.

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
1929	412,877	615,092	689,334	16,498,222	220,084
		Per Head of Population.			
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	·29
1911	·36	·51	·67	9·79	·25
1921	·32	·41	·63	7·99	·12
1929	·23	·35	·39	9·37	·13
		Per Square Mile.			
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
1929	4·70	7·00	7·84	187·73	2·53

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 324 sheep in 1929, as compared with 302 in 1921, 306 in 1911, and 237 in 1881.

Size of holdings, showing areas cultivated and grazed.

Information relating to land occupied and cultivation and live stock thereon was collected in March, 1929. The land privately owned was summarized according to different sized holdings, and in the instances where Crown lands were held in conjunction therewith these were, regardless of size, scheduled with the holdings to which they were attached. The details, as well as the particulars of the total holdings in which only Crown land was held, are given in the two succeeding tables :—

SIZE OF HOLDINGS SHOWING AREAS UNDER CULTIVATION AND PASTURE, MARCH, 1929.

Size of Holdings. (In Acres.)	Privately-owned Land. Number of Holdings.	Privately-owned Land. Area Occupied.	Crown Land held in conjunction with that privately owned.	Total Area Occupied.	Area under— Cultivation.	Area under— Pasture, &c.
		acres.	acres.	acres.	acres.	acres.
1 and under 5	2,595	7,047	3,614	10,661	1,513	9,148
5 ,, 15	6,038	54,491	33,372	87,863	16,533	71,330
15 ,, 30	6,458	132,343	53,187	185,530	51,461	134,069
30 ,, 50	4,700	180,796	12,257	193,053	56,928	136,125
50 ,, 100	8,388	601,533	105,603	707,136	165,172	541,964
100 ,, 200	10,999	1,552,901	214,434	1,767,335	327,664	1,439,671
200 ,, 300	6,146	1,489,885	246,301	1,736,186	320,178	1,416,008
300 ,, 321	2,478	777,744	368,922	1,146,666	207,213	939,453
321 ,, 400	3,041	1,088,035	173,868	1,261,903	251,771	1,010,132
400 ,, 500	3,315	1,476,201	267,126	1,743,327	390,869	1,352,458
500 ,, 600	2,653	1,448,722	306,687	1,755,409	410,771	1,344,638
600 ,, 641	2,473	1,550,460	230,891	1,781,351	726,148	1,055,203
641 ,, 700	1,414	944,839	114,554	1,059,393	397,067	662,326
700 ,, 800	2,568	1,922,683	234,052	2,156,685	792,575	1,364,110
800 ,, 900	1,839	1,544,365	209,151	1,753,516	562,783	1,190,733
900 ,, 1,000	1,502	1,417,019	241,156	1,658,175	487,997	1,170,178
1,000 1,500	3,742	4,512,546	928,671	5,441,217	1,482,517	3,958,700
1,500 ,, 2,000	1,534	2,609,534	533,624	3,143,158	650,934	2,492,224
2,000 ,, 2,500	670	1,480,604	205,053	1,685,657	310,577	1,375,080
2,500 ,, 3,000	398	1,077,167	159,037	1,236,204	174,627	1,061,577
3,000 ,, 4,000	402	1,370,095	486,490	1,856,585	166,276	1,690,309
4,000 ,, 5,000	183	808,873	237,727	1,046,600	76,008	970,592
5,000 ,, 7,500	196	1,179,529	146,491	1,326,020	73,352	1,252,668
7,500 ,, 10,000	101	867,752	61,283	929,035	24,190	904,845
10,000 ,, 15,000	69	837,808	40,709	878,517	21,159	857,358
15,000 ,, 20,000	21	358,661	50,129	408,790	7,756	401,034
20,000 ,, 30,000	14	344,786	2,139	346,925	2,628	344,297
30,000 ,, 40,000	..	..	..	..	..	..
40,000 ,, 50,000	1	46,090	380	46,470	1,160	45,310
Total Privately-owned Land ..	73,938	31,682,459	5,666,908	37,349,367	8,157,827	29,191,540
Crown Land not held in conjunction with that privately owned ..	974	..	1,021,435	1,021,435	159,575	861,860
Grand Total ..	74,912	31,682,459	6,688,343	38,370,802	8,317,402	30,053,400

Size of holdings and live stock thereon.

The previous table shows the areas devoted to cultivation and grazing on different-sized holdings in March, 1929, while the next table gives the numbers of horses, cattle, sheep, and pigs on these holdings, and the total numbers on Crown lands that are not held conjointly with privately-owned land, at the same date.

SIZE OF HOLDINGS AND LIVE STOCK THEREON, MARCH, 1929.

Size of Holdings. (In Acres.)	Live Stock on Land Occupied.				
	Horses.	Cattle.		Sheep.	Pigs.
		Dairy Cows.	Other Cattle.		
1 and under 5 ..	2,079	2,687	1,307	1,504	783
5 ,, 15 ..	6,427	8,500	4,463	5,420	2,823
15 ,, 30 ..	9,894	12,034	6,223	13,418	4,755
30 ,, 50 ..	9,433	19,170	9,888	25,329	6,989
50 ,, 100 ..	23,177	70,758	37,291	140,374	30,274
100 ,, 200 ..	40,312	146,547	87,179	489,760	59,352
200 ,, 300 ..	28,838	88,720	63,922	610,500	32,949
300 ,, 321 ..	13,334	27,670	24,533	337,900	11,395
321 ,, 400 ..	17,953	38,591	35,068	556,783	12,912
400 ,, 500 ..	21,860	37,764	39,113	751,984	12,302
500 ,, 600 ..	18,609	25,519	32,270	750,745	7,807
600 ,, 641 ..	20,907	13,642	17,414	539,794	4,347
641 ,, 700 ..	11,802	9,600	12,887	373,190	3,080
700 ,, 800 ..	21,187	13,786	22,116	664,249	4,824
800 ,, 900 ..	16,386	12,148	22,218	598,076	3,712
900 ,, 1,000 ..	14,285	8,958	17,645	651,318	2,596
1,000 ,, 1,500 ..	40,971	24,007	57,008	2,315,635	8,175
1,500 ,, 2,000 ..	18,371	11,578	38,491	1,524,178	2,434
2,000 ,, 2,500 ..	8,796	5,715	20,872	947,606	1,168
2,500 ,, 3,000 ..	5,301	4,112	15,016	702,540	1,051
3,000 ,, 4,000 ..	5,603	2,665	20,708	970,488	546
4,000 ,, 5,000 ..	2,962	1,705	16,613	630,645	423
5,000 ,, 7,500 ..	3,959	1,927	25,080	901,049	235
7,500 ,, 10,000 ..	2,195	979	13,103	690,776	176
10,000 ,, 15,000 ..	1,716	816	7,654	636,579	96
15,000 ,, 20,000 ..	639	370	3,138	266,158	29
20,000 ,, 30,000 ..	1,195	380	15,279	270,870	15
30,000 ,, 40,000 ..	..	..	..	..	..
40,000 ,, 50,000 ..	128	24	612	22,880	7
Total on Privately-owned Land	368,319	590,372	667,111	16,389,748	215,255
On Crown Land not held in conjunction with privately-owned Land	4,083	3,070	4,576	81,937	1,186
In towns and travelling ..	40,475	21,650	17,647	26,537	5,643
Grand Total ..	412,877	615,092	689,334	16,498,222	222,084

The position disclosed was that 66,607 persons holding up to 1,000 acres each of private land occupied in the aggregate 16,189,014 acres of such land, or 51 per cent. of the total area in occupation, as well as 2,815,175 acres of Crown land—a total of 19,004,189 acres. Of the privately-owned land and Crown land held in conjunction therewith, these occupiers controlled 63 per cent. of the total cultivation and 47 per cent. of the pasture, and possessed 75 per cent. of the horses, 91 per cent. of the dairy cows, 65 per cent. of the other cattle, 93 per cent. of the pigs, and 40 per cent. of the sheep.

Size of holdings in 1913, 1919, 1925, and 1929.

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, 1925, and 1929 :—

SIZE OF HOLDINGS AND CULTIVATION THEREON, 1913, 1919, 1925, AND 1929.

Size of Holdings. (In Acres.)	Year.	Privately-owned Land. Number of Holdings.	Privately-owned Land. Area Occupied.	Crown Land held in conjunction with that privately owned.	Total Area Occupied.	Area under— Cultivation.	Area under— 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
	1929	28,179	976,210	208,033	1,184,243	291,607	892,636
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
	1929	19,623	3,820,530	829,657	4,650,187	855,055	3,795,132
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
	1929	11,482	5,563,418	978,572	6,541,990	1,779,559	4,762,431
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
	1929	7,323	5,828,856	798,913	6,627,769	2,240,422	4,387,347
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	1,836,928	7,467,219
	1929	5,946	8,602,684	1,667,348	10,270,032	2,444,028	7,826,004
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	270,426	3,271,674
	1925	899	2,974,753	741,294	3,716,047	284,495	3,431,552
	1929	983	3,256,135	883,254	4,139,389	416,911	3,722,478
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
	1929	297	2,047,281	207,774	2,255,055	97,542	2,157,513
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
	1929	105	1,587,345	93,357	1,680,702	32,703	1,647,999
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
	1929	73,938	31,682,459	5,666,908	37,349,367	8,157,827	29,191,540
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	36,800	696,535
	1929	974	..	1,021,435	1,021,435	159,575	861,860
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
	1929	74,912	31,682,459	6,688,343	38,370,802	8,317,402	30,053,400

Features disclosed by the last classification are that, as compared with 1925, the holdings under 641 acres decreased by 6,120 in number and 985,733 in area, while those over 640 acres increased by 956 in number and 1,202,868 acres in area.

The number of holdings of privately-owned land of over 10,000 acres was 105 in 1929, 104 in 1925, 152 in 1919, 151 in 1913, 175 in 1910, and 195 in 1906, and the aggregate areas comprised therein in

the corresponding years were 1,587,345 acres, 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 twenty-three years between 1906 and 1929 was equivalent to 46 per cent. in the number, and 62 per cent. in the acreage of such estates. Most of this reduction took place between the years 1906 and 1913, and 1919 and 1925.

Size of holdings and how utilized, 1913, 1919, 1925, and 1929.

To illustrate the uses to which the land was applied in 1913, 1919, 1925, and 1929, 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, 1925, AND 1929.

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
	1929	38·11	3·17	3·57	3·06	6·26	1,730,071	194
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	128
	1925	27·46	13·77	13·44	13·85	19·20	4,994,010	124
	1929	26·54	12·45	10·48	13·00	17·72	4,894,426	129
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	4,592,327	91
	1929	15·52	17·52	21·81	16·31	17·48	4,828,882	101
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
	1929	9·90	17·74	27·47	15·03	13·18	3,639,581	83
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	22·28	6,539,378	80
	1925	6·98	25·79	26·47	25·63	21·55	5,607,738	75
	1929	8·05	27·50	29·96	26·81	23·23	6,414,825	82
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
	1929	1·33	11·08	5·11	12·75	10·17	2,807,247	75
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
	1929	·41	6·04	1·20	7·39	6·88	1,899,899	88
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
	1929	·14	4·50	·40	5·65	5·08	1,402,905	85
Total	1913	100·00	100·00	100·00	100·00	100·00	24,957,112	82
	1919						29,356,865	92
	1925						26,013,430	89
	1929						27,617,836	92

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 92 sheep in 1929, as compared with 89 in 1925, 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 1929, 64 per cent. of the dairy cows and 69 per cent. of the pigs were on holdings of not more than 320 acres.

Land occupied in different districts.

The following tables show the area of, and the land in occupation, in March, 1929, in districts, and the uses to which the land was applied :—

AREA OF AND LAND IN OCCUPATION IN EACH DISTRICT OF VICTORIA, MARCH, 1929.

(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	16,898	448,671	237,655	1,860,313	217,838	2,759,477
North-Central	2,929,920	5,494	141,519	26,133	1,915,839	114,638	2,198,129
Western ..	8,775,040	11,916	375,552	294,098	5,453,675	573,438	6,696,763
Wimmera ..	7,394,560	6,224	2,048,239	7,015	3,496,252	619,734	6,171,240
Mallee ..	10,784,000	8,340	3,272,464	16,324	2,156,066	610,945	6,055,799
Northern ..	6,337,280	12,002	1,589,256	133,104	3,466,231	108,259	5,296,850
North-Eastern	7,220,480	5,182	143,872	10,723	3,884,814	359,123	4,398,532
Gippsland ..	8,739,200	8,856	174,540	429,666	2,793,653	1,396,153	4,794,012
Total ..	56,245,760	74,912	8,189,113	1,154,718	25,026,843	4,000,128	38,370,802
	PERCENTAGE OF TOTAL OCCUPIED IN EACH DISTRICT.						
Central ..	..	..	16·08	8·61	67·42	7·89	100·00
North-Central	..	..	6·44	1·19	87·16	5·21	100·00
Western ..	..	..	5·61	4·39	81·44	8·56	100·00
Wimmera ..	..	..	33·19	0·11	56·66	10·04	100·00
Mallee ..	..	..	54·04	0·27	35·60	10·09	100·00
Northern ..	..	..	30·00	2·51	65·44	2·05	100·00
North-Eastern	..	..	3·27	0·24	88·32	8·17	100·00
Gippsland ..	..	..	3·64	8·96	58·27	29·13	100·00
Total ..	..	..	21·34	3·01	65·22	10·43	100·00
	PERCENTAGE IN EACH DISTRICT OF TOTAL IN STATE.						
Central ..	..	22·56	5·42	20·58	7·43	5·45	7·19
North-Central	..	7·33	1·73	2·26	7·66	2·87	5·73
Western ..	..	15·91	4·58	25·47	21·79	14·33	17·45
Wimmera ..	..	8·31	25·01	0·61	13·97	15·49	16·08
Mallee ..	..	11·13	39·96	1·41	8·62	15·27	15·78
Northern ..	..	16·02	19·41	11·53	13·85	2·71	13·81
North-Eastern	..	6·92	1·76	0·93	15·52	8·98	11·46
Gippsland ..	..	11·82	2·13	37·21	11·16	34·90	12·50
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, 54 per cent. in the Mallee, 33 per cent. in the Wimmera, and 30 per cent. in the Northern districts are devoted to agriculture, and these divisions supply over 84 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, 37 per cent. of all the sown grasses in the State being found in that district.

Areas occupied and stock thereon, in districts.

The next table contains particulars of the distribution of horses, cattle, and sheep on agricultural and pastoral lands in March, 1929:—

AREA OCCUPIED AND STOCK THEREON, 1929.

Districts.	Area Occupied for—		Number of—		
	Agriculture.	Pasture.	Horses.	Cattle.	Sheep.
	acres.	acres.			
Central	443,671	2,097,968	78,547	207,674	1,341,649
North-Central ..	141,519	1,941,972	19,562	73,801	1,489,266
Western	375,552	5,747,773	53,362	315,004	4,919,971
Wimmera ..	2,048,239	3,503,267	56,905	33,579	2,342,795
Mallee	3,272,464	2,172,390	62,664	28,029	937,078
Northern	1,589,256	3,599,335	77,746	160,676	2,846,627
North-Eastern ..	143,872	3,895,537	27,994	201,349	1,361,143
Gippsland ..	174,540	3,223,319	36,097	284,314	1,259,693
Total ..	8,189,113	26,181,561	412,877	1,304,426	16,498,222

The area occupied does not include 4,000,128 acres which are mostly in an unproductive state.

Live stock in Victoria, 1925 to 1929.

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, 1929, are given on pages 573, 581–582, and 586–588 of this volume:—

LIVE STOCK IN VICTORIA, 1925 TO 1929.

Live Stock.	1925.	1926.	1927.	1928.	1929.
Horses (including foals)	473,236	463,051	447,988	428,666	412,877
Cattle—					
Dairy Cows ..	760,207	727,940	673,089	626,139	615,092
Other (including calves) ..	845,347	785,847	762,672	700,938	689,334
Sheep	12,649,898	13,740,500	14,919,653	15,557,067	16,498,222
Pigs	288,509	339,601	284,271	212,785	222,084

Comparing 1929 with 1928, sheep increased by 6·5 per cent., while horses decreased by 3·7 per cent., and cattle by 1·7 per cent.

The peak period for horses was 562,331 in 1914, since when, owing to the increased use of motor vehicles for transport and tractors on farms, there has been a fairly constant decrease in the number each year. The decline in the last ten years amounted to 21 per cent.

The number of sheep in the State in 1929 established a record.

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 1927–28 and 1928–29 for live stock. The information has been extracted from the Melbourne *Stock and Station Journal*:—

PRICES IN MELBOURNE OF LIVE STOCK, 1927–28 AND 1928–29.

Stock.	Prices in 1927–28.		Prices in 1928–29.	
	Average.	Range.	Average.	Range.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Horses.				
Extra heavy draught	38 15 0	37 0 0 to 40 10 0	42 16 6	39 10 0 to 47 10 0
Medium draught ..	28 15 0	27 10 0 to 30 0 0	29 15 0	27 10 0 to 31 10 0
Delivery cart ..	14 5 0	13 0 0 to 15 0 0	16 17 6	15 0 0 to 19 10 0
Indian Remounts ..	19 12 6	19 0 0 to 20 10 0	15 14 0	12 0 0 to 17 5 9
Saddle and harness	5 2 6	4 10 0 to 6 0 0	8 3 6	7 0 0 to 11 5 0
Ponies	8 0 0	7 10 0 to 8 10 0	9 18 6	9 0 0 to 11 10 0
Order cart ..	9 5 0	8 0 0 to 10 0 0	11 12 6	10 0 0 to 13 10 0
Fat Cattle.				
Bullocks—				
Extra prime ..	24 7 1	19 6 8 to 29 6 0	19 14 10	17 2 2 to 25 16 0
Prime	21 1 8	17 6 0 to 25 5 0	17 9 2	15 4 0 to 21 15 0
Good	18 1 7	16 3 6 to 21 6 0	15 8 1	13 7 6 to 19 10 0
Good light and handy weights	16 1 7	14 5 0 to 19 0 0	14 5 6	11 7 6 to 17 17 0
Cows—				
Best	14 16 6	13 6 0 to 17 7 0	12 18 8	11 0 9 to 15 11 0
Others	8 6 4	7 7 6 to 8 19 0	9 15 8	8 17 6 to 10 15 0
Fat Sheep.				
Wethers (cross)—				
Extra prime ..	1 13 4	1 4 9 to 2 2 7	1 12 4	1 3 7 to 1 19 9
Prime ..	1 9 9	1 2 0 to 1 18 7	1 9 4	1 1 5 to 1 16 5
Good	1 5 10	0 18 11 to 1 13 7	1 6 1	0 18 0 to 1 13 0
Ewes (cross)—				
Extra prime ..	1 7 0	1 0 2 to 1 14 1	1 5 8	0 16 6 to 1 14 0
Prime	1 4 2	0 17 7 to 1 10 11	1 2 11	0 14 9 to 1 11 6
Good	1 0 5	0 13 3 to 1 6 11	0 19 1	0 12 0 to 1 8 0
Wethers (merino)—				
Extra prime ..	1 12 5	1 2 5 to 2 3 5	1 11 1	1 2 6 to 2 0 4
Prime	1 9 0	0 19 5 to 1 19 1	1 7 6	1 0 4 to 1 17 3
Good	1 4 11	0 16 7 to 1 14 7	1 3 8	0 16 10 to 1 13 0
Ewes (merino) best	1 1 4	0 15 8 to 1 9 10	0 19 6	0 14 1 to 1 7 9
Fat Lambs.				
Extra prime ..	1 8 9	1 4 1 to 1 17 6	1 6 9	0 19 10 to 1 13 2
Prime	1 6 0	0 19 9 to 1 14 3	1 4 3	0 17 9 to 1 11 0
Good	1 2 3	0 17 2 to 1 9 5	1 1 2	0 14 6 to 1 7 5
Pigs.				
Back Fatters—				
Extra heavy prime	12 8 3	10 4 10 to 14 0 0	13 12 4	10 16 3 to 16 9 4
Extra prime and weighty ..	9 12 6	8 7 0 to 10 15 0	10 10 7	8 17 6 to 12 10 0
Baconers—				
Extra prime ..	5 7 8	4 11 10 to 6 17 5	5 11 3	5 1 4 to 6 1 10
Prime	4 11 11	4 0 10 to 5 9 5	5 1 8	4 10 0 to 5 13 1
Porkers	2 15 9	2 6 6 to 3 4 9	3 0 10	2 15 11 to 3 8 3

NOTE.—Prices for dairy cattle are not available.

Stock Slaughtered. The following is a statement of the stock slaughtered on farms and stations, as well as in municipal abattoirs, during the years ended 30th June, 1928 and 1929 :—

STOCK SLAUGHTERED, 1927-28 AND 1928-29.

Year ended June—	Number Slaughtered.		
	Sheep and Lambs.	Cattle.	Pigs.
1928	4,732,494	469,610	358,135
1929	5,286,642	466,576	354,339

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

PURPOSES FOR WHICH STOCK WERE SLAUGHTERED, 1927-28 AND 1928-29.

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
1929	3,681,251	456,829	156,049	1,590,573	6,297	..

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
1929	6,470	1,298	198,131	8,348	2,152	159

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

Of the 5,286,642 sheep and lambs slaughtered in Victoria in 1928-29, 1,590,573, or 30 per cent., as compared with 19 per cent. in 1927-28, were frozen. In 1928-29 the oversea exports included 21,288,776 lbs. of mutton, valued at £431,440, and 37,564,594 lbs. of lamb, valued at £1,096,891.

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 fifteen 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. Seasonal influences were responsible for fluctuations in the subsequent years.

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
1928–29 ..	422,215	50	431,440	1,168,358	32	1,096,891

Dairying.

The dairying industry is one of the principal sources of the wealth of the community. The value of dairy produce in 1929 was £11,959,500, as compared with £11,186,070 in 1928, £10,483,760 in 1927, £10,364,790 in 1926, and £10,381,175 in 1925. 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, 1924–25 TO 1928–29.

Year ended March—	Number of Cow-keepers.	Number of Dairy Cows.	Butter made.*	Cheese made.*
			lbs.	lbs.
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
1929	54,814	615,092	93,728,516	5,505,932

* Year ended 30th June.

Areas of holdings and numbers and sizes of dairy herds.

For the first time in Victoria, a classification has been made of the sizes of dairy herds on various holdings. The following table shows the numbers and sizes of dairy herds, and the percentages of each, on holdings of various areas :—

AREAS OF HOLDINGS AND NUMBERS AND SIZES OF DAIRY HERDS THEREON, 1929.

Area of Holdings. (In Acres.)	Number and Size of Dairy Herds.									
	Under 5 Cows.		5 and under 10.		10 and under 15.		15 and under 20.		20 and under 30.	
	Herds.	Dairy Cows.	Herds	Dairy Cows.	Herds.	Dairy Cows.	Herds.	Dairy Cows.	Herds.	Dairy Cows.
1 and under 50	8,936	15,907	1,653	10,722	610	7,079	215	3,582	166	3,811
50 ,, 100	2,384	5,194	1,186	8,135	940	11,205	668	11,298	956	22,358
100 ,, 200	2,545	5,853	1,291	8,747	1,018	12,132	833	14,070	1,471	35,556
200 ,, 321	2,342	5,378	1,185	7,850	691	8,131	453	7,599	776	18,627
321 ,, 641	4,545	10,714	1,800	11,781	732	8,512	396	6,641	528	12,550
641 ,, 1,000	3,625	8,056	1,029	6,554	278	3,209	124	2,091	171	4,103
1,000 ,, 2,500	3,028	7,581	1,256	7,930	316	3,596	113	1,868	129	3,035
2,500 and upwards	501	1,387	430	2,864	143	1,651	64	1,057	48	1,122
Total ..	27,906	60,070	9,830	64,583	4,728	55,515	2,866	48,206	4,245	101,162
Percentage in each group ..	50·91	10·12	17·93	10·88	8·63	9·36	5·23	8·12	7·74	17·05

AREAS OF HOLDINGS AND NUMBERS AND SIZES OF DAIRY HERDS THEREON, 1929—*continued.*

Area of Holdings. (In Acres.)	Number and Size of Dairy Herds—*continued.*									
	30 and under 50.		50 and under 100.		100 and upwards.		Total.		Percentage in each Area Group.	
	Herds.	Dairy Cows.	Herds.	Dairy Cows.	Herds.	Dairy Cows.	Herds.	Dairy Cows.	Herds.	Dairy Cows.
1 and under 50	50	1,744	3	160	..	..	11,633	43,005	21·22	7·25
50 ,, 100	327	11,344	22	1,360	1	200	6,484	71,034	11·82	11·98
100 ,, 200	1,358	49,245	336	20,374	11	1,350	8,863	147,327	16·17	24·83
200 ,, 321	807	30,354	545	35,153	31	3,634	6,830	116,726	12·46	19·67
321 ,, 641	523	19,681	480	32,653	106	13,252	9,110	115,784	16·63	19·51
641 ,, 1,000	156	5,845	131	8,943	42	5,896	5,556	44,697	10·14	7·52
1,000 ,, 2,500	107	3,985	92	6,026	45	7,727	5,036	41,748	9·28	7·04
2,500 and upwards	36	1,219	19	1,281	11	2,480	1,252	13,061	2·28	2·20
Total ..	3,364	123,417	1,628	105,950	247	34,539	54,814	593,442 *	100·00	100·00
Percentage in each group ..	6·14	20·80	2·97	17·85	0·45	5·82	100·00	100·00	..	..

* Exclusive of 21,650 travelling and in cities and towns.

It will be observed that 64 per cent. of the dairy cows were on holdings of under 321 acres, and 83 per cent. on holdings of under 641 acres.

Twenty-eight per cent. of the dairy cows were in the Western district, 22 per cent. in the Gippsland district, and 18 per cent. in the Central district.

Butter and cheese made on farms.

The quantities of butter and cheese made on farms in the last five years were as follows:—

BUTTER AND CHEESE MADE ON FARMS, 1924–25 TO 1928–29.

Year ended June—	Butter.	Cheese.
	lbs.	lbs.
1925	5,395,087	228,779
1926	4,734,669	389,893
1927	3,887,324	516,063
1928	3,592,264	217,495
1929	3,464,539	246,854

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, 1924-25 TO 1928-29.

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.
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	48,136,040	1,803,049	350,570
1928	80,678,548	381,794	5,404,450	53,876,662	2,619,855	213,119
1929	90,263,977	471,729	5,259,078	53,948,559	3,340,171	310,426

The quantities of milk, in gallons, received at factories and creameries were 240,114,430 in 1924-25, 197,804,300 in 1925-26, 205,441,560 in 1926-27, 212,983,200 in 1927-28, and 226,228,350 in 1928-29.

Exports of butter and cheese.

In 1928-29 there were exported from Victoria to countries outside Australia 41,321,453 lbs. of butter, valued at £3,157,722, all of which was Australian produce. The quantity sent to the United Kingdom was 32,943,144 lbs., valued at £2,470,892. The quantity of cheese exported to oversea countries was 300,013 lbs., and the value thereof, £12,916.

Wool production.

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 1928-29 and earlier seasons was as follows :—

VICTORIAN WOOL CLIP AND ESTIMATED TOTAL PRODUCTION.

Districts.		Wool Clip, 1928-29.		
		Sheep.	Lambs.	Total.
		lbs.	lbs.	lbs.
Central		8,848,301	639,347	9,487,648
North-Central ..		10,598,930	758,639	11,357,569
Western		36,128,238	2,448,024	38,576,262
Wimmera		18,360,488	1,125,492	19,485,980
Mallee		6,995,991	389,952	7,385,943
Northern		19,437,998	1,607,296	21,045,294
North-Eastern ..		8,400,943	759,975	9,160,918
Gippsland		7,305,917	563,816	7,869,733
Total Clip	1928-29	116,076,806	8,292,541	124,369,347
	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

VICTORIAN WOOL CLIP AND ESTIMATED TOTAL PRODUCTION—*continued.*

—	1925–26.	1926–27.	1927–28.	1928–29.
	lbs.	lbs.	lbs.	lbs.
Wool clip	90,614,299	98,177,162	95,033,646	124,369,347
Wool stripped from Victorian skins and on Victorian skins exported (estimated) ..	20,646,515	23,122,459	23,769,390	25,509,241
Total production ..	111,260,814	121,299,621	118,803,036	149,878,588
Total value ..	£7,082,820	£7,876,683	£9,701,660	£10,252,002

In 1928–29 there were 13,005,239 sheep and 3,565,737 lambs shorn, as compared with 12,809,537 sheep and 2,747,400 lambs in 1927–28, 11,863,262 sheep and 2,671,435 lambs in 1926–27, 10,990,842 sheep and 2,899,787 lambs in 1925–26, and 9,803,371 sheep and 2,790,054 lambs in 1924–25.

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, 1924–25 TO 1928–29.

Year.	Weight of a Fleece.		
	Sheep.	Lambs.	Sheep and Lambs combined.
	lbs.	lbs.	lbs.
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
1928–29	8·93	2·33	7·51

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, 1924–25 TO 1928–29.

Year.	Production.		Used in Manufactures.		Available for Export.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	lbs.	£	lbs.	£	lbs.	£
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
1928–29	149,878,588	10,252,002	25,008,506	1,518,212	124,870,082	8,733,790

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, 1926–27 TO 1928–29.

Class of Wool.	Average Price per lb. in—		
	1926–27.	1927–28.	1928–29.
GREASY MERINO.			
Extra Super (Western District)	32d. to 35d.	35d. to 37d.	29d. to 32d.
Super	27d. to 30d.	32d. to 34d.	26d. to 28d.
Good	23d. to 25d.	26d. to 28d.	23d. to 25d.
Average	19d. to 21d.	22d. to 24d.	20d. to 23d.
Wasty and Inferior	15d. to 17d.	18d. to 20d.	13d. to 15d.
Extra Super Lambs	32d. to 34d.	36d. to 40d.	30d. to 34d.
Super Lambs	24d. to 27d.	29d. to 31d.	24d. to 28d.
Good Lambs	18d. to 20d.	22d. to 24d.	17d. to 20d.
Average Lambs	15d. to 18d.	18d. to 20d.	10d. to 16d.
Inferior Lambs	8d. to 10d.	11d. to 12d.	8d. to 10d.
GREASY CROSSBRED.			
Extra Super Comebacks ..	29d. to 31d.	31d. to 33d.	26d. to 29d.
Super Comebacks	25d. to 28d.	28d. to 30d.	23d. to 25d.
Fine Crossbred	20d. to 22d.	25d. to 26d.	20d. to 22d.
Medium Crossbred	16d. to 18d.	18d. to 20d.	15d. to 18d.
Coarse Crossbred and Lincoln	11d. to 12d.	13d. to 16d.	10d. to 13d.
Super Fine Crossbred Lambs ..	22d. to 24d.	26d. to 30d.	24d. to 26d.
Good Crossbred Lambs ..	18d. to 20d.	20d. to 22d.	18d. to 20d.
Coarse and Lincoln Lambs ..	12d. to 14d.	15d. to 17d.	13d. to 15d.

PRICES OF WOOL, 1926-27 TO 1928-29—*continued.*

Class of Wool.	Average Price per lb. in—		
	1926-27.	1927-28.	1928-29.
SCOURED.			
Extra Super Fleece	45d. to 48d.	46d. to 48d.	40d. to 44d.
Super Fleece	38d. to 42d.	40d. to 44d.	36d. to 40d.
Good Fleece	34d. to 36d.	36d. to 38d.	30d. to 34d.
Average Fleece	25d. to 27d.	30d. to 32d.	25d. to 28d.
RECORD PRICES FOR THE SEASON.			
Greasy Merino Fleece ..	41¾d.	44¾d.	47d.
„ Comeback Fleece ..	32¼d.	34½d.	30¼d.
„ Merino Lambs ..	46¾d.	51½d.	37½d.
„ Comeback Lambs ..	30d.	39½d.	30d.
Scoured Fleece	47d.	51½d.	48d.

Flocks of sheep in districts.

Returns which were collected in March, 1925 and 1929, give full information in regard to the flocks of sheep in Victoria. The numbers of flocks and of sheep at those times in the different districts were as follows:—

NUMBERS OF FLOCKS AND OF SHEEP IN DISTRICTS, 1925 AND 1929.

District.	Number of—				Average Number of Sheep to a Flock.		Percentage of—			
	Flocks.		Sheep.				Flocks.		Sheep.	
	1925.	1929.	1925.	1929.	1925.	1929	1925.	1929.	1925.	1929.
Central ..	2,291	3,009	990,194	1,329,652	432	442	9·66	10·35	7·84	8·07
North-Central	2,098	2,506	1,190,606	1,488,769	567	594	8·84	8·62	9·43	9·04
Western ..	5,003	5,756	4,122,779	4,916,640	824	854	21·08	19·79	32·66	29·85
Wimmera ..	4,220	4,303	2,125,327	2,342,293	504	544	17·78	14·80	16·84	14·22
Mallee ..	1,849	2,549	665,674	936,313	360	367	7·79	8·77	5·27	5·68
Northern ..	4,647	5,739	1,971,660	2,837,762	424	494	19·58	19·74	15·62	17·23
North-Eastern	2,073	2,678	865,435	1,360,904	417	508	8·74	9·21	6·86	8·26
Gippsland ..	1,550	2,536	691,340	1,259,352	446	497	6·53	8·72	5·48	7·65
Total ..	23,731	29,076	12,623,015	16,471,685	532	567	100·00	100·00	100·00	100·00

The figures do not include 26,883 sheep in 1925, and 26,537 sheep in 1929 which were travelling on the roads or were located in cities

and towns. Flocks were greater in number in all districts in 1929 than in 1925. In the four years referred to the number of flocks increased by 718 in the Central, 408 in the North-Central, 753 in the Western, 83 in the Wimmera, 700 in the Mallee, 1,092 in the Northern, 605 in the North-Eastern, and 986 in the Gippsland district, the total increase for Victoria being 5,345, or nearly 23 per cent. The average number of sheep to a flock showed an increase in each district. The average number for the State was 567 in 1929, as compared with 532 in 1925, 555 in 1919, 477 in 1917, 478 in 1913, 531 in 1910, 642 in 1908, and 706 in 1906. The number of sheep in the State increased from 12,649,898 in 1925 to 16,498,222 in 1929. All divisions of the State showed substantial increases during the four years under review.

Size of flocks.

The following table contains a classification for the whole State of sheep according to sizes of flocks, exclusive of those travelling and in cities and towns (*vide* previous paragraph) :—

SHEEP ACCORDING TO SIZES OF FLOCKS, 1925 AND 1929.

Size of Flocks.	Number of—				Percentage of—			
	Flocks.		Sheep.		Flocks.		Sheep.	
	1925.	1929.	1925.	1929.	1925.	1929.	1925.	1929.
Under 500	17,187	19,902	2,939,575	3,602,345	72·42	68·45	23·29	21·87
500 and under 1,000	3,692	5,225	2,519,857	3,584,454	15·56	17·97	19·96	21·76
1,000 ,, 2,000	1,725	2,591	2,317,968	3,493,346	7·27	8·91	18·36	21·21
2,000 ,, 5,000	851	1,046	2,428,522	3,029,857	3·59	3·60	19·24	18·39
5,000 ,, 10,000	207	227	1,399,428	1,563,323	·87	·78	11·09	9·49
10,000 ,, 20,000	62	76	824,643	981,485	·26	·26	6·53	5·96
20,000 and upwards ..	7	9	193,022	216,875	·03	·03	1·53	1·32
Total	23,731	29,076	12,623,015	16,471,685	100·00	100·00	100·00	100·00

An inspection of the above figures shows that flocks of less than 500 sheep had increased by 2,715, those of 500 to 1,000 by 1,533, 1,000 to 2,000 by 866, 2,000 to 5,000 by 195, 5,000 to 10,000 by 20, 10,000 to 20,000 by 14, and those of over 20,000 by 2. The increase in the number of sheep in the whole State was 30 per cent. One flock of over 30,000 sheep, as well as 6 others of over 20,000, were in the Western district, and one of the latter number in each of the Mallee and Northern districts. Nearly 30 per cent. of all the sheep in Victoria were in the Western District.

Areas of holdings and numbers and sizes of flocks of sheep.

The numbers and sizes of flocks of sheep on holdings of various areas, including those on Crown land not held conjointly with that privately owned, in March, 1929, are given in the next table. Although only 7,858 flocks, or 27 per cent. of the total number, were depastured on holdings of 900 acres and over, these accounted for 10,600,629 sheep, or 64 per cent. of the total. Sheep travelling on the roads or located in cities or towns are not included.

AREAS OF HOLDINGS AND NUMBERS AND SIZES OF FLOCKS THEREON, 1929.

Area of Holdings. (In Acres.)	Number and Size of Flocks.															
	Under 500.		500 and under 1,000.		1,000 and under 2,000.		2,000 and under 5,000.		5,000 and under 10,000.		10,000 and under 20,000.		20,000 and upwards.		Total.	
	Number of Flocks.	Number of Sheep.	Number of Flocks.	Number of Sheep.	Number of Flocks.	Number of Sheep.	Number of Flocks.	Number of Sheep.	Number of Flocks.	Number of Sheep.	Number of Flocks.	Number of Sheep.	Number of Flocks.	Number of Sheep.	Number of Flocks.	Number of Sheep.
1 and under 200	5,447	534,746	142	93,481	34	43,306	3	7,000	..	..	..	..	..	..	5,626	678,533
200 ,, 321	3,891	665,907	336	214,946	44	54,281	5	13,827	..	..	..	..	..	..	4,276	948,961
321 ,, 500	3,413	747,108	691	453,144	79	97,454	5	12,955	..	..	..	..	..	..	4,188	1,310,661
500 ,, 641	2,567	557,959	822	544,196	141	176,426	6	15,377	..	..	..	..	..	..	3,536	1,293,958
641 ,, 900	2,208	490,207	1,074	735,740	296	363,941	11	29,752	3	19,303	..	..	..	..	3,592	1,638,943
900 ,, 1,500	1,911	480,602	1,530	1,086,453	863	1,141,135	106	259,282	3	18,640	..	..	..	..	4,413	2,986,112
1,500 ,, 2,500	424	117,049	514	372,334	830	1,163,482	306	777,689	10	59,490	..	..	..	..	2,084	2,490,044
2,500 ,, 5,000	32	7,236	111	80,825	280	418,150	481	1,457,818	48	295,118	2	23,370	1	25,316	955	2,307,833
5,000 ,, 10,000	6	897	3	1,887	22	33,021	117	428,518	129	903,210	18	213,617	1	20,580	296	1,601,730
10,000 and upwards ..	3	634	2	1,448	2	2,150	6	27,639	34	267,562	56	744,498	7	170,979	110	1,214,910
Total ..	19,902	3,602,345	5,225	3,584,454	2,591	3,493,346	1,046	3,029,857	227	1,563,323	76	981,485	9	216,875	29,076	16,471,685

NOTE.—Where Crown land is held in conjunction with privately-owned land, the holding is classified according to the area privately owned.

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	412,877	615,092	689,334	16,498,222	222,084
New South Wales ..	567,371	1,023,187	1,761,428	50,184,950	311,605
Federal Capital Territory	924	704	4,565	207,211	51
Queensland ..	522,490	670,805	4,457,536	18,509,201	215,764
South Australia ...	205,865	108,969	154,047	7,079,947	62,723
Northern Territory	37,452	768,751		7,635	407
Western Australia ..	160,876	69,047	768,480	8,943,002	49,243
Tasmania	34,908	94,268	114,544	2,000,605	48,304
New Zealand ..	298,986	1,371,063	2,074,727	29,051,382	556,732

Bee-keeping.

The returns for 1928–29 show that there were in that year 2,284 bee-keepers, who owned 51,820 frame and 3,427 box hives, producing 4,145,883 and 35,688 lbs. of honey respectively, and 49,675 lbs. of beeswax. The number of bee-keepers owning 20 hives and upwards was 569, as compared with 565 in the previous season. In 1928–29, the quantity of honey produced in the Wimmera district was 1,259,562 lbs., in the Northern district, 848,329 lbs., in the Western district, 734,017 lbs., and in the North-Eastern district, 744,175 lbs. The more important particulars of the industry for the last five years are given below :—

BEE-KEEPING, 1924–25 TO 1928–29.

Season ended May—	Number of Bee-keepers.	Number of Hives.	Honey produced.	Beeswax produced.
			lbs.	lbs.
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
1929	2,284	55,247	4,181,571	49,675

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, 1929, sums amounting to £1,483,587 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	1928-29	81,377

In addition to the expenditure of £1,483,587 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 :— £32,399 in 1924-25, £42,628 in 1925-26, £32,338 in 1926-27, £37,887 in 1927-28, and £55,198 in 1928-29. A complete system, administered by an officer called the Chief Inspector under the Vermin Destruction Act, exists for effectually keeping the rabbits under control.

Rabbits, &c., sold at Melbourne Fish Market.

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, 1924-25 TO 1928-29.

Year ended June.	Rabbits.	Hares.	Wild-fowl.
	pairs.	brace.	brace.
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
1928-29	1,594,020	Nil	11,316

* Included with rabbits.

Frozen rabbits, &c., exported.

Large quantities of frozen rabbits and hares and of rabbit and hare skins have been exported to oversea 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, 1924-25 TO 1928-29.

Year ended June.	Frozen Rabbits and Hares.		Rabbit and Hare Skins.	
	Quantity.	Value.	Quantity.	Value.
	pairs.	£	lbs.	£
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
1928-29	1,624,279	136,273	2,682,567	604,842

FISHERIES.

Numbers of men and boats engaged in fishing.

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 1928-29 :—

VICTORIAN FISHERIES—MEN AND BOATS EMPLOYED, 1928-29.

Fishing Stations.	Number of Men.	Boats.		Value of Nets and other Plant.
		Number.	Value.	
			£	£
Anderson's Inlet	16	10	431	296
Barwon Heads and Ocean Grove ..	12	6	1,400	82
Brighton	5	4	193	82
Corner Inlet, Welshpool, Toora, and Port Franklin	66	51	7,200	2,526
Dromana and Rosebud	30	22	1,292	349
Frankston	13	8	349	259
Geelong	96	46	3,616	1,040
Gippsland Lakes	154	97	7,294	4,047
Kerang	3	3	14	80
Lake Boga	5	5	47	93
Lorne	6	3	118	45
Lindsay River	2	2	16	75
Mallacoota	20	14	810	376
Mentone	11	8	233	147
Mordialloc, Chelsea, and Carrum ..	55	38	2,607	1,132
Mornington	61	39	3,609	829
Portarlington and St. Leonards ..	80	52	4,985	1,275
Portland	40	25	5,399	616
Port Albert	101	59	5,257	1,873
Port Campbell	2	2	130	17
Port Fairy	45	34	6,430	353
Port Melbourne	71	51	4,990	1,312
Queenscliff	140	74	17,833	1,869
Rainbow	..	..	..	..
Sandringham and Black Rock	41	21	3,859	589
Sorrento, Portsea, and Rye	91	51	5,611	1,046
St. Kilda	14	11	321	205
Torquay	8	4	57	44
Warrnambool	15	12	820	96
Werribee	6	4	293	91
Waranga Basin	5	4	40	27
Western Port (Cowes, Hastings, Grantville, Flinders, San Remo, and Tooradin)	131	100	15,019	3,367
Williamstown	60	42	3,119	748
Wonthaggi	5	5	288	34
Total	1,410	907	103,680	25,020

Melbourne Fish Market. The quantities and values of fish sold in the Melbourne Fish Market during each of the years 1927-28 and 1928-29 were as shown in the next table :—

FISH SOLD IN THE MELBOURNE FISH MARKET, 1927-28 AND 1928-29.

		1927-28.		1928-29.	
		Quantity.	Value.	Quantity.	Value.
			£		£
Fresh Fish (Victorian)	lbs.	10,726,600	156,430	9,299,065	147,235
Crayfish	doz.	33,395	35,064	28,402	29,822
Imported Fish (fresh or frozen) ..	lbs.	1,532,608	38,315	5,400,508	180,017
Oysters	bags	9,831	29,493	9,757	29,271
Total		..	259,302	..	386,345

In addition to the above, 1,677 cwt. of smoked fish, and 23,200 lbs. of prawns were sold in this market in 1928-29.

Victorian fish sold. The quantity and value of fish caught in Victorian waters and sold in the Melbourne and Ballarat markets and elsewhere in 1928-29 were as follows :—

VICTORIAN FISH SOLD IN 1928-29.

Markets.	Quantity.		Value.	
	Fish.	Crayfish.	Fish.	Crayfish.
	lbs.	doz.	£	£
Melbourne	9,299,065	10,982	147,235	11,531
Ballarat	491,926	1,170	7,788	1,070
Other	330,870	1,103	5,239	1,008
Total	10,121,861	13,255	160,262	13,609

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, 1927-28 AND 1928-29.

		1927-28.		1928-29.	
		Quantity.	Value.	Quantity.	Value.
Fish—			£		£
Fresh or Frozen	lbs.	3,265,187	88,920	3,027,821	79,153
Smoked or Dried	„	33,627	2,289	28,141	2,022
Fresh Oysters	cwt.	1,488	1,157	1,308	958
Potted or Concentrated, &c. ..		..	26,239	..	22,925
Preserved in tins, &c. ..	lbs.	6,133,531	289,655	6,870,852	307,896
N.E.I.	cwt.	1,971	5,507	2,484	7,012
Total		..	413,767	..	419,966

The most important item in this table is fish preserved in tins and other air-tight vessels, of which 3,651,961 lbs. came from Canada, 1,011,639 lbs. from the United Kingdom, 997,386 lbs. from the United States of America, and 739,273 lbs. from Norway in 1928-29.

Agriculture in Victoria and Great Britain. The figures relating to agriculture and live stock in Victoria and Great Britain (England, Wales, and Scotland) in 1928 are, for comparative purposes, placed side by side in the table which follows :—

AGRICULTURE AND LIVE STOCK IN VICTORIA AND GREAT BRITAIN, 1928.

—		Victoria.	Great Britain.
Area	acres	56,245,760	56,208,959
Wheat	bushels	46,818,833	49,579,000
Oats	„	5,602,409	120,232,000
Barley	„	1,556,118	50,266,000
Peas	„	108,607	2,053,000
Potatoes	tons	140,158	4,545,000
Turnips and swedes	„	2,079*	16,613,000
Mangolds	„	5,301	5,777,000
Hay	„	1,267,437	7,302,000
Horses	No.	412,877	1,204,198
Cattle	„	1,304,426	7,240,281
Sheep	„	16,498,322	23,968,314
Pigs	„	222,084	3,166,547

* 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.

Miners' Rights. 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 1928-29 from miners' rights was £2,069.

Mining Leases. 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 1928-29 was £4,843.

Area occupied for Mining. The area of Crown and private lands under occupation for mining purposes on 31st December, 1928, was 39,904 acres. The subjoined table shows the area being worked for different minerals :—

AREA UNDER OCCUPATION FOR MINING PURPOSES, 31ST DECEMBER, 1928 (CROWN LAND AND PRIVATE LAND).

Nature of Mineral, &c.	Area.
	acres.
Gold	7,075
Coal (ordinary)	12,048*
Coal (brown)	1,207
Coal (black and brown)	101
Antimony and Gold	20
Bauxite	58
Bluestone	46
Clay	29
Clay and Chalk	6
Clay and Schist	5
Clay and Slum	20
Clay, Pigments and Infusorial Earth	10
Clay and Slate	3
Dolomite and Clay	1
Granite	32
Gravel (Cement)	6
Gravel	5
Gypsum	594
Clay (Aluminium)	6
Kaolin	32
Kaolin and Gold	30
Kaolin and Quartz Grit	10
Lead	29
Fireclay	18
Limestone	67
Limestone and Clay	27
Magnesite	114
Manganese and Cobalt	19
Marble	39
Marblestone	6
Molybdenite	297
Ochre	60
Ochres, Chalks and Gold	5
Oil	1,544
Oil and Gas	12,391
Oil and Gypsum	7
Oil, Sulphates of Lime, Iron and Potash	224
Quicksilver	61
Sand	27
Silicate of Alumina	51
Silver and Lead	10
Slate	64
Stone	5
Tin	2,756
Tin and Gold	22
Tin and Wolfram	52
Iron	60
Water Right Licences	471
Tailings Licences	134
Total	39,904

* Includes State Coal Mine area.

Certain Gold Mining Leases include the right to mine for Minerals.
Certain Mineral Leases include the right to mine for Gold.

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, 1929. 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, 1924-25 TO 1928-29.

Item.	Expenditure from Consolidated Revenue.				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	£	£	£	£	£
Mines Department	24,567	23,569	25,687	24,900	23,649
State Coal Mine	458,380	471,530	605,218	621,316	729,820
Coal Mines Regulation—Sinking Fund and Depreciation Fund	37,002	41,807	54,555	73,567	41,847
Diamond drills for prospecting ..	12,476	12,242	12,864	13,323	15,519
Testing plants	3,571	3,120	2,378	2,980	3,372
Geological and underground surveys of mines	3,591	3,595	3,791	3,973	3,917
Mining Development—					
Advances to companies, &c., boring for gold, coal, &c. ..	8,739	12,368	10,678	5,309	3,029
Miscellaneous	2,431	2,143	2,065	1,708	1,786
Total	550,757	570,374	717,236	747,076	822,939

NOTE.—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 373 of this work.

The advances from loan moneys and revenue to mining companies to 30th June, 1929, for the development of mining, totalled £284,688 (£62,740 from loan moneys, and £221,948 from revenue) of which sum £43,572 had up to that date been repaid, £53,541 realized, and £164,733 written off, leaving £22,842 outstanding. Interest received during 1928-29 amounted to £133, and interest outstanding on 30th June, 1929, to £3,587.

Total mineral production. 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 1928 :—

TOTAL MINERAL PRODUCTION TO 31ST DECEMBER, 1928.

Metals and Minerals.	Recorded during 1928.		Total Recorded to end of 1928.	
	Quantity.	Value.	Quantity.	Value.
	Fine ozs.	£	Fine ozs.	£
Gold	33,917	144,068	71,298,530	302,856,192
Silver	1,454	175	1,466,733*	222,939
Platinum	..	..	30,577	7,880
Diamonds	..	..	311	1,671
Sapphires, &c. ..	..	..	..	128
	tons.		tons.	630
Coal, black	658,323	731,015	13,192,872	10,021,613
,, brown	1,591,858	202,393	5,760,064	1,074,987
Ore—copper	..	..	18,730	218,590
,, tin	85½	12,954	17,072	974,096
,, antimony ..	2	20	104,274½†	612,055
,, silver-lead ..	5	100	804	5,992
,, iron	..	..	5,434	12,540
,, manganese ..	..	..	422	2,009
Wolfram	..	..	118	11,785
Gypsum	10,559	5,245	132,867	93,288
Magnesite	72	237	1,961	5,972
Kaolin	1,635	2,388	35,461	46,441
Diatomaceous earth ..	..	..	8,657	33,137
Pigment clays ..	..	..	4,496	5,503
Phosphate rock ..	..	..	15,781	16,704
Molybdenite	..	..	868½†	30,911
Fluorspar	..	..	623	1,888
Jarosite (Red Oxide) ..	..	..	109	1,359
Bauxite	193	96	1,114	2,396
Bluestone, freestone, granite, &c.‡ Limestone, &c.§	..	602,900	..	10,510,291
Total	..	1,701,591	..	326,770,997

* 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 mining. Gold was first found in Victoria in 1849 in the Pyrenees 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 1928 was £302,856,192, as shown in the preceding statement.

Gold raised in Victoria.

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

GOLD RAISED IN VICTORIA, 1851 TO 1928.

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	1928	33,917

* Gross ozs. 1851–1900.

The yield has been on the down grade since 1906, the return for the State for 1928 having been the lowest since 1851. The quantities in fine ounces raised in the other principal gold-producing States in 1928 were 393,408 ounces in Western Australia, 13,277 ounces in Queensland, and 12,831 ounces in New South Wales. The total production of gold in the world in 1927, as shown in the United States Mint Report, was 19,397,757 fine ounces.

Mining district gold yields.

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 1 ounce less than the total output in 1927, and, in 1928, 21 ounces more.

DISTRICT YIELDS OF GOLD, ALLUVIAL AND QUARTZ, 1927 AND 1928.

Mining District.	1927.			1928.		
	Alluvial.	Quartz.	Total.	Alluvial.	Quartz.	Total.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Ararat and Stawell ..	94	63	157	130	170	300
Ballarat	494	1,730	2,224	507	574	1,081
Beechworth ..	4,586	9,292	13,878	5,401	6,230	11,631
Bendigo	287	12,658	12,945	573	17,100	17,673
Castlemaine ..	906	7,796	8,702	1,416	3,710	5,126
Gippsland	245	2,990	3,235	344	479	823
Maryborough ..	198	499	697	306	340	646
Total	6,810	35,028	41,838	8,677	28,603	37,280

Gold-mining dividends. 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, 1924 TO 1928.

Mining District.	Amount Distributed.				
	1924.	1925.	1926.	1927.	1928.
	£	£	£	£	£
Ararat and Stawell	..	..	..	..	..
Ballarat	475	..	..	..	..
Beechworth	..	..	1,000	1,000	..
Bendigo	13,500	6,000	1,500	..	6,750
Castlemaine	..	..	..	..	..
Gippsland	..	..	..	..	..
Maryborough	..	..	..	..	..
Total	13,975	6,000	2,500	1,000	6,750

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, 1924 TO 1928.

Year.	Alluvial Miners.	Quartz Miners.	Total.
1924	816	1,835	2,651
1925	725	1,628	2,353
1926	550	1,417	1,967
1927	443	683	1,126
1928	215	440	655

The number of men employed in each mining district in 1928 was as follows :—Ararat and Stawell, 18; Ballarat, 38; Bendigo, 217; Beechworth, 151; Castlemaine, 128; Gippsland, 62; and Maryborough, 41.

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, 1924 TO 1928.

Year.	Approximate Value of Machinery Employed in—		
	Alluvial Mining.	Quartz Mining.	Total.
	£	£	£
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
1928	30,000	180,000	210,000

Dredging and sluicing.

A feature of alluvial mining in Victoria for the last twenty-seven 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 1928, the number of pump hydraulic sluices at work was 1, in addition to which 4 jet elevators and 1 gravitation plant were operating. Particulars relating to these dredging and sluicing plants for the last five years are as follows :—

DREDGING AND SLUICING, 1924 TO 1928.

Year.	Number of Plants.	Area Worked.	Quantity of Material Treated.	Gold Obtained.	Tin Obtained.
		acres.	cub. yds.	ozs.	tons.
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
1928	6	12	1,227,000	5,689	61

These plants employed 102 men in 1928. The yield of gold in that year per cubic yard of material was 2·2 grains. Since the inception of dredge mining 1,901,224 ounces of gold and 1,782 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, 1924 TO 1928.

Year.	Number of Plants.	Quantity of Tailings Treated.	Yield of Gold.	Value of Yield.
		tons.	ozs.	£
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
1928	8	6,397	1,199	4,240

Records show that the total amount of tailings which have been treated by the cyanide and other processes is 16,028,088 tons, and that the gold which has been won thereby amounts to 1,285,923 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, 1924 TO 1928.

Year.	Number of Batteries.	Quantity of Ore Treated.	Yield of Gold.
		tons.	ozs.
1924	33	1,006	668
1925	31	895	776
1926	31	476	618
1927	31	643	999
1928	31	1,369	1,405

Since 1897, the year in which the first battery was erected, 77,579 tons of ore have been crushed for 55,265 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 5,760,064 tons, valued at £1,074,987, of which, 876,468 tons were obtained in 1925, 957,935 tons in 1926, 1,455,482 tons in 1927, and 1,591,858 tons in 1928. Of

the total output for 1928, 165,551 tons, valued at £54,058, were obtained from the State Brown Coal Mine at Morwell, and 1,426,307 tons, valued at £148,335, 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 632.

The State coal-field.

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, 1928, was 600,931 tons, valued at £661,024. The total output up to the end of 1928 was 8,663,000 tons, valued at £7,128,681. The average number of men employed at the mine throughout the year ended 31st December, 1928, was 1,543.

Victorian coal production and value.

The quantity of coal, exclusive of brown coal, raised in Victoria up to the end of 1928 was 13,192,872 tons, valued at £10,021,613. 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 1928, 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
1928	658,323	22 2

* Total production up to date mentioned.

The quantities of coal produced in the other States in 1928 were as follows :—New South Wales, 9,448,197 tons; Queensland, 1,076,340 tons; Western Australia, 528,420 tons; and Tasmania, 128,500 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, 1924 TO 1928.

Year.	Gold Mines.			Coal Mines.		
	Miners Employed.	Persons Killed.	Persons Injured.	Miners Employed.	Persons Killed.	Persons Injured.
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
1928	655	2	1	2,224	2	5

As a result of gold mining accidents during the last five years 9 persons were killed, and 24 were injured and rendered unfit for work for a period of at least fourteen days. These numbers were equivalent to annual rates of 1·03 and 2·74 respectively per 1,000 employed. Coal mining accidents during the same period accounted for 16 deaths, and 55 injuries resulting in disablement for at least fourteen days, these being equal to yearly rates of 1·28 and 4·39 respectively per 1,000 employees.

Boring for gold, coal, and other minerals.

The record of boring operations conducted by the Mines Department during the last five years is as follows :—

GOVERNMENT BORING OPERATIONS, 1924 TO 1928.

Year.	Number of Machines.	Bores put down for—				Total Depth Bored.
		Gold.	Coal.	Other Minerals.	Total.	
						feet.
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	10	38	16	64	21,000
1928	13	9	21	14	44	15,000

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

Antimony. Up to the end of 1928 the quantity of antimony produced in Victoria was 104,274½ tons of concentrates valued at £612,055. The whole of it was obtained at Costerfield.

Tin. The production of tin ore in the State up to the end of 1928 was 17,072 tons, valued at £974,096. In the year 1928 the quantity produced was 85½ tons, as against 62½ tons in 1927, 29 tons in 1926, 69 tons in 1925, and 38 tons in 1924. Most of the tin won during the last five years was obtained in the Beechworth district.

Gypsum. The quantity of gypsum produced in the State in 1928 was 10,559 tons, most of which was obtained at Tempy, Bolton, Chillingollah, and Waitchie. The output for the previous year was 20,835 tons. Up to the end of 1928 the quantity raised in Victoria was 132,867 tons, valued at £93,288.

Kaolin. The quantity of kaolin produced in 1928 was 1,635 tons, and in the previous year, 2,473 tons. Up to the end of 1928 the total output was 35,461 tons, valued at £46,441.

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, 1924–25 TO 1928–29.

Year ended June—	Number of Quarries.	Quantity of Stone Operated on—				Approximate Value of Stone Raised.
		Bluestone.	Sandstone.	Granite.	Limestone.	
		c. yds.	c. yds.	tons.	c. yds.	£
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
1929 ..	99	1,487,410	3,633	6,893	250,253	602,900

In 1928–29 the number of persons employed in quarries was 1,881, and the wages paid amounted to £461,762. 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 1928-29 the total number of factories was 8,197, employing 156,568 persons. Within the last ten years the number of factories has increased by 3.6 per cent., the number of persons employed by 15 per cent., the amount of salaries and wages paid by 78 per cent., the value of output by 26 per cent., the value of machinery and plant, land and buildings by 127 per cent., and the horse-power of factory machinery by 168 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 generation of electricity and the manufacture of briquettes, 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 and 1928-29 have been increased by the inclusion of statistics relating to the bakery industry (see page 622), and allowance for this should be made when comparing the figures for the last two years with those of previous years.

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 (including containers).	Value of Output.
1	2	3	4	5	6	7
			£	£	£	£
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	69,637,778	128,465,317
1928–29..	8,197	156,568	69,909,370	31,533,586	70,100,456	127,897,463

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 5, Salaries and Wages Paid, was not inclusive of amounts taken by working proprietors as drawings.

Factories and Wages Board Legislation.

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 1928 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.

In estimating the relative importance of various industries or the value of manufacturing industry as a whole, the method used is to calculate the value added in the process of manufacture, termed "added value." This is arrived at in the following way:—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 machinery, replacement of tools, and any other important cost of manufacture, the difference being the value added to raw materials in the process of manufacture, and representing the fund available for the payment of wages, rent, interest, minor expenses, and profit.

It is considered that an inaccurate idea would be obtained by using the total value of output of manufacturing industries in year to year comparisons, owing to the duplication of materials used, the finished product of one process of manufacture forming, as it often does, the raw material for another. Woollen manufactures might be cited as an example. Greasy wool forms the raw material for the woolscouring industry, the product of which is scoured wool. This is afterwards combed into wool tops which are used in the spinning mills for the manufacture of yarn. In due course the yarn is woven into cloth, the raw material for the clothing industry. If these processes are carried out separately in different factories it is evident that the value of the wool would be counted five times by using value of output as the basis for annual comparisons of manufacturing production.

Added value prevents this double counting, gives a truer picture of the relative economic importance of industries, and also provides a good basis for estimating and comparing productive efficiency in manufacturing.

As added value is based on value of output, the added value per employee is affected not only by output per employee, but also by the price obtained, and should, therefore, be corrected to allow for variations in price levels. Another important factor is the quantity and efficiency of the machinery used in the process of manufacture.

The following table shows the value added per person employed in each class of manufacturing industry for the year ended 30th June, 1929:—

VALUE ADDED, 1928–29.

Class of Industry.	Average Number of Persons Employed.	Value Added.	Value Added per Person Employed.
		£	£ s. d.
1. Treating raw materials product of agricultural and pastoral pursuits, &c.	3,198	1,393,462	435 14 9
2. Treating oils and fats—animal, vegetable, &c.	880	575,794	654 6 3
3. Processes in stone, glass, clay, &c.	5,576	2,235,167	400 17 1
4. Working in wood	6,601	2,179,075	330 2 3
5. Metal works, machinery, &c. ..	27,340	8,935,211	326 16 4
6. Connected with food and drink, &c...	20,934	10,719,942	512 1 8
7. Clothing and textile fabrics, &c...	53,949	12,195,057	226 0 11
8. Books, paper, printing, and engraving	11,490	4,107,525	357 9 9
9. Musical instruments, &c. ..	537	172,132	320 10 10
10. Arms and explosives	517	207,690	401 14 5
11. Vehicles and fittings, saddlery, harness, &c.	8,163	2,474,829	303 3 6
12. Ship and boat building and repairing	396	128,574	324 13 8
13. Furniture, bedding, upholstery ..	4,792	1,385,923	289 4 4
14. Drugs, chemicals, and by-products	2,791	1,483,807	531 12 10
15. Surgical and scientific instruments	284	95,384	335 17 2
16. Jewellery, time-pieces, and plated ware	1,065	320,010	300 9 7
17. Heat, light, and power	3,034	2,359,169	777 11 6
18. Rubber and leatherware, n.e.i. ..	4,688	1,968,837	419 19 6
19. Minor wares, n.e.i.	333	87,691	263 6 9
Total	156,568	53,025,279	338 13 5

The table hereunder has been compiled in an endeavour to supply comparable figures of the value added per employee in Victorian factories for each of the past ten years.

In recent years various alterations have been made in the method of arriving at this important concept, following recommendations by Australasian statisticians in annual conferences, the objects of which are to improve the statistics and to obtain uniformity throughout the Commonwealth.

The result is that any calculations of added value based on past published statements would not be strictly comparable.

The value added per employee has been recalculated, using the latest year as base and adjusting the previous years.

Prior to 1927–28, bakeries were not included, but the effect of their inclusion is relatively small. In 1927–28, value added per employee in Bakeries was £371 12s. 11d., and in 1928–29 £410 18s. 8d. To exclude these from the aggregate figures would reduce the added value per employee to £334 14s. 3d. in 1927–28, and to £337 2s. 9d. in 1928–29.

VALUE ADDED IN MANUFACTURING.

Year.	Value of Output.	Expenses of Manufacturing.*	Value Added.	Average Number of Persons Employed.	Value Added per Person Employed.
1.	2.	3.	4.	5.	6.
	£	£	£		£ s. d.
1919–20 ..	101,475,363	68,524,324	32,951,039	136,522	241 7 3
1920–21 ..	106,008,294	68,878,822	37,129,472	140,743	263 16 2
1921–22 ..	106,243,181	63,978,488	42,264,693	144,876	291 14 7
1922–23 ..	111,286,343	66,459,537	44,826,806	152,625	293 14 1
1923–24 ..	113,921,927	66,410,960	47,510,967	156,162	304 4 10
1924–25 ..	118,177,398	69,611,632	48,565,766	154,158	315 0 9
1925–26 ..	119,986,439	71,784,661	48,201,778	152,959	315 2 7
1926–27 ..	127,397,951	74,774,770	52,623,181	161,639	325 11 2
1927–28 ..	128,465,317	74,667,052	53,798,265	160,357	335 9 9
1928–29 ..	127,897,463	74,872,184	53,025,279	156,568	338 13 5

* Expenses of manufacturing includes the following costs only:—Raw materials, containers, fuel and light, tools replaced, repairs to plant and machinery, lubricating oil, and water.

Column 3 deducted from column 2 gives column 4, which when divided by column 5 gives column 6.

Production of different industries, 1928-29.

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 1928–29 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, 1928-29.

Nature of Industry.	Number of Factories.	Actual Horse-power of Engines used.	Average Number of Persons Employed.				Value of—			
			Males.		Females.					
			Working Proprietors.	Employees.	Working Proprietors.	Employees.	Wages paid.	Fuel and Light used.	Materials used, including Containers.	Articles Produced or Work Done.
Class I.—Treating Raw Material the product of Pastoral Pursuits, or Vegetable Products, not otherwise classed.							£	£	£	£
Boiling down, bone milling ..	21	1,114	15	268	..	4	80,788	26,155	288,595	474,760
Sausage skins	6	31	2	230	..	1	65,559	514	96,510	190,889
Tanning	42	4,005	54	1,803	..	22	466,000	33,824	1,897,630	2,722,296
Fellmongering	32	1,646	23	424	..	2	111,097	23,025	1,654,912	1,949,721
Chaffcutting and grain crushing ..	128	1,976	29	311	..	10	79,080	10,417	81,339	215,755
Total	229	8,772	123	3,036	..	39	802,524	93,935	4,018,986	5,553,421
Class II.—Oils and Fats, Animal and Vegetable.										
Oil, grease, glue	10	689	10	183	..	16	51,338	15,566	255,347	379,198
Soap and candle	17	851	9	510	..	152	141,107	36,628	703,126	1,230,451
Total	27	1,540	19	693	..	168	192,445	52,194	958,473	1,609,649

FACTORIES—POWER, WORKERS, WAGES, ETC., AND PRODUCTION, 1928-29—*continued.*

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.				
Class III.—Processes relating to Stone, Clay, Glass, &c.							£	£	£	£
Bricks, tiles, pipes, and pottery ..	76	8,459	50	2,143	..	128	538,952	223,231	142,869	1,171,830
Cement, including cement tiles and pipes	38	9,404	18	961	..	4	251,469	176,171	310,690	1,087,992
Glass, including bottles	24	1,472	16	980	..	19	269,635	63,555	202,047	739,811
Marble and stone dressing ..	46	769	52	395	..	9	117,417	3,543	79,569	236,084
Modelling	54	859	62	568	..	16	154,895	5,386	200,446	473,887
Lime and asbestos	13	519	7	148	..	..	38,825	21,278	22,659	100,983
Total	251	21,482	205	5,195	..	176	1,371,193	493,164	958,280	3,810,587
Class IV.—Working in Wood.										
Boxes and cases	48	1,534	37	385	1	8	102,044	4,956	191,590	361,246
Cooperage	10	410	9	252	..	1	83,854	2,591	49,930	173,938
Saw-milling, joinery, &c.	314	11,030	219	3,186	..	53	822,505	28,026	1,202,731	2,393,240
Forest saw-mills	171	3,549	215	1,533	..	10	406,582	5,364	137,706	692,344
Wood carving, turning	94	1,423	80	578	..	34	150,422	5,292	180,115	422,349
Total	637	17,946	560	5,934	1	106	1,565,407	46,229	1,762,072	4,043,117

Class V.—Metal Works, Machinery, &c.										
Agricultural implement	71	2,711	70	3,054	..	115	762,977	49,243	738,414	1,885,154
Art metal works	14	182	7	139	..	5	32,461	1,371	28,775	73,762
Brass and copper	91	1,075	105	1,151	..	44	289,338	15,024	258,936	693,013
Engineering	290	8,089	319	5,500	1	148	1,501,946	71,814	1,551,290	3,840,472
Ironworks and foundries	166	7,394	178	3,888	1	206	1,000,946	111,311	1,023,437	2,641,271
Railway workshops	21	5,832	..	6,866	..	7	1,658,952	83,188	1,546,544	3,593,496
Stoves, ovens	22	362	26	319	..	6	86,098	6,059	52,227	176,096
Tinsmithing	107	1,124	83	1,732	..	280	397,133	17,145	703,680	1,373,316
Wireworking	27	710	33	387	..	27	105,319	3,453	260,477	464,246
Other metal works	56	725	30	390	..	38	103,819	9,109	183,891	377,032
Electrical apparatus	111	1,026	87	1,298	..	168	324,632	10,994	298,610	804,890
Other	48	805	38	586	..	8	156,092	8,054	346,237	588,896
Total	1,024	30,035	976	25,310	2	1,052	6,419,713	386,765	6,992,518	16,511,644
Class VI.—Connected with Food and Drink, &c.										
Bacon	19	1,838	25	505	..	26	147,369	21,737	1,109,616	1,409,897
Butter, cheese	169	7,346	19	2,112	..	318	582,411	147,369	7,961,545	9,614,084
Meat freezing, preserving	12	3,927	..	825	..	26	229,245	28,400	1,621,669	2,049,866
Confectionery	156	5,959	92	1,513	10	1,425	566,178	77,381	1,561,546	2,924,846
Oatmeal, starch, &c.	14	2,268	7	329	1	236	116,464	23,506	563,548	885,854
Flour-milling, &c.	41	5,982	27	935	..	23	269,913	53,677	4,593,331	5,378,763
Jam, fruit, sauce, &c.	63	2,893	23	1,512	2	1,030	497,067	35,342	1,458,991	2,473,492
Aerated water, cordial, &c. ..	109	757	88	617	6	108	178,388	8,619	360,768	716,143
Brewing, &c.	9	4,180	..	1,186	..	8	411,714	64,013	1,093,097	2,522,933
Condiments, coffee, cocoa	51	842	10	332	2	287	105,231	6,637	739,580	1,017,841
Distilling	8	344	2	127	..	13	33,569	7,558	130,407	255,349
Ice, refrigerating	49	4,989	33	218	..	4	68,943	40,490	14,266	194,448
Malt	20	555	7	281	..	5	91,995	20,820	473,025	725,854
Tobacco, &c.	12	714	17	938	..	561	328,217	8,965	1,051,660	1,849,897
Bread, pastry, and cake	487	1,822	449	2,369	78	352	767,117	84,436	2,045,012	3,480,992
Other	18	3,789	12	1,313	..	490	349,461	78,440	3,861,480	4,832,842
Total	1,237	48,205	811	15,112	99	4,912	4,743,282	707,390	28,639,541	40,333,101

FACTORIES—POWER, WORKERS, WAGES, ETC., AND PRODUCTION, 1928-29—*continued.*

Nature of Industry.	Number of Factories.	Actual Horse-power of Engines used.	Average Number of Persons Employed.				Value of—			
			Males.		Females.					
			Working Proprietors.	Employees.	Working Proprietors.	Employees.	Wages paid.	Fuel and Light used.	Materials used, including Containers.	Articles Produced or Work Done.
							£	£	£	£
Class VII.—Clothing and Textile Fabrics, and Fibrous Material.										
Woollen, cotton mills	40	15,216	23	3,070	..	3,950	1,142,366	144,467	2,563,284	4,636,996
Knitting, hosiery..	174	2,224	109	1,227	62	5,335	920,854	37,068	1,929,502	3,640,147
Boots, shoes, and accessories ..	198	3,626	241	5,894	16	5,356	2,043,432	38,094	3,225,628	6,196,085
Boot repairs	340	431	297	260	..	10	116,849	2,767	83,955	253,913
Clothing	516	574	462	1,485	66	6,585	1,260,642	23,511	1,928,380	3,652,907
Waterproof clothing	9	32	8	57	..	216	43,355	603	59,070	134,171
Dressmaking and millinery ..	512	683	171	361	353	7,974	1,067,867	15,244	1,870,686	3,406,295
Fur	48	97	49	164	8	285	86,678	1,645	314,385	480,250
Hats and caps	53	574	45	502	5	1,153	279,582	10,571	390,407	836,184
Underclothing, shirt	189	1,224	115	492	64	5,995	817,463	16,152	1,915,789	3,231,655
Sail, tent, rope, twine, &c. ..	30	1,859	25	543	..	417	171,463	14,761	446,151	819,781
Other	38	400	32	226	5	236	89,073	6,683	109,280	255,826
Total	2,147	26,940	1,577	14,281	579	37,512	8,039,624	311,566	14,836,517	27,544,210

Class VIII.—Books, Paper, Printing, Engraving, &c.										
Paper-making, paper bags, &c. ..	47	4,661	29	911	4	900	337,697	80,221	607,314	1,377,226
Photo engraving	24	70	34	202	2	98	76,382	2,101	38,648	156,851
Printing	326	3,987	386	3,742	9	1,537	1,210,250	27,877	943,867	2,838,598
Newspapers	119	3,242	107	1,977	1	59	680,706	25,575	939,057	2,032,621
Die sinking, &c.	22	100	24	142	..	8	38,647	911	12,905	70,961
Bookbinding	38	652	35	689	..	594	234,082	5,269	296,537	676,950
Total	576	12,712	615	7,663	16	3,196	2,577,764	141,954	2,838,328	7,153,207
Class IX.—Musical Instruments ..	19	707	9	493	..	35	117,505	3,923	159,249	335,387
Class X.—Arms and Explosives ..	9	867	1	324	..	192	115,471	18,697	252,877	495,262
Class XI.—Vehicles and Fittings, Saddlery, Harness, &c.										
Coachbuilding	195	1,964	222	1,435	..	16	352,431	12,648	260,945	761,055
Motor repairs and assembling ..	685	2,493	491	3,492	2	73	891,514	35,617	54,223	1,274,991
Motor body building and repairs ..	74	2,037	83	1,974	..	66	544,155	13,077	643,962	1,413,391
Perambulators	13	49	21	132	1	8	31,777	550	41,372	86,438
Saddle, harness	14	20	15	104	..	28	29,087	259	40,899	84,021
Total	981	6,563	832	7,137	3	191	1,848,964	62,151	1,041,401	3,619,896
Class XII.—Ship and Aircraft Building, &c.	15	1,478	14	377	..	5	99,905	5,573	39,397	176,189

FACTORIES—POWER, WORKERS, WAGES, ETC., AND PRODUCTION, 1928-29—*continued.*

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.				
Class XIII.—Furniture, Bedding, &c.							£	£	£	£
Bedding, upholstery, &c.	72	1,159	49	587	5	321	181,945	6,093	430,428	720,409
Furniture	318	3,625	376	2,512	2	90	596,276	18,888	684,816	1,561,278
Picture frame	14	39	11	62	1	12	17,648	324	19,780	47,187
Basket, wickerware	24	112	28	200	..	1	40,049	973	40,187	100,774
Other	38	242	24	296	2	213	94,916	2,043	219,266	390,872
Total	466	5,177	488	3,657	10	637	930,834	28,321	1,394,477	2,820,520
Class XIV.—Drugs, Chemicals, and By-products.										
Chemicals, drugs, &c.	49	2,406	18	659	3	699	272,686	25,744	514,892	1,168,545
Paints and varnishes	17	605	13	88	..	17	26,089	1,957	103,982	168,098
Inks, polishes	22	427	6	180	..	127	63,029	2,963	258,049	439,876
Chemical fertilizers	9	2,395	1	951	..	4	256,327	38,432	1,111,197	1,823,709
Essential oils	5	43	1	24	..	..	5,120	339	21,993	41,747
Total	102	5,876	39	1,902	3	847	623,251	69,435	2,010,113	3,641,975
Class XV.—Surgical and Scientific Appliances	46	93	31	227	..	26	62,867	1,515	45,425	143,407

Class XVI.—Time-pieces, Jewellery, and Plated-ware	119	842	120	824	2	119	214,662	8,413	228,548	560,257
Class XVII.—Heat, Light, and Energy.										
Electric light	87	235,589	5	1,145	..	3	322,295	596,396	..	1,616,076
Gas, coke	35	3,306	..	926	..	10	265,536	162,606	1,002,811	2,042,896
Other	9	4,843	2	464	..	479	182,706	43,059	566,590	1,255,223
Total	131	243,738	7	2,535	..	492	770,537	802,061	1,569,401	4,914,195
Class XVIII.—Rubber and Leather-ware (except Saddlery and Harness)										
Rubber goods	89	12,741	65	2,799	..	1,004	845,641	123,394	1,963,142	3,911,849
Fancy leather, belting, &c.	60	345	66	406	3	345	136,308	3,226	308,691	545,573
Total	149	13,086	131	3,205	3	1,349	981,949	126,620	2,271,833	4,457,422
Class XIX.—Wares, not elsewhere included.										
Toys	13	67	11	50	..	3	12,391	399	16,025	35,594
Umbrella	5	19	3	48	..	110	25,399	277	47,871	89,868
Other Industries	14	137	8	65	4	31	17,899	716	20,257	48,555
Total	32	223	22	163	4	144	55,689	1,392	84,153	174,017
Grand Total	8,197	446,282	6,580	98,068	722	51,198	31,533,586	3,361,298	70,100,456	127,897,463

Increase in value of output of certain industries, 1923-24 and 1928-29.

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 1923–24 and 1928–29 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, 1923–24 AND 1928–29.

Industry.	Value of Output.		Increase in Five Years.	
	1923–24.	1928–29.	Value.	Per cent.
	£	£	£	
Rubber goods	1,560,888	3,911,849	2,350,961	150·6
Knitting, hosiery	1,892,662	3,640,147	1,747,485	92·3
Butter, cheese	8,184,522	9,614,084	1,429,562	17·5
Woollen mills	3,561,480	4,636,996	1,075,516	30·2
Meat freezing, preserving ..	1,143,920	2,049,866	905,946	79·2
Underclothing, shirt ..	2,601,053	3,231,655	630,602	24·2
Coach, motor body building, &c.	2,914,959	3,535,875	620,916	21·3
Fertilizers	1,209,368	1,823,709	614,341	50·8
Jam, fruit, sauce	1,930,258	2,473,492	543,234	28.1
Condiments, coffee	620,243	1,017,841	397,598	64·1
Engineering, ironfoundry ..	6,087,049	6,481,743	394,694	6·4
Railway workshops	3,222,714	3,593,496	370,782	11·5
Electrical apparatus ..	462,063	804,890	342,827	74·2
Cement, including cement pipes	769,692	1,087,992	318,300	41·3
Soap and candle	937,148	1,230,451	293,303	31·3
Dressmaking, millinery ..	3,135,160	3,406,295	271,135	8·6
Chemicals, drugs	912,427	1,168,545	256,118	28·1
Agricultural implements ..	1,690,645	1,885,154	194,509	11·5
Boiling down, bone milling ..	319,158	474,760	155,602	48·7
Malt	601,433	725,854	124,421	20·7

INDIVIDUAL INDUSTRIES.

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

Tanneries.

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

TANNERIES, 1919-20 TO 1928-29.

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.
			£			£
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	2,368	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
1928-29	42	4,005	366,680	1,825	54	*466,000

* Including amounts drawn by working proprietors.

Year.	Number Tanned— Hides and Skins.			Value of Materials Used.	Value of Articles produced or Work done.
	Cow and Ox.	Calf.	Sheep and other Skins.		
				£	£
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
1928-29	624,681	455,902	1,130,352	1,897,630	2,722,296

The quantity of bark used in connexion with tanning operations in 1928-29 was 10,931 tons.

The value of the leather, mostly glace kid, imported into Victoria from oversea countries during the year ended 30th June, 1929, was £165,837, and the value of leather exported for the same period was £120,327.

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

SOAP AND CANDLE WORKS, 1919-20 TO 1928-29.

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.	£
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
1928-29	17	240,640	671	141,107†	367,601	22,802	1,230,451

* Not including soap made in small soap works not classified as factories, viz., 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, 874 cwt. in 1927-28, and 755 cwt. in 1928-29.

† Including amounts drawn by working proprietors.

The quantity of tallow used in 1928-29 in the manufacture of soap and candles was 215,519 cwt. in factories, and 438 cwt. in minor works.

The imports from oversea countries in 1928-29 included 441,190 lbs. of soap valued at £27,358, and 48,323 lbs. of candles, &c., valued at £3,331.

Brickyards, potteries, &c. Particulars relating to brickyards and potteries for the ten years 1919-20 to 1928-29 are shown in the following statement. The value of the land, plant, buildings, &c., used in connexion with such works in 1928-29 was £1,068,040 :—

BRICKS, POTTERY, PIPES, AND TILES, 1919-20 TO 1928-29.

Year.	Number of Establishments.	Persons Employed.	Amount of Wages Paid	Number of Bricks Made.*	Value of—	
					Pipes and Tiles.	Pottery.
			£		£	£
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
1928-29 ..	76	2,321	538,952†	182,981,000	308,932	124,839

* 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 1928-29 was £589,668, being a decrease of £126,695 on the value of those made in the preceding year.

Forest Saw-mills.

Detailed information in regard to the forest saw-mills of the State for the ten years 1919-20 to 1928-29 is given in the table which follows :—

FOREST SAW-MILLS, 1919-20 TO 1928-29.

Year.	Number of Mills.	Value of Machinery and Plant in Use.	Persons Employed.	Amount of Wages Paid.	Victorian Timber Sawn.	
					Quantity.	Value.
		£		£	super ft.	£
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
1928-29 ..	171	443,640	1,758	406,582*	79,018,000	676,200

* Including amounts drawn by working proprietors.

A dispute over the question of wages and hours caused a stoppage of this industry for a period of 27 weeks during the year 1928-29.

In addition to the forest saw-mills there were 466 other factories working in wood. Particulars relating to these for the year 1928-29 are given on page 610.

Firewood. The quantity of timber sawn for firewood consumption in the year 1928–29 was 274,727 tons valued at the sawmills at £283,280. 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. Agricultural and Dairy Machinery Works have been tabulated jointly since 1925–26, owing to a revision of the classification of Victorian statistics. Comparable figures are therefore available for the past three years only.

AGRICULTURAL AND DAIRY MACHINERY WORKS, 1926–27 TO 1928–29.

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	801,008	2,003,855
1928–29 ..	71	3,239	762,977	49,243	738,414	1,885,154

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

Bacon curing. In the following table particulars of bacon and ham curing establishments are given for the ten years 1919–20 to 1928–29. The value of the machinery, plant, land and buildings in connexion with these establishments was £224,710 in 1919–20 and £352,260 in 1928–29.

BACON CURING, 1919–20 TO 1928–29.

Year.	Number of Establishments.	Persons Employed.	Amount of Wages Paid.	Pigs Slaughtered for Curing.	Weight of Bacon and Ham Cured.	Value of Output.
			£	number	lbs.	£
1919–20 ..	21	549	99,736	182,320	16,675,090	1,384,351
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
1928–29 ..	19	556	147,369*	198,131	18,611,728	1,409,897

* Including amounts drawn by working proprietors.

In addition, the following quantities of bacon and ham were returned as having been cured on farms:—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, 976,871 lbs. in 1927–28, and 789,719 lbs. in 1928–29. The total quantity of bacon and ham cured in 1928–29 was thus 19,401,447 lbs. —a decrease of 1,203,701 lbs. as compared with 1927–28.

Butter and cheese factories.

The number of butter, cheese, and kindred factories in 1928–29 was 169. Of these 136 were making butter, 22 cheese, 3 concentrated milk, 4 condensed milk, 13 powdered milk, 9 casein, and 1 milk sugar. There were also 22 creameries attached to the factories. The following table gives some indication of the value of this industry to the State:—

BUTTER AND CHEESE FACTORIES, 1919–20 TO 1928–29.

Year.	Number of Factories.	Value of Machinery, Plant, Land, and Buildings.	Persons Employed.	Amount of Wages Paid.	Value of Output.
		£		£	£
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
1928–29	169	1,931,360	2,449	582,411*	9,614,084

* Including amounts drawn by working proprietors.

Further particulars relating to butter and cheese factories will be found under the heading of Dairying on page 581.

BAKERIES (INCLUDING BREAD, PASTRY, AND CAKES, ETC.), 1928–29.

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

Figures for the past two years only are therefore available and cover about 44 per cent. of bakers, the remaining 56 per cent. being too small to be classified as factories according to the statistical definition. In 1927–28, 669 small factories, representing the 56 per cent. excluded from the statistics, used 32,889 tons of flour and produced, among other items, 20,851,188 4-lb. loaves of bread.

The total value of output of the industry as stated hereunder includes the value of all articles produced, but details relating to the output of pastry, cakes, pies, scones, &c., have not been tabulated. It must be explained that the value quoted is the wholesale selling value of the goods produced at the factory exclusive of all selling and delivery costs.

BAKERIES, 1927–28 AND 1928–29.

	1927–28.	1928–29.
Number of factories	519	487
Average number of employees	3,367	3,248
Actual horse-power of engines used	1,774	1,822
Value of land and buildings	£1,025,220	£1,087,550
Value of plant and machinery	£344,970	£368,050
Salaries and wages paid	£772,704	£767,117
Value of materials used	£2,218,452	£2,045,012
Cost of fuel, light, and power used	£86,592	£84,436
Cost of repairs, lubricating oil, and water used ..	£19,077	£16,828
Total output	£3,575,645	£3,480,992
Value added in process of manufacture	£1,251,524	£1,334,716
Value added per employee	£371	£411
Flour used—tons	89,135	90,943
Bread made—4-lb. loaves	52,812,500	54,656,000

Meat freezing and preserving works.

Meat freezing and preserving works numbered twelve in 1928-29, and gave employment to 851 hands, the wages amounting to £229,245. The approximate value of machinery, plant, land and buildings in that year was £908,070. The output for each of the last ten years is given in the following table :—

MEAT FREEZING AND PRESERVING, 1919-20 TO 1928-29.

Year.	Frozen.			
	Cattle.	Sheep.	Rabbits and Hares.	Poultry.
	qrs.	number.	number.	number.
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
1928-29	6,297	1,590,573	3,248,558	8,732

Year.	Preserved.			
	Beef.	Mutton.	Rabbits and Hares.	Other Meats, &c.
	cwt.	cwt.	cwt.	cwt.
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
1928-29	9,544		3	4,459

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, 1929 :—

MEATS IMPORTED AND EXPORTED OVERSEA, 1928-29.

Meats.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
		£		£
Frozen—				
Mutton	5,755 lbs.	125	21,288,776 lbs.	431,440
Lamb			37,564,594 „	1,096,891
Beef	..	..	1,741,366 „	29,328
Pork	301,431 lbs.	8,241	5,130 „	227
Rabbits and Hares ..	..	..	1,624,279 prs.	136,273
Poultry	..	..	4,361 „	3,360
Game	9,048 lbs.	862	7,753 lbs.	221
Potted and Concentrated	..	55,561	..	6,475
Preserved in tins ..	307,511 lbs.	14,926	512,626 lbs.	19,640
Sausage Casings.. ..	4,638 cwt.	75,484	12,097 cwt.	171,839
Not elsewhere included ..	..	1,512	..	27,324
Total value ..	..	156,711	..	1,923,018

Flour mills.

The value of the machinery, plant, land and buildings used in connexion with flour mills was estimated at £591,685 in 1919-20 and at £1,103,110 in 1928-29. Particulars of the industry for the ten years 1919-20 to 1928-29 are as follows :—

FLOUR MILLS, 1919-20 TO 1928-29.

Year.	Number of Mills.	Persons Employed.	Amount of Wages Paid.	Wheat Ground into Flour.	Flour Made.	Value of Total Output.
			£	bushels.	tons.	£
1919-20 ..	51	1,064	189,224	16,920,890	353,683	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
1928-29 ..	41	985	269,913*	18,545,041	390,286	5,378,763

* Including amounts drawn by working proprietors.

In addition to the flour made, the wheat ground in 1928-29 produced 8,228,720 bushels of bran and 7,762,370 bushels of pollard.

Exports of bread stuffs.

During the year 1928-29, 1,724,207 lbs. of biscuits valued at £50,149, and 193,665 tons of flour valued at £2,260,895, were exported from Victoria to countries beyond Australia.

Jam, pickle, and sauce works.

In 1928-29 there were 38 establishments in which the manufacture of jams, pickles, and sauces was carried on, and the number of persons employed therein was 2,126, of whom 23 were working proprietors. The wages paid amounted to £393,685, and the value of machinery, plant, land and buildings was £760,950. 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, 1919-20 TO 1928-29.

Year.	Fruit Used.	Sugar Used.	Jams and Jellies Made.	Fruit Preserved.	Fruit Pulped.	Sauce Made.	Pickles Made.
	cwt.	cwt.	cwt.	cwt.	cwt.	pints.	pints.
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..	792,283	246,170	300,822	335,798	110,420	7,385,438	2,615,267
1927-28..	960,004	295,331	340,847	479,928	121,060	7,312,500	1,487,990
1928-29..	601,722	253,735	285,636	351,048	57,648	7,905,541	1,803,764

Some of these establishments also candied fruit peel, the quantities being 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, 3,563 cwt. in 1927-28, and 4,135 cwt. in 1928-29. The value of the output in 1928-29 of the whole of the establishments whose produce is shown in the above table was £2,202,502.

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. In 1925 and 1926 a substantial amount was spent to remodel and bring the factory up to date.

The State Rivers and Water Supply Commission has developed an 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.
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
1928-29	2,130	15,236	2,108

Last season 43s. a ton was paid for Sugar Beets. Weather conditions were very unfavorable, and the yield light, but a high sugar content somewhat compensated for this. The past three seasons have been indifferent, and it is hoped that there will be an early improvement.

Breweries. Particulars regarding breweries for the ten years 1919-20 to 1928-29 are set forth in the next table. Machinery and plant were valued at £453,040 in 1919-20 and at £944,880 in 1928-29, whilst land and buildings were valued at £396,080 and £692,090 respectively in those years. The wages paid in 1928-29 amounted to £411,714.

BREWERIES, 1919-20 TO 1928-29.

Year.	Number of Breweries.	Persons Employed.	Materials Used—			Beer and Stout Made.	Value of Output.
			Sugar.	Malt.	Hops.		
			cwt.	bushels.	lbs.	gallons.	£
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	331,317	26,484,000	2,605,704
1927–28	9	1,169	116,890	815,882	814,812	25,870,000	2,534,815
1928–29	9	1,194	110,968	806,252	777,849	24,999,000	2,522,933

Distilleries. The number of distilleries working in 1928–29 was 8, and the persons employed numbered 142, of whom two were working proprietors. The estimated value of the machinery, plant, land and buildings was £196,170. The quantities of materials used in manufacture and of spirits distilled in each of the last ten years were as follows:—

DISTILLERIES, 1919–20 TO 1928–29.

Year.	Materials Used.				Spirits Distilled.
	Wine.	Malt.	Other Grain.	Molasses.	
	gallons.	bushels.	bushels.	lbs.	proof gals.
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	..	2,994,880	785,595
1926–27	1,874,370	212,022	..	2,437,920	995,708
1927–28	1,843,100	113,404	..	1,513,792	709,031
1928–29	1,320,046	175,833	11,192	2,278,080	813,562

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:—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, 10,110 gallons in 1927–28, and 17,529 gallons in 1928–29.

Tobacco factories.

The number of tobacco, cigar, and cigarette factories licensed in 1928–29 was twenty-four, of which twelve were too small to be classified as ordinary factories and were consequently not included in the statistical tabulation on page 611. In the year mentioned the remaining twelve gave employment to 1,516 persons who were paid £328,217 in wages, and used machinery, plant, land and buildings valued at £426,240. 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, 1919–20 TO 1928–29.

Year.	Unmanufactured Leaf Operated on.		Quantity Manufactured.			
	Australian.	Imported.	Tobacco.	Snuff.	Cigars.	Cigarettes.
	lbs.	lbs.	lbs.	lbs.	number.	number.
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
1928–29 ..	450,083	4,585,040	5,351,643	4,527	24,094,483	96,032,175

Woollen mills.

There were twenty-eight woollen mills working in 1928–29, and the number of persons employed therein was 6,561, of whom seventeen were working proprietors. The wages paid amounted to £1,066,897, and the approximate value of the machinery, plant, land and buildings was £2,920,690. The value of the raw materials used during the year was £2,377,416, and that of the goods manufactured in the same period, £4,308,677. The quantities of wool and cotton used and of goods manufactured in each of the last ten years were as follows:—

WOOLLEN MILLS, 1919–20 TO 1928–29.

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	£
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	2,509,198	4,035,298	224,745	47,179	2,397,610
1921–22	8,015,650	586,836	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	1,898,647	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
1928–29	11,582,312	832,851	5,979,625*	4,603,874*	285,830	115,533	4,308,677

* Square yards.

During the period 1919–20 to 1928–29 the value of the output of woollen mills increased by 118 per cent. Steady progress is indicated by the above table until the year 1928–29, which shows a decrease 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, 1919–20 TO 1928–29.

Year.	Number of Factories.	Persons Employed.	Value of Machinery, Plant, Land, and Buildings.	Wages Paid.
			£	£
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	1,906,127*
1928–29	175	11,041	1,403,330	1,939,069*

* 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	84,602	102,592	244,997
1928-29 ..	340	567	491,110	83,955	116,849	253,913

OUTPUT OF BOOT FACTORIES, 1919-20 TO 1928-29.

Year.	Goods Manufactured—		Value of Materials Used.	Value of Output.
	Boots and Shoes.	Slippers.*		
	pairs.	pairs.	£	£
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	851,289	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	7,660,638	1,724,418	2,995,490	6,045,226
1926-27	8,147,282	2,100,228	3,058,257	6,105,072
1927-28	7,792,702	2,188,608	2,943,572	5,657,318
1928-29	7,856,996	2,492,609	3,031,173	5,810,619

* Includes canvas shoes and house-boots.

Dress (exclusive of boot) factories.

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 £15,505,660 in 1928-29, as compared with £11,407,324 in 1919-20. During the period 1919-20 to 1928-29 the persons employed increased by 14 per cent., the wages paid

by 82 per cent., the value of materials used by 26 per cent., and the value of the output by 36 per cent. Particulars of the industry for each of the last ten years are as follows :—

DRESS (EXCLUSIVE OF BOOT) FACTORIES, 1919–20 TO 1928–29

Year.	Number of Factories.	Number of Persons Employed.			Amount of Wages Paid.	Value of Materials Used.	Value of Output.
		Males.	Females.	Total.			
					£	£	£
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	7,181,020	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
1928–29	1,522	5,433	28,272	33,705	4,541,295*	8,426,982	15,505,660

* 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, 1919–20 TO 1928–29.

Year.	Number of Stations.	Horse-power of Machinery.	Value of Machinery and Plant.	Persons Employed.	Wages Paid.	Electricity Supplied.	Value of Output.
			£		£	British units.	£
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	185,633	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
1928–29	87	235,589	6,079,300	1,153	322,295	673,492,000	1,616,076

The decrease in the number of persons and the value of machinery and plant and output in electric supply undertakings for the last four 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.

Prior to 1923–24 particulars relating to the Newport power houses controlled by the Victorian Railways Commissioners and the State

Electricity Commission had not been included in the statistics, and this accounts for the large increase in the figures for that year. The principal generating station is now located at the Electricity Commissioner's works at Yallourn, where 304,383,000 units were generated in the year 1928-29.

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, 130,000 tons of brown coal briquettes annually. Approval has been given to the duplication of the power station in order to meet the increasing demand for electricity, and work is now proceeding in connexion therewith. Work has also been commenced on the extension of the briquette factory. This extension will, it is expected, result in the triplication of the output of briquettes.

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., has been established at Richmond, where the single-phase power house of the Melbourne Electric Supply Company Ltd. has been taken over and converted to three-phase supply. The duplication of the Yallourn power station and main transmission line necessitates the erection of a second receiving station, and work is accordingly proceeding on the construction of a new terminal station at Richmond.

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, Boolarra, Rosedale, Bairnsdale, Stratford, Newry, Darnum, Ruby, Yinnar, Nilma, Tinamba, Toongabbie, Tynong, Lakes Entrance, Glengarry, Bunyip, and Longwarry. 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 districts of Victoria to the borough of Port Fairy (a distance of 138 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, Larpen, Nalangil, Ryan's Lane, Wool Wool, Birregurra, Dennington, and Koroit, and the city of Warrnambool.

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 has purchased from the Electric Supply Company of Victoria Ltd. the dual electrical and tramway undertakings in the important inland cities of Ballarat and Bendigo. This purchase was ratified by Parliament in the 1929 Session, when an Act was also passed authorizing the Commission to operate tramways in the two cities mentioned, as well as in Geelong, where tramways are associated with the electricity supply undertaking of the Melbourne Electric Supply Company Ltd., whose assets will pass to the Commission on the 1st September, 1930. The Commission will control and supervise the electrical and tramways undertakings in Ballarat and Bendigo on the 1st July, 1931, between which date and the date of actual possession (30th June, 1934) the company will act in the capacity of managers for the Commission. Upon finalization of the negotiations for purchase of the Ballarat and Bendigo undertakings, the work of constructing a ring main to link up those cities and Geelong with Melbourne was commenced. This represents the last major extension of transmitted supply necessary to consummate the State scheme as a complete power system for Victoria. The first section of the ring main has been completed as far as Castlemaine, and supply is being given to that town and to Kyneton, Macedon, Woodend, Gisborne, Diggers' Rest, Lancefield, Romsey, Riddell, and Monegeetta. The supply to Sunbury, previously given over the 22,000-volt subsidiary line which serves the outer metropolitan area, has also been transferred to the Bendigo-Ballarat ring main. The municipal undertakings at Kyneton, Woodend, and Gisborne, and the private undertaking at Castlemaine, were acquired by the Commission, preparatory to service being given to those centres from the first section of the ring main.

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, Sunshine, Glenroy, Pascoe Vale, and Essendon-Flemington. Also Sassafras, Sherbrooke, Tremont, Ferny Creek, Olinda, Dromana, Sorrento-Portsea, Rosebud, Rye, Tyabb, Silvan, Evelyn, Tally-Ho, Glen Waverley, Pakenham, Beaconsfield, Berwick, Kallista, Lower Plenty, Diamond Creek, Cranbourne, and Narre Warren. At the 30th June, 1929, the Commission was supplying, either in retail or in bulk, over 140 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 steam flow, volume, &c.

Five hydro-power stations (Sugarloaf, Rubicon, Rubicon Lower, Rubicon Falls, and Royston) have been erected and are in operation. The Sugarloaf station is the largest, being of 18,000 horse-power capacity. 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 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, Mooroopna, Tatura, Merrigum, Benalla, Chiltern, Tongala, Rutherglen, Kyabram, Thornton, Mansfield, Barnawartha, and Dookie. 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.

Gasworks. 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 four 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, 1919–20 TO 1928–29.

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.	£
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	2,098,571
1924–25 ..	45	2,464	668,006	406,868	5,608,313,000	226,436	2,087,358
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
1928–29 ..	35	936	265,536	437,651	6,424,614,000	279,887	2,042,896

Oil was used as well as coal in the manufacture of gas, the number of gallons consumed each year being 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, 68,567 in 1927–28, and 239,928 in 1928–29.

Number and Location of Factories.

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 1919-20 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.			
	1919-20	1926-27.	1927-28.	1928-29.	1919-20	1926-27.	1927-28.	1928-29.
Treating raw material, product of pastoral pursuits, &c. ..	96	83	83	84	209	160	149	145
Treating oils and fats, animal, vegetable, &c.	16	21	19	19	10	10	9	8
Processes in stone, clay, glass, &c. ..	114	168	163	156	82	109	98	95
Working in wood ..	226	336	331	337	286	342	319	300
Metal works, machinery, &c. ..	577	807	819	808	197	216	222	216
Connected with food and drink, &c. ..	261	267	592	582	415	465	665	655
Clothing and textile fabrics, &c. ..	1,249	1,719	1,750	1,805	324	368	358	342
Books, paper, printing, &c... ..	309	410	407	402	156	172	174	174
Musical instruments, &c.	12	19	18	19	..	..	..	..
Arms and explosives	10	7	7	8	..	1	1	1
Vehicles, saddlery, harness, &c. ..	291	468	465	466	321	481	506	515
Ship and boat building and repairing..	10	11	10	13	2	2	2	2
Furniture, upholstery and bedding ..	304	448	445	419	28	48	54	47
Drugs, chemicals, and by-products ..	79	92	98	89	45	22	23	13
Surgical and other scientific appliances	30	40	43	42	3	4	3	4
Jewellery, time-pieces and plated-ware ..	92	112	108	111	7	5	7	8
Heat, light, and power	62	26	26	26	108	103	104	105
Rubber and Leatherware	45	106	116	119	..	24	28	30
Minor wares, n.e.i. ..	60	18	23	30	2	..	..	2
Total ..	3,843	5,158	5,523	5,535	2,195	2,532	2,722	2,662

Since 1919-20 the number of factories in the State has increased by 2,159, the greatest numerical increase in the classes being that of the clothing and textile factories, of which there were 574 more in 1928-29 than in 1919-20. 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.

Employment in factories. The average number of persons employed in each class of industry is shown in the following table :—

AVERAGE NUMBER OF PERSONS EMPLOYED IN FACTORIES.

Class of Industry.	1919-20.	1925-26.	1926-27.	1927-28.	1928-29.
Treating raw materials, product of pastoral pursuits, &c. ..	4,759	4,209	4,112	3,552	3,198
Treating oils and fats, animal, vegetable, &c.	878	891	941	870	880
Processes in stone, clay, glass, &c.	4,828	5,975	6,117	5,855	5,576
Working in wood	8,802	9,685	9,134	8,265	6,601
Metal works, machinery, &c. ..	19,079	25,663	28,563	27,819	27,340
Connected with food and drink, &c.	20,545	18,813	18,881	21,476	20,934
Clothing and textile fabrics, &c.	44,245	50,188	55,101	53,857	53,949
Books, paper, printing, &c. ..	9,487	11,374	11,720	11,618	11,490
Musical instruments, &c. ..	285	529	532	471	537
Arms and explosives	839	471	537	511	517
Vehicles, saddlery, harness, &c.	5,707	7,386	8,236	7,845	8,163
Ship and boat building and repairing	938	388	388	395	396
Furniture, bedding, and upholstery	3,657	4,527	5,460	5,199	4,792
Drugs, chemicals, and by-products	2,447	2,713	2,811	2,839	2,791
Surgical and other scientific appliances..	174	230	269	269	284
Jewellery, time-pieces, and plated-ware	1,347	1,097	1,044	1,100	1,065
Heat, light, and power ..	4,466	4,186	2,984	3,029	3,034
Rubber and Leatherware, n.e.i...	1,045	919	4,496	5,080	4,688
Minor wares, n.e.i.	2,994	3,715	313	307	333
Total	136,522	152,959	161,639	160,357	156,568

The method of arriving at this average has been altered for the year 1928-29, aud it is now taken as the average number employed over the whole year, and not, in the case of a seasonal factory working only for a portion of the year, the average for the period of operation.

The table of monthly employment in factories (see page 652) is designed to show seasonal employment.

The total increase in the number of hands employed during the period covered by the above table was 20,046, which represented an advance of about 15 per cent. An increase of 2 per cent. is, however, due to the addition of a new industry in class 6, viz., bakeries (see page 622), 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 9,704, 2,456, and 8,261 respectively in the number of persons employed in 1928-29 as compared with the

number in 1919–20. 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.

Size of factories.

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.									
	1924–25.	Increase.	1925–26.	Increase.	1926–27.	Increase.	1927–28.	Increase.	1928–29.	Increase.
		%		%		%		%		%
Under 4 hands—										
Number of Factories	1,787	9·23	1,879	5·15	2,051	9·15	2,397	16·87	2,585	7·84
,, Employees	3,872	6·28	4,011	3·59	4,315	7·58	5,056	17·17	4,907	— 2·95
4 hands—										
Number of Factories	764	4·80	797	4·32	811	1·76	955	17·75	823	—13·82
,, Employees	3,056	4·80	3,188	4·32	3,244	1·76	3,820	17·75	3,292	—13·82
5 to 10 hands—										
Number of Factories	2,259	—3·17	2,210	—2·17	2,215	0·22	2,301	3·88	2,241	— 2·61
,, Employees	15,706	0·89	15,304	—2·56	15,465	1·05	15,861	2·56	15,391	— 2·96
11 to 20 hands—										
Number of Factories	1,169	—2·75	1,142	—2·31	1,125	—1·49	1,101	—2·13	1,085	— 1·45
,, Employees	17,068	—1·73	16,615	—2·65	16,479	—0·81	16,160	—1·93	15,840	— 1·98
21 to 50 hands—										
Number of Factories	902	—3·94	883	—2·11	900	1·92	922	2·44	903	— 2·06
,, Employees	28,661	—4·33	28,066	—2·08	28,774	2·52	28,960	0·64	28,472	— 1·68
51 to 100 hands—										
Number of Factories	312	0·32	303	—2·88	340	12·21	320	—5·88	300	— 6·25
,, Employees	21,960	1·56	20,838	—5·11	24,177	16·02	22,433	—7·21	20,963	— 6·55
Over 100 hands—										
Number of Factories	232	—2·93	247	6·46	248	0·40	249	0·40	260	4·42
,, Employees	63,835	—1·92	64,937	1·73	69,185	16·54	68,067	—1·61	67,703	— 0·53

PROPORTION OF FACTORIES OF DIFFERENT SIZES.

Size of Factory.	Percentage to Total.									
	1924–25.		1925–26.		1926–27.		1927–28.		1928–29.	
	Factories.	Employees.	Factories.	Employees.	Factories.	Employees.	Factories.	Employees.	Factories.	Employees.
Under 4 hands ..	24·1	2·5	25·2	2·6	26·7	2·7	29·1	3·1	31·5	3·1
4 ,, ..	10·3	2·0	10·7	2·1	10·6	2·0	11·6	2·4	10·1	2·1
5 to 10 ,, ..	30·4	10·2	29·6	10·0	28·8	9·6	27·9	9·9	27·3	9·8
11 to 20 ,, ..	15·7	11·1	15·3	10·9	14·6	10·2	13·3	10·1	13·2	10·1
21 to 50 ,, ..	12·2	18·6	11·8	18·4	11·7	17·8	11·2	18·0	11·0	18·2
51 to 100 ,, ..	4·2	14·2	4·1	13·6	4·4	14·9	3·9	14·0	3·7	13·4
101 and over ..	3·1	41·4	3·3	42·4	3·2	42·8	3·0	42·5	3·2	43·3
Total ..	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0	100·0

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.	1923–24.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
Working proprietors ..	7,500	7,255	7,254	7,334	7,755	7,302
Managers, overseers ..	4,929	5,043	5,213	5,580	5,891	5,826
Accountants, clerks ..	6,966	6,827	6,034	6,519	6,677	6,847
Engine-drivers, firemen	2,197	2,142	2,065	2,036	1,945	1,850
Workers in factory or works	129,617	128,706	128,948	137,025	135,425	132,304
Outworkers	870	728	736	592	380	240
Carters, messengers ..	3,378	2,766	2,394	2,065	1,703	1,660
Others	705	691	315	488	581	539
Total ..	156,162	154,158	152,959	161,639	160,357	156,568

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 1919–20 to 1928–29, 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.
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
1928–29 ..	104,648	1,195	51,920	586	156,568	889

Males formed 67·5 per cent. in 1919–20 and 66·8 per cent. in 1928–29 of the total persons employed. The increase during the period 1919–20 to 1928–29 in the number of males employed was 12,547, or 13·6 per cent., and in the number of females employed, 7,499, or 16·9 per cent.

Employment of females.

Of the total females in factories 73·3 per cent. are engaged in the textile and clothing industries, and 9·7 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, 1928–29.

Industry.	Number Employed.		Females per 100 Males.
	Males.	Females.	
Oatmeal, etc.	336	237	70.5
Biscuit	629	445	70·7
Jam, fruit, and vegetable canning ..	1,008	808	80·2
Confectionery	1,605	1,435	89·4
Tobacco	955	561	58·7
Woollen mills	2,949	3,612	122·5
Clothing, tailoring, etc.	1,947	6,651	341·6
Dressmaking, millinery	532	8,327	1,565·2
Underclothing, shirts, ties, etc. ..	607	6,059	998·2
Hats, caps, etc.	547	1,158	211·7
Hosiery, knitting	1,336	5,397	403·9
Fur	213	293	137·6
Boots and shoes	5,810	5,231	90·0
Printing, newspapers, etc.	6,212	1,606	25·8
Bookbinding, etc.	724	594	82·0
Paper making, Paper bag, etc. ..	940	904	96·2
Sail, tent, rope, twine	568	417	73·4
Chemicals	677	702	103·7
Ammunition and Explosives ..	325	192	59·1
Upholstery, bedding, etc.	636	326	51·3
Match	180	478	265·6
Fancy leather	472	348	73·7
Rubber goods	2,864	1,004	35·1
All other factories	72,576	5,135	7·1
Total	104,648	51,920	49·6

Child labour in factories.

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 4·29 and 8.39 per cent. respectively in 1928–29, as

against 4·04 and 6·47 per cent. in 1919-20. The number of children employed in factories and their proportions to the total employees are given in the subjoined table for the years 1919-20 to 1928-29 :—

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.
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
1928-29 ..	4,209	4,298	8,507	4·29	8·39	5·70

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 1919-20 to 1928-29 :—

MACHINERY IN FACTORIES.

Year.	Number of Factories equipped with Machinery.	Value of Machinery and Plant.	Horse-power of Engines.
		£	
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
1928-29	7,305	33,724,910	446,382

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, 1919-20 TO 1928-29.

Year.	Number of Factories using—					
	Steam.	Gas.	Electricity.	Oil.	Water, Wind, or Horses.	Manual Labour.
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	324	5,701	509	12	1,036
1928-29 ..	579	278	5,941	493	14	892

Year.	Actual Horse-power of Engines.				
	Steam.	Gas.	Electricity.	Oil.	Total.
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	97,381	5,380	353,920
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
1928-29	*274,331	10,886	147,835	13,330	446,382

* Includes 26,265 horse-power generated by water.

The predominance of steam is due to its extensive use for the generation of electricity. A consistent increase is shown in the use of electricity which, as a secondary power, should be deducted from the total if the nett horse-power used in factory production is required.

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.				
	£	£	£	£	£	£	£
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	304,366	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	3,353,582	532,265	20,915,338	5,229,167	32,087,051
1928–29	1,965,990	100,829	3,416,012	552,056	20,268,582	5,230,117	31,533,586
			Average Amounts.				
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1919–20	..	..	264 8 1	118 6 9	157 16 8	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*
1928–29	298 15 8	139 13 0	374 11 3	155 7 7	227 17 5	109 15 5	197 8 3*

* 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 1928–29 show an advance of 12s. 6d. in the average wage paid per employee.

The method of arriving at the average number of employees for the year 1928–29 (see page 637) would tend to increase the average wage paid to an amount slightly greater than that in previous years.

The average wage for 1928–29 (£197 8s. 3d.) 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.

Cost and value of production in factories.

The cost of production and the value of the output in each class of manufacturing industry during the year 1928-29 are given in the subjoined statement:—

FACTORY COSTS AND OUTPUT, 1928-29.

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. ..	4,018,986	93,935	802,524	47,038	5,553,421
Treating oils and fats, animal, vegetable, &c.	958,473	52,194	192,445	23,188	1,609,649
Processes in stone, clay, glass, &c.	958,280	493,164	1,371,193	123,976	3,810,587
Working in wood	1,762,072	46,229	1,565,407	55,741	4,043,117
Metal works, machinery, &c...	6,992,518	386,765	6,419,713	197,150	16,511,644
Connected with food and drink, &c.	28,639,541	707,390	4,743,282	266,228	40,333,101
Clothing and textile fabrics, &c.	14,836,517	311,566	8,039,624	201,070	27,544,210
Books, paper, printing, &c. ..	2,838,328	141,954	2,577,764	65,400	7,153,207
Musical instruments, &c. ..	158,116	3,923	117,595	1,216	335,387
Arms and explosives ..	252,877	18,697	115,471	15,998	495,262
Vehicles, saddlery, harness, &c.	1,041,401	62,151	1,848,964	41,515	3,619,896
Ship and boat building and repairing	39,397	5,573	99,905	2,645	176,189
Furniture, upholstery, and bedding	1,394,477	28,321	930,834	11,799	2,820,520
Drugs, chemicals, and by-products	2,010,113	69,435	623,251	78,620	3,641,975
Surgical and other scientific instruments	45,425	1,515	62,867	1,083	143,407
Jewellery, time-pieces, and plated-ware	228,548	8,413	214,662	3,286	560,257
Heat, light, and power ..	1,569,401	802,061	770,537	183,564	4,914,195
Rubber and leatherware, n.e.i.	2,271,833	126,620	981,949	90,132	4,457,422
Minor wares, n.e.i.	84,153	1,392	55,689	781	174,017
Total	70,100,456	3,361,298	31,533,586	1,410,430	127,897,463

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, 1928-29.

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 Expenditure, Interest and Profit.
	%	%	%	%	%
1. Treating raw material, product of pastoral pursuits, &c.	72·4	1·7	14·5	0·8	10·6
2. Treating oils and fats, animal, vegetable, &c. ..	59·6	3·2	12·0	1·4	23·8
3. Processes in stone, clay, glass, &c.	25·1	12·9	36·0	3·3	22·7
4. Working in wood ..	43·6	1·1	38·7	1·4	15·2
5. Metal works, machinery, &c.	42·4	2·3	38·9	1·2	15·2
6. Connected with food and drink, &c.	71·0	1·7	11·8	0·7	14·8
7. Clothing and textile fabrics, &c.	53·9	1·1	29·2	0·7	15·1
8. Books, paper, printing, &c.	39·7	2·0	36·0	0·9	21·4
9. Musical instruments, &c.	47·1	1·2	35·0	0·4	16·3
10. Arms and explosives ..	51·1	3·8	23·3	3·2	18·6
11. Vehicles, saddlery, harness, &c.	28·8	1·7	51·1	1·1	17·3
12. Ship and boat building and repairing	22·4	3·1	56·7	1·5	16·3
13. Furniture, upholstery, and bedding	49·4	1·0	33·0	0·4	16·2
14. Drugs, chemicals, and by-products	55·2	1·9	17·1	2·2	23·6
15. Surgical and other scientific instruments	31·7	1·0	43·8	0·8	22·7
16. Jewellery, time-pieces, and plated-ware	40·8	1·5	38·3	0·6	18·8
17. Heat, light, and power ..	31·9	16·3	15·7	3·8	32·3
18. Rubber and leatherware, n.e.i.	51·0	2·9	22·0	2·0	22·1
19. Minor wares, n.e.i. ..	48·4	0·8	32·0	0·4	18·4
Total	54·8	2·6	24·7	1·1	16·8

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 36 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 12 per cent. and that on raw materials to 71 per cent. of the value of the output.

Cost of production, 1919-20 to 1928-29.

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 1919-20 to 1928-29 :—

COST OF PRODUCTION AND VALUE OF OUTPUT OF FACTORIES, 1919-20 TO 1928-29.

Year.	Cost of Production.				Total Value of Output.
	Materials.	Fuel, Light, and Power.	Salaries and Wages.	All other Expenditure, Interest, and Profit.	
	£	£	£	£	£
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
1923-24 ..	62,217,874	2,803,239	27,472,084	21,428,730	113,921,927
1924-25 ..	65,205,233	2,964,635	29,057,052	20,950,478	118,177,398
1925-26 ..	67,164,445	3,156,382	29,329,400	20,336,212	119,986,439
1926-27 ..	69,816,935	3,392,448	31,822,589	22,365,979	127,397,951
1927-28 ..	69,637,778	3,433,923	32,087,051	23,306,565	128,465,317
1928-29 ..	70,100,456	3,361,298	31,533,586	22,902,123	127,897,463

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

PROPORTION OF OUTLAY TO OUTPUT OF FACTORIES, 1919-20 TO 1928-29.

Year.	Proportion of Outlay to Output.				Total.
	Materials.	Fuel, Light, and Power.	Salaries and Wages.	Other Expenditure, Interest, and Profit.	
	%	%	%	%	%
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
1928-29	54·8	2·6	24·7	17·9	100·0

The apparent decrease since 1923-24 in the percentage available for profit and miscellaneous expenses, as shown in the last table, is largely accounted for by 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, £2,056,699, and £2,066,819.

The ratio of salaries and wages to the value of the output of factories was 24·7 per cent. on the average of the last five years, as against 21·5 per cent. in the period 1919-20 to 1923-24. The cost of materials was 55.0per cent. of the value of output in the period 1924-25 to 1928-29, as compared with 58·7 per cent. in the years 1919-20 to 1923-24. The proportionate outlay on fuel, light, and power was 2·1 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 13s. 3d. in every £100 of the total output value in the period 1924-25 to 1928-29, as compared with £17 13s. 8d. 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 1928-29 :—

MACHINERY, PLANT, LAND AND BUILDINGS USED IN MANUFACTURING INDUSTRIES, 1928-29.

Class of Industry.	Value of Machinery and Plant.	Value of Land and Buildings.
	£	£
Treating raw material, product of pastoral pursuits, &c.	705,050	909,050
Treating oils and fats, animal, vegetable, &c. ..	317,620	267,410
Processes in stone, clay, glass, &c.	1,356,600	1,294,570
Working in wood	1,045,900	1,070,760
Metal works, machinery, &c.	4,151,130	4,996,240
Connected with food and drink, &c.	6,273,170	7,247,890
Clothing and textile fabrics, &c.	4,340,960	7,533,190
Books, paper, printing, &c.	2,829,760	3,151,860
Musical instruments, &c.	47,920	183,780
Arms and explosives..	328,870	453,640
Vehicles, saddlery, harness, &c.	993,170	2,604,870
Ship and boat building and repairing	110,950	197,360
Furniture, upholstery, and bedding	282,790	1,055,570
Drugs, chemicals, and by-products	1,030,020	919,240
Surgical and other scientific instruments ..	23,280	120,660
Jewellery, time-pieces, and plated-ware ..	67,820	270,190
Heat, light, and power	8,775,670	2,800,650
Rubber and Leatherware, n.e.i.	1,025,290	1,033,890
Minor wares, n.e.i.	18,940	73,640
Total	33,724,910	36,184,460

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 £36,971,530, 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 1919-20 to 1928-29 :—

MACHINERY, PLANT, LAND AND BUILDINGS USED IN MANUFACTURING INDUSTRIES, 1919-20 TO 1928-29.

Year.	Value of Machinery and Plant.	Value of Land and Buildings.
	£	£
1919-20	15,846,935	14,957,585
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
1928-29	33,724,910	36,184,460

It will be seen from these figures that the values of machinery and plant and land and buildings increased by 127 per cent. between 1919-20 and 1928-29.

Accidents in factories.

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, 1919 TO 1928.

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
1928	137,244	1,224	·891

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, and printing are carried on. The estimated value of the output for 1928-29 was £62,336, and of the materials used, £49,314. 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 144 persons (121 males and 23 females). The value of the work turned out for the period under review was £31,030.

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, 1924-25 TO 1928-29.

Produce.	Value in—				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Cultivation.	£	£	£	£	£
Wheat	11,993,546	6,665,150	9,546,812	4,724,269	8,364,675
Oats	934,538	684,320	653,291	688,804	627,521
Barley, malting ..	258,263	202,206	192,349	184,824	151,726
„ other ..	95,743	87,960	103,390	112,503	70,778
Maize	137,948	172,825	152,055	121,368	136,067
Other Cereals ..	53,227	58,525	58,483	48,995	36,000
Grass and Clover Seed	3,886	2,749	2,350	2,076	9,380
Potatoes ..	682,878	1,309,470	671,673	388,537	1,189,349
Onions	209,803	267,793	110,839	188,186	187,233
Other Root Crops	12,340	18,297	15,161	14,759	13,163
Hay	3,639,496	3,497,253	4,719,925	3,683,272	3,502,862
Straw	66,920	63,988	47,970	66,904	49,427
Green Forage* ..	497,655	539,365	436,205	474,475	535,755
Tobacco ..	49,120	47,160	57,700	35,280	39,510
Grapes, not made into wine, raisins, &c.	45,372	77,333	74,889	81,421	50,813
Raisins, ordinary	57,867	73,452	99,080	76,100	82,873
„ sultanas..	733,919	676,965	1,195,183	623,241	857,975
Currants ..	110,099	93,972	182,536	152,171	273,186
Wine	153,986	177,371	254,184	152,212	84,239
Hops	53,000	54,193	16,074	50,262	36,800
Other Crops ..	78,848	125,788	109,022	168,618	119,397
Fruit grown for sale in orchards and gardens ..	1,091,508	1,247,723	970,831	1,189,356	1,093,434
Fruit in private orchards and gardens	9,945	12,070	9,570	10,520	8,500
Market Gardens ..	731,000	830,450	887,550	949,200	931,500
Less Deductions	−3,535,135	−3,283,560	−4,822,130	−5,616,588	−4,087,508
Total ..	18,165,772	13,702,818	15,744,992	8,570,865	14,364,655

* Exclusive of area under sown grasses.

VALUE OF VICTORIAN PRODUCTION, 1924-25 TO 1928-29—*continued.*

Produce.	Value in—				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Dairying and Pastoral.	£	£	£	£	£
Milk consumed in natural state ..	1,784,590	2,333,000	2,326,800	2,184,900	2,025,200
Butter made ..	6,618,240	6,182,120	6,233,400	6,675,700	7,682,200
Cheese made ..	204,890	227,660	270,620	244,140	325,600
Cream made (not for butter)	190,540	184,350	154,880	174,610	212,800
Condensed, Concentrated, and Powdered Milk	1,582,915	1,437,660	1,498,060	1,906,720	1,713,600
Cattle	3,538,240	3,707,000	2,330,830	3,308,880	4,203,500
Pigs	1,588,620	1,720,740	1,343,750	1,189,410	1,622,700
Sheep (without wool)	4,390,880	3,316,660	2,585,770	3,740,310	3,468,000
Wool	11,440,240	7,082,820	7,876,683	9,701,660	10,252,002
Less Deductions ..	−1,723,178	−1,771,800	−2,340,426	−2,701,730	−2,368,289
Total ..	29,615,977	24,420,210	22,280,367	26,424,600	29,137,413
Mining.					
Gold	285,316	200,958	208,778	163,699	144,068
Coal	610,671	762,521	846,697	982,533	933,408
Stone from Quarries (including limestone) ..	530,820	666,765	700,200	652,800	602,900
Other Metals and Minerals	41,848	37,284	124,567	156,246	113,765
Total ..	1,468,655	1,667,528	1,880,242	1,955,278	1,794,141
Forest Produce.					
Timber (Forest Sawmills only) ..	745,580	711,970	863,493	782,700	676,200
Firewood (estimated)..	1,053,870	1,071,000	888,400	910,000	939,000
Bark for Tanning ..	132,935	129,490	136,906	107,700	98,380
Total ..	1,932,385	1,912,460	1,888,799	1,800,400	1,713,580
Miscellaneous.					
Honey and Beeswax ..	78,981	41,694	47,282	60,140	82,854
Poultry production (estimated)	4,443,200	4,515,400	4,819,500	4,760,000	4,295,000
Rabbits and Hares ..	403,680	697,665	508,340	679,230	820,820
Fish	164,296	187,851	167,461	185,840	173,870
Total ..	5,090,157	5,442,610	5,542,583	5,685,210	5,372,544
Total Value of Primary Products	56,272,946	47,145,626	47,336,983	44,436,353	52,382,333
Manufacturing—Added Value* ..	45,271,348	46,006,461	51,005,430	51,565,291	51,062,027
Grand Total ..	101,544,294	93,152,087	98,342,413	96,001,644	103,444,360

* 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.

Deductions made from the total value of "Cultivation" include cost of freight and handling charges, together with cost of bags, seed, manure, spraying material, and fodder used in the production of crops. In the case of "Dairying and Pastoral" production the deductions

consist of cost of freight, handling charges, and wool packs, and the value of hay, bran and pollard, green fodder, and root crops used as fodder.

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 resulted in an increase in added value in manufacturing of £1,251,524 in 1927–28, and an increase of £1,334,716 in the year 1928–29, for which allowance must be made when comparing the figures for the last two years 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, 1924–25 TO 1928–29.

Produce.	Value of Produce per head in—				
	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Cultivation ..	10 19 3	8 2 9	9 4 0	4 18 5	8 3 2
Dairying and Pastoral	17 17 5	14 10 0	13 0 4	15 3 6	16 10 11
Mining	0 17 9	0 19 10	1 1 11	1 2 5	1 0 4
Forest	1 3 4	1 2 8	1 2 1	1 0 8	0 19 6
Miscellaneous ..	3 1 5	3 4 8	3 4 9	3 5 4	3 1 0
Total Primary Production	33 19 2	27 19 11	27 13 1	25 10 4	29 14 11
Manufactures ..	27 6 5	27 6 5	29 15 11	29 12 3	28 19 11
Grand Total	61 5 7	55 6 4	57 9 0	55 2 7	58 14 10

Monthly employment in factories.

Factory schedules for the year 1928–29 called for data days nearest the 15th day of each month, including and all others engaged in work connected with manufac- The information has been tabulated and the monthly totals for

MONTHLY EMPLOYMENT

Industry.	Average Number			
	July.	August.	September.	October.
Aerated waters	591	654	700	756
Agricultural implements	3,656	3,714	3,763	2,842
Aircraft building	80	80	87	87
Arms and ammunition	195	194	198	199
Art metal works	143	141	153	145
Bacon	518	528	522	523
Bakeries	2,654	2,657	2,661	2,677
Bags and sacks	133	127	126	121
Basket, wickerware	201	204	197	195
Bedding, upholstery	859	876	910	903
Biscuits	1,066	1,046	1,051	1,018
Boiling down, bone mills	267	266	278	281
Bookbinding	1,280	1,292	1,305	1,289
Boot accessories	445	450	449	461
Boots and shoes	9,901	10,475	10,880	11,275
Boot repair	261	262	264	266
Boxes and cases	427	420	439	438
Brass and copper	1,148	1,280	1,190	1,204
Breweries	1,111	1,141	1,173	1,205
Bricks	1,037	1,107	1,125	1,145
Brooms and brushware	259	257	260	268
Butter, cheese, &c.	2,159	2,226	2,488	2,697
Chaffcutting	307	299	279	320
Cement and cement goods	1,055	1,020	946	948
Chemical fertilizers	845	844	877	846
Chemicals, drugs	1,348	1,366	1,382	1,375
Clothing	7,488	7,618	7,924	7,981
Coachbuilding	1,427	1,434	1,451	1,450
Confectionery	3,205	3,107	3,069	2,956
Condiments, coffee, &c.	602	595	617	609
Cooperage	252	255	258	267
Cornflour, oatmeal, &c.	578	566	557	554
Cotton mills	446	454	454	460
Cutlery	119	120	121	118
Diesinking	162	176	176	180
Distilleries	124	141	133	138
Docks and slips	284	315	320	326
Dressmaking	7,214	7,927	8,315	8,354
Dried fruit	264	244	253	270
Dyeworks	323	310	325	323
Electric light and power	1,197	1,149	1,163	1,155
Electrical apparatus	1,424	1,452	1,430	1,425
Electroplating	410	425	430	437
Engineering	5,755	5,746	5,658	5,663

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, 1928–29.

of Employees in—

November.	December.	January.	February.	March.	April.	May.	June.
812	914	856	820	773	662	621	586
2,944	2,896	3,017	3,106	3,112	3,097	2,979	2,878
87	87	82	83	91	89	90	83
198	194	193	207	210	204	205	206
146	138	140	142	142	146	148	149
536	549	533	533	543	551	538	541
2,685	2,713	2,688	2,707	2,746	2,711	2,720	2,731
133	128	121	133	131	124	132	125
209	229	212	211	196	199	197	189
923	952	908	911	922	926	921	889
1,068	1,091	1,064	1,053	1,062	1,080	1,057	1,054
282	277	279	281	277	282	274	264
1,307	1,294	1,288	1,297	1,290	1,266	1,261	1,248
459	455	426	451	457	440	450	444
11,504	10,978	9,529	10,623	10,957	10,927	11,350	11,242
271	273	260	261	268	269	268	269
455	428	428	332	338	301	319	317
1,198	1,203	1,213	1,213	1,229	1,199	1,179	1,160
1,239	1,269	1,239	1,185	1,201	1,201	1,192	1,182
1,137	1,105	1,099	1,115	1,109	1,068	632	402
264	259	263	270	264	261	266	264
2,762	2,732	2,548	2,364	2,285	2,246	2,254	2,222
304	316	351	376	324	310	305	304
949	972	971	979	945	961	933	916
838	840	946	964	1,305	1,265	970	891
1,424	1,422	1,344	1,359	1,351	1,331	1,329	1,325
8,084	8,133	7,661	7,926	8,069	8,088	8,066	7,860
1,473	1,502	1,489	1,482	1,451	1,424	1,413	1,404
3,041	3,100	2,606	2,773	2,783	2,843	2,953	2,969
629	646	632	614	596	619	634	633
266	265	255	260	252	226	254	236
561	572	565	565	546	574	592	583
463	479	477	489	501	491	493	493
119	119	120	123	121	124	125	124
143	142	139	139	140	138	136	137
149	131	135	137	145	162	156	139
273	317	325	309	348	263	262	249
8,224	8,125	7,519	8,261	8,501	8,339	8,195	7,604
242	269	329	426	979	1,002	654	398
327	327	324	341	340	337	350	352
1,162	1,122	1,131	1,128	1,127	1,119	1,164	1,181
1,441	1,459	1,459	1,398	1,511	1,481	1,492	1,497
448	455	462	471	481	479	475	486
5,575	5,624	5,585	5,592	5,802	5,846	5,556	5,527

MONTHLY EMPLOYMENT IN

Industry.	Average Number			
	July.	August.	September.	October.
Explosives	313	318	316	301
Fancy leather	692	729	759	755
Fellmongeries	508	482	437	463
Flour mills	914	916	896	904
Forest sawmilling	1,857	1,863	1,872	1,857
Furnishing, drapery	195	198	195	195
Furniture, cabinet	2,623	2,615	2,619	2,651
Furriers	390	407	423	423
Gas	955	944	948	961
Glass	936	886	1,010	1,058
Hats and caps	1,463	1,609	1,636	1,711
Ice refrigerating	164	169	202	228
Inks, polishes, &c.	296	303	305	301
Ironworks and foundries	4,102	4,092	4,089	3,983
Jam, fruit preserving	1,146	1,293	1,246	1,050
Jewellery	454	471	485	511
Joinery, sawmilling	3,772	3,736	3,769	3,826
Knitting, hosiery	5,951	5,974	5,990	6,058
Leather belting, fancy leather	692	729	759	755
Lime	165	164	154	152
Malt	289	300	298	296
Margarine	52	53	53	50
Matches	646	647	646	637
Meat preserving	654	750	985	1,448
Meters	215	209	211	206
Metallurgical	43	42	44	44
Metal works, other	444	440	453	435
Modelling, plaster sheets	597	604	628	611
Monumental	408	504	413	405
Motor body building	1,851	2,128	2,129	2,115
Motor repairs, assembling	3,367	3,450	3,483	3,470
Musical instruments	507	544	551	545
Nails	179	178	178	177
Newspapers	1,986	2,012	2,045	2,026
Optical and scientific instruments	155	155	155	157
Oil and grease	196	194	198	200
Paper, paper bags	1,770	1,658	1,673	1,712
Paints and varnishes	101	101	101	99
Perambulators	134	136	135	137
Photo engraving	284	284	286	289
Pickles, sauces, vinegar	244	267	281	296
Picture framing	69	78	79	79
Pipes and pottery	786	807	829	815
Printing	5,257	5,281	5,285	5,283
Railway workshops	6,843	6,891	6,866	6,875
Rope, cordage	782	794	797	764
Rubber goods	3,803	3,934	3,846	3,689
Saddlery, harness	132	134	131	127
Sail, tent, tarpaulin	214	199	210	217
Sausage skins	211	225	261	292

FACTORIES, 1928–29—*continued.*

of Employees in—

November.	December.	January.	February.	March.	April.	May.	June.
311	310	308	313	318	319	317	318
767	766	745	756	769	751	743	718
539	473	371	403	398	378	355	375
879	975	1,122	1,029	995	968	952	906
1,982	2,090	1,956	1,506	871	787	832	925
209	213	200	212	212	210	211	194
2,617	2,642	2,521	2,533	2,527	2,492	2,505	2,466
428	428	441	474	500	496	498	473
944	928	923	917	919	913	933	941
1,040	1,063	1,002	1,025	1,014	1,094	934	937
1,713	1,754	1,625	1,648	1,646	1,635	1,674	1,713
263	287	299	294	277	196	165	152
309	310	323	327	319	317	309	306
4,009	4,032	3,997	4,131	4,180	4,221	4,135	4,013
1,266	1,584	2,661	3,027	3,551	1,876	1,512	1,248
544	531	459	367	473	479	479	477
3,850	3,894	3,818	2,351	2,382	2,458	2,471	2,673
6,205	6,323	6,455	6,788	6,938	7,087	7,409	7,341
767	766	745	756	769	751	743	718
150	147	131	122	125	124	117	123
302	295	259	250	230	295	312	305
53	53	51	52	51	54	55	56
637	651	664	710	684	658	686	616
1,507	1,262	921	934	457	405	371	426
210	217	225	231	230	230	229	230
44	42	38	42	42	39	41	38
439	421	435	437	428	407	405	404
618	598	575	605	541	526	498	529
405	397	391	415	411	409	379	345
2,218	2,224	2,227	2,123	1,974	1,697	2,002	1,890
3,634	3,829	3,737	3,666	3,588	3,558	3,520	3,454
540	545	549	511	513	513	520	504
179	180	174	182	182	181	188	192
2,037	2,085	2,030	2,032	2,057	2,063	2,061	2,046
155	155	157	158	158	157	156	154
189	187	199	204	202	206	200	196
1,819	1,844	1,831	1,850	1,878	1,878	1,902	1,863
103	105	107	107	107	108	106	104
141	143	138	138	142	143	144	144
288	297	309	307	311	300	297	293
316	321	328	289	306	306	306	301
75	74	70	73	76	74	74	74
824	803	806	782	756	698	608	623
5,346	5,359	5,240	5,219	5,212	5,249	5,292	5,243
6,843	6,805	6,827	6,841	6,934	6,948	6,912	6,898
761	750	692	709	708	700	731	728
3,699	3,602	3,597	3,842	3,935	3,921	4,036	3,682
120	125	124	126	130	137	138	132
223	230	213	216	209	213	212	208
305	277	229	244	190	188	188	179

MONTHLY EMPLOYMENT IN

Industry.	Average Number			
	July.	August.	September.	October.
Shirts, ties, scarves	2,503	2,576	2,472	2,709
Soap and candle	658	674	682	671
Stoves, ovens	317	318	325	321
Surgical instruments	96	95	94	95
Tanneries	1,547	1,641	1,764	1,812
Tinsmithing	1,940	2,003	2,041	2,056
Tiles	529	547	566	580
Tobacco	1,552	1,578	1,547	1,514
Umbrella	181	174	154	142
Underclothing, corset	3,477	3,558	3,691	3,755
Waterproof clothing	308	281	287	279
Wireworking	402	411	417	422
Woodturning	596	616	636	639
Woollen mills	6,495	6,315	6,290	6,334
Window blinds	35	38	36	39
Others	1,189	1,170	1,170	1,137

Building Statistics.

Reliable statistics of building and construction work are of great value to the community, but, while their usefulness is becoming recognized by business men and economists, it is apparent from returns which were collected in the year 1929 from builders in Victoria that a number of builders do not yet appreciate their significance.

As a means of estimating future requirements it is essential to have records of past experience. In the business world it is necessary to make forecasts before future policies can be initiated. Forecasting facilitates preparation, and is a means of determining the nature of the organization to be built up.

When reliable data in regard to building operations are available financial institutions are able to make preparations with a view to assisting the builder and his client. So, too, will the producers of the raw material for building, the manufacturers of bricks, tiles, cement and builders' hardware, the timber merchants and all others responsible for the supply of materials have an early opportunity of creating the necessary organization for producing in anticipation of demand.

It is obviously desirable in the interests of efficiency and economy that all persons who are engaged in building or construction work, or

FACTORIES, 1928-29—*continued.*

of Employees in—

November.	December.	January.	February.	March.	April.	May.	June.
2,691	2,631	2,543	2,632	2,607	2,567	2,560	2,569
668	672	650	661	673	666	654	658
319	318	326	321	343	339	344	335
98	100	99	100	99	95	99	99
1,902	1,815	1,801	1,918	1,967	1,978	1,911	1,898
2,068	2,169	2,083	2,064	2,025	1,952	1,924	1,940
589	593	517	507	497	488	307	355
1,543	1,544	1,446	1,477	1,465	1,463	1,456	1,445
153	160	156	154	156	141	157	157
3,782	3,770	3,651	3,822	3,897	3,911	3,903	3,798
278	273	268	260	261	268	271	245
418	423	410	421	416	408	412	400
646	662	636	603	621	583	559	554
6,399	6,388	6,490	6,607	6,693	6,750	6,809	6,889
40	40	49	48	48	46	48	44
1,148	1,210	1,275	1,252	1,228	1,282	1,272	1,262

in work related thereto, should have as accurate data as possible in regard to the amount of such work which is being carried on.

A number of industries are associated with and to a large extent dependent on the building industry, and for this reason variations in the value of the annual production in such industry will exercise a material influence on the general prosperity of the community. Fluctuations in building operations are usually followed by corresponding fluctuations in general business and building statistics are therefore valuable as giving an indication of the possible future trend of such business.

Schedules were forwarded to Victorian builders in June, 1929, for information in regard to operations for the financial year 1928–29. Some difficulty was experienced in getting the names and addresses of builders, but the Melbourne organizations gave valuable assistance by supplying lists of their members. The names of all contractors for the State Savings Bank were obtained, and other sources of information were also utilized. Had a Bill to provide for the registration of builders, which had been prepared, become law, no difficulty would have been experienced.

The following is a summary of the main particulars collected. The number of returns from which the figures appearing in such summary have been compiled is 1,190.

BUILDING STATISTICS.

Value of building work done	£5,747,671
Value of jobbing and repair work ..	519,243
Total	6,266,914

BUILDINGS COMPLETED DURING 1928-29.

—	Number.	Value.
		£
Houses—		
Three rooms	73	27,003
Four rooms	836	544,785
Five rooms	1,952	1,628,794
Six rooms	357	430,824
Seven rooms	95	159,671
Over seven rooms	108	363,611
Business premises	..	1,403,005
Other buildings	..	491,351
Total	..	5,049,044