

## MUNICIPAL STATISTICS.

**Early legislation.** Amongst the various enactments which became law for Victoria on its separation from New South Wales, was a provision in the Imperial Act authorizing the Governor to incorporate the inhabitants of every county, to form districts for the purpose of local government, and to establish elective District Councils, with power to frame by-laws for making and maintaining roads, establishing schools, levying local tolls and rates, &c. Many of the provisions of the Act were found to be unworkable and expensive in the details, and the District Councils therefore discontinued their meetings and practical working under the Act. Improved legislation being required, an Act was passed in 1853, establishing a central Road Board for the whole Colony, with an Inspector-General and staff, and also providing for the creation of local Road Districts under the management of Road Boards. This Act made provision chiefly for local government in country districts, and the greater part of it remained in force until 1863, when it was repealed, and replaced by the Roads Districts and Shires Act. In the meanwhile suburban districts and towns were growing up, and in 1859 an Act was passed for the establishment of municipal institutions in Victoria. This Act also continued in force till 1863, when its chief provisions were merged into the Municipal Corporations Act. Further improvements and extensions have been made from time to time in the Acts dealing with local government, and it is now practically universal throughout Victoria, the whole area of the State (except French Island) being divided into urban or rural municipal districts. The former are called cities, towns, and boroughs, and the latter shires.

The laws relating to local government were amended and consolidated by the *Local Government Act* 1915. The councils of municipalities have power to levy rates, which, together with licence-fees, subsidies received from the State, market dues, rents, and sanitary charges, form their chief sources of income. Their principal functions are to make, maintain, and control streets, roads, bridges, ferries, culverts, sewers, drains, water-courses, and jetties within their respective boundaries; and, under proper by-laws, to control the traffic and regulate the markets, pounds, abattoirs, baths, and places of recreation; also to make arrangements for sewerage,

lighting, water supply, and carrying on of noxious trades, and to act as local Boards of Health.

Any portion of Victoria, not exceeding in area nine square miles, and having no point in such area distant more than six miles from any other point therein, which contains at least 500 inhabitant householders, and rateable property capable of yielding £300 per annum upon a rate of one shilling in the pound, may be constituted a borough. Any borough having during the preceding financial year a revenue of £10,000 may be declared a town; or, having a revenue of £20,000, may be declared a city. Any portion of Victoria containing rateable property capable of yielding £1,500 on a rate of one shilling in the pound may be constituted a shire. There are 51 cities, towns, and boroughs in Victoria, and 139 shires. The Governor in Council may unite any two or more boroughs which form one contiguous area so as to form one borough, notwithstanding that the area would exceed the limits above specified; may unite any number of municipalities, one of which is a shire, which form one contiguous area, so as to form one shire; and may sever any portion of a municipal district and attach it to another, annex an outlying district, subdivide any municipal district into any number of divisions not exceeding eight, alter the boundaries, or abolish the subdivisions.

**Townships.**

On petition by twenty-five ratepayers resident in any portion, not exceeding three square miles in extent, of any shire, and distant more than ten miles from the City of Melbourne, the Governor in Council may proclaim such portion a township.

**Municipal councillors.**

Each municipality existing at the commencement of the original Act, 29th December, 1854—now incorporated in the Act of 1915—is allowed the number of councillors then assigned to it; but in other cases the number must be some multiple of three, not less than six nor more than 24. The number is usually nine. If the district is subdivided, the number of councillors is three for each subdivision. If at any time in any municipality there is no council or there are not enough councillors to form a quorum, a commissioner may be appointed by the Governor in Council to exercise the powers of the council. Male persons liable to be rated in respect of property in the municipal district of the rateable annual value of £20 at least, whether consisting of one or more tenements, are qualified to hold the office of councillor. The election of councillors takes place annually. One-third of the councillors retire each year by rotation, but retiring councillors may be re-elected. The councillors elect their own chairman; who, in the case of cities, towns, and boroughs, is called the mayor; in the case of shires, the president.

**Municipal electors.**

Every person (male or female) 21 years of age or upwards, liable to be rated in respect of property within a municipal district, in respect of which all rates, made before 10th

March of the year, have been paid, shall be entitled to be enrolled as a voter. Plurality of votes is allowed upon the following scale :—

### IN CITIES, TOWNS, AND BOROUGHES.

Properties rated at an annual value of under £50	..	..	One vote.
"    "    "    "    £50 to £100	..	..	Two votes.
"    "    "    "    £100 and upwards	..	..	Three votes.

### IN SHIRES.

Properties rated at an annual value of under £25	..	..	One vote.
"    "    "    "    £25 to £75	..	..	Two votes.
"    "    "    "    £75 and upwards	..	..	Three votes.

No person may be enrolled in respect of property rated under £5 a year, unless there is a house on the property, and he resides there. The occupier and the owner are not to be both enrolled in respect of the same property, the former having the prior right of enrolment. Corporations liable to be rated may nominate not more than three persons to be enrolled in their stead, and joint occupiers and owners, not exceeding three, are each entitled to be enrolled. If there be more than three, then the three standing first on the last rate valuation or return are so entitled. The *Voting by Post Act* 1915 may be made applicable to the elections for any municipality on the petition of the councillors.

**Rateable property.** All land situated in a municipal district is rateable property except the following :—Crown lands; land used exclusively for commons, mines, public worship, mechanics' institutes, public libraries, cemeteries, primary free schools, and charitable purposes; land vested in or held by or in trust for any municipality, local governing body, or commissioners under the Water Acts; and land vested in fee in the Railways Commissioners, Minister of Public Instruction, Board of Land and Works, Harbor Trust Commissioners, and Melbourne and Metropolitan Board of Works. The expression "land" includes, of course, all buildings and improvements thereon. For the purpose of rating the valuation of property is computed at its net annual value, that is to say, at the rent at which the same might reasonably be expected to let from year to year, free of all usual tenants' rates and taxes, and deducting therefrom the probable annual average cost of insurance and other expenses (if any) necessary to maintain the property in a state of command such rent: provided that no rateable property shall be computed as of an annual value of less than £5 per centum upon the fair capital value of the fee-simple thereof. In the case of certain Crown lands, held for pastoral purposes only, the provision that the annual value

must not be less than 5 per cent. on the capital value does not apply, but the occupier is rated on the actual net annual value of the property.

Rates levied in municipal districts are of three kinds, viz.:—General, extra, and separate rates. General rates are levied at least once in each year by the council of every municipality, and shall not exceed in any one year 2s. 6d. in the pound of the net annual value, or be less than 6d. in the pound of such value. Every general rate is made and levied on the occupier of the property rated, or, if there be no occupier, or the occupier be the Crown or a public or local body, then upon the owner of the property. Extra rates may be levied in any one or more subdivisions of a district, on requisition by not less than two-thirds of the councillors for the subdivision, provided that both rates together in any subdivision do not exceed 2s. 6d. in the pound. Extra rates are levied on all properties alike in the subdivision; but, where any works or undertakings are for the special benefit of any particular portion of the municipal district, "a separate rate" may be levied, with the consent of a majority of the occupiers, and of one-third at least of the owners of the properties affected. The rates to be levied may be differential, according to the benefits to be received by different properties, and the amount of the rate must be such as will, in the opinion of the council, suffice to provide for the payment of interest, and periodical repayments of, or sinking fund for, the loan raised on the security of such rate.

Where under any Act a council is empowered to execute any work at the cost of the owners, or to require such owners to do so, a special improvement charge may be made on the properties affected, on the security of which money may be borrowed for the carrying out of such work.

Melbourne and Geelong—the latter of which for many years ranked next in importance to the metropolis—having been incorporated under special statutes prior to the establishment of municipal government on a large scale throughout the State, are not subject to the Local Government Acts, except in a few comparatively unimportant particulars. Melbourne was incorporated as a town in 1842, and was ordained a city in 1847. Geelong was incorporated as a town in 1849, and proclaimed a city in 1910.

**Amalgamation  
of  
Municipalities.**

Under the provisions of the *Local Government Acts Amendment Act 1914* the following municipalities were united from the 1st October, 1915:—

**BOROUGHS.**

Majorca, united with Shire of Tullaroop  
Carisbrook, united with Shire of Tullaroop  
Raywood, united with Shire of Marong  
Buninyong, united with Shire of Buninyong  
Browns and Scarsdale, united with Shire of Grenville  
Smythesdale, united with Shire of Grenville  
Tarnagulla, united with Shire of Bet Bet  
Malmsbury, united with Shire of Kyneton  
Talbot, united with Shire of Talbot.

**SHIRES.**

Epping, united with Whittlesea  
Mount Alexander, united with Newstead  
Meredith, united with Bannockburn  
Mount Franklin, united with Glenlyon  
Templestowe, united with Doncaster  
Merriang, united with Broadmeadows.

From the 31st May, 1916, the following municipalities were united:—

**BOROUGH.**

Chewton, united with Shire of Metcalfe.

**SHIRES.**

Lancefield, united with Romsey.  
Springfield, united with Romsey.

**New Municipality.** A portion of the Shire of Moorabbin was excised on 26th February, 1917, and constituted a separate municipality with the title of Borough of Sandringham.

**Municipalities: 1912-13 to 1916-17.** The total number of municipalities throughout the State in which local government was being administered at the end of the year 1916 was 190. Of these, 18 ranked as cities, 7 as towns, 26 as boroughs, and the remainder (139) as shires. The following is a summary of the estimated population, number of ratepayers, estimated number of dwellings (inhabited and

uninhabited), total and annual value of rateable property, and annual revenue of cities, towns, boroughs, and shires in each of the five years ended 1916-17.

MUNICIPALITIES : 1912-13 TO 1916-17.

Year.	Popula- tion.	Number of Rate- payers.	Estimated Number of Dwellings.		Estimated Value of Rateable Property.		Total Revenue.
			In- habited.	Un- inhabited.	Total.	Annual.	
<b>Cities, Towns, and Boroughs—</b>							
1912-13 ..	777,696	200,679			£ 127,743,501	£ 7,270,972	£ 1,259,569
1913-14 ..	802,479	203,773	173,646	2,895	137,649,219	7,790,654	1,320,545
1914-15 ..	825,078	209,276	180,410	3,725	147,205,224	8,218,040	1,378,006
1915-16 ..	824,170	208,759	182,445	3,293	149,235,137	8,335,553	1,407,021
1916-17 ..	829,368	213,520	184,417	3,377	154,105,571	8,537,302	..
<b>Shires—</b>							
1912-13 ..	583,909	173,271			160,128,933	8,152,473	840,080
1913-14 ..	600,431	175,637	152,654	3,748	164,268,467	8,255,505	854,433
1914-15 ..	608,828	181,480	134,349	3,530	167,405,523	8,517,938	827,466
1915-16 ..	617,587	184,374	137,799	3,619	169,724,979	8,606,509	847,206
1916-17 ..	618,896	187,894	138,801	3,196	172,309,539	8,732,116	..
<b>Total—</b>							
1912-13 ..	1,361,605	373,950			287,872,434	15,423,445	2,099,649
1913-14 ..	1,402,910	379,410	326,300	6,643	301,917,636	16,046,159	2,175,023
1914-15 ..	1,433,906	390,756	314,759	7,255	314,610,747	16,735,978	2,205,472
1915-16 ..	1,441,757	393,133	320,244	6,912	318,960,116	16,942,062	2,254,227
1916-17 ..	1,448,264	401,414	323,218	6,573	326,415,110	17,319,418	..

**Increases in  
value of  
rateable  
properties and  
municipal  
revenue.**

It will be observed from the following figures that there has been a very substantial increase in the estimated value of rateable property and in the revenue of municipalities during the period covered by the foregoing table :—

**INCREASE IN VALUE OF PROPERTIES AND IN MUNICIPAL REVENUE.**

	Increase.		
	1916-17 over 1912-13.		1915-16 over 1912-13.
	Estimated Value of Rateable Property.		Revenue from all sources.
	Total.	Annual.	
Cities, Towns, and Boroughs .. .. .	£ 26,362,070	£ 1,316,330	£ 147,452
Shires .. .. .	12,180,606	579,643	7,126
<b>Total Increase .. .. .</b>	<b>38,542,676</b>	<b>1,895,973</b>	<b>154,578</b>

The number of ratepayers returned for 1916-17 was 401,414, and the total capital value of rateable property £326,415,110, which is equivalent to about 18½ years' purchase on the basis of the annual value of £17,319,418.

Properties rated in municipalities.

The properties upon which the municipalities have levied rates during the past five years have steadily increased, as is shown in the following statement:—

NUMBER OF PROPERTIES RATED IN MUNICIPALITIES, 1912-13 TO 1916-17.

Year.	Properties Rated.		
	In Cities, Towns, and Boroughs.	In Shires.	Total.
1912-13	233,939	231,904	465,843
1913-14	240,077	247,923	482,000
1914-15	247,802	249,434	497,236
1915-16	248,100	255,958	504,058
1916-17	251,050	260,297	511,347

The following is a statement of the estimated population, number of ratepayers, total and annual value of rateable property, annual endowment payable by the Government, total revenue, and amount of rate levied in the £1 in each city, town, and borough in Victoria. The information relates to the municipal year, 1916-17, except as regards the item "revenue," which is for 1915-16:—

CITIES, TOWNS, AND BOROUGHES, 1916-17.

Name.	Estimated Population.	Number of Ratepayers.	Amount of General Rate levied in the £1.	Estimated Value of Rateable Property.		Total Revenue 1915-16.	Annual Endowment payable by the Government.
				Total.	Annual.		
<b>CITIES.</b>							
			s. d.	£	£	£	£
Ballarat	20,546	5,831	2 3	2,598,960	173,264	34,539	..
Bendigo	25,000	6,520	2 0	2,939,302	209,943	39,101	..
Brunswick	38,810	9,603	2 4	5,496,020	274,801	43,234	..
Camberwell	18,030	5,491	2 0	4,358,980	217,949	29,887	..
Caulfield	25,400	10,000	2 4	5,786,160	289,308	46,697	..
Collingwood	35,900	7,870	2 0	4,602,016	276,121	31,530	..
Essendon	31,850	9,020	2 0	4,958,900	247,945	29,937	..
Fitzroy	35,200	7,686	1 8	6,118,650	339,925	34,429	..
Footscray	29,920	6,318	2 4	4,452,900	222,645	43,275	..
Geelong	15,393	4,374	2 4	2,833,540	141,677	27,062	..
Hawthorn	23,170	6,334	2 0	5,797,080	289,854	32,355	..
Malvern	26,000	7,186	2 3	6,103,100	305,155	39,418	..
Melbourne	107,170	23,927	1 2	44,813,620	2,240,681	467,761	..
Northcote	25,120	6,800	2 3	3,427,400	171,370	35,852	..
Prahran	48,570	11,639	1 9	7,355,256	612,938	62,470	..
Richmond	41,000	9,221	2 1	5,868,504	326,028	39,991	..
South Melbourne	48,760	10,341	2 0	9,665,700	483,285	63,253	..
St. Kilda	31,420	7,043	2 0	4,698,480	391,540	44,838	..
<b>TOWNS.</b>							
Ballarat East	15,515	3,871	2 0	1,276,335	85,089	14,437	..
Brighton	18,000	3,890	2 3	3,747,780	187,389	23,799	..
Coburg	14,320	6,320	2 3	1,426,350	95,090	14,058	..
Kew	13,550	3,650	2 1	2,048,835	136,589	17,632	..
Port Melbourne	13,200	2,900	2 3	1,238,750	99,100	20,737	..
Warrnambool	7,400	1,608	2 0	1,190,440	59,522	20,973	..
Williamstown	13,200	6,200	2 3	1,958,400	130,560	18,198	..

## CITIES, TOWNS, AND BOROUGH—continued.

Name.	Estimated Population.	Number of Rate-payers.	Amount of General Rate levied in the £1.	Estimated Value of Rateable Property.		Total Revenue 1915-16.	Annual Endowment payable by the Government.
				Total.	Annual.		
<b>BOROUGHES.</b>							
			<i>s. d.</i>	£	£	£	£
Ararat ..	4,500	1,064	2 6	262,070	26,207	12,422	25
Castlemaine ..	5,650	1,650	2 0	456,787	38,543	6,114	25
Clunes ..	1,700	346	1 6	60,452	8,636	3,083	37
Creswick ..	2,100	591	1 9	80,210	8,021	2,455	38
Daylesford ..	1,820	796	2 3	279,600	18,644	3,957	25
Dunolly ..	1,150	330	1 6	60,540	6,054	1,102	25
Eaglehawk ..	7,500	1,950	2 0	388,728	32,394	7,045	25
Echuca ..	4,012	1,080	2 0	303,312	24,265	6,205	25
Geelong West ..	8,651	2,244	1 10	1,016,140	50,807	12,037	25
Hamilton ..	4,700	1,162	2 3	732,140	36,607	7,294	25
Horsham ..	3,550	790	2 6	448,800	26,400	6,460	50
Inglewood ..	1,260	330	1 6	77,760	6,480	1,782	25
Koroit ..	2,387	433	2 0	322,420	16,121	3,464	25
Maryborough ..	5,000	1,201	1 6	260,600	26,060	5,448	25
Newtown and Chilwell ..	6,900	1,696	1 9	873,600	43,680	5,259	25
Oakleigh ..	4,940	1,967	2 3	807,780	40,389	7,248	60
Portland ..	2,240	664	2 2	377,580	18,379	4,341	25
Port Fairy ..	2,000	487	2 0	289,000	14,450	4,061	25
Queenscliff ..	1,625	524	2 0	248,040	12,402	2,188	50
Rutherglen ..	1,300	375	1 6	112,560	11,256	2,241	40
Sale ..	3,519	960	1 9	400,200	20,010	8,187	25
Sebastopol ..	2,380	455	2 0	83,904	6,992	1,335	40
Stawell ..	4,410	900	2 3	197,310	19,731	7,235	25
St. Arnaud ..	3,900	988	1 9	367,880	18,394	2,963	25
Wangaratta ..	4,030	903	1 10	588,240	29,412	4,316	25
Wonthaggi ..	3,700	991	2 0	248,400	20,700	3,375	..
<b>Total</b> ..	<b>829,368</b>	<b>213,620</b>	<b>..</b>	<b>154,105,571</b>	<b>8,587,302</b>	<b>1,407,021</b>	<b>755</b>

Shires,  
1916-17.

The next table gives a list of the shires, and similar particulars to those shown for the cities, towns, and boroughs:—

## SHIRES, 1916-17.

Name.	Estimated Population.	Number of Rate-payers.	Amount of General Rate levied in the £1.	Estimated Value of Rateable Property.		Total Revenue 1915-16.	Annual Endowment payable by the Government.
				Total.	Annual.		
			<i>s. d.</i>	£	£	£	£
Alberton ..	5,300	1,236	1 3	1,679,220	83,961	7,706	706
Alexandra ..	3,000	752	1 3	898,040	44,902	4,114	393
Arapiles ..	2,713	682	1 0	837,280	41,864	2,554	154
Ararat ..	7,500	1,900	1 3	3,211,080	160,554	12,931	650
Avoca ..	4,000	1,470	1 3	800,520	40,026	3,444	243
Avon ..	2,900	780	1 0	800,020	40,001	2,407	293
Bacchus Marsh ..	3,150	720	1 6	830,880	41,544	3,982	206
Bairnsdale ..	8,500	1,950	1 0	1,996,420	99,821	10,195	714
Ballan ..	4,000	1,040	1 3	721,720	36,086	3,076	287
Ballarat ..	4,475	931	1 0	1,212,660	60,633	3,931	227
Bannockburn ..	3,050	805	1 0	1,065,780	53,289	4,506	288
Barrabool ..	2,070	455	1 4	752,900	37,645	3,317	213
Beechworth ..	6,000	1,400	1 4	846,980	28,915	7,159	273
Belfast ..	2,620	653	1 4	1,058,760	52,938	4,321	325



## SHIRES—continued.

Name.	Estimated Population.	Number of Rate-payers.	Amount of General Rate levied in the £1.		Estimated Value of Rateable Property.		Total Revenue 1915-16.	Annual Endowment payable by the Government.
			s.	d.	Total.	Annual.		
			s.	d.	£	£	£	£
Bellarine ..	4,820	1,796	1	3	1,037,800	51,890	3,977	243
Benalla ..	8,000	2,850	1	0	2,507,340	125,367	15,537	725
Berwick ..	7,500	2,500	1	6	1,630,240	81,512	7,882	500
Bet Bet ..	4,600	1,015	1	0	649,580	32,479	2,472	213
Birchip ..	1,900	525	1	0	1,035,540	51,777	3,888	200
Borong ..	6,000	1,390	1	0	2,519,080	125,954	9,677	540
Braybrook ..	2,200	2,200	1	3	1,016,580	50,829	6,158	160
Bright ..	5,400	1,400	1	3	707,620	35,331	3,956	375
Broadford ..	2,120	484	1	6	378,020	18,901	1,499	150
Broadmeadows ..	3,403	1,951	1	3	1,149,480	57,474	6,568	270
Bulla ..	2,600	418	1	3	612,600	30,630	3,636	175
Buln Buln ..	4,800	1,412	1	6	1,152,220	57,611	5,804	625
Bungaree ..	4,800	925	1	9	629,260	31,463	3,682	400
Buninyong ..	6,385	2,100	1	4	1,269,500	63,475	5,287	300
Charlton ..	3,350	733	1	0	1,056,660	52,833	4,811	275
Chiltern ..	2,997	825	1	0	453,000	30,200	2,416	196
Colac ..	14,500	3,260	1	3	5,273,540	263,677	23,791	600
Corio ..	3,045	963	1	6	1,374,140	68,707	7,439	350
Cranbourne ..	4,600	1,546	1	6	1,153,620	57,681	5,199	235
Creswick ..	5,000	1,074	1	0	1,103,440	55,172	3,882	388
Dandenong ..	7,000	4,420	2	0	1,491,200	74,560	13,785	262
Deakin ..	3,300	922	1	0	1,290,580	64,529	3,758	223
Dimboola ..	6,200	1,265	1	6	1,709,880	85,494	8,854	309
Donald ..	3,219	783	1	0	974,400	43,720	4,677	233
Doncaster ..	2,146	801	1	6	621,980	31,099	2,992	197
Dundas ..	3,350	1,162	1	0	2,032,820	101,641	5,865	525
Dumunkle ..	5,000	1,087	1	0	1,857,760	92,888	6,063	600
East Loddon ..	1,700	500	1	3	920,000	46,000	3,606	275
Eltham ..	3,575	1,405	1	6	770,540	38,527	4,223	210
Euroa ..	5,500	1,136	1	6	1,125,660	56,283	5,702	325
Fernfree Gully ..	5,000	2,400	2	0	961,560	48,073	6,173	450
Flinders ..	3,600	2,850	1	6	870,080	43,504	4,251	130
Frankton ..								
Frankton and Hastings ..	3,600	2,139	1	9	753,860	37,943	4,114	212
Glaborne ..	2,250	700	1	3	597,420	29,871	2,298	170
Glanalg ..	5,950	1,533	1	0	2,429,620	121,481	8,529	600
Glanlyon ..	5,378	1,178	1	3	325,020	32,502	2,524	227
Gordon ..	3,800	857	1	0	1,032,100	51,605	4,363	370
Goulburn ..	3,000	562	1	0	674,180	33,709	3,059	175
Gressville ..	5,995	1,660	1	3	718,440	47,896	4,420	302
Hampden ..	9,850	2,320	1	6	5,523,820	276,191	27,454	375
Healesville ..	2,100	860	2	0	458,260	22,913	3,300	240
Heidelberg ..	11,750	4,950	1	6	2,379,480	118,974	28,710	250
Heytesbury ..	5,000	1,176	1	6	1,713,260	85,663	7,992	550
Howqua ..	1,300	281	1	6	80,120	4,006	847	100
Huntly ..	3,500	994	1	0	908,780	45,489	3,188	200
Kara Kara ..	4,200	1,850	1	6	1,183,560	59,428	6,277	338
Karkaroc ..	5,500	1,310	1	0	2,324,840	114,242	8,866	475
Kellar ..	1,025	550	1	3	426,540	21,327	1,462	50
Kerang ..	9,300	2,358	1	0	3,003,840	150,192	12,781	500
Kilmore ..	2,000	545	1	6	204,840	20,484	2,230	137
Korong ..	6,300	1,396	1	6	1,088,300	54,415	4,845	325
Kowree ..	3,852	1,313	1	0	1,351,163	84,448	5,579	435
Kyneton ..	7,020	2,130	1	0	1,366,280	69,314	8,947	360
Lawliot ..	3,300	624	1	6	544,005	36,267	3,431	193
Leld ..	1,500	605	1	3	1,023,500	51,175	3,718	275
Lexton ..	1,900	584	1	0	803,360	40,413	3,073	200
Lilydale ..	6,650	2,775	1	9	1,388,800	69,480	8,725	400
Lowan ..	4,100	1,300	1	6	820,000	41,000	3,903	300
Maffra ..	4,250	1,090	1	0	1,451,460	72,573	6,356	500
Maldon ..	4,000	1,236	1	0	704,000	35,200	2,901	187
Manasfield ..	3,500	986	1	3	1,182,820	59,116	5,738	450
Marong ..	6,700	2,290	1	3	1,789,680	89,484	6,902	460
Melton ..	1,750	331	1	3	437,655	29,177	2,379	118
Metcalf ..	3,650	960	1	0	470,337	37,627	2,650	164

## SHIRES—continued.

Name.	Estimated Population.	Number of Rate-payers.	Amount of General Rate levied in the £1.	Estimated Value of Rateable Property.		Total Revenue 1915-16.	Annual Endowment payable by the Government.
				Total.	Annual.		
Mildura ..	6,750	1 432	8 4.	£ 1,386,100	£ 69,305	£ 11,835	£ 238
Minhamite ..	2,000	562	1 0.	1,330,480	66,524	5,001	325
Mirboo ..	1,350	351	1 6	483,740	24,187	2,360	350
Moorabbin ..	15,500	6,450	2 0	3,354,280	167,714	32,763	300
Mornington ..	1,000	777	1 9	447,480	22,374	3,563	115
Mortlake ..	2,912	683	1 3	2,200,660	110,033	8,385	350
Morwell ..	3,200	849	1 3	915,080	45,754	4,414	450
Mount Rouse ..	2,480	700	1 0	1,569,200	78,460	5,981	200
Mulgrave ..	2,558	935	2 0	567,480	28,374	3,486	225
McIvor ..	4,160	1,138	1 0	756,200	37,810	3,082	225
Narracan ..	5,400	1,335	1 6	1,281,740	64,087	6,592	650
Newham and Woodend ..	2,480	553	1 6	425,200	21,260	3,128	150
Newstead and Mount Alexander ..	4,450	1,019	1 0	529,320	26,466	2,147	168
Namurkah ..	6,750	1,582	1 0	2,451,640	122,582	9,348	600
Nunawading ..	9,846	3,720	2 2	1,937,080	96,854	13,600	475
Omco ..	3,200	1,470	1 6	853,180	42,659	5,248	850
Orbost ..	3,200	950	1 6	740,000	37,000	5,028	478
Oxley ..	4,670	1,034	1 0	1,078,920	53,946	3,226	375
Phillip Island and Woolamal ..	3,870	2,300	1 6	1,128,720	56,436	5,843	550
Peowong and Jeetho ..	7,500	1,537	1 3	1,832,000	91,600	10,082	1,000
Portland ..	5,300	1,980	1 0	1,729,420	86,471	5,743	500
Preston ..	7,590	3,418	2 0	1,178,920	58,946	10,821	325
Pyalong ..	1,150	345	1 6	422,480	21,124	2,371	115
Ripon ..	4,400	1,190	1 3	1,769,640	88,482	8,051	225
Rochester ..	5,307	1,574	1 0	1,267,400	63,370	5,680	250
Rodney ..	6,718	1,634	1 0	2,114,980	105,749	7,723	437
Romsey ..	3,750	889	1 3	1,265,600	63,280	4,436	307
Rosedale ..	4,000	1,100	1 0	1,545,580	77,279	5,440	544
Rutherglen ..	4,800	750	1 3	794,860	39,743	3,408	225
Seymour ..	4,100	1,111	1 0	828,500	41,425	4,164	425
Shepparton ..	8,300	1,702	1 0	2,149,300	107,465	10,514	475
South Barwon ..	3,000	1,315	1 9	570,920	28,546	3,222	139
South Gippsland ..	4,125	1,020	1 6	989,540	49,477	5,601	525
Stawell ..	3,698	1,230	1 3	1,455,800	72,790	5,931	312
Strathfieldsaye ..	3,800	1,080	1 3	476,760	23,838	2,298	139
Swan Hill ..	6,800	2,600	1 0	2,214,020	110,701	9,363	275
Talbot ..	2,000	630	1 3	476,220	23,811	2,476	135
Tambo ..	3,100	1,014	1 9	673,480	33,674	4,372	520
Towong ..	6,300	1,600	1 0	1,895,920	94,796	8,423	900
Traralgon ..	3,300	864	1 6	986,840	49,342	7,719	446
Tullaroop ..	4,536	1,339	1 0	495,330	33,022	2,695	209
Tungamah ..	5,568	1,562	1 0	1,768,220	88,411	7,013	450
Upper Yarra ..	3,500	1,069	2 4	528,260	26,413	2,863	225
Violet Town ..	3,000	690	1 0	765,380	38,269	2,306	225
Walhalla ..	2,000	383	2 0	45,864	5,733	1,071	285
Walpeup ..	3,025	1,452	1 0	1,397,560	60,878	5,535	..
Wangaratta* ..	2,700	802	1 0	656,840	32,842	2,364	148
Wannon ..	2,700	782	1 0	1,975,960	98,798	6,470	431
Warraga ..	4,800	1,315	1 0	1,655,860	82,793	6,122	375
Warragul ..	4,000	1,063	1 10	1,165,880	58,294	7,487	900
Warrnambool ..	8,700	2,012	1 0	3,888,400	194,420	14,608	690
Werribee ..	5,000	3,860	1 6	1,632,000	76,600	8,762	300
Whittlesea ..	3,620	1,002	1 3	968,160	48,408	4,336	230
Wimmera ..	4,250	1,040	1 0	1,637,460	81,873	5,787	365
Winehelea ..	4,350	1,370	1 3	1,476,540	73,827	6,171	425
Woodonga ..	2,100	588	1 3	500,660	25,033	2,608	171
Woorayl ..	4,495	1,239	1 9	1,335,300	66,765	8,090	1,050
Wycheproof ..	4,200	1,081	1 0	1,304,960	65,248	6,351	332
Yackandandah ..	4,000	980	1 3	757,620	37,881	3,238	358
Yarrowonga ..	3,310	802	1 0	756,230	37,814	5,280	285
Yea ..	2,520	720	1 6	880,700	44,035	3,427	382
Total ..	618,896	187,894	..	172,309,539	8,732,116	847,206	48,467

\* Formerly North Ovens.

The following is the number of cities, towns, and boroughs, and the number of shires in which rates were struck in each of the last five years at the amounts set down in the first column:—

RATINGS IN MUNICIPALITIES, 1912-13 TO 1916-17.

Amount levied in the £1.	Number of Cities, Towns, and Boroughs.					Number of Shires.				
	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.	1912-13.	1913-14.	1914-15.	1915-16.	1916-17.
s. d.										
1 0	6	6	6	..	..	68	60	67	58	53
1 1	1	1	..	..	..	..	..	..	1	..
1 2	..	..	1	1	1	..	..	..	..	..
1 3	2	1	1	2	..	38	39	39	38	33
1 4	..	..	..	..	..	2	3	2	2	4
1 6	11	11	10	4	5	26	31	25	26	31
1 7	..	..	..	..	..	..	..	..	1	..
1 8	2	2	2	2	1	..	..	..	..	8
1 9	6	3	3	4	5	7	8	7	7	8
1 10	..	..	..	..	2	..	..	..	..	1
2 0	19	22	22	19	17	5	5	6	7	7
2 1	2	2	1	2	2	..	..	..	..	..
2 2	..	..	1	1	1	..	..	1	1	1
2 3	8	8	10	11	11	..	..	..	..	..
2 4	1	2	2	4	4	..	..	..	..	..
2 6	3	3	2	2	2	1	1	..	..	1
Total ..	61	61	61	52	51	147	147	147	141	139

These figures give an average rating of 1s. 10½d. in the £1 in cities, towns, and boroughs, and of 1s. 3d. in shires. The rating in the urban districts is thus shown to be over 7d. in the £1 more than in the rural districts. It will be observed that no municipality during the last five years imposed the minimum rate allowed by law, viz., 6d., but that several reached the maximum of 2s. 6d. in the £1.

The following return shows the proportion of properties at different rateable values at the different rateable values at three dates. It will be seen that there was very little alteration in the eight years intervening between the first and last dates:—

PROPORTION OF PROPERTIES AT DIFFERENT RATEABLE VALUES, 1901-2, 1905-6, AND 1909-10.

Rateable Values.	Number of Properties in every 100 Rated.								
	In Cities, Towns, and Boroughs.			In Shires.			In Victoria.		
	1901-2.	1905-6.	1909-10.	1901-2.	1905-6.	1909-10.	1901-2.	1905-6.	1909-10.
Under £25 ...	72.6	72.9	70.1	63.1	64.6	63.9	67.8	68.8	67.0
£25 to £50 ...	18.3	18.0	20.3	23.4	20.6	18.8	20.9	19.3	19.5
£50 " £75 ...	4.2	4.2	4.9	5.6	6.2	7.3	4.9	5.2	6.1
£75 " £100 ...	1.7	1.8	1.5	3.5	3.5	3.5	2.6	2.6	2.5
£100 " £200 ...	2.0	2.0	2.0	3.1	3.6	4.6	2.5	2.8	3.3
£200 " £300 ...	.6	.5	.5	.6	.7	1.0	.6	.6	.8
£300 " £400 ...	.2	.2	.2	.2	.3	.3	.2	.2	.3
£400 " £500 ...	.1	.1	.1	.1	.1	.2	.1	.1	.1
£500 and upwards	.3	.3	.4	.4	.4	.4	.4	.4	.4

Municipal  
revenue and  
expenditure.

The ordinary revenue and expenditure for each of the last three financial years was as follows:—

REVENUE AND EXPENDITURE OF MUNICIPALITIES,  
1914 TO 1916.

Sources of Revenue.	1914.	1915.	1916.
Taxation—	£	£	£
Rates	1,251,649	1,277,063	1,346,439
Licences	108,106	104,634	105,772
Dog Fees	21,807	20,158	20,528
Government Endowment and Grants	144,374	140,545	74,372
Contributions for Streets, Footpaths, &c.	63,260	52,472	52,045
Market and Weighbridge Dues	70,620	63,646	63,812
Sanitary Charges	83,982	85,971	91,125
Rents	76,803	72,133	59,006
Other Sources	354,427	388,850	441,128
Total	2,175,028	2,205,472	2,254,227
Heads of Expenditure.			
Salaries, &c.	192,066	199,872	206,353
Sanitary Work, Street Cleansing, &c.	206,271	225,919	236,766
Lighting	89,926	93,381	95,420
Contributions to Fire Brigades	28,361	30,277	32,086
Public Works—			
Construction	315,480	274,593	238,773
Maintenance	814,459	811,608	847,505
Formation of Private Streets, &c.	70,465	62,012	68,024
Redemption of Loans	80,576	92,738	101,461
Interest on Loans	239,737	252,912	262,760
Charities	18,026	19,406	18,801
Other Expenditure	151,613	174,945	180,018
Total	2,206,980	2,237,663	2,287,967

As compared with 1915, the revenue of 1916 increased by £48,755, as follows:—Rates increased by £69,376, sanitary charges by £5,154, licences by £1,138, dog fees by £370, market and weighbridge dues by £166, and “other sources” by £52,278. The revenue from contributions for streets, footpaths, &c., decreased by £427; Government endowment and grants by £66,173; and rents by £13,127. The expenditure was in excess of the amount for the previous year by £50,304. The following items showed increases:—Salaries, £6,481; sanitary work and street cleansing, £10,847; lighting, £2,039; contributions to Fire Brigades, £1,809; public works maintenance, £35,897; formation of private streets, £6,012; redemption of loans, £8,723; interest on loans, £9,848; and other expenditure, £5,073. There were decreases under the headings of public works construction, £35,820; and charities, £605.

Sixty per cent. of municipal revenue in 1916 was derived from rates, 5 per cent. from licences of all kinds, 3 per cent. from market and weighbridge dues, 1 per cent. from dog fees, 3 per cent. from Government endowments and grants, 2 per cent. from contributions for streets, footpaths, &c., 4 per cent. from sanitary charges, 3 per cent. from rents, and 19 per cent. from all "other sources."

**Salaries.** In 1916 the salaries of the municipal officers amounted to £206,353, or 9 per cent. of the entire revenue.

**Local charities.** A sum of £18,801, or less than 1 per cent. of the revenue, was devoted to the local charities; the greater part of this disbursement was in aid of hospitals, benevolent asylums and associations, and orphan asylums.

**Assets and liabilities of municipalities.** The assets of the municipalities are shown under three heads—(1) Municipal Fund, (2) Loan Fund, (3) Property; and the liabilities under two heads—(1) Municipal Fund, (2) Loan Fund.

MUNICIPAL ASSETS AND LIABILITIES, 1914 TO 1916.

Assets.	1914.	1915.	1916.
	£	£	£
<b>Municipal Fund—</b>			
Uncollected Rates ... ..	120,200	147,886	146,491
Other Assets ... ..	652,530	760,685	392,876
<b>Loan Funds—</b>			
<b>Sinking Funds—</b>			
Amount at Credit ... ..	878,322	839,951	792,445
Arrears Due ... ..	1,327	1,326	834
Unexpended Balances ... ..	351,923	378,278	209,363
<b>Property—</b>			
Halls, Buildings, Markets, &c. ...	3,799,038	3,863,556	3,750,947
Waterworks ... ..	180,485	175,267	177,050
Gasworks ... ..	103,435	99,107	105,124
<b>Total Assets</b> ... ..	<b>6,087,260</b>	<b>6,266,056</b>	<b>5,575,130</b>
Liabilities.	1914.	1915.	1916.
	£	£	£
<b>Municipal Fund—</b>			
Due on Current Contracts ... ..	74,451	71,729	73,005
Arrears due to Sinking Funds ... ..	1,327	1,326	834
Overdue Interest ... ..	19,771	13,776	14,456
Bank Overdrafts ... ..	206,694	213,330	252,130
Other Liabilities ... ..	356,884	410,576	221,183
<b>Loan Funds—</b>			
Loans Outstanding ... ..	5,617,056	5,739,084	5,869,260
Due on Loan Contracts ... ..	69,181	237,765	15,888
<b>Total Liabilities</b> ... ..	<b>6,345,364</b>	<b>6,687,586</b>	<b>6,446,756</b>

**Municipal  
assets and  
liabilities  
compared.**

The total assets of municipalities in 1916 amounted to £5,575,130, and the total liabilities to £6,446,756. The aggregate of the current liabilities (Municipal Fund) was £561,608, against which there were assets amounting to £539,367. The gross liability on account of loan expenditure for works completed and in progress was £5,885,148, which, after deducting sinking funds and unexpended balances, was reduced to £4,882,506. If credit were taken for the value of municipal properties in markets, halls, buildings, gasworks, electric light works, waterworks, &c. (£4,033,121), the net burden on account of loan moneys would be £849,385.

The valuation of municipal properties is probably an underestimate, as the particulars furnished under this heading were not in every case complete.

**Endowment of  
municipalities.** An annual endowment to municipalities of £310,000 was authorized by the *Local Government Act* 1874, and it ceased to be payable in 1879. A subsidy, however, in lieu of such endowment, amounting to £310,000, was voted by Parliament annually, and this vote was gradually increased until £450,000 was reached in 1889-90 and 1890-91. Under the *Local Government Act* 1891, £450,000 was provided as an annual endowment for the municipalities. This amount was reduced to £405,000 per annum from 1st January, 1893; to £310,000 from 1st July, 1893; to £100,000 from 1st July, 1894; and to £50,000 from 1st July, 1902. Under Act No. 2025 it was increased to £75,000 for the year 1906-7, and from the 1st July, 1907, it was increased under Act No. 2129 to £100,000. Payments were made on the basis of this amount to 30th June, 1915, but for the financial years 1915-16 and 1916-17 it was reduced to £50,000 under the authority of Acts Nos. 2805 and 2872. The endowment is payable in equal moieties in March and September of each year, and no city or town is entitled to receive any part of it. The distribution amongst the boroughs and shires is based on the amount of general and extra rates received in the twelve months ended on the last day of September next preceding the financial year 1907-8, according to the following scale :—

To every borough or first-class shire	..	3s. in the £1	
„ second-class shire	..	5s.	„
„ third-class shire	..	6s.	„
„ fourth-class shire	..	8s.	„
„ fifth-class shire	..	10s.	„
„ sixth-class shire	..	12s.	„

### RATING ON UNIMPROVED VALUES BY MUNICIPALITIES.

**Rating on unimproved values.** An Act was passed by the State Parliament on 3rd February, 1914, to provide for optional rating by municipalities on the basis of the unimproved values of rateable property. This measure does not come into operation until proclaimed by the Governor in Council, which proclamation may be made when the values of land made by assessors in the various parts of the State under the *Land Tax Act* 1910 are available for adoption.

Any municipality may adopt the method of rating set forth in the Act, but two months before doing so must publish in the *Government Gazette* and twice in some newspaper circulating in the district a notice of its intention to take such course. If one-tenth of the ratepayers in writing demand a poll the proposal must be submitted by the council to the ratepayers, and it shall not be deemed to be carried unless affirmed by a majority of the valid votes recorded, and unless the number of valid votes recorded forms at least one-third of the number of persons on the roll. Where a council of a municipality has not published a notice that it intends to adopt the Act one-tenth of the ratepayers may demand a poll. If a proposal is adopted or rescinded it cannot be again submitted to the ratepayers for three years. Special properties such as railways, tramways, waterworks, hydraulic works, electric light and power works, gas works, and any undertaking extending continuously beyond the boundaries of any municipal district which is subject to more than one separate valuation, although there is no actual separation of the different parts of the property, are not rateable on unimproved values.

### WORKERS' DWELLINGS.

**Workers' dwellings.** An Act to enable municipal councils to provide workers' dwellings was passed by the State Parliament in February, 1914.

The houses are to be leased to persons who are not owners of dwelling houses in Victoria or elsewhere and who are not in receipt of incomes of more than £200 a year. Sub-letting by tenants is not permitted. In fixing rents of dwelling houses account is to be taken of interest, depreciation, rates, repairs, and insurance. Before constructing new houses plans showing the classes of houses to be built are to be submitted for the approval of the Governor in Council. The amount that may be borrowed for the purposes of the Act by any one municipality is not to exceed £50,000. Power is given to increase the general rate

to recoup advances from the municipal fund, but so far as practicable all advances are to be repaid out of the profits accruing from transactions under the Act. Once in every year a balance-sheet has to be prepared showing receipts and expenditure relating to all operations undertaken during the previous year; also assets and liabilities.

### **COUNTRY ROADS BOARD.**

**Country Roads Board.** With the object of improving the main roads of the State an Act was passed on 23rd December, 1912 (Consolidated Act No. 2635), which empowers the Governor in Council to appoint a board to consist of three members. The chairman is to be paid an annual salary not exceeding £800, and each of the other members a salary not exceeding £600.

**Duties.** The duties of the board are to ascertain by survey and investigation what roads are main roads; the nature and extent of the resources of Victoria in metals, minerals, and materials suitable for the purposes of road-making and maintenance, and the most effective and economical methods of dealing with the same, and of supplying and utilizing the material in any part of Victoria; the most effective methods of road construction and maintenance; what deviations (if any) in existing roads or what new roads should be made so as to facilitate communication and improve the conditions of traffic; and to record, publish, and make available for general information the results of all such surveys and investigations. The duty of furnishing information that may be required is imposed on the municipal authorities.

The construction of permanent works and the maintenance of main roads are likewise to be carried out by the municipalities to the satisfaction of the board, but power is reserved to the Governor in Council to direct that permanent works and maintenance shall be carried out by the board.

**Finance.** For the purpose of making permanent works, power is given to the Governor in Council to issue stock or debentures to the amount of £400,000 a year for five years, and the principal and interest are a charge upon the Consolidated Revenue of the State. The money so raised is to be placed to the credit of an account to be called "the Country Roads Board Loan Account," which will be debited with all payments made by the Treasurer towards the cost of permanent works. A sinking fund of 1 per cent. per annum on half the amount borrowed is authorized to be paid out of the Consolidated Revenue until half the amount borrowed is redeemed. The total cost of the works, in the first instance, is to be paid by the Treasury, but subsequently half the amount expended



is to be refunded by the municipalities affected. In the case of expenditure on permanent works, an annual payment to the Treasurer of 6 per cent. on the amount due by each municipality is provided for, and the cost of maintenance, allocated to each municipality, must be paid out of the municipal fund before the 1st July in each year. A special rate not to exceed 6d. in the £1 on the net annual value of rateable property, to meet the cost of permanent works and maintenance, may be levied in any ward or riding of a municipality as the council may direct. In the event of default of payment by a municipality the board may levy a rate to meet the amount owing. All fees and fines paid under the Motor Car Act, all moneys standing to the credit of the Municipal Fees and Fines Trust Fund, all fees paid on the registration or renewal of the registration of traction engines, and all fees received by the Crown after the 30th June, 1912, under the *Unused Roads and Water Frontages Act 1903* (incorporated in the *Local Government Act 1915*), are to be credited to the Country Roads Board Fund.

Since the appointment of the Board in March, 1913, the members have inspected the principal highways throughout the State. Every Shire Council and Borough Council, with which the Board is likely to have dealings relating to the construction or maintenance of roads declared main roads under the Act, has been interviewed and the provisions of the Act have been explained to it.

During the year 1915-16, constructional work to the value of £464,787, and maintenance work involving an expenditure of £98,878, were undertaken.

A system for the continuous maintenance of all main roads is also gradually being evolved, by which it is hoped that those that are now being constructed or reconstructed will be kept in good condition, while those that are in a fair state of efficiency will be kept up to that standard.

As soon as practicable after the termination of each year the board must present a report to the Minister setting forth its proceedings, the permanent works constructed, the mileage of the roads maintained, and an account of all moneys received and expended under the provisions of the Act.

The rates of fees on registration or renewal of registration of motor cars, motor cycles, and traction engines are as follows:—The owners of motor cycles must pay an annual registration fee of 5s.; of traction engines, £3 3s.; and of motor cars, £1 1s. to £6 6s., according to the horse-power of the vehicles.

Registration  
of motors,  
&c.

Ordinary revenue and expenditure.

The following is a statement of the revenue and expenditure during 1915-16 of the fund established under the Country Roads Act:—

COUNTRY ROADS BOARD FUND.

STATEMENT OF REVENUE AND EXPENDITURE FOR THE YEAR ENDED 30TH JUNE, 1916.

Revenue.		Expenditure.	
£ s. d.	£ s. d.	£ s. d.	£ s. d.
Balance 1st July, 1915 .. ..	89,955 16 1	Maintenance Works .. ..	48,785 0 6
Motor Car Act No. 2237—			
Registration Fees .. ..	29,739 17 0	Maintenance Works .. ..	1,884 7 1
Licence Fees .. ..	2,674 6 6	Less Half Cost, to be borne by Fund .. ..	692 3 7
Fines .. ..	2,336 3 6		692 3 6
	44,750 7 0	Interest overcharged written back .. ..	1 9 0
Less Refunds and Costs of Administration .. ..	3,214 11 0	Interest on Permanent Works Postponed now Apportioned .. ..	2 15 10
	41,535 16 0	Investigation Survey .. ..	30 0 0
Unused Roads and Water Frontages Act No. 1894—		Quarry Sites .. ..	455 5 0
Licence Fees .. ..	20,753 16 0	Metal and Quarry Investigation .. ..	7 4 0
Less Refunds and Costs of Administrations .. ..	1,166 8 1		492 9 0
	19,587 7 11	Interest on Loans .. ..	12,858 6 4
Country Roads Act No. 2415—		Contributions to Sinking Fund .. ..	4,119 8 9
Traction Engine Licences .. ..	1,154 18 0		16,477 15 1
Forfeited Deposits .. ..	341 3 2	Office Furniture .. ..	89 3 5
Plant Earnings .. ..	4,952 10 4	Postages and Telegrams .. ..	221 12 7
Less Working Costs .. ..	2,981 6 8	Motor Expenses .. ..	431 18 3
	1,971 3 8	Printing, Stationery, &c. .. ..	878 2 6
Materials, Sale of .. ..	71 19 5	Salaries .. ..	7,485 2 2
Plans .. ..	42 10 6	Stores, Transport, &c. .. ..	81 12 1
Penalties on Contracts .. ..	21 0 0	Surveying Instruments .. ..	16 13 11
Contributions, Victorian Railways, on account Neerim Road, Shire of Buln Buln .. ..	93 12 6	Travelling Expenses .. ..	399 12 6
		Wages .. ..	261 1 2
Interest accrued on Apportionments, postponed (Act No. 2607) .. ..	4,396 4 0	Plant Purchase .. ..	4,109 9 0
		Plans, Purchase of .. ..	121 7 0
Permanent Works—		Insurance of Employees (Workers' Compensation Act) .. ..	77 16 0
Contributions payable by Municipalities .. ..	12,847 5 2	Storeyard .. ..	78 0 2
		Office Expenses .. ..	144 2 3
		Compensation Claim .. ..	3 10 0
		Balance .. ..	14,349 3 0
			91,223 0 6
	£172,023 16 5		£172,023 16 5

Loan receipts and expenditure.

The expenditure out of loan money on the construction of permanent works for the year ended 30th June, 1916, is shown below:—

COUNTRY ROADS BOARD LOAN ACCOUNT FOR YEAR ENDED 30TH JUNE, 1916.

Receipts.			Expenditure.		
	£	s. d.		£	s. d.
To Balance .. .. .	7,424	19 9	By Permanent Works .. .. .	464,737	2 11
„ Proceeds of Loans .. .. .	553,650	0 0	„ Temporary Advance — Country Roads Board Fund refunded ..	74,135	15 7
„ Advance from Country Roads Board Fund .. .. .	44,725	6 8	„ Balance .. .. .	66,907	7 11
Total .. .. .	£605,830	6 5	Total .. .. .	£605,830	6 5

LICENSING FUND.

Licensing fund.

The following is a statement of the receipts and expenditure of the Licensing Fund for the year ended 30th June, 1916:—

LICENSING FUND.—RECEIPTS AND EXPENDITURE, 1915-1916.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
Voted from Revenue	10,000	0 0	Expenses of officers carrying out the Licensing Act .. .. .	7,029	8 5
Licences .. .. .	74,674	18 1	Equivalent to municipalities (see succeeding table) .. .. .	75,154	0 0
Fees .. .. .	2,090	3 6	Transferred to Police Superannuation Fund under section 313 of Act No. 2683	23,422	15 9
Fines .. .. .	4,417	8 6			
Sale of confiscated liquor .. .. .	50	11 1			
Club certificates and percentage fees .. .. .	1,361	1 1			
Permits .. .. .	1,370	0 0			
Expenses of holding extended annual sitting of court .. .. .	12	5 0			
Compensation assessments .. .. .	11,629	16 11			
	£105,606	4 2		£105,606	4 2

**Licence fees.** In addition to the endowment of £50,000 the municipalities received from the Government in 1915-16 a sum of £75,154 out of the Licensing Fund, under Act No. 2683, Section 313, this being the equivalent for (1) fees for licences; (2) fees for the registration of brewers and spirit merchants; and (3) fines, penalties, and forfeitures incurred under the *Licensing Act* 1915. The particulars of this payment are as follows:—

#### EQUIVALENT FOR LICENCE FEES, ETC., 1915-16.

	£	s.	d.
Paid to Cities ... ..	32,093	0	0
" Towns ... ..	4,795	0	0
" Boroughs ... ..	9,407	0	0
" Shires—			
1st Class ... ..	288	0	0
2nd " ... ..	12,464	0	0
3rd " ... ..	10,137	0	0
4th " ... ..	773	0	0
5th " ... ..	3,400	0	0
6th " ... ..	1,519	0	0
Total ... ..	£74,876	0	0
Add payments on account of 1914-15 ... ..	278	0	0
Amount paid in 1915-16 ... ..	£75,154	0	0

#### MUNICIPAL LOANS.

In connexion with loans raised by municipalities, Section 375 of the *Local Government Act* 1915 provides that, when any municipality incurs a loan and the debentures are payable in different years, the Council shall obtain from the Auditor-General a certificate, in writing, that the amounts proposed to be provided in each year will be sufficient to pay all principal moneys and interest as they fall due. The repayments of principal have to be so provided for, that each year of the currency of the loan shall bear its full share towards liquidation.

Councils may borrow for not more than 40 years upon the credit of the municipality for permanent works or undertakings or to liquidate moneys owing on account of any previous loan.

The amount of money borrowed by any municipality is not to exceed ten times the average income of the municipality for the previous three years from general rates not exceeding 1s. 6d. in the £1. But, in addition, loans having a currency of not more than 30 years may be raised upon the security of certain income and not upon the credit of the municipality, by the issue of debentures or by mortgage. These loans are not to exceed five times the average amount of such income.

Municipal indebtedness.

The total loan indebtedness of the municipalities at the end of their financial year was £5,869,260, due to the Government and the public respectively as follows:—

MUNICIPAL INDEBTEDNESS, 1916.

		Due to the Government.	Due to the Public.
		£	£
Cities, Towns, and Boroughs	...	362,714	4,573,089
Shires	... ..	141,751	791,706
Total		504,465	5,364,795
		5,869,260	

Municipal loan receipts and expenditure.

The succeeding statements show the loan receipts and expenditure:—

MUNICIPAL LOAN RECEIPTS AND EXPENDITURE, 1916.

	Cities, Towns, and Boroughs.	Shires.	Total.
	£	£	£
Receipts during the year	430,581	69,781	500,312
Balance unexpended from previous year	228,218	30,547	258,765
Expenditure during the year	472,337	77,377	549,714
Balance unexpended at the end of 1916	186,462	22,901	209,363

Municipal loan expenditure 1912 to 1916.

The municipal expenditure of loan moneys during the year 1916 amounted to £549,714, of which £472,337 was spent by cities, towns, and boroughs, and £77,377 by shires.

MUNICIPAL LOAN RECEIPTS AND EXPENDITURE: RETURN FOR FIVE YEARS.

Year.	Receipts.	Expenditure.
	£	£
1912	284,234	311,956
1913	276,544	407,477
1914	573,291	343,661
1915	460,228	439,973
1916	500,312	549,714

Loans raised  
by municipal-  
ities,  
1916.

The loan receipts for the year amounted to £500,312, of which £183,548 was obtained from the Government. The unexpended balance of loan moneys at the end of the year 1915-16 was £209,363—£186,462 to the credit of cities, towns, and boroughs, and £22,901 to the credit of shires. The following are the particulars:—

### LOANS TO MUNICIPALITIES, 1916.

	Loans from—		Unexpended Balance of Loan Moneys.
	Government.	Public.	
CITIES, TOWNS, AND BOROUGHS—	£	£	£
Ararat .. .. .	2,167	..	..
Ballarat .. .. .	14,500	..	..
Ballarat East .. .. .	6,450	..	338
Bendigo .. .. .	..	..	3,768
Brighton .. .. .	8,250	..	..
Brunswick .. .. .	..	..	3,687
Camberwell .. .. .	2,590	..	1,135
Castlemaine .. .. .	300	..	85
Caulfield .. .. .	14,800	..	1,849
Coburg .. .. .	1,040	4,000	575
Collingwood .. .. .	..	..	917
Dunolly .. .. .	..	..	66
Echuca .. .. .	1,500	..	385
Essendon .. .. .	400	..	987
Fitzroy .. .. .	..	..	876
Footscray .. .. .	2,500	..	..
Geelong .. .. .	5,000	..	1,484
Hawthorn .. .. .	1,500	9,000	17,108
Kew .. .. .	..	7,000	8,706
Malvern .. .. .	..	..	15,596
Maryborough .. .. .	..	..	365
Melbourne .. .. .	50,000	229,614*	85,753
Newtown and Chilwell .. .. .	2,500	..	..
Northcote .. .. .	2,870	..	..
Oakleigh .. .. .	400	..	..
Portland .. .. .	..	1,100	502
Port Melbourne .. .. .	..	..	6,644
Prahran .. .. .	..	6,000	9,550
Queenscliff .. .. .	..	..	129
Richmond .. .. .	5,000	12,000	1,082
South Melbourne .. .. .	5,000	..	8,155
St. Arnaud .. .. .	..	..	183
St. Kilda .. .. .	6,000	..	4,372
Warrnambool .. .. .	1,100	..	..
Williamstown .. .. .	7,500	20,500	12,165
Total .. .. .	141,387	289,214	186,462

\* Amount transferred from Electric Supply Depreciation and Renewals Fund to Loan and Capital Accounts.

## LOANS TO MUNICIPALITIES, 1916—continued.

	Loans from—		Unexpended Balance of Loan Moneys.
	Government.	Public.	
SHIRES—	£	£	£
Alexandra .. .. .	900	..	..
Avoca .. .. .	615	..	..
Ballarat .. .. .	..	..	672
Beechworth .. .. .	..	..	59
Bet Bet .. .. .	1,205	..	..
Borong .. .. .	..	100	..
Bright .. .. .	390	..	144
Buninyong .. .. .	1,500	..	..
Corio .. .. .	..	2,000	606
Dandenong .. .. .	..	1,500	428
Dimboola .. .. .	1,000	5,500	..
Doncaster .. .. .	..	2,750	11
Eltham .. .. .	3,000	..	1,501
Ferntree Gully .. .. .	..	..	326
Glenelg .. .. .	1,500	..	..
Heidelberg .. .. .	..	..	9,553
Huntly .. .. .	..	..	1,099
Keilor .. .. .	..	..	16
Korong .. .. .	1,380	..	..
Kyneton .. .. .	1,342	..	20
Lexton .. .. .	1,600	..	..
Lillydale .. .. .	..	..	228
Mansfield .. .. .	1,200	300	..
Melton .. .. .	..	..	200
Mildura .. .. .	800	..	244
Moorabbin .. .. .	5,000	..	..
Mulgrave .. .. .	1,000	..	..
Nunawading .. .. .	6,183	2,350	..
Phillip Island and Woolamai .. .. .	..	..	167
Poowong and Jeetho .. .. .	..	700	58
Preston .. .. .	3,000	..	1,037
Ripon .. .. .	2,100	..	6
Rodney .. .. .	..	2,500	77
Romsey .. .. .	500	..	..
Rutherglen .. .. .	..	350	350
Shepparton .. .. .	1,000	2,500	1,279
South Barwon .. .. .	691	..	135
Tungamah .. .. .	..	..	27
Upper Yarra .. .. .	..	..	237
Warragul .. .. .	200	..	..
Werribee .. .. .	..	1,000	105
Whittlesea .. .. .	5,700	..	1,843
Wycheproof .. .. .	375	..	..
Yea .. .. .	..	6,000	2,473
Total .. .. .	42,181	27,550	22,901

### RECEIPTS AND EXPENDITURE OF THE CITIES OF MELBOURNE, BALLARAT, AND BENDIGO.

Particulars of the receipts and expenditure for 1916 of the City of Melbourne and of the principal cities in the country—Ballarat and Bendigo—are given in the following statements:—

Of the total revenue of the City of Melbourne in 1916, about 32 per cent. was derived from rates, 40 per cent. from the sale of electric light, 8 per cent. from the rental of city property—chiefly markets, and shops—7 per cent. from market and weighbridge fees, 5 per cent. from licences, and 8 per cent. from other sources. For public works maintenance, such as roads and bridges, markets, abattoirs, &c., about 24 per cent. of the total expenditure was incurred; for interest on loans and on bank overdraft and expenses of paying interest, 19 per cent.; for payments to sinking funds and repayment of loans, 6 per cent.; for electric supply, 27 per cent.; for lighting, 4 per cent.; for street cleansing, 9 per cent.; for salaries, allowances, and commissions, 6 per cent.; and for miscellaneous expenditure, 5 per cent.

#### CITY OF MELBOURNE : REVENUE AND EXPENDITURE, 1916.

Heads of Revenue.	Amount.
Rates—	£
General .. .. .	130,646
Lighting .. .. .	18,666
Licences—	
Publicans'—Equivalent for—From Licensing Act .. .. .	11,576
Abattoirs—Slaughtering Dues and Meat Supervision Fees .. .. .	10,855
Drays, Hackney Carriages, Trams, and Motors .. .. .	1,814
Other Licences .. .. .	383
Fees under Dog Act .. .. .	949
City Baths .. .. .	3,361
Market and Weighbridge Fees .. .. .	30,381
Lighting—Sale of Electric Current and Rent of Meters, &c. .. .. .	189,507
Fines and Costs .. .. .	2,258
Rents—	
Markets and Weighbridges .. .. .	32,412
Town Hall Premises and Rooms .. .. .	3,144
Other .. .. .	1,368



CITY OF MELBOURNE: REVENUE AND EXPENDITURE, 1916—  
continued.

Heads of Revenue.	Amount.
	£
Interest on Fixed Deposits, &c. .. .. .	10,391
Miscellaneous—	
Desiccators .. .. .	6,141
Public Conveniences, &c. .. .. .	4,984
Fees under Building Act .. .. .	1,057
Sundries .. .. .	7,871
Total .. .. .	467,761
Heads of Expenditure.	Amount.
	£
Salaries (including clerical assistance, expenses of audit, collection of statistics, making valuation, and commissions paid in lieu of salaries, &c.) .. .. .	26,460
Allowance to Lord Mayor .. .. .	1,500
Closet Cleansing and Sanitary Works .. .. .	157
Street Cleansing, &c. .. .. .	40,278
Lighting—Electric and Gas .. .. .	21,000
Fire Brigades Board—Contribution .. .. .	7,989
Public Works—Maintenance—	
Roads and Bridges .. .. .	62,882
Markets and Weighbridges .. .. .	13,820
Public Buildings (including Abattoirs, Baths, &c.) .. .. .	24,810
Parks and Planting Trees in Streets .. .. .	10,434
Interest on Loan from the Government .. .. .	503
"  "  Loans from the Public .. .. .	88,715
Repayment of Public Loans .. .. .	10,000
"  "  Government Loan .. .. .	210
Sinking Funds—Loans from the Public .. .. .	17,668
Electric Supply—Maintenance, &c. .. .. .	127,440
Expenses of paying Interest on Loans .. .. .	622
Interest on Bank Overdrafts .. .. .	1,557
Contributions to Charitable Institutions .. .. .	1,400
"  "  Infectious Diseases Hospital .. .. .	2,897
"  "  Heatherton Sanatorium .. .. .	940
Law Costs .. .. .	763
Printing, Advertising, and Stationery .. .. .	3,559
Miscellaneous—	
Rat Destruction .. .. .	651
Gas Conference .. .. .	172
Fees—Dog Act .. .. .	537
Insurance and Guarantee Premiums .. .. .	2,340
Elections .. .. .	140
Sundries .. .. .	3,175
Total .. .. .	472,619

Of the total revenue received by the City of Ballarat in 1916, about 56 per cent. was obtained from rates, 7 per cent. from licences, 13 per cent. from sanitary rates, 6 per cent. from market and weighbridge dues, 5 per cent. from rents, and 13 per cent. from all other sources. The expenditure was incurred in connexion with the following services in the proportions mentioned:—40 per cent. for public works, 14 per cent. for interest, sinking funds, and repayment of loans, 14 per cent. for sanitary work, 7 per cent. for lighting, 5 per cent. for salaries and allowances, 7 per cent. for street cleaning, &c., and 13 per cent. for all other items.

**CITY OF BALLARAT: REVENUE AND EXPENDITURE FOR THE YEAR ENDED 30TH SEPTEMBER, 1916.**

Revenue.	Amount. £	Expenditure.	Amount. £
Special Grants—From Government ... ..	242	Salaries ... ..	1,510
General Rates ... ..	19,350	Allowance to Mayor ... ..	400
Licences—From Licensing Fund... ..	2,392	Sanitary Expenses ... ..	4,997
Other ... ..	163	Street Cleaning, &c. ... ..	2,506
Market and Weighbridge Dues ... ..	2,060	Lighting ... ..	2,470
Contributions for Formation of Private Streets, Roads, Lanes, &c. ... ..	455	Fire Brigades Board—Contribution ... ..	734
Dog Fees ... ..	223	Public Works { Construction ... ..	1,793
Pound Fees ... ..	43	Maintenance ... ..	12,243
Closet Cleansing and Sanitary Rates and Fees	4,657	Repayments of Loans—	
Rents ... ..	1,594	To Government ... ..	433
Interest ... ..	125	To the Public ... ..	1,616
Botanic Gardens ... ..	264	Payment to Sinking Funds—	
Other Sources ... ..	2,971	Loans from the Public ... ..	240
		Interest—Government Loan ... ..	258
		"    Loans from the Public ... ..	2,345
		"    Bank Overdraft ... ..	120
		Contributions to Charitable Institutions ... ..	384
		Printing, Advertising, and Stationery ... ..	329
		Other Expenditure ... ..	3,149
Total ... ..	£34,530	Total ... ..	£35,527

Revenue and expenditure of City of Bendigo, 1916.

In the City of Bendigo in 1916, the following were the proportions of total revenue obtained under the different headings:—General rates, 54 per cent.; licences, 12 per cent.; sanitary rates and fees, 16 per cent.; market and weighbridge dues, 6 per cent.; rents, 7 per cent.; and other sources, 5 per cent. The proportions of the total expenditure on various services were:—Public works, construction and maintenance, 30 per cent.; sanitary expenses, 16 per cent.; interest on loans, 7 per cent.; payments to sinking funds and redemption of loans, 11 per cent.; salaries and allowances, 5 per cent.; lighting,

8 per cent. ; formation of private streets, &c., 6 per cent. ; street cleansing, 8 per cent. ; and miscellaneous expenditure, 9 per cent.

**CITY OF BENDIGO : REVENUE AND EXPENDITURE FOR THE YEAR ENDED 30TH SEPTEMBER, 1916.**

Revenue.	Amount. £	Expenditure.	Amount. £
Special Grants—From Govern- ment .. .. .	645	Salaries .. .. .	1,712
General Rates .. .. .	21,105	Allowance to Mayor .. .. .	400
Licences—From Licensing Fund .. .. .	3,132	Sanitary Expenses .. .. .	6,531
„ Other .. .. .	1,378	Street Cleansing .. .. .	3,453
Market and Weighbridge Dues	2,407	Lighting .. .. .	3,411
Dog Fees .. .. .	228	Fire Brigades Board—Contri- bution .. .. .	674
Closest Cleansing and Sani- tary Rates and Fees .. .. .	6,337	Public Works { Construc- tion .. .. .	1,370
Rents .. .. .	2,633	{ Mainte- { nance .. .. .	10,806
Interest .. .. .	399	Formation of Private Streets, Roads, &c. .. .. .	2,281
Sports Grounds .. .. .	106	Payments to Sinking Fund— Loans from the Public .. .. .	3,643
Other Sources .. .. .	731	Repayment of Loans— To the Public .. .. .	782
		Interest on Loans from the Public .. .. .	2,617
		Interest on Bank Overdraft .. .. .	399
		Contributions to Charitable Institutions .. .. .	177
		Printing, Advertising, and Stationery .. .. .	567
		Other Expenditure .. .. .	2,372
<b>Total .. .. .</b>	<b>39,101</b>	<b>Total .. .. .</b>	<b>41,195</b>

**MUNICIPAL OFFICERS' FIDELITY GUARANTEE FUND.**

An Act was passed in 1907 (No. 2080) incorporating the Municipal Association of Victoria, and authorizing it to institute a "Municipal Officers' Fidelity Guarantee Fund," to which any municipality, any authority constituted under any Water Act or any Weights and Measures Union may contribute such sum as may be fixed by the association for a guarantee against loss by the dishonesty of its officers. The Act provided, however, that the fund could not be established until three-fifths of the municipalities in Victoria had agreed in writing to contribute and that the amount to be contributed for a guarantee must not be less than that payable in 1907 for a like guarantee to any incorporated company or society in Victoria. At any time after the fund has reached £3,500 the rates of contribution may be altered, so that it will be maintained at that sum, and, in the event of the amount at credit being at any time insufficient to pay all the liabilities and expenses, the difference must be made up by payments from all the contributors, each paying *pro rata* to its contributions. If the association determines to discontinue business, the funds are to be divided proportionately to the sums contributed during the preceding five years.

**Municipal  
Officers'  
Guarantee  
Fund.**

Payment of contributions is to be made within one month after a written notification has been sent by the secretary. Full and accurate accounts are to be kept of all moneys received and expended, and of the details of the transactions. A balance-sheet, made up to the 30th September of each year, must be prepared, exhibiting a true statement of receipts and expenditure and the balance to the credit of the fund.

More than the required number of municipalities agreed to cooperate, and the fund was inaugurated on 1st January, 1908. The operation of the fund was, at first, restricted by the association to guarantees in respect of municipal officers, but the rules have been altered, and since 1st October, 1914, they have permitted of guarantees being obtained by any waterworks authority or Weights and Measures Union; such authority or union is required, however, to make a preliminary payment into capital account. The premium revenue for the year ended 30th September, 1914, in respect of guarantees amounting to £198,320, was £1,115, but under the reduced scale of premiums which came into force on 1st October of that year, guarantees for the year ended 30th September, 1916, amounting to £223,320, were obtained from the Association for £732. The amount to the credit of the fund on 30th September, 1916 (including amount invested in purchase of inscribed stock and debentures and accrued interest, £6,771), was £7,008. The claims paid from the inception of the fund to 30th September, 1916, amounted to £1,269.

### MELBOURNE HARBOR TRUST.

Melbourne  
Harbor Trust  
—receipts and  
expenditure.

The Melbourne Harbor Trust is a corporate body, established in 1876 to regulate, manage, and improve the Port of Melbourne and portions of the Yarra and Saltwater Rivers adjacent, for which purpose certain lands and properties are vested in Commissioners. On 31st December, 1912, an Act was passed by the State Parliament which altered the constitution of the Trust. Instead of seventeen Commissioners, of whom six were appointed by the municipalities concerned, three by the owners of ships registered at Melbourne, three by merchants and traders paying wharfage rates, and five by the Governor-in-Council, there are substituted five Commissioners to be appointed by the Governor-in-Council. Other than the chairman, one member is to be an owner of ships registered at some British port and trading at Melbourne, one a person engaged in the business of an exporter by sea of Victorian produce, one an importer by sea of goods into Victoria, and one identified with primary production in Victoria. The chairman's salary is not to exceed £1,500; and the attendance fees of the other Commissioners are fixed at £2 2s. per meeting, the remuneration not to exceed £250 in any year. The borrowing power of the Trust is increased from £2,000,000 to £3,000,000. The payment to the Consolidated Revenue is not to be greater than £60,000 per annum for five years from 1st January, 1913. The following are particulars of the ordinary receipts

and ordinary and capital expenditure during each of the last five years:—

**MELBOURNE HARBOR TRUST.—RECEIPTS AND EXPENDITURE: 1912 TO 1916.**

Heads of Revenue and Expenditure.	1912.	1913.	1914.	1915.	1916.
<b>REVENUE.</b>					
Wharfage and Quayage	£	£	£	£	£
Rates .. ..	314,447	312,151	317,543	272,279	273,731
Rents .. ..	19,001	20,424	22,833	23,834	30,360
Interest .. ..	2,375	665	2,284	1,293	170
Other Revenue .. ..	3,792	4,299	11,194	13,092	17,273
	339,615	337,539	353,854	310,498	321,534
Less Amount paid to Consolidated Revenue .. ..	68,344	60,960	60,000	60,000	60,000
Total .. ..	271,271	276,579	293,854	250,498	261,534
<b>REVENUE EXPENDITURE.</b>					
General Management and Expenses .. ..	27,453	28,622	34,163	36,067	47,224
Flotation and Redemption of Loans Expenses .. ..	..	..	5,289	5,936	..
Maintenance—Dredging .. ..	32,559	32,014	24,758	20,298	20,496
" Harbor .. ..	1,159	2,107	1,698	1,754	1,957
" Wharfs .. ..	17,350	20,583	13,370	25,469	20,928
" Approaches .. ..	11,666	9,207	10,835	7,999	9,994
Interest on Loans* .. ..	69,264	59,494	69,981	72,934	76,278
Depreciation, Renewals Account, and Sinking Fund .. ..	17,500	29,188	30,058	30,415	51,364
Total .. ..	176,951	181,215	190,152	200,872	228,241
Surplus on Revenue Account .. ..	94,320	95,364	103,702	49,626	33,293
<b>CAPITAL EXPENDITURE.</b>					
Land and Property .. ..	1,119	46,007	5,534	2,060	1,316
Deepening Waterways .. ..	21,845	49,620	96,198	93,615	82,429
Wharfs Construction .. ..	85,227	115,244	87,885	120,627	105,803
Approaches Construction .. ..	9,854	16,354	7,029	10,921	8,960
Other Harbor Improvements .. ..	2,735	2,713	1,376	4,275	35,946
Floating Plant .. ..	72,078	9,744	33,451	3,112	25,190
General Plant .. ..	102	2,910	3,364	4,107	2,853
Stock Account .. ..	14,543	44,572	32,070	25,451	21,784
Total .. ..	207,503	287,164	266,907	264,168	284,281

\* Exclusive of interest on cost of plant debited to works carried out by day labour.

**GEELONG HARBOR TRUST.**

Geelong  
Harbor Trust  
—receipts and  
expenditure.

An Act to provide for the construction of works in connexion with the harbor at Geelong was passed on 12th December, 1905. This measure made provision for the constitution of the Geelong Harbor Trust and the appointment of three commissioners, the chairman to receive £400 per annum, and each of the other commissioners £200 per annum. The management of the port and shipping is vested in the commissioners. Power is given to the Trust to borrow £550,000 and to issue debentures, which may be made payable in London or Melbourne. The following is a summary of the receipts and expenditure for the last three years, the expenditure from ordinary revenue being distinguished from loan expenditure:—

**GEELONG HARBOR TRUST—REVENUE AND EXPENDITURE.**

	1914.	1915.	1916.
	£	£	£
<b>REVENUE.</b>			
Wharfage and Quayage Rates .. .. .	13,495	10,200	9,171
Rents, Fees, and Licences .. .. .	3,750	3,776	4,113
Sparrovale Farm .. .. .	7,281	6,710	4,930
Corio Freezing Works and Abattoirs .. .. .	12,404	9,543	9,777
Other Revenue .. .. .	1,064	606	830
	37,994	30,835	28,821
<b>REVENUE EXPENDITURE.</b>			
General Management and Expenses .. .. .	6,610	5,950	7,540
Maintenance—Wharfs and Approaches .. .. .	2,101	196	755
" Harbor .. .. .	831	587	455
" Floating Plant .. .. .	326	82	182
" Other .. .. .	676	992	988
Interest on Loans and Sinking Fund .. .. .	19,167	21,870	24,288
Sparrovale Farm .. .. .	6,221	5,786	6,447
Corio Freezing Works and Abattoirs .. .. .	1,934	1,576	710
Corio Quay Power-house .. .. .	2,548	1,805	3,055
Miscellaneous .. .. .	894	211	608
Total .. .. .	41,308	39,055	45,028
<b>CAPITAL EXPENDITURE.</b>			
Land and Property .. .. .	19,611	2,224	22,992
Deepening Waterworks .. .. .	11,970	15,882	8,804
Wharfs and Approaches Construction .. .. .	7,303	6,617	365
Other Harbor Improvements .. .. .	9,480	28,983	9,873
Floating and General Plant .. .. .	2,137	1,358	..
Stock Account .. .. .	455	..	..
Miscellaneous .. .. .	696	2,030	832
Total .. .. .	51,652	57,094	42,866

## MELBOURNE AND METROPOLITAN BOARD OF WORKS.

### Creation and constitution of Board.

The Board was established by Act of Parliament No. 1197, which came into force on 20th December, 1890, and it entered upon its duties on 18th March, 1891.

It consists of 40 members, of whom one is the Chairman, who is elected every four years by the other members, the retiring Chairman being eligible for re-election. The other members must be also members of the respective councils which they represent, and are elected as follows:—Nine by the Melbourne City Council, four by the South Melbourne Council, three by the Prahran Council, two each by the Fitzroy, Richmond, St. Kilda, and Collingwood Councils, and one each by the other fifteen suburban municipal councils returning a representative, viz., Footscray, Hawthorn, Brunswick, Essendon, Malvern, Brighton, Northcote, Port Melbourne, Williamstown, Caulfield, Camberwell, Kew, Coburg, Heidelberg, and Preston.

Thirteen of the members retire annually in the month of February, but are eligible for re-election if they remain members of their respective councils.

### Functions of the Board.

The functions of the Board are to control and manage the Metropolitan water supply system, including watersheds, reservoirs, weirs, aqueducts, pipes, &c.; to provide the metropolis with an efficient system of sewerage and drainage; and to prevent the pollution of the River Yarra and other public streams and water-courses within the metropolis.

### Area under Board's control, and population.

The sewerage area over which the Board exercises control consists of fifteen cities, five towns, one shire, and parts of four other municipalities, or twenty-five municipalities in all, embracing a total area of 90,821 acres. The Board also exercises control (by *Gazette* notices) for water supply purposes of an additional 2,949 acres in four municipalities. The Board further supplies water to the Metropolitan Farm at Werribee, and the outfall sewer area. Various other shires also arrange for bulk supplies of water. The total estimated population supplied with water on 31st December, 1916, was 720,577.

### Board's borrowing powers and liability on loans.

The Board is authorized to borrow £10,750,000, exclusive of loans amounting to £2,389,934 contracted by the Government and taken over by the Board.

The liability for Government loans on 30th June, 1916, was £1,559,786, and for loans raised by the Board, £10,573,160, a portion of the latter amount having been applied in repayment of Government loans falling due. The Board was at that date empowered to borrow £1,006,988 before reaching the limit of its borrowing powers.

## WATER SUPPLY FINANCE.

### Water supply assessments and rates.

By Act of Parliament the rate to be paid in respect of any lands and tenements for the supply of water for domestic purposes, otherwise than by measure, is limited to an amount not exceeding 8d. in the £1 on the annual valuation of

the lands and tenements served. The water rate levied in the year 1915-16 was 6d. in the £1 on the annual value of property served. Assessments of £20 and under are charged a minimum rate of 10s. per annum. There is a charge of 1s. per 1,000 gallons for water supplied by meter, with the assessed rate as a minimum. For shipping at Melbourne wharfs the charge is 3s. per 1,000 gallons, and at special berths at Melbourne wharfs, with fixed meters, it is 1s. 6d. per 1,000 gallons.

**Water meters.** Water meters may be hired from the Board at the following annual rentals, payable quarterly in advance:—  
For a  $\frac{1}{2}$ -in. meter, 5s.;  $\frac{3}{4}$ -in., 6s.; 1-in., 8s.;  $1\frac{1}{4}$ -in., 10s. 6d.; and  $1\frac{1}{2}$ -in., 14s.

**Garden rate.** Areas not exceeding 100 square yards (including paths) are supplied with water without meters on payment of a special rate of 10s. per annum each.

**Assessed value of property.** The total annual value of property assessed for water supply purposes and liable to water rates was £6,905,842 in 1915-16.

**Water rate receipts.** In 1915-16 the water rate receipts were as follows:—

	£	s.	d.
Water rate (including arrears)	152,453	16	4
Meters	159,689	3	5
Special rates	3,730	13	2
<b>Total</b>	<b>315,873</b>	<b>12</b>	<b>11</b>

**Revenue and expenditure of water supply system.** The total revenue amounted to £334,181, as against £350,549 in the previous year. The cost in 1915-16 of maintenance and management was £54,580\*, and of interest £134,915, the total charges being £189,495\*, compared with a cost in 1914-15 of £60,547 for maintenance and management, and of £130,268 for interest, or a total charge of £190,815.

**Cost of the Melbourne and Metropolitan waterworks system.** The total cost of the water supply system up to 30th June, 1916, was as follows:—

Original water supply works, tank pumping station, &c.	£84,885
Yan Yean system	632,432
Maroondah system	785,524
O'Shanassy system	444,621
Service reservoirs	249,424
Large mains	1,188,226
Reticulation	1,450,516
<b>Total</b>	<b>£4,835,628</b>

\* Not including Renewals, £7,349, and Special War Expenditure, £7,728.



## SEWERAGE FINANCE.

In 1891 the annual value of rateable property within the area then to be seweraged was £6,866,313, of which about £1,000,000 related to vacant lands. The collapse of the land boom was followed by a heavy shrinkage in the value of rateable property. A recovery in values has since taken place, and the total of the sewerage assessments for 1916-17 is £7,530,397, inclusive of assessments on vacant lands.

By Act of Parliament the Board is empowered to levy a general sewerage rate not exceeding 1s. 2d. in the £1 in seweraged areas. The sewerage rate for 1915-16 was 11d. in the £1 in the seweraged area. The total annual value of property assessed for sewerage purposes and liable to the 11d. rate was, in 1915-16, £6,430,370.

The receipts from the general sewerage rate in 1915-16 amounted to £299,360.

The sewerage revenue for 1915-16 was £358,112, as against £382,458 in the previous year. The cost in 1915-16 of management, working expenses and repairs was £70,783\*, and of interest £321,640, the total charges being £392,423\*, compared with a cost in 1914-15 of £72,030 for management, working expenses, repairs, and renewals, and £316,788 for interest, or a total charge of £388,818.

The cost of sewerage works and house connexions up to 30th June, 1916, was £7,315,580, divided as follows:—

Farm purchase and preparation .. ..	£553,668
Outfall sewer and rising mains .. ..	423,034
Pumping station buildings and engines .. ..	244,702
Main and branch sewers .. ..	2,117,647
Street reticulation .. ..	2,176,591
Reticulation of rights-of-way .. ..	989,868
House connexions branches .. ..	394,100
Cost of house connexions chargeable to capital .. ..	415,970
<hr/>	
Cost of sewerage system .. ..	£7,315,580
Householders' debts for house connexions .. ..	134,850
River improvements .. ..	3,781
<hr/>	
Total .. ..	£7,454,211

## DESCRIPTION OF WATER WORKS.

The metropolis is supplied with water from three independent sources—one known as the Yan Yean system, fed by the watershed of the Plenty River and Jack's Creek from the southern slopes of the Great Dividing Range, supplemented by the Wallaby and Silver Creeks, tributaries of the Goulburn, whose waters have been diverted over the range by means of weirs, aqueducts, and tunnels; a second, known as the

\* Not including Renewals, £3,424, and Special War Expenditure, £2,925.

Maroondah system, whose watershed is in the Healesville district and which takes in the water of the Maroondah or Watts River, the Graceburn, Donnelly's and Coranderrk Creeks, and other smaller streams; and a third, known as the O'Shanassy and Upper Yarra system, whose watersheds are in the Upper Yarra above Warburton. As regards the last-mentioned system, at present only the O'Shanassy River, a main tributary of the Upper Yarra, has been tapped.

**Total catchment area.** The total catchment area from which water is collected at present from the three systems is 102,000 acres, the whole of which is vested in the Board, and free from settlement or grazing.

**Total daily supply.** The total daily quantity of water which can be sent into Melbourne at present from the three systems is 90,000,000 gallons.

#### YAN YEAN SYSTEM.

**Yan Yeau system.** The Yan Yeau watershed embraces Silver and Wallaby Creeks, 12,000 acres; Plenty River and Jack's Creek, 12,000 acres; and the catchment areas of Yan Yeau Reservoir, 5,000 acres, totalling 29,000 acres. The water is collected into the Toorourrong Reservoir, and taken thence to the Yan Yeau Reservoir, where it is stored. This reservoir is an artificial lake situated 22 miles northerly from the city, and 602 feet above sea-level. It is formed by the construction of an earthen bank 49 chains long, 30 feet high, and 20 feet wide on top, with a slope next the water of three to one and an outside slope of two to one. The reservoir when full covers an area of 1,360 acres, or  $2\frac{1}{8}$  square miles, with a maximum depth of 26 feet, and an average depth of 18 feet. The maximum depth of water in the reservoir in 1916 was 25 ft.  $11\frac{1}{2}$  in. on 22nd October, and the minimum depth 19 ft.  $9\frac{3}{4}$  in. on 25th March. Its total capacity is 6,400,000,000 gallons, of which 5,400,000,000 gallons are available for consumption. In the year ended 31st December, 1916, the total intake of the Yan Yeau Reservoir was 4,640,391,000 gallons, and the total output was 2,623,884,000 gallons exclusive of loss by evaporation.

From this reservoir the water is forwarded to Morang Pipe Head Reservoir through an open aqueduct capable of delivering 33,000,000 gallons a day when full, and thence to Preston Reservoir, or to Melbourne direct, by a series of pipes.

**High-level system.** There is also a direct main, called the high-level system, from Yan Yeau to Surrey Hills Reservoir, for supplying the high levels of the eastern suburbs of Melbourne in conjunction with the O'Shanassy and Upper Yarra System. It is capable of delivering 9,000,000 gallons a day.

#### MAROONDAH SYSTEM.

The Maroondah water is taken by means of small weirs from the watershed of 40,000 acres situated above Healesville, and it is thence conveyed to the Preston Service Reservoirs along an aqueduct (about  $41\frac{1}{4}$  miles of open channels, tunnels, and syphons), which is capable of delivering 28,000,000 gallons daily.

## O'SHANASSY AND UPPER YARRA SYSTEM.

O'Shanassy  
and  
Upper Yarra  
watershed.

The watershed of the O'Shanassy River comprises 33,000 acres, situated near Warburton. The water is diverted by means of a weir and conveyed to Surrey Hills by way of Mitcham in an aqueduct, and in tunnels, syphons, and pipe line of an aggregate length of 48½ miles. The aqueduct is capable of delivering 20,000,000 gallons daily, but it has been completed in the tunnels and some other parts to a capacity of 60,000,000 gallons to provide for further diversions from the Upper Yarra and its tributaries.

Storage and  
service  
reservoirs.

There are two storage and thirteen service reservoirs (also four other service reservoirs proposed) as under :—

## STORAGE RESERVOIRS.

Description.	Capacity.	Reduced Level at By-wash.
	Gallons.	
Yan Yean .. .. .	6,400,000,000*	602 feet above L.W.M.
Toorourrong .. .. .	60,000,000	747 " " "
Total (storage) .. .. .	6,460,000,000	

\* Of this quantity 5,400,000,000 gallons are available for consumption.

## SERVICE RESERVOIRS.

Description.	Capacity.	Reduced Level at By-wash.
	Gallons.	
Preston No. 1 .. .. .	13,500,000	326·50 feet
„ No. 2 .. .. .	24,500,000	326·50 „
„ No. 3 .. .. .	26,300,000	326·50 „
Essendon No. 1 .. .. .	1,000,000	209·25 „
„ No. 2 .. .. .	4,000,000	209·25 „
Caulfield .. .. .	10,000,000	166·00 „
Kew .. .. .	3,000,000	281·50 „
Surrey Hills No. 1 .. .. .	9,000,000	429·50 „
„ No. 2 .. .. .	15,000,000	429·50 „
Morang (Pipe Head) .. .. .	3,000,000	485·00 „
Heidelberg .. .. .	1,000,000	325·00 „
Notting Hill .. .. .	10,000,000	332·50 „
Olinda .. .. .	11,000,000	671·00 „
Total (service) .. .. .	131,300,000	..
North Essendon (proposed provision for 10,000,000 gallons)	..	290·00 „ (approx.)
Mitcham (proposed provision for three reservoirs with a capacity of from 20 to 25 million gallons each)	..	515·00 „ „

**Aqueducts, &c., mains, and reticulation pipes.** The following is the mileage return of aqueducts, &c., mains, and reticulation pipes up to the 30th June, 1916:—

	Miles	Chs.	Miles	Chs.
<b>YAN YEAN SYSTEM—</b>				
Aqueducts, &c., between watersheds and Reservoir	23	62		
Aqueduct—Yan Yeau Reservoir to Morang	6	33½		
Total			30	15½
<b>MAROONDAH SYSTEM—</b>				
Main Maroondah Aqueduct	41	28		
Tributary Aqueducts	6	8		
Scours at Preston Reservoirs	2	52½		
Total			50	8½
<b>O'SHANASSY SYSTEM—</b>				
O'Shanassy Aqueduct	22	68½		
O'Shanassy Pipe line	25	69½		
Scour Channel at Warburton	0	32½		
Scour at Olinda Reservoir	0	31		
Scour at Surrey Hills Reservoir	0	49		
Total			50	10½
Grand Total, Aqueducts, &c.			130	34½
*Large Mains, 54-in to 12-in. diameter (inclusive)			230	21½
Reticulation under 12-in. diameter			1,298	53½
Grand Total, Aqueducts, &c., Mains, and Reticulation			1,659	29½

**Consumption of water in Melbourne and suburbs.** The average number of people supplied with water during 1916 was 713,957, and the average daily consumption was 51·69 gallons per head. Some districts are supplied outside the Board's sewerage area. The total consumption and average consumption per day are shown hereunder for each month during 1916:—

**TOTAL AND DAILY AVERAGE CONSUMPTION OF WATER IN MELBOURNE AND SUBURBS DURING EACH MONTH OF THE YEAR, 1916.**

Month.	Total Consumption of Water.	Daily Average Consumption of Water.
	Gallons.	Gallons.
January	1,479,821,000	47,736,161
February	1,191,142,000	41,073,862
March	1,318,547,000	42,533,774
April	1,046,082,000	34,869,400
May	1,082,729,000	34,926,742
June	1,020,033,000	34,001,100
July	1,002,478,000	32,338,000
August	968,822,000	31,252,322
September	1,011,894,000	33,729,800
October	1,064,133,000	34,326,870
November	1,105,423,000	36,847,433
December	1,218,205,000	39,296,935
Total for the year	13,509,309,000	...
Daily average for the year	...	36,910,680

\* Exclusive of O'Shanassy Pipe line and Maroondah Aqueduct syphons.

The following table shows for each year since the establishment of the Board in 1891 the daily average consumption of water, and the daily average per head:—

DAILY AVERAGE QUANTITY OF WATER CONSUMED IN MELBOURNE AND SUBURBS, 1891 TO 1916.

Year.	Population supplied with Water to 30th June.	Houses supplied with Water to 30th June.	Tenements Connected with Sewerage System to 30th June.	Daily Average of Annual Consumption of Water to 31st December.	No. of Gallons of Water per Head Daily.
1891 ...	482,600	99,364	...	25,747,761	53·35
1892 ...	486,620	106,772	...	23,476,780	48·24
1893 ...	469,390	107,125	...	24,290,041	51·75
1894 ...	449,560	107,764	...	27,071,106	60·22
1895 ...	444,340	107,260	...	26,689,683	60·07
1896 ...	452,210	106,486	...	23,837,695	52·71
1897 ...	458,300	105,710	...	24,665,607	53·82
1898 ...	466,895	104,861	3,899	28,253,294	60·51
1899 ...	480,390	103,981	13,593	27,068,465	56·37
1900 ...	489,600	104,050	28,300	28,230,690	57·66
1901 ...	494,905	104,548	38,696	29,427,589	59·46
1902 ...	501,580	105,051	47,172	29,080,027	57·98
1903 ...	502,840	106,176	55,929	28,858,633	57·39
1904 ...	505,760	107,701	64,487	29,523,153	58·37
1905 ...	511,520	109,393	71,689	32,400,286	63·34
1906 ...	519,925	111,494	79,597	33,479,900	64·39
1907 ...	530,655	114,049	87,853	35,212,222	66·36
1908 ...	543,115	116,781	94,067	31,559,830	58·11
1909 ...	557,350	119,650	99,955	33,047,340	59·29
1910 ...	573,255	123,227	105,993	33,272,490	58·04
1911 ...	588,000	128,036	112,293	36,110,115	61·41
1912 ...	604,275	133,122	118,350	38,569,566	63·83
1913 ...	628,430	140,351	125,103	41,842,926	66·27
1914 ...	651,000	147,442	131,168	40,778,844	62·64
1915 ...	674,000	150,825	138,108	36,567,614	54·25
1916 ...	713,957	155,208	143,737	36,910,680	51·69

DESCRIPTION OF SEWERAGE SYSTEM.

Sewerage system.

While the Board took over from the State Government the branch which had the management of the Melbourne Water Supply, still the chief object of its creation was to carry out the long-called-for and pressing want of an efficient system of sewerage in the Metropolitan area. The plans and estimates of the cost of the Metropolitan sewerage scheme were originally prepared by the late Mr. James Mansergh, an expert civil engineer from England, and were furnished to the Board on its creation. The scheme recommended by the designer and selected by the Board's Engineer-in-Chief (the late Mr. William Thwaites) was estimated to cost £5,030,000, but was modified by Mr. Thwaites, with the concurrence of the Board, so as to reduce the estimated cost to £3,451,000.

The original Act of Parliament contemplated only the construction of sewers in the streets, but this was altered by an Act passed in 1897, which added the duty of constructing sewers in rights-of-way and the branches from the sewers to the building line of each property, and in consequence has added considerably to the original estimate of cost.

Tenements  
connected  
with the  
sewerage  
system.

The first tenement was connected in Port Melbourne in August, 1897. On 31st December, 1916, 148,637 tenements had been gazetted as within sewerage areas, and applications received *re* 464 outside gazetted areas, making a total of 149,101 tenements. Out of this number 148,660 were provided with sanitary fittings which required to be connected with the sewerage system, and 146,207 had been connected, including the 464 outside gazetted areas. Of the remaining 2,453 tenements, 1,466 were in progress of connexion, while on 987 tenements connexions work had not been commenced.

The following statement shows the progress of house connexions to the 31st December, 1916:—

**PROGRESS OF HOUSE CONNEXIONS WITH THE SEWERAGE SYSTEM IN MELBOURNE AND SUBURBS.**

Municipality.	No. of Tenements connected on 31st December, 1916.
Melbourne City ... ..	26,690
South Melbourne City ... ..	10,731
Prahran City ... ..	11,696
Fitzroy City ... ..	7,912
Richmond City ... ..	10,184
St. Kilda City ... ..	6,982
Collingwood City ... ..	8,375
Footscray City ... ..	6,377
Hawthorn City ... ..	6,184
Brunswick City ... ..	8,394
Essendon City ... ..	6,986
Malvern City ... ..	5,137
Caulfield City ... ..	4,196
Northcote City ... ..	5,030
Camberwell City ... ..	3,159
Brighton Town ... ..	3,643
Port Melbourne Town ... ..	2,994
Williamstown Town ... ..	3,541
Kew Town ... ..	2,610
Coburg Town ... ..	1,817
Heidelberg Shire (part of) ... ..	1,166
Preston Shire ... ..	971
Moorabbin Shire (part of) ... ..	1,207
Nunawading Shire (part of) ... ..	225
<b>Total ... ..</b>	<b>146,207</b>

**PROGRESS REPORT OF SEWERAGE WORK.**

On the 31st December, 1916, the sewerage system was practically completed in the following districts within the Board's Metropolitan area, viz.:—

Melbourne, South Melbourne, Port Melbourne, Collingwood, Fitzroy, Richmond, Prahran, St. Kilda, Moorabbin, Nunawading, and the thickly populated portions of Essendon and Malvern.

The sewerage system was nearly completed in Brighton, Hawthorn and Footscray, and the thickly populated portions of Brunswick, Camberwell, Northcote, Preston, and Williamstown, together with the greater portions of Coburg and Kew, and, in a lesser degree, Caulfield. A fair proportion of Heidelberg had also been completed.

During the past twelve months the work has progressed principally in Caulfield and Malvern, and in a lesser degree in Hawthorn, Footscray, Brighton, Preston, Northcote, St. Kilda and Essendon.

Main and branch sewers have been extended in Malvern and Caulfield to meet the requirements of new reticulation areas.

Reticulation contracts have been completed in Caulfield, Malvern, Hawthorn, Footscray, Brighton, Preston and Northcote, and numerous reticulation extensions to provide for new buildings or fresh subdivisions have been carried out in various portions of the metropolitan area. Reticulation contracts and day labour extensions are now being carried out in Caulfield, St. Kilda and Fairfield.

The whole system was so far advanced that on the date mentioned above the sewage from 149,101 tenements could be collected, including those inside and outside gazetted areas, and 148,660 tenements could be connected. Of these, 146,207 tenements were connected, and work was in progress on 1,466 other premises. The total number of fittings connected with the system was as follows:—59 public conveniences and 82 public urinals, 169,570 water closets, 126,802 baths, 98,634 sinks, 97,027 sets of wash troughs, 47,568 lavatories, 16,061 stables, 9,646 urinals, 8,230 polluted areas and paved yards, 1,956 cellars, 1,081 slop hoppers, 299 latrines, and 341 dairies, there being also 441 tenements with no fittings to connect. The house connexions pipes join the 9-inch reticulation pipes, which are gradually collected into 12-inch, 15-inch, and 18-inch pipes, and then again into brick and concrete branch sewers, which join the sub-mains and mains. In all 1,400½ miles of reticulation and 153¾ miles of mains and branch sewers have been completed, making a total length of 1,554 miles.

Particulars of the system are as follows:—

The sewage of the metropolis is delivered into two main sewers and a subsidiary main leading to the pumping station at Spotswood.

The two main sewers are—

1. The North Yarra main sewer (North Yarra system), which commences with Heidelberg, and thence takes up East Kew, Preston, Coburg, Northcote, Brunswick, the Clifton Hill part of Collingwood, also Fitzroy, and the North Carlton, North Melbourne, and Flemington and Kensington parts of Melbourne, together with Essendon and Footscray.

2. The Hobson's Bay main sewer (South Yarra system), which starts at Sandringham, picking up Brighton, Caulfield, Malvern, St. Kilda, Camberwell, and a small part of Nunawading, besides the remaining part of Kew, also Hawthorn, Prahran, South Melbourne, Port Melbourne, Richmond, and the remaining part of Collingwood, with East Melbourne, and other remaining parts of Melbourne.

The subsidiary main, which takes in Williamstown, joins the Hobson's Bay main before it enters the pumping station.

### PUMPING STATION, RISING MAINS, AND OUTFALL SEWER.

**Pumping station.** When collected at Spotswood the two systems are dealt with in separate buildings, and are arranged to be worked either separately or unitedly. The sewage enters the pumping station at a level of 50 feet below low-water mark through straining wells, one of which is established on each system. The wells are of 22 feet internal diameter, and each contains two straining cages, one of which is always in position. The solid matter caught in them is transferred to a drier in the building over the wells, where it is subject to steam pressure and consequently to a high temperature, which renders the material innocuous. The material from the drier is of no manurial value and is destroyed in a furnace. The sewage is raised by the pumps 125 feet through two 6-foot and one 4-foot wrought-iron rising mains—the three lengths running side by side, each 2·794 miles long (an aggregate length of 8·38 miles)—to the head of the outfall sewer, at Brooklyn, 75 feet above low-water mark, whence it gravitates to the Metropolitan Sewage Farm at Werribee in a partly-open and partly-closed channel 16 miles long, of 11 feet diameter, and having a grade of 2 feet to the mile. The full capacity of the outfall sewer is 18,000 cubic feet a minute.

### METROPOLITAN SEWAGE FARM.

**Sewage farm.** The purification of the sewage of Melbourne and Suburbs is effected by filtration and aeration through the natural soil of the Sewage Farm, which contains 11,153 acres 30½ perches of land situated about 24 miles south-west of Melbourne and 4 miles south-west of the township of Werribee in open plain country, and had an average rainfall to 31st December, 1916, of 18·07 inches. The farm has the Werribee River for its eastern boundary, with a long frontage to Port Phillip Bay on the south (extending from the mouth of the Werribee River to the mouth of the Little River), to which the land gradually slopes from the north, the highest point being 44 feet above low-water mark. The head of the rising main at Brooklyn is, as has been mentioned, 75 feet above low-water mark and the sewage flows by gravitation from there to the farm, a distance of 16 miles, where the point of delivery is 37·25 feet above low-water mark.

To irrigate the portion of the farm above that level necessitates pumping, and in the meantime most of the high land is being used for dry farming, cereal crops being grown.

The farm originally comprised 8,847 acres 5½ perches of virgin unimproved land, which (together with a strip 11¼ miles long, containing 168¼ acres, on which the greater portion of the main outfall sewer from the pumping station to the farm is constructed) cost the Board £159,873 in 1892. By an Act of Parliament passed on 11th August, 1911, the Crown was authorised to sell to the Board at £2 per



acre an area of 305 acres 3 roods 11 perches of low-lying Crown land along the foreshore of the bay adjoining the sewage farm. By another Act of Parliament, passed on 11th December, 1912, a further area of 815 acres 1 rood 8 perches of foreshore land was acquired from the Government at £2 per acre. This land, extending westerly to the mouth of the Little River, gave the Board a frontage to the bay, extending from that river to the Werribee River. An area of 252 acres 3 roods 7 perches of irrigable land adjoining the sewage farm on the south-west was acquired by private treaty at £15 per acre during 1913; 120 acres 2 roods 23 perches of private land adjoining the above area has since been acquired at £5 12s. 6d. per acre, and 811 acres 2 roods 16 perches at the north-east corner of the original farm area has been purchased from the Lands Purchase and Management Board at £25 per acre. The last two purchases were made in 1914. The acquirement of these areas has increased the size of the Sewage Farm to 11,153 acres 30½ perches.

Before being required for sewage disposal the greater portion of the farm was leased by the Board to hay and grain growers, and proved highly productive under wheat, oats, and barley. The rents ranged up to about 30s. per acre, and for a number of years averaged over £1 per acre over the whole area let.

The method followed by the Board was to gradually resume the land from the tenants as it was required for sewage filtration purposes in order to keep pace with the progress of the sewerage house connexions work in the Metropolis. It has now all been resumed, but there is a considerable area yet to be brought under irrigation, preparation for which is carried on continuously.

The process of preparation generally followed is as follows:—After being divided by roads into rectangular blocks of 80 acres the blocks are again subdivided into paddocks of 20 acres (20 chains by 10 chains). The soil is broken up by steam ploughs, the bottom being subsoiled to a depth of about 2 ft. 6 in., and, where necessary, underdrained with agricultural pipes. The blocks are then graded into bays of about half an acre each, and commanded by distributing drains to facilitate rapid flooding—where the natural contour of the country is uneven it is found necessary to grade the blocks in small terraces; deep drainage channels are cut, the earth from same being thrown up to form embankments to carry the main supply carriers along the boundaries of these 20-acre blocks, which are at the same time securely fenced, and planted with trees for shelter and breakwinds. The main carriers and drains run parallel north to south through the farm being half a mile apart; the sub-carriers and drains branch east and west every 10 chains. The available area of the 20-acre block is reduced to about 18 acres by the space occupied by the carriers, drains, roads, and plantations. The prepared blocks are generally sown with lucerne or perennial grasses (chiefly prairie or rye) or a mixture of lucerne and prairie grass, and in a few months are ready to be flooded with sewage.

The resultant growth is very rapid, and (with the exception of a few hundred acres of lucerne reserved for hay) the irrigated lucerne and grasses are pastured with sheep, cattle, and horses; the practice being to keep the stock shifting from block to block (in flocks of about 500 sheep or an equivalent number of horses or cattle to each 18 acres) to eat the feed down in front of the sewage water. The filtered sewage is discharged into the bay by a series of main effluent channels running parallel north and south through the farm.

A large proportion of the farm lands will necessarily never be available for irrigation purposes. Eighty-four acres have been devoted to sites for townships and manager's and workmen's cottages, of which last there are 59 on the farm. There are at present 441 acres of plantations and reserves, and the private roads and channels account for a further 463 acres; the area so utilized must of course increase as additional sections of the farm are brought under irrigation. These three items—cottage and township sites (84 acres), plantations and reserves (441 acres), and private roads and channels (463 acres)—at present account for 988 acres.

As each acre of properly prepared land under irrigation suffices to deal with the sewage of only 100 persons, and as there are about 6,000 additional tenements connected with the sewerage system each year (in 1915-16 there were 5,629 additional tenements connected), it will be seen that it is only a matter of a few years before all the available land of the original purchase will be under intense irrigation; hence the necessity for the acquirement of the additional areas previously referred to.

The total area available for sewage disposal at 30th June, 1916, was 7,996 acres, and the average quantity of sewage delivered daily on to this area during the year 1915-16 was 29,170,233 gallons = 107.45 acre-feet per day = 4.92 feet per annum over the whole of the prepared part of the farm.

Of the area under irrigation, viz., 7,024 acres, 160 acres were sown with maize for grain, and 522 acres of lucerne were cut for hay, leaving 6,184 acres of grasses, and small areas under fodder crops of maize, and rape (totalling 158 acres). Of the 7,024 acres, 6,543 acres can be depastured with stock.

Notwithstanding the large quantity of sewage water required to be put on the pastures summer and winter alike, the effective filtration of which must be the Board's first consideration, a considerable profit is derived from the farming and grazing operations. The principal sources of revenue are from the fattening of store sheep and cattle and the grazing of horses on agistment. The maximum stock carried in spring was 950 horses, 4,000 sheep, and 5,500 cattle, and the minimum in winter 1,000 horses, no sheep, and 5,000 cattle, the general practice being to gradually reduce the stock from the spring maximum to the minimum in winter. The profits from transactions in sheep and cattle for the year 1915-16 were—from sheep, £5,813;

from cattle, £34,755. The revenue from agistment (principally horses) was £5,223. The fat stock from the farm always excite keen competition from butchers and freezers, and command high prices.

The following are particulars of the sales for the year ended 30th June, 1916 :—

	£	s.	d.
Lucerne (Chaff and Hay) .. ..	4,419	15	9
Barley (Grain and Straw) .. ..	1,278	5	3
Oaten Chaff .. ..	1,150	13	7
Maize .. ..	2,071	14	7
Wheat .. ..	746	5	3
Total .. ..	9,666	14	5

Experiments are being carried on to ascertain the varieties of lucerne and maize best suited for growing on the sewage farm, and the varieties of grasses likely to flourish under the largest amount of winter irrigation.

The total capital cost of the farm for purchase and preparation was at 30th June, 1916, £553,668, and after paying interest on this sum and all charges in connexion with the disposal of the sewage the net profit resulting from the various farming operations and the receipts from rents of cottages, &c., for the year 1915-16 amounted to £15,746. The estimated population served by the sewerage system during that year was 661,190. The profitableness of the farming and grazing operations is largely influenced by the climatic conditions of the State generally, and the net cost of sewage purification varies accordingly from year to year. The average for the five years 1911-12 to 1915-16 was 71d. per head of population per annum.

The sewage farm is supplied with water for stock and domestic purposes from the metropolitan water supply system.

Statistical details relating to the farm for the year 1915-16 or as at 30th June, 1916, are as follows :—

	Acres.
Total area of farm .. ..	11,153
Utilized as follows :—	
Area sown with grasses .. ..	6,184
Area of settling pits under fodder crops other than lucerne or grasses—	
Maize, 138 acres; rape, 20 acres .. ..	158
Area under lucerne for hay .. ..	522
"    "    maize for grain, 80 acres .. ..	160
"    "    "    "    "    80 acres in settling pits in foreshore land .. ..	
Total area under irrigation and intense culture ..	7,024

	Acres.
Area prepared for settling pits for winter sewage ..	972
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Total area prepared for irrigation and sewage disposal .. .. .	7,996
Area under preparation for irrigation .. .. .	145
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Total area prepared and under preparation for irrigation .. .. .	8,141
Area under cereal crops (wheat, barley, and oats) not included above .. .. .	220
Area under natural grasses .. .. .	247
"    "    bare fallow .. .. .	619
"    "    of swampy ground reserved for settling pits ..	938
Areas reserved for cottage sites (57 acres) and township sites (27 acres) .. .. .	84
"    "    plantations and reserves .. .. .	441
"    "    private roads and channels .. .. .	463
<hr/>	
Total area of farm .. .. .	11,153
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Lucerne hay—area cut .. .. .	Acres 522
Total yield of lucerne hay for season .. .. .	Tons 1,870
Maize for grain—area harvested .. .. .	Acres 160
Average yield per acre .. .. .	Bushels 45
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Fodder crops (other than lucerne or grasses)—	Acres.
Maize .. .. .	138
Rape .. .. .	20
<hr/>	
Total .. .. .	158
Area sown with grasses .. .. .	6,184
Portion of area under lucerne for hay .. .. .	174
"    "    "    maize for grain .. .. .	27
<hr/>	
Total area of irrigated pasture available for grazing by stock .. .. .	6,543
<hr/>	
Acreage carrying sheep .. .. .	—
"    "    cattle .. .. .	5,493
"    "    horses (on agistment) .. .. .	1,050
<hr/>	
Total area carrying stock .. .. .	6,543

	Horses.	Cattle.	Sheep.
Stock carried—			
Maximum in spring—	950	5,500	4,000
Minimum in winter—	1,000	5,000	Nil
Number of sheep and cattle purchased and sold for year ended 30th June, 1916—			
		Cattle.	Sheep.
Purchased .. .. .		6,678	2,049
Sold .. .. .		5,434	7,888
Live stock on farm at 30th June, 1916—			
Horses owned by Board—			
Draughts—Stallions .. .. .			2
"    Mares .. .. .			23
"    Geldings .. .. .			70
"    1 and 2 years old .. .. .			17
"    Foals .. .. .			12
			<hr/>
Light saddle and harness horses .. .. .			124
			24
			<hr/>
Total .. .. .			148
			<hr/>
Horses agisted .. .. .			1,032
Cattle owned by the Board .. .. .			4,352
"    agisted .. .. .			93
Profits from transactions in live-stock—			
Sheep .. .. .			£5,813
Cattle .. .. .			34,755
			<hr/>
Total .. .. .			£40,568
			<hr/>
Agistment fees (principally horses) .. .. .			£5,223
			<hr/>
			No.
Men employed by Board on farm .. .. .			169
			<hr/>
Population resident on farm over 21 years of age .. .. .			133
"    "    "    under 21 years of age .. .. .			171
			<hr/>
Total .. .. .			304
			<hr/>
Houses on farm owned by Board .. .. .			59
House rents received during the year .. .. .			£1,220

## PROGRESS OF CONSTRUCTION WORKS.

	Acres.
Area steam ploughed for irrigation .. ..	7,468
„ „ „ for plantations and reserves .. ..	188
„ mole-drained by steam plant .. ..	1,145
„ underdrained with pipes .. ..	619
	Miles. Chains.
Length of main carrier embankments—cement lined ..	8 10
„ „ „ „ unlined .. ..	24 56
Total .. ..	32 66
Length of subsidiary carriers—	
C.I. flumes .. ..	15 62
C.C. flumes .. ..	4 72
Embankments unlined .. ..	40 60
Total .. ..	61 34
Length of main drains .. ..	32 49
„ subsidiary drains .. ..	90 20
„ pipe drains .. ..	27 1
„ agricultural pipes .. ..	32 49
Total .. ..	182 39
Length of water pipes laid—6-inch .. ..	2 25
„ „ 4-inch .. ..	11 7
„ „ 3-inch .. ..	0 7
„ „ 2-inch .. ..	14 7
„ „ 1½-inch .. ..	2 33
„ „ 1-inch .. ..	3 53
Total .. ..	33 52
Length of roads formed.. ..	34 73
„ fencing erected—No. 7 gauge black fencing wire .. ..	321 56
„ „ wire netted—No. 17 gauge wire netting, 42 in. by 1½ in. .. ..	6 23
	No.
Trees planted .. ..	218,000
Rainfall for year ended 30th June, 1915 .. ..	14·21 inches
„ „ „ „ 1916 .. ..	14·47 „
Average rainfall for 24 years to 31st December, 1916 .. ..	18·07 „

Average quantity of sewage delivered daily on to farm for year 1915-16 = in gallons ..	29,170,233
= 107.45 acre-feet per day = 4.92 feet per annum over the total area available for sewage disposal, viz., 7,996 acres.	
Total capital cost of farm to 30th June, 1916 ..	£553,668
Profit on farm trading account for the year after charging up working expenses .. ..	£15,970
Net profit (after charging working expenses of sewage disposal and £21,927 interest on capital cost) 1915-16 .. .. .	£15,746
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Population served by sewerage system .. ..	661,190
Average net cost of sewage purification for the five years, 1911-12 to 1915-16 .. .. .	71d per head of population per annum.

### FIRE BRIGADES BOARDS.

**Constitution of Fire Brigades Boards.**

Connected with the water service of the State generally is the service of water required for fire extinction.

Under the *Fire Brigades Act* 1915, there are constituted a metropolitan fire district, controlled by the Metropolitan Fire Brigades Board, and nine country fire districts, controlled by the Country Fire Brigades Board. The supervisors are the chief officers of the respective Boards, who are aided by deputies and other assistants.

The arrangements for fire extinction in the metropolis are closely allied to those for the Melbourne water supply, the service having been provided under the clauses of the *Fire Brigades Act* 1915, and its amendments.

The Metropolitan Fire District embraces the area included in the various municipalities within a radius of ten miles from the General Post Office. The area vested in the Melbourne and Metropolitan Board of Works is included in this area, but the Metropolitan Fire Brigades Board has jurisdiction over portions of the shires of Werribee, Braybrook, Keilor, Broadmeadows, Heidelberg, Nunawading, Mulgrave, and Moorabbin, within the 10-mile radius, which are not vested in the Melbourne and Metropolitan Board of Works. The Metropolitan Fire District includes the greater portion of the shire of Moorabbin, and it extends in a southerly direction as far as Mordialloc, that township being included.

The Metropolitan Fire Board is composed of nine members, of whom three are appointed by the Governor in Council, three by the municipal councils, and three by the insurance companies.

The Metropolitan Fire Brigades Board on 31st December, 1916, had under its control the following:—Forty-three stations, 243 members of permanent staff, 39 members of special service staff, 7 members of clerical staff, 18 men engaged in the workshops, 110 partially paid firemen, 2 motor-drawn

steam fire engines, 8 horse-drawn steam fire engines, 3 gasolene engines, 4 petrol motor fire engines, 1 motor salvage waggon and chemical engine combined, 3 motor combination appliances, 33 motor hose waggons, 2 motor cycles, 1 motor lorry, 1 Chief Officer's motor car, 7 horse hose reels, 24 hand hose reels, 8 extension ladders and fire escapes, 6 Pompier ladders, 11 exercise and supply carts, 1 salvage van, 29 horses, 126,160 feet of hose, 41 hand pumps, 4 smoke helmets, 1 smoke jacket, and 274 fire alarm circuits having 900 street fire-alarms, of which 876 contained telephones, and the remaining 24 were fire alarms only. There were also 582 auxiliary boxes and 19 automatic systems in public and other buildings, 182 direct telephone lines, 56 of which were acting as fire alarms to buildings, and 33 circuits to sprinkler installations, with 67 sprinkler call transmitting instruments.

During 1916 the cost of maintenance of the Metropolitan Fire Brigade was £93,575, one-third being contributed by each of the contributing bodies, viz., Government of Victoria, municipalities within the Metropolitan Fire District, and the insurance companies carrying on business in that district. The municipalities' contribution is equal to .88d. in the £1 over an area wherein the property is valued at £7,536,802, and that of the insurance companies is equal to £5 7s. 1d. for every £100 of premiums on insured property. The premiums received in the Melbourne Fire District in 1915 amounted to £516,405, and the total of the payments made by the companies in 1916 for the maintenance of the fire brigade system was £27,657.

The closing of three stations during the year is in accordance with the motorisation policy of the Board in so far as its equipment is concerned, the ultimate result aimed at being economy and concentration of staff and equipment with increased efficiency.

The Country Fire Brigades Board consists of nine members. Three are appointed by the Governor in Council, two are elected by the municipal councils of the districts in which there are brigades registered under the Board, two are elected by the fire insurance companies carrying on business in such districts, and two by the registered fire brigades. The Board annually elects one of its members as president. The tenure of the Board members is two years. The Board's revenue in 1916 was £15,536, which was obtained from the following sources:—(a) Government, £5,156; (b) municipalities, £5,132; (c) insurance companies, £5,156; and (d) other sources, £92. The expenditure for the year amounted to £15,212. There are 107 municipal councils and 64 insurance companies included in the operation of the Act. The premiums received by the insurance companies in country districts during the year 1915 amounted to £205,874, and the total of their contributions in 1916 for the up-keep of the brigades was £5,156. The total value of rateable property assessed within the Board's district in 1916 was £1,823,705. All brigades under the control of the Board are volunteer brigades, but in the large towns a few permanent stationkeepers and watchmen are also employed. There are 129 registered brigades, and two more are about to be

Country Fire  
Brigades  
Board.



registered. The number of registered firemen is 2,871, but in many brigades there is, in addition to the registered firemen, a number of "reserve members." The Chief Officer of the Board frequently inspects the brigades, and also pays them "surprise visits." He reports monthly to the Board as to the efficiency of the service, and in regard to the equipment necessary to be supplied. In 1916 the chief items of the plant consisted of 5 steam engines, 4 motor tenders, 63 manual engines, 11 horse brakes, 61 apparatus carriages, 3 fire escapes, about 280 hose reels, and approximately 180,000 feet of canvas hose.

**Powers of the Board.**

A section of the Fire Brigades Act provides that for the purpose of extinguishing any fire the chief officers of the fire brigades may in the areas under their respective control "cause water to be shut off from any main or pipe in order to obtain a greater pressure and supply of water for the purpose of extinguishing any fire, and no person or body having the management of any water supply shall be liable to any penalty or claim by reason of any interruption of the supply of water occasioned by compliance with the provisions of this section."

Another section of the Act provides that "each Board, its officers and servants, any local committee, its officers and servants, and any brigade registered under this Act shall have the use of all water mains, water plugs, valves, pipes, vested in or belonging to the Board of Land and Works or any public or municipal corporation, or local body whatsoever, and of all water therein, or in any well or tank, free of charge, for the purpose of extinguishing any fire, or for the purpose of drills, competitions, and practice, conducted under the authority of either board or any local committee."

Local councils have the right, in the interests of fire prevention, with the approval of the Governor in Council, of making, altering, or repealing by-laws for the purpose of regulating the height of all buildings erected in their own municipality, or in any part of it, and also for providing means of escape from such buildings during a fire.

The general duties of the Fire Brigades Boards are defined to be those "of taking, superintending, and enforcing all necessary steps for the extinguishment of fires, and for the protection of life and property in case of fire, and the general control of all stations and of all fire brigades shall be vested in the Boards for the metropolis and country districts respectively. The Boards may purchase or lease property for fire brigade stations, and control the formation of permanent and volunteer fire brigades, and schools of instruction, the maintenance of fire alarms, and the establishment of communication, telephonic and other."

The Melbourne and Metropolitan Board of Works is bound to keep all its pipes, to which fire plugs are affixed, charged with water, unless prevented by unusual drought or other unavoidable cause, or during necessary repairs, and shall allow all persons at all times to take and use such water for extinguishing fires. On 30th June, 1916, the Board had fixed to its 230 miles  $21\frac{1}{2}$  chains of leading mains and 1,298 miles

53½ chains of reticulation mains 3,260 pillar hydrants, 120 Tregear patent hydrants, and 14,926 ball fire plugs, viz., 14,905 Bateman and Moore (of which 1,612 are with spring) and 21 Fowler patent—a grand total of 18,306. Except in case of accident, repairs, or cleaning, these mains are kept constantly full of water under pressure.

The Melbourne and Metropolitan Board of Works, under the water supply provisions of the *Consolidated Act* of 1915, must, upon the request of any municipal council within its boundaries, fix proper fire plugs in the main and other pipes belonging to the Board, at convenient distances, and at such places as the Board may consider proper and convenient for the supply of water for extinguishing any fire which may break out within its limits. The cost of fixing fire plugs and notice boards, together with the cost of their maintenance, must be defrayed by the municipal council within whose limits the fire plug is fixed. The Board may also fix fire plugs for private owners, provided they pay the cost and maintenance.

Particulars of receipts and expenditure of both Boards during the five years ended 30th June, 1916, are as follows :—

**REVENUE AND EXPENDITURE OF FIRE BRIGADES BOARDS :  
RETURN FOR FIVE YEARS.**

	1912.	1913.	1914.	1915.	1916.
<i>Ordinary Receipts.</i>	£	£	£	£	£
Contributions — Government, Municipal, and Insurance ...	78,206	82,540	85,036	93,831	102,215
Receipts for Services ...	5,172	5,941	8,241	6,634	7,595
Interest and Sundries ...	2,109	3,725	1,476	9,993	4,202
<b>Total</b> ...	<b>85,487</b>	<b>92,206</b>	<b>94,753</b>	<b>110,458</b>	<b>114,012</b>
<i>Ordinary Expenditure.</i>					
Salaries ...	48,798	50,426	54,285	56,104	59,162
Fire Expenses ...	3,183	3,233	3,312	3,261	3,331
Administrative Charges, &c.	16,517	15,584	19,515	24,056	21,476
Plant—Purchase and Repairs ...	7,176	4,592	4,112	4,224	6,003
Interest ...	5,995	5,928	7,217	8,838	9,871
Sinking Fund ...	2,000	2,430	2,215	2,735	3,526
Firemen's Accident Fund	550	550	650	604	311
Miscellaneous ...	6,243	4,580	4,624	6,467	5,107
<b>Total</b> ...	<b>90,462</b>	<b>87,323</b>	<b>95,930</b>	<b>106,289</b>	<b>108,787</b>
<i>Loan Expenditure.</i>					
Purchase of Land and Erection of Buildings, &c.	417	14,796	19,373	28,808	14,711