

# VICTORIAN YEAR-BOOK, 1915-16.

## INTRODUCTORY REMARKS.

Records of early discoveries show a lamentable ignorance of the geography of the Southern and Indian Oceans, since the venturesome sailors who first attempted to explore these seas were not skilled in cartography, and their maps, or the maps plotted from their verbal narratives, were of necessity crude and inaccurate. A map published with the account of Frobisher's voyages in 1578 encircles the whole Southern Pole with a vast stretch of land, separated from South America by the Strait of Magellan, and stretching further north in those regions which we now know as Australia, indicating a belief and an assurance in the existence of our continent. It is an interesting fact that in Burton's *Anatomy of Melancholy*, published in 1621, references are made to this land as *Terra Australis Incognita*.

**Frobisher.** Frobisher reports that the Portuguese and Spaniards in their voyages to the East Indies saw and touched on the north edge of the southern continent. In 1526 the trading vessels of the former nation reached New Guinea, though their masters were unaware of the existence of the Strait which separates it from Australia. After the discovery of the sea route to India by Vasco da Gama in 1497, the Portuguese began to trade with the East Indies, and were followed by the Spaniards and Dutch, the latter largely replacing the Portuguese traders in the East.

**De Quiros.** De Quiros, a Portuguese in the service of Spain, made strenuous efforts to reach the Great South Land, as he was convinced that the rumours concerning its existence were true. In December, 1605, he set sail to discover it, with Torres as captain of the second vessel of his small fleet. De Quiros discovered the New Hebrides and thought that he had found the great continent. He sailed eastwards for Peru, but his second in command, Luis de Torres, took a western course and found the strait lying between Papua and the northern extremity of Australia. De Quiros may be regarded as the last of the Southern European explorers, whose work was now taken up by the Dutch.

**Dutch exploration.** In 1595 the Dutch East India Company was formed, with head-quarters at Batavia, whence ten years later Jansen was sent on a voyage of discovery, when he surveyed the south coast of New Guinea, and the east coast of Cape York peninsula, without, however, discovering the passage between the two.

**De Houtman and Jansen.** In 1606 the Dutch Governor of the Moluccas, De Houtman, despatched an exploring party, which surveyed the east coast of the Gulf of Carpentaria, but the report of Captain Jansen, the leader of the expedition, was unfavorable, and it was many years before the Dutch again visited this territory, which at the time they believed formed part of New Guinea.

During the next forty years a number of Dutch navigators touched at various points on the coast of Australia. Amongst these may be mentioned Carstens, who in 1623 coasted part of the northern shores, and Pool who in 1636 followed the coast line of the whole of the Gulf of Carpentaria. Of the Dutch discoverers Pelsaert, who sailed to Sharks Bay in the *Batavia* in 1629, was the only one who made any detailed observations of the character of the country inland. His journal contains the first notice and description of the kangaroo that has come down to us.

**Van Diemen and Tasman.** In 1642 Anthony Van Diemen, Governor of the Dutch East India Colonies, selected Abel Jansen Tasman to make explorations in the South Seas. On 24th November, 1642, the west coast of Tasmania was discovered. Rounding this and the south coast, Tasman entered Storm Bay and Frederick Henry Bay, where he hoisted the Dutch flag. Naming the locality Van Diemen's Land, he sailed eastwards, and discovered New Zealand, returning afterwards to Batavia. In the following year Tasman surveyed portions of the north and west coasts of Australia, from the Gulf of Carpentaria to Sharks Bay.

**Dampier.** In January, 1688, New Holland (so named by the Dutch) was visited near Roebuck Bay by Dampier, the first Englishman who sighted our shores. The description of his voyages includes his opinions respecting Australia and the people he found there, as well as of its flora and fauna. He was selected in 1699 to make further exploration of the place, to ascertain whether the land was a continent or a group of islands. He visited Sharks Bay, sailed northward to the archipelago now bearing his name, and then returned to England. His unfavorable report concerning the country suspended British exploration for many years.

**Cook.** That our continent ever became a portion of the British Empire is due to the enterprise, skill, and courage of Captain James Cook. In 1768 the British Government sent a scientific expedition, under his command, to Tahiti, with permission to undertake exploration in the South Seas. Cook first landed in New Zealand at Poverty Bay, on 8th October, 1769. After coasting round the North Island, and the South and Stewart Islands—mistaking the latter for part of the South Island—he took his departure from Cape Farewell on the 31st March, 1770, for Australia, and on the 20th April, 1770, land was sighted by Lieutenant Hicks, at a point believed to be the present Cape Everard, on the Victorian coast. Cook sailed northwards, and, after seven or eight days on the water, landed first at Botany Bay,

then further north at other places on the east coast. He then passed through Torres Strait, and, having thus demonstrated the fact that Australia was an island (although believed to be joined to Van Diemen's Land), returned home.

**Phillip.** Cook's description of Botany Bay was so favorable that in 1787 the British Government despatched Captain Arthur Phillip, in charge of a squadron of eleven vessels, to found a penal colony in Australia. Finding Botany Bay, which he entered on the 20th January following, unsuitable for settlement, he sailed northward to Port Jackson, which was named after Sir George Jackson, one of the Secretaries to the Admiralty, and he there formally took possession of the country on 26th January, 1788, in the name of His Majesty King George III.

**Clarke.** The first landing effected in Victoria was in 1797, from a vessel wrecked on Furneaux Island, in Bass Strait. Mr. Clarke, the super-cargo, and two sailors, out of a total of seventeen, reached Sydney overland, and these were probably the first white men who landed on Victorian shores.

Notable discoveries by sea were afterwards made by **Flinders, Bass, Grant, Murray,** and others, the first two of whom sailed through the strait separating Australia from Van Diemen's Land, and circumnavigated the latter island in 1798, thus demonstrating it to be an island. In 1802 Port Phillip Bay was discovered by Lieutenant Murray, sent from Sydney in the *Lady Nelson*, to survey the south coast. Flinders circumnavigated the continent in 1803, and after his very remarkable voyages there was no more coastal exploratory work to do except to fill in details.

**Collins.** In 1803 an attempt was made to colonize Victoria, then known as the territory of Port Phillip, by making it a convict colony, which, luckily, proved abortive. A penal expedition, under Captain Collins, arrived in Port Phillip Bay on 7th October. It consisted of nearly 400 persons, of whom over 300 were convicts. A sandy site, chosen at Sorrento, proved to be unsuitable for the colony, chiefly because of the scarcity of fresh water, and Collins sent out an exploring party in search of a better place. The hostility of the blacks, preventing any satisfactory land exploration, and stormy weather in the bay, precluding efficient observation, combined to produce a gloomy report; and Collins applied to his chief at Sydney for permission to remove to Van Diemen's Land. Governor King readily assented, and after three months of wretchedness in Port Phillip, the colony crossed Bass Strait, and founded the settlement at the Derwent. Among the few children who had accompanied their parents in this expedition was John Pascoe Fawkner, who, 32 years later, led a party to the Yarra, and assisted in the foundation of Melbourne.

**Hume and Howell.** In 1824, a young Australian-born explorer, Hamilton Hume, of Lake George, in company with Captain Howell, and six convicts as servants, set out overland with the intention of reaching Westernport. After accidents by flood and field,

swimming rivers, climbing mountains, and hewing their way with difficulty through rough forest country, they reached the river which now separates Victoria from New South Wales, and which they called the Hume. After much toil and many disappointments, they reached Corio Bay, near the site of the present town of Geelong. The members of the expedition, believing that they had reached their destination, then returned to Sydney. Two years later another expedition, under

**Westernport Settlement.**

Captain Wright, with Hovell as guide, settled at Westernport, the latter being under the impression that it was an inlet of the bay which Hume and he had previously reached. After a year's struggle for existence the place was abandoned, and the settlement withdrawn, lack of energy and general discontent being the apparent causes of failure.

In 1829, Sturt and Macleay, with eight convicts, rowed down the Murrumbidgee, and reached the river which Hume and Hovell had crossed some years previously, and which Sturt, in ignorance of the fact that it was the same as that to which the name Hume was given, called the Murray. The party then continued their journey past the mouth of the Darling, the upper waters of which Sturt had himself previously discovered, until they reached the broad waters of Lake Alexandrina. Unable to cross the bar which blocked the passage to the open, they turned back, and, after a laborious and perilous journey, reached head-quarters, having explored a thousand miles of new country, and navigated the greatest of Australian rivers.

**Mitchell.**

In 1836, Major Mitchell, Surveyor-General of New South Wales, with 25 convicts, followed the Lachlan and Lower Murrumbidgee, and having crossed the Murray, beheld, from the summit of Mount Hope, a wide extent of good pasture land. Holding his course southward, with a declination slightly to the west, he crossed the verdant plains past the mountain-range, which he called the Grampians, and reached the southern coast of Discovery Bay. At Portland the party met the Henty family, who had, two years previously, established a sheep and cattle station there for the convenience of whalers, who made Portland Bay a place of resort. The expedition followed a north-eastern course home. The name applied by Mitchell to that part of our State which he traversed was *Australia Felix*.

**Discovery of Gippsland.**

Gippsland, the eastern portion of Victoria, was entered from New South Wales in January, 1840, by Angus McMillan when searching for cattle pastures; and in the same year a Polish man of science, Strzelecki, accompanied by two stock-raisers, Macarthur and Riley, also explored the same region. It was Strzelecki who suggested the use of the name Gippsland, in compliment to the Governor of New South Wales, and Australia's loftiest mountain, Kosciusko, bears the name of a Polish hero as a consequence of the travels of this investigator.

**Portland Settlement.**

Whilst the earlier of these toilsome and dangerous overland expeditions were being conducted, anxious eyes were eagerly watching for a favorable opportunity to move across the

straits. Whale and seal hunting prevailed in the waters off the Victorian coast, or on the rocky islets that studded these waters. As early as 1828 sealers had erected temporary dwellings upon suitable spots on the southern coast of Victoria. The principal traders were

**Dutton.** William Dutton, John Griffiths, and John and Charles Mills. The first-named of these, William Dutton, established a whaling station at Portland in 1832, and was followed a year later by Edward Henty, who crossed in the *Thistle*, and with the servants, horses, cattle, and sheep, which he brought with him, became the first of that class of people who are now, to such a large extent, the backbone of our State, the agriculturists.

But it was the Bay of Port Phillip, after all, that was destined to become the principal channel of the new district's commerce. Thither John Batman came in 1835, entering the Heads on 29th May in the *Rebecca*. After landing near Geelong, and with characteristic acumen, ingratiating himself with the natives he proceeded up the bay, and anchored off what is now Williamstown. He proceeded, with fourteen well-armed men, along the banks of the Lower Yarra and

**The Yarra.** Saltwater as far as the site of Sunbury, and the natives, friendly because of Batman's favour in the eyes of the Geelong natives, were ready to treat with him. The famous barter, afterwards declared informal, by which the natives conveyed to him about 600,000 acres of rich grassy land for a quantity of knives, scissors, looking-glasses, blankets, and similar articles of native ambition, was drawn up by Batman near the site of Melbourne. Proceeding southwards, he came upon the main stream of the Yarra, and again boarded his vessel. Next day he ascended the river in a boat, and on reaching the Yarra Falls, entered in his diary the famous legend, "This will be the place for a village." Leaving a small party at Indented Head,

**Melbourne.** Batman and his associates returned to Tasmania to prepare for the transportation of their households and worldly possessions, which speedily followed.

But Batman was not to have things all his own way. **Fawkner.** John Pascoe Fawkner, who was one of the children whose brightness had illumed for a time the gloomy Sorrento settlement of 1803, formed a small party, and sailed in the *Enterprise* from Launceston a few weeks after Batman's departure. After visiting Westernport, whose aspect was particularly discouraging to the settlers, the *Enterprise* entered Port Phillip on 15th August, 1835. Batman's party at Indented Head, speedily and in due form intimated that their master was the owner of all the western side of the bay and the noble river at its head. Fawkner appears to have been prepared for such a claim, presumptuous as he declared it to be, for the *Enterprise* proceeded up the South Channel, and moved slowly northwards along the coast, in order that an exploring party might land from time to time to view the country. In this way Dromana, Frankston, Mordialloc, Brighton, and St. Kilda were tried and found wanting, and eventually the vessel anchored in Hobson's Bay, near the river mouth. The Yarra was

entered in a boat, and the site of the present Custom-house selected for the settlement. Next day, the *Enterprise* was towed up, and the landing of the colonists, with their horses, provisions, ploughs, grain, fruit trees, building material, and other necessities of a new settlement, accomplished the foundation of Melbourne. The settlement at Indented Head was removed to "the place for a village," and encamped quietly on the site of St. James's Cathedral, close behind the Fawkner settlement.

**The Capital.** Thus arose the present capital of the State, which, under the name of Greater Melbourne, now comprises the cities of Melbourne, South Melbourne, St. Kilda, Footscray, Fitzroy, Collingwood, Hawthorn, Richmond, Prahran, Brunswick, Essendon, Caulfield, Malvern, Northcote, and Camberwell; the towns of Brighton, Port Melbourne, Williamstown, Kew, Coburg; the borough of Oakleigh; the shire of Preston; and parts of the shires of Moorabbin, Mulgrave, Nunawading, Doncaster, Templestowe, Heidelberg, Whittlesea, Epping, Broadmeadows, Keilor, Braybrook, Wyndham, and Eltham. The total area of Greater Melbourne is 163,480 acres, of which 5,858 acres are reserved as parks and gardens. At the census of 1901 there was 97,653 dwellings, containing 538,569 rooms, and housing 494,167 persons, which had increased to 142,500 dwellings, with a population of 684,000 at the end of 1915.

**Port Phillip district.** Rapid progress was made by the new settlement. In little more than a year Sir Richard Bourke, the Governor of New South Wales, sent Captain Lonsdale from Sydney as Magistrate. He himself visited the place in 1837, and planned out the towns of Melbourne, Williamstown, and Geelong, to the last of which places Captain Fyans was appointed police magistrate in September of the year named. Up to 1851, the district formed a part of New South Wales, under the name of Port Phillip. On the 1st July of that year it became a separate Colony, and was called Victoria in honour of the late Queen.

**Burke and Wills.** An expedition was organized in 1858 in Victoria for the purpose of promoting an endeavour to cross Australia through the centre from south to north. A sum of about £11,500 was provided partly by subscription and partly by the Victorian Parliament. The command was intrusted to Richard O'Hara Burke, a police inspector, and the expedition started from Melbourne on 20th August, 1860. A depôt was established at Cooper's Creek, and from that point in December, 1861, Burke and Wills, with two other men, determined to make a dash for the Gulf of Carpentaria. The party did reach the Flinders River, which flows into the Gulf, and were within two days' journey of the sea, but they were insufficiently provisioned and had to return to Cooper's Creek. When they reached the depôt after four and a half months' absence, they found that Brahe, the man whom Burke had left in charge, had left just seven hours before. The time he had been instructed to wait had passed, and he had resolved to go to Menindie, on the Darling, where the reserves of the expedition were based. He left some provisions in a hole in the ground, and cut the

word "Dig" on the bark of a neighbouring tree. When Burke, Wills, and King—the fourth man, Gray, had died on the journey—staggered into the Cooper's Creek depôt, their condition was desperate. They ate the provisions they found, and rested a couple of days, debating what course they should pursue. Burke, instead of following in Brahe's tracks, as Wills wanted to do, insisted on making for a cattle station at Mount Hopeless, 150 miles away. It was a fatal resolve. They killed their camels for their flesh and crept forward on foot. When within 40 miles of Mount Hopeless, Burke, not knowing how near he was, gave the order to turn back to Cooper's Creek. Wills died first, in the hut at Cooper's Creek. Burke and King tried to find the encampment of some blacks who had helped their dead companion some time before. Burke broke down and died by the way. King lived with the blacks until he was rescued by A. W. Howitt, who had been sent out from Melbourne in charge of a relief expedition. He survived until 1872.

### GOLD PRODUCTION.

**Gold.** An important element in the development and prosperity of the new Colony was the discovery of gold, which took place in 1851. The precious metal was first discovered at Clunes, then at Anderson's Creek, and soon after at Buninyong and Ballarat, afterwards at Mount Alexander, and eventually at Bendigo. Large and important fields were subsequently opened up in the districts around Ararat, Stawell, Beechworth, and Maryborough, and in Gippsland. The discovery brought about a large immigration from many parts of the world. All persons were allowed to dig for gold on payment of a licence-fee of £1 10s. per month, afterwards reduced to that amount per quarter. In the early days the diggers found no difficulty in paying this fee, as they were not very numerous, and were generally successful. As time went on, however, the gold-fields population increased largely, many men were unsuccessful, and the payment of the fee became burdensome. The mode of collecting it was objectionable. The outcome of the whole matter was dissatisfaction and discontent, which culminated in a riot at Ballarat towards the close of 1854, when the diggers erected a stockade at Eureka, and set the authorities at defiance. Troops and police to the number of not quite 300 were despatched to Ballarat, and the disturbance was speedily quelled. An officer was killed, together with four privates, and about a dozen of the storming party were wounded. On the other side fully 30 were killed, many were wounded, and 130 prisoners were taken. A Royal Commission was subsequently appointed, which made recommendations for the removal of the licence-fee, and for other concessions, the carrying out of which ultimately restored peace and harmony.

From the date of its discovery, the quantity of gold recorded for Victoria up to the end of 1915 was 74,310,887 ounces, valued at £296,704,008, this being about one-half the quantity recorded for the whole of Australia.

### WOOL PRODUCTION.

**Wool.** Important as was the discovery of gold in aiding the early development of the Colony, wool production has been hardly less notable. It is to the Tasmanian flocks of sheep that the best Victorian stock owes its origin. The original Henty flock was formed at Sussex, England, towards the close of the eighteenth century, and brought by members of the family to Tasmania, whence it was transferred to Portland, at the time Edward Henty settled there. Good Merinoes were also overlanded from the Camden flock, established in New South Wales by Captain Macarthur in 1797, with Merinoes imported from England. This strain has been preserved pure in Victoria. The first official return of sheep in this State was in 1836, when the number was 41,332. At the end of 1842 the number recorded for the Port Phillip district was 1,404,333. The herds increased year by year, until at the census of 1891 the number was 12,692,843, but, owing to dry and unfavorable seasons between that year and 1901, it was then reduced to 10,841,790. The number had increased in 1907-8 to 14,146,734, but a partial drought experienced in that year was mainly responsible for a reduction to 12,545,742 in 1908-9. Since that time the numbers have varied, but had fallen to 12,051,685 in 1915.

Wool was first exported in 1837, the quantity being 175,081 lbs., valued at £11,639; in the following year 320,383 lbs., valued at £21,631, were exported; in 1839, 615,603 lbs., valued at £45,226; in 1840, 941,815 lbs., valued at £67,902; and in 1841, 1,714,711 lbs., valued at £85,735.

Soon after this time the figures of the export trade of wool from Victoria include small returns from New South Wales; but it was not until 1864 that wool to any considerable extent was exported from that Colony through Victoria. In 1862 and in 1863 the export from Victoria was about 25,000,000 lbs.; in 1864 it was nearly 40,000,000 lbs., the increase being mainly derived from the Riverina district, which was placed in communication with Melbourne by means of the Echuca railway. In 1914-15, the wool production was 95,406,867 lbs., nearly all of which was exported. Prior to 1890 no returns were prepared to show the average weight of fleeces. Since that year, however, records have been kept, and the average (sheep and lambs) for the whole period may be put down at 5 lbs. 8½ ozs. This may be taken as an indication of the suitability of Victoria in soil, climate, and natural pasturage for sheep-breeding.

### GENERAL PROGRESS.

The following table has been prepared to illustrate the advance made by the Colony since 1842, the year of the introduction of representative government into New South Wales, which then included the Port Phillip district. The years 1850 and 1855 have been chosen—the former as being the year immediately preceding the separation of the Colony from New South Wales, and the latter the date of the



## STATISTICS OF VICTORIAN PROGRESS, 1842 TO 1915.

	1842.	1850.	1855.	1861.	1871.	1881.	1891.	1901.	1914-15.
Population, 31st December ..	23,799	76,162	364,324	541,800	747,412	879,886	1,157,678	1,210,882	1,417,801
Revenue .. £	87,296	259,433	2,728,656	2,592,101	3,734,422	5,186,011	8,343,588	7,712,099	10,529,017
Expenditure from Revenue .. £	124,631	196,440	2,612,807	3,092,021	3,659,534	5,103,642	9,128,699	7,672,780	11,706,968
Public Funded Debt .. £	..	..	480,000	6,345,060	11,994,800	22,426,602	43,638,897	49,546,275	72,183,927
Gold produced .. oz.	..	..	2,793,065	1,967,433	1,355,477	858,850	576,400	73,235,138	352,272
Wool produced .. lbs.	2,752,330	16,345,468	22,470,443	22,640,745	37,177,646	45,970,560	76,503,635	46,867,572	95,406,867
Butter produced .. "	..	..	..	..	..	..	10,703,786	..	62,421,288
Agriculture—									
Land in cultivation .. acres	8,124	52,341	115,060	427,241	793,918	1,582,998	2,512,593	3,647,459	5,969,304
Wheat .. bushels	55,360	556,167	1,148,011	3,607,727	4,500,795	8,714,377	13,679,268	12,127,382	3,940,947
Oats .. "	66,100	99,535	614,614	2,136,430	3,299,889	3,612,111	4,455,551	6,724,900	1,608,419
Wine .. gallons	..	4,621	9,372	47,568	713,589	539,191	1,554,130	1,981,475	605,636
Live Stock—Horses .. No.	4,065	21,219	33,430	84,057	151,643	278,195	440,696	392,237	552,053
" Cattle .. "	100,792	378,806	534,113	628,092	799,509	1,286,677	1,812,104	1,602,384	1,362,542
" Sheep .. "	1,404,333	6,032,783	4,577,872	6,239,253	10,002,381	10,267,265	12,928,148	10,841,790	12,051,685
" Pigs .. "	..	9,260	20,686	43,480	177,447	239,926	286,780	350,370	243,196
Total Imports—Value .. £	277,427	744,925	12,007,939	13,532,452	12,341,995	16,718,521	21,711,608	18,927,340	28,150,198*
" Exports—Value .. £	193,783	1,041,796	13,493,338	13,828,606	14,557,820	16,252,103	16,006,743	18,646,097	29,896,275*
Imports, Oversea—Value .. £	..	..	..	10,991,377	9,201,942	11,481,567	13,802,598	12,686,880	20,997,294
Exports .. "	..	..	..	12,209,794	12,843,451	12,318,128	11,408,922	13,075,259	12,357,334
Shipping .. tonnage	78,025	195,117	1,133,283	1,090,002	1,355,025	2,411,902	4,715,109	6,715,491	10,598,880
Railways open .. miles	..	..	..	..	..	..	..	..	..
Telegraph wire .. "	..	..	..	214	3,472	1,247	2,764	3,238	8,860
Postal business—Letters .. No.	97,490	381,651	2,990,992	6,109,929	11,716,166	26,308,347	62,526,448	83,973,499	188,440,698
" Newspapers .. "	147,160	381,158	2,349,656	4,277,179	5,172,970	11,440,732	22,729,005	27,104,344	40,737,663
Savings Bank Deposits .. £	..	52,697	173,090	582,796	1,117,761	2,569,488	5,715,687	9,662,006	24,789,697
Factories—									
Number of .. "	..	..	278	581	1,740	2,488	3,141	3,249	5,650
Hands employed .. "	..	..	..	4,395	19,469	43,209	52,225	66,529	118,399
Value of machinery, plant, land and buildings .. £	..	..	..	..	4,725,125	8,044,296	16,472,859	12,238,500	21,975,646
Value of articles produced .. £	..	..	..	..	..	13,370,830	22,390,251	19,478,780	49,439,985
State Education—									
Number of Primary schools ..	..	61	370	671	988	1,757	2,233	1,967	2,175
Expenditure on Education .. £	..	..	115,099	162,547	274,384	546,285	726,711	701,034	1,581,530
Total value of rateable property in municipalities .. £	..	..	..	29,638,091	50,166,078	87,642,459	203,351,360	185,101,993	314,010,747
Friendly Societies—									
Number of Members ..	..	..	1,698	7,166	35,706	47,908	89,269	101,045	158,511
Total funds .. £	..	..	..	..	213,004	475,954	961,933	1,370,692	2,644,216

NOTE.—In a few instances in the earlier years, where it is not possible to give figures for the exact date or period shown, those for the nearest dates or periods are given. Gold was discovered in 1851, in which year the return was 145,137 oz. Butter figures were not collected prior to 1891. \* These figures relate to the calendar year 1909. Owing to the Commonwealth authorities having discontinued the keeping of records of inter-State trade, the value of the total imports and exports of the State are not available for a later year.

Introduction of responsible government for Victoria. The subsequent years are census years, except the last:—

Introductory Remarks.

The population of the State at the end of 1842 was 23,799; and at the end of 1915 it had increased to 1,417,801. During the period 1842-1915 the revenue steadily increased from £87,296 to £10,529,000. There was no public debt until after separation. In 1855 the State indebtedness was £480,000, in 1915 the funded debt had reached £72,183,927, which has been spent on revenue-yielding and other works of a permanent character. The land in cultivation in 1842 was slightly over 8,000 acres; it now amounts to 5,969,000 acres; in the number of horses, cattle, and pigs increases are generally shown. The value of imports in 1842 was £277,427; in 1909, the last year for which figures are available, it was over £28,000,000. Exports amounted to £198,783 in 1842; and in 1909 to nearly £30,000,000. No railways or telegraphs were in existence up to the end of 1855; in 1861 there were 214 miles of railway open, in 1915 there were 3,880 miles; 2,586 miles of telegraph wires had been erected up to 1861, and 26,146 miles up to the end of 1914. Postal business in letters and newspapers has expanded rapidly during the period covered by the table, and there has also been a large increase in Savings Bank deposits which rose from £52,697 in 1850 to £24,789,697 in 1915.

The expenditure on education amounted to £115,000 in 1855, and had increased to £1,531,530 in 1914-15. Members of friendly societies numbered 1,698 in 1856, and 158,511 in 1914—the funds amounting to £213,000 in 1871 and £2,644,216 in 1914. Hands employed in factories rose from 19,468 in 1871 to 118,399 in 1914. The total value of rateable property in municipalities, which was £29,600,000 in 1861, aggregated £314,610,747 in 1914-15.

### GEOGRAPHICAL POSITION, AREA, AND CLIMATE.

**Area of Victoria.** Victoria is situated at the south-eastern extremity of the Australian continent, of which it occupies about a thirty-fourth part, and it contains about 87,884 square miles, or 56,245,760 acres. It is bounded on the north and north-east by New South Wales, from which it is separated by the River Murray, and by a straight line running in a south-easterly direction from a place near the head-waters of that stream, called The Springs, on Forest Hill, to Cape Howe. On the west it is bounded by South Australia, the dividing line being about 242 geographical miles in length, approximating to the position of the 141st meridian of east longitude, and extending from the River Murray to the sea. On the south and south-east its shores are washed by the Southern Ocean, Bass Strait, and the Pacific Ocean. It lies between the 34th and 39th parallels of south latitude, and the 141st and 150th meridians of east longitude. Its extreme length from east to west is about 420, its greatest breadth about 250, and its extent of coast-line nearly 600 geographical miles. Great Britain, exclusive of the islands in the British Seas, contains 88,756 square miles, and is therefore slightly larger than Victoria.

The southernmost point in Victoria, and in the whole of Australia, is Wilson's Promontory, which lies in latitude 39 deg. 8 min. S., longitude 146 deg. 26 min. E., the northernmost point is the place

where the western boundary of the State meets the Murray, latitude 34 deg. 2 min. S., longitude 140 deg. 58 min. E.; the point furthest east is Cape Howe, situated in latitude 37 deg. 31 min. S., longitude 149 deg. 59 min. E.; the most westerly point is the line of the whole western frontier, which, according to the latest correction, lies upon the meridian 140 deg. 58 min. E., and extends from latitude 34 deg. 2 min. S. to latitude 38 deg. 4 min. S., or 242 geographical miles.

**Climate.**

From its geographical position, Victoria enjoys a climate more suitable to the European constitution than any other State upon the Continent of Australia. In the fifty-nine years ended with 1915 the maximum temperature in the shade recorded at the Melbourne Observatory was 111·2 deg. Fahr., viz., on the 14th January, 1862; the minimum was 27 deg., viz., on the 21st July, 1869; and the mean was 57·4 deg. Upon the average, on four days during the year, the thermometer rises above 100 deg. in the shade; and, generally, on about three nights during the year, it falls below freezing point. The maximum temperature in the sun ever recorded (*i.e.*, since 1857) was 178·5 deg., viz., on the 4th January, 1862. The mean atmospheric pressure, noted at an Observatory 91 feet above the sea level was, during the fifty-nine years ended with 1915, 29·93 inches; the average number of days on which rain fell was 135, and the average yearly rainfall was 25·27 inches.

**PHYSICAL GEOGRAPHY, GEOLOGY, AND FAUNA OF VICTORIA.**

*By the late T. S. Hall, M.A., D.Sc.*

NOTE.—The article by Dr. Hall, which appeared in the *Year-Book* for 1914–15 and previous issues, is repeated this year, although Dr. Hall died in December, 1915. It has not been thought necessary to make any alterations therein, as it is considered that the article still gives a correct representation of the facts.

Additional information is being obtained in the course of the official Geological Survey work and private investigations, and this will be embodied in the next *Year-Book* in an article by Mr. H. Herman, B.C.E., M.M.E., F.G.S., Director of Geological Survey for Victoria.

**PHYSICAL GEOGRAPHY.**

In shape, Victoria is roughly triangular, its breadth from north to south along its western border being about one-half its length from east to west. The highlands also form a triangle, but in this case the greatest north and south measurement is in the east, while the base stretches nearly to the western boundary. This area of high land attains its greatest elevation in the east, and gradually sinks towards the west. The elevated region consists of palæozoic, and perhaps older rocks, of various ages, with, in a few cases, as at Dargo High Plains, and at Bogong High Plains, patches of older-tertiary basalts.

There are thus constituted two main drainage areas. A series of rivers flows northwards from the highlands, forming the Murray

and its southern tributaries, while another series flows southwards to the sea. At the western end the Glenelg taps streams which arise both on the northern and the southern slopes. The water-parting between the north and the south flowing streams is spoken of as the Main Dividing Range, and along its course are some of the highest mountains of the State, as Mount Cobboras, 6,030 feet, Mount Hotham, 6,100 feet, and several others nearly as high. The average elevation of the Divide is about 3,000 feet. The highest mountains in Victoria lie to the north of the water-parting, namely, Mount Bogong, 6,508 feet, and Mount Feathertop, 6,306 feet. On the higher mountains snow occasionally lies in sheltered localities throughout the year, but we have no permanently snow-clad mountains in Australia. The Divide, which is of considerable geological age, forms a well-marked boundary between two distinct zoological areas. The animals to the north are allied to those of Central Australia, while those to the south are almost identical with the Tasmanian.

The strike of the palæozoic rocks is, roughly, north and south, so that the direction of the Dividing Range is not due to the primary rock-folding. Owing to stream capture and general denudation, the Divide has doubtless shifted its position from time to time, but the existence of the highlands is possibly, in part, due to an east and west series of folds, of which the "pitch" in the anticlines of our older rocks affords evidence; and in part to faulting, the latter being the more probable.

Highlands occur to the north of Cape Otway, where they rise to a height of over 2,000 feet, and also in South Gippsland. These districts are densely clothed with forests, and rich in fern gullies, the rocks consisting of fresh-water jurassic strata. Geographically isolated from the rest of the State is the rugged granitic area of Wilson's Promontory, which rises in places to about 2,500 feet. This mass is a "tied island," the neck of the peninsula being formed by sand dunes. The chain of lofty granitic islands extending from the Promontory to Tasmania is the remains of an ancient connecting mountain range.

The north-west of Victoria is occupied by a large plain which borders the highlands on their northern side, and sweeps west, and still further north far beyond the boundaries of the State. It represents in the main the flood-plain of the Murray and its tributaries. This area is for the most part covered by a dense growth of several dwarf species of Eucalyptus, known collectively as Mallee.

The south-west is occupied by another plain, consisting chiefly of recent basalts and tuffs. It is typically treeless, owing to the small depth of soil, and to poor subsoil drainage, but it is richly grassed, and contains some of the best and most easily worked agricultural land in the State.

Rivers and  
Lakes.

As already indicated, the main river system consists of the Murray and its tributaries, the Murray itself being the only stream that is navigable for any distance, and forming an important highway. Owing to the building up of its flood-plain by

the river its western tributaries can no longer reach it, but spread out in times of flood into broad, shallow lakes which disappear in dry seasons.

As regards the streams to the south of the Dividing Range, the south-westerly drift bars the mouths of all which debouch into the open sea, and long continued action has built up a ridge off the Gippsland coast behind which the rivers spread out to form large shallow lakes. The volcanic plains of the west are dotted with lakes and swamps owing to the imperfect drainage of the almost level expanse, to the low barriers formed by the irregular flows of lava, and to the distribution of the sheets of volcanic ash. Some of these lakes have been ascribed to sinking of the surface as a subsequent result of the volcanic outburst, while others, several of which are very deep, occupy the sites of volcanic vents. Many of the western lakes have no outlet, and are salt, while those with a permanent or occasional overflow are fresh.

**Coastline.** From the Glenelg on the west as far eastward as the Gellibrand River, the western plains abut on the sea. Sometimes it is the volcanic rocks which reach the coast, but in most places the underlying marine tertiaries border the shore, with or without an intervening belt of sand dunes. When dunes are present they usually disturb the drainage, and extensive swamps and marshes are the result. These are extensively developed between Nelson and Cape Bridgewater. Where the plain, as at its eastern end, reaches the height of 200 or 300 feet it is deeply eroded, and, as is the case in the area occupied by the Heytesbury forest, its essential character is not at first apparent, and the coast itself is bordered by vertical cliffs. East of the Gellibrand, and sweeping past Cape Otway to near Split Point, the highlands of the Otway Ranges with their forests, streams, and waterfalls afford a coast of great beauty. From Split Point, as far as Wilson's Promontory, the land shows no great elevation, rarely rising more than 200 feet. Sand dunes and cliffs of marine tertiaries, or of basalt, border it nearly all the way. At Cape Woolamai we have an isolated mass of granite, and about Cape Patterson the jurassic coal series forms the shore line. Near Cape Liptrap is a small, rugged outcrop of palæozoic rocks. Beyond Wilson's Promontory, with its beautiful scenery of small bays backed by lofty tree-clad ranges, and with its clusters of precipitous islets, comes the long, dune-fringed Ninety-mile-beach. Behind these dunes at their eastern end lie the Gippsland Lakes. Beyond Lakes' Entrance high ranges of palæozoic rocks and granite approach the sea, and extend to Cape Howe, the most easterly point in the State.

The only good natural harbor is the land-locked basin of Port Phillip. Portland Bay and Port Fairy are formed under the lee of projecting tongues of volcanic rocks. The lower Glenelg River, for 40 miles inland, Lady Bay, Warrnambool Bay, and Port Campbell owe their main outlines to the fact that they are drowned valleys. Port Phillip has itself a similar origin, its eastern side being defined

by a north and south fault. The harbor originally opened widely to the sea, and the old line of sea cliffs may be traced from Dromana to Cape Schanck on the eastern side, while on the west it runs from St. Leonard's to Ocean Grove. The Sorrento peninsula and the sandy triangular area with Queenscliff at its apex are dunes piled on sand banks which nearly closed the port, the gap at the heads being kept open by the tidal scour. Western Port and Mallacoota Inlet are also due to subsidence. The estuaries of the Curdie, Gellibrand, Aire, Barwon, and other smaller streams were formerly inlets of a similar nature, but are now more or less filled with river-borne material.

As regards islands, we are poorly off. Lady Julia Percy Island, near Portland, is volcanic. East of this, where hard bands occur at sea-level, in the marine tertiaries, the coast is fringed by stacks and precipitous islets carved out by the waves. These are absent along the Otway coast, where the jurassic rocks reach the shore. Phillip and French Islands, like those off Wilson's Promontory, are due to subsidence, the old hill tops standing above the sea which now fills the intervening valleys.

### GEOLOGY.

The triangular shape of the area occupied by the palæozoic rocks has already been pointed out. The stratified rocks of this age have a general north and south strike, and the older ones are acutely folded. The mesozoic and tertiary strata show no great crumpling, though considerable faulting has occurred in places. Their strike is in the main parallel to the coast, or east and west.

For details as to the distribution of the rocks reference may be made to the beautiful geological map of Victoria published a few years ago by the Department of Mines.

Scattered irregularly over the State are numerous outcrops of quartz-mica-diorites and granitoid rocks of various types. They are mostly post-silurian, and intrude the older rocks. They range from Cape Howe to beyond the Glenelg, and from Wilson's Promontory in the south to near Swan Hill in the north.

At Mounts Macedon and Dandenong occurs a series of dacites and various other associated rocks intruding the supposed devonian granites.

Another series of rocks of basic composition and of palæozoic age is found near Heathcote and in a few other localities.

In the extreme north-east in Benambra, and in the south-west in Dundas, are two large areas of crystalline schists. Their age is in dispute. By some they are regarded as archæan, and by others as altered ordovician. A few small patches occur elsewhere.

At Heathcote a few imperfect fossils have been found, which have been referred to middle cambrian age, but this reference has been disputed in favour of ordovician. At Dookie and at Waratah Bay certain other beds have been thought to be cambrian,

but fossils are wanting. Certain limestones associated with upper ordovician slates have recently been referred to cambrian on palæontological evidence.

**Ordovician.** Slates and sandstones of ordovician age, all acutely folded, and more or less cleaved, occur. Limestones are practically absent. One large area is situated in the east, and the same rocks re-appear in the centre of the State. From Ballarat westward is a large mass of rocks having similar characters, and generally regarded as ordovician. Recently many places which were thought to be occupied by silurian rocks have yielded ordovician fossils, as will be seen on comparing the last two editions of the geological map. Since then ordovician, in the place of silurian, has been proved in several places on the Mornington Peninsula.

As regards fossils, the absence of calcareous beds greatly limits their variety. A few sponges and lower types of crustacea occur. No trilobites have been found, unless the Heathcote rocks be ordovician, and not cambrian. The dominant forms are graptolites, of which a large number are known. The series is divided into upper and lower. Of the former there is but little accurate information available. The rocks of the eastern area, a prolongation of similar beds in New South Wales, are of this age, as also are certain rocks near Matlock, Sunbury, and some other places north of Melbourne. The lower ordovician has been divided into four. These, in descending order, are typically developed at Darriwell (north of Geelong), and at Castlemaine, Bendigo, and Lancefield. Most of our auriferous quartz veins occur in the ordovician, but some are in younger, and some in older, rocks. The best studied gold-field is that of Bendigo, where the veins fill lenticular spaces arching over the anticlines. They have considerable extension along the strike, and several usually occur on the same anticline, one below the other. These veins are known as "saddle-reefs." "Pitch" of the strata, or undulation of the axis of the anticlines in a vertical direction, is a marked feature, and of considerable importance from its effect on mine working.

**Silurian.** The older rocks round Melbourne, and for some distance to the north and east, are of silurian age. Sandstones, mudstones, and, at a few places, as at Lilydale, near Mansfield, and on the Thomson River, limestones occur. The rocks have not been subjected to the same amount of disturbance as the ordovician, and fossils are fairly common, though, except in the limestones, rarely well preserved. A large number have been recorded. Graptolites, corals, polyzoa, brachiopoda, mollusca, trilobites, and crustacea have been found. An apparent approach to a devonian facies is shown at some localities. In the neighbourhood of Melbourne the strata are much disturbed. There is an upper and a lower series, formerly known by names borrowed from British geology, though the local names, Melbournian for the lower or graptolite bearing series, and Yeringian for the upper, are now more suitably employed. The rocks are frequently auriferous.

**Devonian.** A long and narrow belt of quartz-porphyrines, and allied rocks, running parallel to the Snowy River, and partly intersected by it, marks a volcanic axis. In places tuffs rest on the edges of the ordovician, and are in turn overlain by limestones rich in devonian fossils. The volcanic rocks have been referred to lower devonian, and the limestones to middle devonian. Several patches of these limestones occur widely scattered over the eastern parts of the State, the largest being at Buchan and at Bindi. Corals, brachiopods, and molluscs abound in them. A series of much-folded shales and quartzites of apparently the same age, judging by the fossils, is to be seen at Tabberabbera and Cobannah. In places overlying these highly-inclined, middle devonian beds are found nearly horizontal strata. These, as at Iguana Creek, yield plant remains, and are regarded as upper devonian. The Grampian sandstones, which form a bold range with an abrupt south-easterly facing scarp over 2,000 feet in height, are provisionally regarded as upper palæozoic. Fossils, as yet undetermined, have only recently been found. The Cathedral Range, near Marysville, belongs probably to the same series.

**Carboniferous.** Certain sandstones on the Avon with *Lepidodendron* are, it is considered, of carboniferous age. From here northward, across the Divide, a belt of similar rocks extends, forming very rugged mountains. A series of fossil fish from near Mansfield, at the northern extremity, has lately been critically examined, and declared to be of carboniferous age, and not devonian, as was formerly held.

**Permo-Carboniferous.** At several localities occur beds of glacial origin, sometimes of considerable thickness. At Bacchus Marsh the boulder beds are associated with sandstones containing the fossil fern-like plant *Gangamopteris* and a few other forms, and this affords a means of correlating them with permo-carboniferous beds elsewhere.

**Jurassic.** About Coleraine and in the Otway district, and in South Gippsland, there are large areas of fresh-water shales and sandstones, in places conglomeratic. A few fish, a dinosaur claw, and fresh-water molluscs have been found; but the chief fossils are plants, of which a large number are now known, as *Baiera*, *Sphenopteris*, *Taeniopteris*, &c. Coal is worked in the beds of Gippsland, as at Jumbunna, Outtrim, and Wonthaggi.

**Tertiary.** The rocks hitherto spoken of are confined in the main to the highlands previously described. The lowlands are for the most part occupied by tertiary rocks of volcanic and marine origin, with, over large tracts, a cover of fluviatile or wind-formed source. They form a belt between the Dividing Range and the sea, or the jurassic rocks, where these occur, from near the mouth of the Snowy River to beyond the western boundary of the State. They sweep round the western end of the Divide, and underlie the greater part of the Mallee district in the north-west. Where they, or the fluviatile or the aeolian deposits, overlie auriferous bedrock, the buried



river channels usually contain gold. In other places lignite beds or brown coals, sometimes of considerable extent and thickness, are formed, as at Dean Marsh, Altona Bay, Lal Lal, and several localities in South Gippsland. Both these types of deposit, the gold and lignite bearing, are of various ages, from oldest tertiary upwards.

The marine beds are extremely rich in fossils, and have been divided into three main groups. Owing to the difficulty, or perhaps the impossibility, of correlating them with the subdivisions of the northern hemisphere, local names are now generally applied.

*Barwonian* (? Eocene).—Sands, clays, and limestones composing beds of this age are widely spread, occurring about the Gippsland Lakes, and along the southern coast from Flinders to the Glenelg. Inland they underlie the western plains from Geelong to Hamilton, and have been proved in bores from Stawell to beyond the Murray northwards. East of this line they appear to be bounded by a ridge of palæozoic rocks, extending northwards from the Divide and only thinly mantled by non-marine beds. The fauna of the marine beds is extremely rich and varied, all types being represented, and in number of species and excellence of preservation is scarcely anywhere surpassed. Associated with the marine beds is a series of basalts and tuffs, which are found more especially in the central and eastern parts of the State. Under certain climatic conditions these volcanic rocks have decomposed to form a valuable agricultural soil.

*Kalimnan* (? Miocene).—These rocks are widely spread, though not so extensively as the Barwonian. They are well represented near Bairnsdale, Shelford, Hamilton, and, though the age is in dispute, at Beaumaris. As a rule they are more arenaceous than the lower beds, and ferruginous sands are typical. The fauna is fairly rich, and very distinct from the Barwonian.

*Werrikooian* (? Pliocene).—Marine beds of this age are not common, but are found in the lower Glenelg district, overlying Barwonian. The fossils are almost all existing species.

After the deposit of these beds there occurred extensive outpourings of basaltic lavas in the southern and south-western parts of the State, and large lava plains were formed, through which deep gorges have been cut by the creeks and rivers. Fine examples of volcanic cones in all stages of denudation are plentiful. In deposits, both immediately before and after this last volcanic outburst, there are found the bones of numerous extinct marsupials, such as Diprotodon, Nototherium, and gigantic kangaroos. Raised beaches point to an elevation of some twenty feet since the previous subsidence which has formed many of our harbors.

#### FAUNA.

The peculiarity of the Australian mammalian fauna has often been remarked upon. Nowhere else in the world do we find representatives of the three great groups into which the class is divided,

namely, the eutheria, the marsupials, and the monotremes. The last group, containing the spiny anteater (*Tachyglossus*) and the platypus (*Ornithorhynchus*), is confined to the continent and neighbouring islands, while the marsupials exist, nowadays, only in the Australian region and in America.

Of the eutheria, which comprises all mammals above the marsupials, we have but a few terrestrial forms—the dingo, a few bats, and rats and mice. The seas afford a few more, such as whales and porpoises, seals and in certain places the dugong (*Halicore*).

In Victoria itself we find the Australian fauna typically developed. The echidna ranges over the whole continent, while its ally, the platypus, is confined to the eastern side of Australia, from Tasmania to the tropics. Both are still common in certain parts of the State.

Among the marsupials the kangaroo family (*Macropodidæ*) is well represented, though the larger forms are rapidly disappearing. These comprise the red, grey, and the black-faced kangaroos. The smaller forms, such as wallabies and kangaroo-rats, are still plentiful in many of the more densely forested regions. The southern wallaby (*Macropus billardieri*) is identical with the Tasmanian one, and the other common one (*M. ualabatus*) ranges far to the north of our boundaries. A few other northern forms come down south as far as the Dividing Range. The small kangaroo-rats (*Bettongia*), dwelling in thick scrub, are hard to catch sight of, and still harder to shoot.

The Australian opossum family (*Phalangeridæ*) comprises our so-called opossums, flying squirrels, and the native bear—unfortunate names, but the only local ones in common use. The silver opossum and the Tasmanian brown are the same species (*Trichosurus vulpecula*), the island form being a little larger and of a darker hue. This species ranges over practically the whole of Australia. They form their nests in hollow trees, or, where these are absent, as on some of the islands in Bass Straits and in Central Australia, on the ground. The ring-tailed opossum (*Pseudocheirus peregrinus*) builds a hollow, ball-like nest of grass and bark in the dense scrub. The flying opossums, or, as they are sometimes called, flying foxes (*Petaurus*) and the flying squirrels (*Acrobates*) are represented by several species, ranging from the size of a cat to that of a mouse, and are very beautiful forms. They have not the power of true flight, but can glide for a considerable distance from a greater to a less height. The native bear (*Phascolarctos cinereus*) has a very restricted range. It does not occur in South Australia nor Tasmania, but passes north up the eastern coastal region. As shown by its occurrence in cave deposits in Western Australia it formerly had a much wider range. Despite its name, it is a harmless vegetable feeder, and its valuable skin dooms it to early extermination.

Of the wombat family we have but one representative (*Phascolomys mitchelli*), which is still common in the eastern parts of the State.

In the native cat family we have three of the spotted species, the large tiger cat (*Dasyurus maculatus*) and the common native cat (*Dasyurus viverrinus*), which occur south of the Dividing Range, and dwell also in Tasmania. The third species (*Dasyurus geoffroyi*) occurs only to the north of the Divide. The Tasmanian devil (*Sarcophilus*), long believed to be extinct on the mainland, probably still exists as a specimen was recently captured in the forests to the north of Kilmore. The weasels (*Phascogale*) and the pouched mice (*Sminthopsis*) are numerous in species and fairly common. Some are arboreal, others terrestrial. The pouched mice are fierce little cannibals, and a few years ago about fifty were sent down alive in a case to the University. Two days after there were two living, while a few rags of fur represented the other four dozen. The survivors engaged in mortal combat in the glass jar in which they were put to be chloroformed. Examples of these small forms and of their skeletons are desiderata in the National Museum. The jumping pouched mouse (*Antechinomys laniger*), which hops like a diminutive kangaroo, comes south only into North-western Victoria, and is not well known with us.

The bandicoot family is a small one, though three species of bandicoot (*Perameles*) are found in the State. They live in grass land. The rabbit-bandicoot, or bilbie (*Peragale*) and the pig-footed bandicoot (*Choeropus ecaudatus*) occur in the north-west, the latter being a rare animal.

In eutheria, the higher mammals, we are, as already stated, poorly off. The dingo, perhaps, got here before man arrived, and its remains are found fossil. Bass Straits was a barrier to it, and it did not reach Tasmania.

Among bats the large flying-fox (*Pteropus poliocephalus*) often does harm to the fruit in the northern parts of the State and in Gippsland. It is widely spread up the eastern sea-board of the continent. It will be noticed that the name "flying fox" is applied both to a bat and a marsupial. We have also several other small bats, but must pass them over.

Among rats, the golden water rat (*Hydromys chrysogaster*) is a large, handsome animal ranging all over Australia, and occurring also in Tasmania and New Guinea. There appears to be only the one species. The bush rats of the State (*Mus gouldi* and *Mus greyi*) are common, and probably others occur. They have not been satisfactorily worked out here, and specimens are needed in the Museum.

Only one species of seal, the Australian sea-bear (*Euotaria cinerea*) is now found in Bass Straits, and is protected. There are colonies on a few outlying islands and rocks. Other species occasionally stray up from the far south. The yellow-sided dolphin (*Delphinus novæ-zelandiæ*) is common in our waters, and whales of several species are occasional visitors.

As regards birds, we have only some two or three species practically confined to the State, the Victorian lyre-bird (*Menura superba*) being the best known. The emu is still common in the north-west. Wild fowl are plentiful, and occasionally great incursions are made from the north. Our most striking birds are the lorries and honey-eaters, which gather "the harvest of the honey-gums." Quail are common at times, and pigeons of various kinds occur. The mound-building lowan, or mallee-hen (*Leipoa ocellata*), and the bower birds (*Ptilonorhynchus violaceus* and *Chlamydodera maculata*) are remarkable for their habits, so often described, while the mutton bird (*Puffinus brevicaudus*) is of great economic value for its eggs, which are gathered, together with its young, in countless numbers. Field naturalists have investigated our birds more thoroughly than any other group of our fauna, and are now busy collecting data for the study of their migrations, an almost untouched subject here.

Turning to the reptiles, we have two tortoises, the short-necked (*Emydura macquariae*), found north of the Divide, and the long-necked (*Chelodina longicollis*) occurring both there and in South Gippsland.

As regards lizards, the most remarkable are the so-called legless forms of the family Pygopidae. They have no front legs, while the hind ones are represented by two scaly flaps usually fitting into grooves on the side of the body, and so escaping casual examination. They are the main source of the stories of snakes with legs, which occasionally fill our newspapers. The large "goanna" (*Varanus varius*) derives its name from *Iguana*, a genus not found in Australia. It is common north of the Divide, and reaches a length of five or six feet. A smaller species (*Varanus gouldi*) ranges as far south as Gippsland, and as it frequents streams is dignified by the name of the Gippsland crocodile. Our other lizards are small and harmless, though some have such terrifying names as "bloodsucker" (*Amphibolurus*), and so on. Altogether we have some fifty species of lizards in the State.

Among snakes, we find the non-venomous blind-snakes (*Typhlops*), with bodies as smooth as glass, the green tree snakes (*Dendrophis*), and the carpet snake (*Python spilotes*). All these forms are commoner in the north of the State. We have about a dozen venomous species, though some from their small size are not dangerous to man. The tiger snake (*Notechis scutatus*), a handsomely marked species, is the most active and dangerous. Most of the others are timid, though quite as deadly when large. The deaf-adder of the drier parts of the State lies quite still till nearly or quite stepped on, and then strikes without warning. It is a short thick-set reptile, and to be dreaded on account of its habits.

We have about eighteen amphibians in Victoria, all of them being frogs and toads. The largest is the handsome green-and-gold "bull-frog" (*Hyla aurea*), very common in Southern Victoria. The sand

frogs (*Limnodynastes*) are widely distributed, even far from water. All the frogs are great insect-eaters, and in their turn are a favorite food of the snakes.

In fresh-water fish we are not rich, owing mainly to our poor river development. There is a marked distinction between the forms found to the north of the Divide, and those to the south. In the Murray basin we have the Murray cod (*Oligorus macquariensis*), which occasionally reaches the weight of 100 lbs. This fish, together with the cat-fish (*Copidoglanis tandanus*), the bony bream (*Chaetoessus richardsoni*), and a few others are absent from the southern waters. The blackfish (*Gadopsis mamoratus*) occurs throughout the Murray basin, even in the Queensland head-waters, in Southern Victoria, and in Northern Tasmania. The eel (*Anguilla australis*) occurs in the southern streams only. The voracious little mountain trout (*Galaxias truttaceus*), which rarely reaches a quarter of a pound in weight, has a similar southern distribution, while the minnow (*Galaxias attenuatus*), common in the south, is said to range into the Murray waters, though we need specimens in the Museum to settle the point. Most of our other southern river-fish occur in the sea as well, and only pass up into the rivers for a longer or a shorter distance. Lampreys are found in most of our streams, but are not often caught.

Want of space prevents any discussion of the marine fish, which are of considerable economic value, though fish-preserving is a very small industry with us.

The treatment of our invertebrate fauna must be brief, and confined to land and fresh water forms, though of some of the marine groups, as for instance the mollusca, we now know a good deal. In shell-fish we are poorly off. There is a black-shelled snail (*Paryphanta atramentaria*), about  $\frac{3}{4}$  inch in diameter in our southern fern-gullies, and another snail (*Panda atomata*) about the same size in Eastern Gippsland. Most of the other species are small, and attract the eye of the naturalist only. One water-dwelling form (*Isidora tenuistriata*), which has its shell coiled in the opposite way to the ordinary—a left-handed screw—is believed to be the temporary host of the liver-fluke of the sheep, and this is the reason why wet ground is “fluky country.”

Scorpions are very common in the warmer parts, but none are very large. Amongst the spiders, we have only one harmful species, the katipo (*Latrodectus hasseltii*), which is identical with the New Zealand and Southern Asiatic form. It is black with a scarlet, or deep orange spot on the hinder end of its back. The so-called “tarantula” (*Isopeda*), though hideous and terrifying to most people, is quite harmless, and could not bite a human being, if it wanted to. A spider with a much larger body (*Nephila* sp.) is found in the northern districts, and spins a very strong web from bush to bush.

Among insects, the beetles, butterflies, and moths alone have been examined with anything like thoroughness. Many of our striking beetles, while in the larval stage, are injurious to vegetation, such as the buprestids, longicorns, cetonids, and cockchafers. The ladybirds (*Coccinellidae*) are carnivorous in the larval stage, and great foes of the scale insects. We have no large butterflies such as occur in Queensland, but possess some very fine moths, some of which, in their larval stage, are plant-eaters, and work considerable damage. We have a few fine stick-insects which mimic dead twigs, and are therefore not often detected, though when seen they always attract notice. Locusts and grasshoppers at times do considerable harm. Dragon-flies, white ants, and ant lions are common enough in certain districts. Our native bees are being starved out by the imported bee, which is now widely spread. The shrill deafening song of the cicada (*Cicada mærens*) in its countless thousands must be heard on a hot day to be appreciated. Hosts of other forms must be passed unnoticed, though it may be said that our "bull-dog" ant is the largest ant known.

Centipedes are common, especially in the warmer parts, but do little if any harm to human beings. *Peripatus* occurs in the moister regions.

Of crustacea, we may mention the fresh-water crayfishes, of which we have several kinds. The Murray crayfish (*Astacopsis serratus*) is a spiny form growing to the length of a foot, and occasionally seen in the Melbourne market. The yabbie, or pond crayfish (*Parachерaps bicarinatus*), is found in all suitable situations, and ranges widely over Australia. It is a small species, but is eaten. The so-called land-crab (*Engaeus*) is really a crayfish, and is found in the damper parts of the State. It also occurs in Tasmania. One of the *Anaspidæ* (*Koonunga cursor*) has been found near Melbourne and Ballarat, and has thrown some light on the classification of the Crustacea.

We are rich in earthworms, though our native species are disappearing before the imported European ones, which are now found everywhere in the State. In the Gippsland giant earthworm we have by far the largest species known. A living specimen measured at the University was seven feet two inches long. Gorgeously coloured planarian worms, a few inches in length, abound in the moister parts of the State, being generally found under logs.

The same localities are the home of two or three species of land-leech, which are blood-thirsty, though small. A fresh-water leech (*Limnoddella australis*), used surgically, is common enough in ponds.

Pond life generally is actively studied by our field naturalists, but an attempt to deal with it would require a volume in itself, and appeal to professed naturalists alone. Suffice it to say that it is rich and varied, and presents us with many interesting problems.

As to the origin of our fauna, much has been said and written. Briefly, the marsupials, and, perhaps, some birds, the tortoises, certain frogs, fresh-water fish, many insects, earthworms, and other animals point definitely to a former land connexion with South America, where they find their nearest living relatives. The eutheria are of Malaysian origin, as also are most of our birds, some of our land mollusca, and the fresh-water crayfishes. This incursion is of later date than the Antarctic one. It may almost be said that the fauna and flora of the Queensland and New South Wales scrubs represent an invasion in force from the north.

In conclusion, one point may be noticed, and that is the popular names given to our animals and plants. The early settlers found themselves in a new world where nearly everything alive differed from what they had been accustomed to. In their difficulties about names they adopted a few—far too few—from the aborigines, but in the main applied the names they knew to the fresh forms they found. Some of the names came from Britain, others from America, and a small number from other countries. So we have oaks and gum trees, box trees, and so on among plants. Among animals, we have bears, badgers, cats, bandicoots, opossums, squirrels, weasels, magpies, larks, wagtails, robins, turkeys, trout, cod, and a host of others, which are in no way related to their namesakes elsewhere. The result is often very confusing, but not nearly as much so as when scientific names, such as *Iguana*, are wrongly applied to animals of a very different character from their rightful owners.

### MOUNTAINS AND HILLS.

The highest mountain in Victoria is Mount Bogong,\*  
 situated in the county of the same name, 6,509 feet  
 above the sea-level; the next highest peaks are—  
 Mount Feathertop, 6,306 feet; Mount Nelson, 6,170 feet; Mount  
 Fainter, 6,160 feet; Mount Hotham, 6,100 feet; Mount McKay,  
 6,030 feet; and Mount Cope, 6,027 feet; all situated in the same  
 county; also the Cobboras, 6,030 feet, situated between the  
 counties of Benambra and Tambo. These, so far as is known, are  
 the only peaks which exceed 6,000 feet in height; but, according to  
 the following list, which has recently been corrected for this work  
 by the Surveyor-General, Mr. A. B. Lang, there are 39 peaks between  
 5,000 and 6,000 feet high, and 40 between 4,000 and 5,000 feet

\* The highest mountain on the Australian Continent is Mount Kosciusko, in New South Wales, one peak of which is 7,328 feet high.

high; it is known, moreover, that there are many peaks rising to upwards of 4,000 feet above the level of the sea whose actual heights have not yet been determined:—

## MOUNTAINS AND HILLS IN VICTORIA.

Name of Mountain.	County.	Approximate Height above Level of Sea.	Name of Mountain.	County.	Approximate Height above Level of Sea.
		feet.			feet.
Abrupt ..	Dundas, Ripon and Villiers	2,721	Barranhet ..	Delatite ..	—
Acland (See Donna Buang)	Evelyn ..	4,080	Baringhup ..	Talbot ..	785
Acland ..	Polwarth ..	—	Barker ..	Talbot and Bendigo	—
Aitken ..	Bourke ..	1,683	Bass Range ..	Mornington	857
Aitken's Hill	Bourke ..	1,606	Battery ..	Delatite ..	—
Alexander ..	Talbot ..	2,435	Baw Baw ..	Buln-Buln and Tanjil	5,062
Alexander's Head or Brock's Monument	Bourke	1,925	Bealiba ..	Gladstone ..	—
Alexander's Crown (See Camel's Hump)	Bourke and Dalhousie	3,295	Bear's Hill ..	Bendigo ..	—
Alexina ..	Anglesey ..	1,526	Beckworth ..	Talbot ..	2,087
Almond Peak	Ripon ..	—	Bellarine ..	Grant ..	430
Anakie ..	Grant ..	1,350	Bell's Hill ..	Grenville ..	1,611
Anderson Peak	Delatite ..	5,010	Bemm or Mt. Cann	Croajingolong	1,754
Angus ..	Tanjil ..	—	Benambra ..	Benambra ..	4,843
Anne ..	Delatite ..	1,417	Ben Cairn ..	Evelyn ..	3,400
Arapiles ..	Lowan ..	1,176	Ben Cruachan	Tanjil ..	2,766
Ararat ..	Ripon and Borung	2,020	Bendock ..	Croajingolong	—
Ararat ..	Mornington	—	Ben Nevis ..	Kara Kara	2,876
Arnold ..	Evelyn and Wonnangatta	4,300	Bernard ..	Delatite ..	1,611
Arthur's Seat	Mornington	1,031	Bindi ..	Tambo ..	—
Atkinson ..	Bourke ..	461	Big Hill ..	Borung ..	895
Avoca ..	Kara Kara	2,461	Big Hill ..	Bourke ..	—
Bainbridge ..	Dundas ..	—	Big Hill ..	Evelyn ..	1,000
Bald Cone ..	Anglesey ..	1,300	Birch's Bald Hill	Talbot ..	—
Bald Head ..	Dargo ..	4,502	Bismarck ..	Anglesey ..	—
Bald Hill ..	Delatite ..	5,020	Black Hill ..	Grant ..	2,310
Bald Hill ..	Mornington	680	Black Hill ..	Grenville ..	1,685
Bald Hill ..	Ripon ..	1,117	Black Range	Anglesey ..	—
Bald Hill ..	Talbot ..	1,956	Black Range	Borung ..	1,903
Balmattum Range	Delatite ..	—	Black Range	Polwarth ..	—
Bankin's Hill	Ripon and Talbot	1,504	Black Range	Lowan ..	—
Barambogie Ranges	Bogong ..	1,220	Blackwood or Myrning	Bourke ..	2,432
			Bland ..	Bourke ..	—
			Blowhard ..	Ripon ..	1,664
			Blue Mountain	Bourke ..	—
			Blue Range ..	Delatite ..	—
			Bogong ..	Bogong ..	6,509
			Boiler Plain ..	Dargo ..	5,150
			Bolangum ..	Kara Kara ..	1,220
			Bolga ..	Benambra ..	2,770
			Bolton East ..	Talbot ..	1,921



## MOUNTAINS AND HILLS—continued.

Name of Mountain.	County.	Approximate Height above Level of Sea.	Name of Mountain.	County.	Approximate Height above Level of Sea.
		feet.			feet.
Bolton West	Talbot ..	2,055	Carlyle ..	Croajingolong	1,185
Boon or Bowen	Croajingolong	4,500	Cassel ..	Borong ..	2,260
Boswell ..	Ripon ..	1,748	Castle Hill ..	Borong ..	—
Boulder ..	Buln Buln ..	1,511	Castle Hill ..	Wonnangatta	4,860
Boulder Range	Buln Buln ..	1,010	Cathcart Hill	Ripon ..	1,021
Boundary Hill	Anglesey ..	—	Cathedral ..	Anglesey ..	2,120
Breach Peak	Anglesey ..	1,634	Cavendish ..	Dundas ..	—
Brenanah ..	Gladstone ..	—	Cavern ..	Talbot and	1,588
Brigg's Bluff	Borong ..	—		Ripon	
Brisbane	Grant ..	1,403	Chalamber ..	Ripon ..	1,549
Ranges			Chalicum ..	Ripon ..	1,594
Brock's Hill	Bourke ..	—	Charlton Hill	Dargo ..	2,090
Broom Hill ..	Gladstone ..	1,220	Chaucer ..	Normanby ..	—
Brown's Hill	Heytesbury	—	Christmas Hills	Evelyn ..	—
Brown's Hill	Ripon and	1,594	Clare Peak or	Delatite ..	4,986
	Talbot		Mt. Dunn		
Bryarty's Hill	Evelyn ..	—	Clarke's Hill	Grenville and	2,380
Buangor ..	Kara Kara	3,247		Talbot	
Buckle ..	Croajingolong	1,461	Clay ..	Normanby ..	622
Buckrabanyule	Gladstone ..	—	Cobbler ..	Delatite ..	5,349
Budd ..	Anglesey ..	1,970	Cobboras No. 1	Tambo ..	6,030
Budgee Budgee	Tanjil and	—	Cobboras No. 2	Tambo and	—
	Wonnangatta			Benambra	
Buffalo (The	Delatite ..	5,645	Coghill's Hill	Talbot and	1,639
Horn)				Ripon	
Buffalo (The	Delatite ..	5,221	Cole ..	Ripon ..	—
Hump)			Colite ..	Grant ..	—
Bulla Bulla ..	Croajingolong	—	Commissioner's	Kara Kara	1,408
Bullancrook	Bourke ..	2,306	or Reserve		
Bullarook Hill	Talbot ..	2,092	Hill		
Buller ..	Wonnangatta	5,935	Concongella Hill	Borong ..	1,376
Bullioh ..	Benambra ..	2,360	Concord ..	Anglesey ..	1,500
Buninyong ..	Grant ..	2,443	Conical Hill ..	Evelyn ..	—
Burramboot	Rodney ..	—	Consultation ..	Talbot ..	—
Burrowa ..	Benambra ..	4,181	Coopragambra	Croajingolong	—
Burrumbeet Hill	Ripon ..	—	Cooyatong ..	Benambra ..	3,270
Burts Hill ..	Evelyn ..	640	Cope ..	Bogong ..	6,027
Bute ..	Grenville ..	—	Corn Hill ..	Wonnangatta	4,395
Byron ..	Lowan ..	—	Corranwarrabul	Evelyn and	2,077
Callender ..	Ripon ..	—	or Mt. Dan-	Mornington	
Camel ..	Rodney ..	—	denong		
Camel's Hump	Bourke and	3,295	Cotteril ..	Bourke ..	679
(or Alexander's	Dalhousie		Crinoline (Li-	Wonnangatta	4,500
Crown)			gar)		
Cameron ..	Talbot ..	—	Cromwell's Nob	Wonnangatta	5,300
Camp Hill ..	Ripon ..	1,389	Cunningham ..	Anglesey ..	1,920
Cann or Mt.	Croajingolong	1,754	Dandenong ..	Evelyn and	2,077
Bemm				Mornington	
Cannibal Hill	Mornington	—	Dargo Hill ..	Dargo ..	—
Cardinal, The	Ripon ..	—	Darriwell ..	Grant ..	1,731

## MOUNTAINS AND HILLS—continued.

Name of Mountain.	County.	Approximate Height above Level of Sea.	Name of Mountain.	County.	Approximate Height above Level of Sea.
		feet.			feet.
Davidson's Rocks	Borong	891	Feathertop ..	Bogong ..	6,306
Dawson ..	Tambo ..	—	Ferguson's Hill	Heytesbury	708
Deddiok ..	Croajingolong	—	Flinders Peak (late Station Peak)	Grant ..	1,154
Delegete Hill	Croajingolong	4,307	Flint Hill ..	Ripon ..	1,059
Delusion ..	Benambra and Dargo	4,507	Forest Hill ..	Tambo and Benambra on the N.S.W. frontier	5,000
Despair ..	Anglesey ..	—	Forest Hill ..	Talbot ..	—
Diamond Hill	Bendigo ..	1,104	Franklin ..	Talbot ..	2,092
Difficult ..	Borong ..	2,656	Franklin Range	Bogong ..	—
Dingle Range	Bogong ..	—	Friday ..	Dargo ..	2,700
Diogenes ..	Dalhousie ..	—	Fullerton's Spring Hill	Wonnangatta	5,400
Direction ..	Kara Kara	—	Fyans ..	Hampden ..	957
Disappointment	Burke and Anglesey	2,631	Gap ..	Talbot ..	—
Djoandah ..	Wonnangatta	2,000	Gaspard ..	Talbot ..	—
Doboobetic ..	Kara Kara ..	—	Gellibrand ..	Grenville ..	871
Dom Dom ..	Anglesey ..	2,500	Genoa Peak	Croajingolong	1,607
Donkey Hill	Kara Kara ..	1,280	Gibbo ..	Benambra ..	5,763
Donna Buang (Acland)	Evelyn ..	4,080	Gisborne ..	Bourke	2,105
Dorchap ..	Bogong ..	3,590	Glasgow ..	Talbot ..	—
Doughboy ..	Tanjil ..	2,500	Glenrowen ..	Moira ..	1,680
Drummond ..	Borong ..	—	Good Morning Bill	Ripon ..	1,716
Dryden ..	Borong ..	—	Gorong ..	Grant ..	1,814
Dundas ..	Dundas ..	1,538	Gowar ..	Gladstone ..	—
Duneed ..	Grant ..	340	Graham ..	Evelyn ..	—
Easton ..	Tanjil ..	3,250	Granyah ..	Benambra ..	2,970
Eccles ..	Normanby ..	584	Green Hill ..	Dalhousie ..	—
Eckersley ..	Normanby ..	537	Green Hill ..	Delatite ..	1,330
Egbert ..	Gladstone ..	—	Green Hill ..	Grenville ..	2,050
Egerton ..	Grant ..	2,058	Green Hill, Trig Stn.	Grant ..	480
Elephant ..	Hampden ..	1,294	Greenock ..	Talbot ..	—
Eliza ..	Mornington	526	Gregory ..	Evelyn ..	4,000
Ellery ..	Croajingolong	4,251	Hamilton ..	Hampden ..	1,047
Ellery E. Bump	Croajingolong	3,908	Happy Hill ..	Tanjil ..	1,900
Emu ..	Ripon ..	1,681	Hardie's Hill	Grenville ..	—
Emu, Gnargooin or Ewan's Hill	Hampden ..	893	Hat Hill ..	Delatite ..	2,544
Emu Hill ..	Grenville ..	1,010	Haunted Hill	Buln Buln ..	600
Enterprise ..	Wonnangatta	1,600	Heath Point ..	Normanby ..	627
Erica ..	Tanjil ..	4,800	Helen ..	Anglesey ..	1,902
Erip ..	Grenville ..	1,539	Hermit, The	Bogong ..	—
Everard ..	Croajingolong	1,200	Hesse ..	Grenville ..	—
Everett ..	Delatite ..	5,100	Higinbotham Heights	Bogong and Dargo	5,800
Ewing Hill ..	Anglesey ..	893	Hoad ..	Dargo ..	2,160
Fainter ..	Bogong ..	6,160	Hoddle Range	Buln Buln ..	—
Fainting Range	Tambo ..	—			
Fatigue ..	Buln Buln ..	2,110			

## MOUNTAINS AND HILLS—continued.

Name of Mountain.	County.	Approximate Height above Level of Sea.	Name of Mountain.	County.	Approximate Height above Level of Sea.
		feet.			feet.
Holden ..	Bourke ..	1,452	Lady Franklin	Bogong ..	1,789
Holland's Nob	Bogong ..	5,840	Lady Mount..	Ripon ..	—
Hollowback ..	Talbot and Ripon	1,842	Lake Mountain	Anglesey and Wonnangatta	4,800
Hollowback or Rock Hill	Kara Kara ..	1,687	Langdale Pike	Polwarth ..	—
Hooghly ..	Gladstone ..	1,190	Landsborough Hill	Kara Kara ..	1,901
Hope ..	Gunbower ..	613	Langi Ghiran	Ripon ..	3,122
Hope ..	Benambra ..	4,505	La Trobe ..	Buln Buln ..	2,366
Hore's Hill ..	Benambra ..	2,580	La Trobe's Range	Polwarth ..	—
Hotspur ..	Villiers ..	213	Lawaluk ..	Grenville ..	—
Hotham ..	Bogong and Dargo	6,100	Lawson ..	Benambra ..	3,350
Howe Hill ..	Croajingolong	1,288	Leading Hill	Mornington	—
Howitt ..	Wonnangatta	5,718	Leinster ..	Dargo and Benambra	—
Hume Range	Bourke, Anglesey, and Evelyn	—	Leonard ..	Buln Buln ..	1,860
Hunter ..	Buln Buln ..	1,136	Leura ..	Hampden ..	1,027
Ida ..	Dalhousie and Rodney	1,537	Lianiduk ..	Karkaroc ..	—
Indigo Hill ..	Bogong ..	970	Little Dick ..	Dargo ..	3,154
Jeffcott ..	Kara Kara ..	—	Livingstone ..	Bogong ..	4,007
Jenkins ..	Weeah ..	339	Liptrap ..	Buln Buln ..	551
Jess ..	Weeah ..	300	Loch ..	Bogong ..	5,900
Jim ..	Bogong ..	5,900	Loinman ..	Karkaroc ..	—
Johnson's Hill	Tanjil and Wonnangatta	3,682	Longwood Hill	Delatite ..	1,255
Juliet ..	Evelyn ..	3,631	Lookout ..	Tanjil ..	3,500
Kangaroo Range	Normanby ..	—	Lookout ..	Tanjil ..	1,400
Kay ..	Croajingolong	3,284	Lyall ..	Mornington	—
Kent ..	Wonnangatta	5,129	Macedon ..	Bourke and Dalhousie	3,325
Kerang ..	Gladstone ..	—	Mackenzie or Mt. Tallarook	Anglesey ..	2,652
Kerang ..	Gunbower ..	—	Mackersey ..	Dundas ..	—
Kerang Moorah	Polwarth ..	—	Magdala ..	Wonnangatta	—
Kernot ..	Tanjil ..	4,675	Maindample	Delatite ..	—
Kersop Peak	Buln Buln ..	636	Major ..	Moirs ..	1,251
Killawarra ..	Moirs ..	—	Malleson's	Evelyn ..	1,400
Kincaid ..	Normanby ..	664	Look-out		
Kinross ..	Grenville ..	908	Mannibadar ..	Grenville ..	1,540
Kirk's Hill ..	Ripon ..	—	Maramingo Hill	Croajingolong	1,271
Koala ..	Dalhousie ..	—	Marm's Point	Bogong ..	5,869
Koang ..	Hampden ..	894	Martha ..	Mornington	545
Koorooyugh or Smeaton Hill	Talbot ..	—	Martin ..	Bogong ..	—
Kooyoora ..	Gladstone ..	—	Matlock ..	Wonnangatta	4,544
Korong ..	Gladstone ..	1,400	Maxwell ..	Anglesey ..	740
Kororoit ..	Bourke ..	779	Melbourne Hill	Bourke ..	1,975
Kurtweeton ..	Hampden ..	—	Meningorot ..	Hampden ..	766
			Mercer ..	Grenville ..	—
			Merril, Mount	Gladstone ..	1,190
			Meuron ..	Polwarth ..	713

## MOUNTAINS AND HILLS—continued.

Name of Mountain.	County.	Approximate Height above Level of Sea.	Name of Mountain.	County.	Approximate Height above Level of Sea.
		feet.			feet.
Misery ..	Ripon ..	1,355	Peter's Hill ..	Polwarth ..	1,280
Misery ..	Mornington	766	Phipps ..	Bogong and Dargo	4,600
Mitchell ..	Talbot ..	—	Pierrepoint ..	Normanby ..	891
Moliagul ..	Gladstone ..	1,251	Pigeon Hill ..	Talbot ..	1,300
Monmot ..	Ripon ..	—	Pilot Range ..	Bogong ..	—
Monda ..	Evelyn and Anglesey	2,974	Pine ..	Benambra ..	—
Monk, The ..	Talbot ..	1,511	Pinnibar ..	Benambra ..	4,100
Monument Hill or Upton Hill	Delatite ..	1,750	Piper ..	Dalhousie ..	—
Moolort ..	Talbot ..	—	Pisgar (or Petit)	Ripon and Talbot	1,771
Moornbool ..	Dalhousie ..	—	Pleasant ..	Rodney ..	—
Moorokyle ..	Talbot ..	—	Pollock ..	Grant ..	650
Moornamboolor Good Morning Bill	Ripon ..	—	Porepunkah	Bogong ..	1,368
Moorul ..	Talbot ..	—	Porndon ..	Heytesbury	949
Moriae ..	Grant ..	839	Powlet's Hill	Talbot ..	1,288
Morton's Hill	Ripon ..	1,515	Pretty Boy ..	Tanjil and Wonnangatta	1,587
Mueller ..	Tanjil ..	4,900	Prospect ..	Anglesey ..	1,025
Murrindal ..	Tambo ..	—	Puckapunyal	Dalhousie ..	1,368
Murrumurra-bong	Bogong ..	—	Puzzle Range	Anglesey ..	—
Myrtoon ..	Hampden ..	713	Pyramid Hill	Gunbower ..	—
McKay ..	Bogong ..	6,030	Quoin Hill, The	Talbot and Ripon	—
McLean's Hill	Ripon ..	1,529	Raven's Hill	Kara Kara	—
McLeod ..	Tambo ..	5,057	Ravenscroft Hill	Ripon and Talbot	—
Naaimia ..	Ripon ..	—	Raymond ..	Croajingolong	975
Napier ..	Normanby ..	1,453	Razorback ..	Benambra ..	3,350
Navarre Hill	Kara Kara	1,355	Red Hill ..	Buln Buln ..	—
Nelson ..	Bogong ..	6,170	Red Hill (Mount Weejort)	Ripon ..	1,211
Nibo ..	Anglesey ..	—	Red Hill ..	Grant ..	1,390
Noorat ..	Hampden ..	1,026	Red Hill ..	Mornington	740
Northwood Hill	Dalhousie ..	654	Reynard ..	Wonnangatta	5,700
Norgate ..	Buln Buln ..	1,390	Richmond ..	Normanby ..	766
Notch Hill ..	Dargo ..	4,507	Riddell ..	Evelyn ..	2,750
Nowa Nowa	Tambo ..	—	Rock Hill or Mt. Hollow-back	Kara Kara	1,687
Oberon ..	Buln Buln ..	1,968	Rocky Peak	Polwarth ..	2,380
Ochtertyre ..	Bogong ..	—	Ross ..	Ripon ..	—
One-Mile Hill	Talbot ..	1,596	Rouse ..	Villiers ..	1,213
One-tree Hill	Evelyn ..	—	Sabine ..	Polwarth ..	1,911
One-tree Hill	Kara Kara	1,590	Saddleback Hill	Ripon ..	1,548
One-tree Hill	Mornington	1,523	Samaria ..	Delatite ..	3,138
One-tree Hill	Normanby ..	—	Sargent ..	Talbot ..	—
One-tree Hill	Ripon ..	1,680	Scallan's Hill	Borong ..	885
Paradox ..	Anglesey ..	—	Scobie ..	Rodney ..	—
Patrick Point	Kara Kara	2,323			

## MOUNTAINS AND HILLS—continued.

Name of Mountain.	County.	Approximate Height above Level of Sea.	Name of Mountain.	County.	Approximate Height above Level of Sea.
		feet.			feet.
Selwyn ..	Wonnangatta and Delatite	—	Suggan Buggan Survey Peak ..	Tambo .. Anglesey ..	— —
Separation ..	Delatite ..	—	Table Top ..	Delatite ..	4,900
Serra Range	Dundas and Ripon	—	Talbot ..	Lowan ..	1,072
<b>Seymour Hill</b>	<b>Dalhousie ..</b>	<b>751</b>	<b>Talbot Peak</b>	<b>Tanjil ..</b>	<b>—</b>
Shadwell ..	Hampden ..	965	Tallarook or Mackenzie	Anglesey ..	2,652
Sherwin's Range	Evelyn ..	—	Tambo ..	Benambra and Dargo	4,707
Shillinglaw ..	Wonnangatta	—	Tamboritha ..	Wonnangatta	5,381
Singapore ..	Buln Buln ..	451	<b>Tanjil Hill ..</b>	<b>Tanjil ..</b>	<b>1,300</b>
Singleton ..	Wonnangatta and Tanjil	4,350	Tara ..	Tambo ..	2,009
Sister Rises, The	Hampden ..	—	Tarrengower	Talbot ..	2,131
Sisters ..	Anglesey ..	—	Tawanga ..	Bogong ..	4,151
Skene ..	Wonnangatta	—	Taylor ..	Dargo ..	1,571
Smeaton Hill	Talbot ..	—	Telegraph Hill	Ripon ..	1,854
<b>Smith's Hill</b>	<b>Ripon ..</b>	<b>1,572</b>	Templar ..	Tatchera ..	—
Snake Hill ..	Dargo ..	4,260	Tennyson ..	Croajingolong	3,422
Snake's Ridge	Buln Buln ..	—	Terrick Terrick	Gunbower ..	—
Snodgrass ..	Anglesey ..	—	Thackeray ..	Dundas ..	—
<b>Spion Kop ..</b>	<b>Bogong ..</b>	<b>5,950</b>	<b>The Bluff ..</b>	<b>Wonnangatta</b>	<b>4,850</b>
Spring Hill ..	Gladstone ..	—	The Brothers	Benambra ..	4,667
Spring Hill ..	Ripon ..	—	<b>The Monolith</b>	<b>Delatite ..</b>	<b>4,686</b>
Spring Hill ..	Talbot ..	2,270	(Buffalo Mts.)		
Square Mount	Dargo ..	5,210	The Peaks ..	Tambo ..	5,300
Stanley ..	Bogong ..	3,444	The Sisters ..	Benambra and Dargo	4,038
Station Peak	Grant ..	1,154	Thorn ..	Delatite and Wonnangatta	5,000
Stavely ..	Villiers ..	1,071	Tikatory Hill	Delatite ..	2,002
Steel's Hill ..	Evelyn ..	—	Timbertop, or Warrambat	Wonnangatta	—
Steiglitz ..	Bourke ..	2,092	Tinga Ringy ..	Croajingolong	4,771
<b>Stewart ..</b>	<b>Anglesey ..</b>	<b>2,016</b>	Tom's Cap ..	Buln-Buln ..	1,258
St. Bernard ..	Bogong and Dargo	5,060	Tongio ..	Tambo ..	—
St. George ..	Polwarth ..	1,000	Tooborac Hills	Dalhousie ..	—
St. Gwinear ..	Tanjil ..	4,950	Toole-be-wong	Evelyn ..	2,600
St. Leonard's	Evelyn and Anglesey	3,304	Torbreck ..	Anglesey and Wonnangatta	5,001
St. Mary's ..	Ripon ..	—	Tower Hill ..	Villiers ..	323
St. Shillack ..	Tanjil ..	5,140	Traawoul ..	Anglesey ..	1,187
<b>Stirling ..</b>	<b>Delatite and Wonnangatta</b>	<b>5,700</b>	Trig Hill ..	Delatite ..	5,040
Strathbogie Ranges	Delatite ..	—	Tucker's Hill	Borong ..	1,200
<b>Strickland ..</b>	<b>Anglesey and Evelyn</b>	<b>4,000</b>	Tulgarna ..	Benambra ..	2,101
Sturgeon ..	Dundas and Villiers	1,946	Twins, The ..	Delatite and Wonnangatta	5,582
Sugarloaf (Bear's)	Evelyn ..	—	Tyers ..	Tanjil ..	4,660
			Ulrich Peak ..	Delatite ..	5,050

MOUNTAINS AND HILLS—*continued.*

Name of Mountain.	County.	Approximate Height above Level of Sea.	Name of Mountain.	County.	Approximate Height above Level of Sea.
		feet.			feet.
Upton or Monument Hill	Delatite ..	1,750	Wellington Trig	Wonnangatta and Tanjil	5,355
Useful ..	Wonnangatta and Tanjil	4,720	Wellington (Nap-Nap-Marra)	Tanjil ..	5,269
Valentia ..	Wonnangatta	—	Werमतong Hill	Benambra ..	—
Vandyke ..	Normanby ..	—	Western Hill	Tanjil ..	1,825
Vaughan's Hill	Talbot ..	1,760	Wheeler's Hill	Delatite ..	1,857
Vereker ..	Buln Buln ..	2,092	Wheeler's Hill	Talbot ..	2,380
Victoria Range	Dundas ..	—	White Hill ..	Delatite ..	5,025
View Hill ..	Bendigo ..	1,182	Whitelaw ..	Tanjil ..	4,875
Vite Vite ..	Hampden ..	—	Whittaker's ..	Croajingolong	—
Wagra ..	Benambra ..	2,638	Widderin ..	Hampden ..	1,132
Wallace ..	Grant ..	1,583	Wild Boar ..	Benambra ..	5,250
Walterson ..	Tambo ..	—	William ..	Ripon and Borung	3,829
Warrambat or Timbertop	Wonnangatta	—	William ..	Bourke and Dalhousie	2,689
Warrenheip ..	Grant ..	2,463	Wills ..	Bogong ..	5,758
Warrion Hill, Gt.	Grenville ..	922	Wilson ..	Buln Buln ..	2,350
Warrnambool	Hampden ..	712	Wilson ..	Bourke ..	—
Watershed Hill	Ripon ..	—	Wiridgil ..	Hampden ..	—
Waverly ..	Wonnangatta	3,346	Wombat ..	Delatite ..	2,659
Weatherboard Hill	Ripon ..	1,826	Wombat Hill	Talbot ..	2,250
Weejort, Ripon	(See Red Hill)	1,211	Yandoit Hill	Talbot ..	—
Wellington ..	Mornington	314	Zero ..	Borung ..	—

**Rivers.** With the exception of the Yarra, on the banks of which the metropolis is situated; the Goulburn, which empties itself into the Murray about eight miles to the eastward of Echuca; the La Trobe and the Mitchell, with, perhaps, a few other of the Gippsland streams; and the Murray itself, the rivers of Victoria are not navigable except by boats. They, however, drain the watershed of large areas of country, and many of the streams are used as feeders to permanent reservoirs for irrigation and water supply purposes for factories. The Murray, which forms the northern boundary of the State, is the largest river in Australia. Its total length is 1,520 miles, for 1,200 of which it flows along the Victorian border.\* Several of the rivers in the north-western portion of the State have no outlet, but are gradually lost in the absorbent tertiary flat country through which they pass. The names and lengths of the principal Victorian rivers, with their positions and approximate lengths, corrected by the

\* From the source of its longest tributary, the Darling, to the Murray mouth, the total length of this river is 2,345 miles.

Surveyor-General, Mr. A. B. Lang, according to the latest information, are as follows:—

RIVERS IN VICTORIA.

Name of River.	Position.	Approximate Length.
Aberfeldy .. ..	Tanjil. Falls into Thomson .. ..	Miles. 35
Acheron .. ..	Anglesey. Falls into Goulburn .. ..	35
Agnes .. ..	Buln Buln. Falls into Corner Inlet .. ..	23
Aire .. ..	Polwarth. Falls into sea, 6 miles W. of Cape Otway	25
Albert .. ..	Buln Buln. Falls into Port Albert .. ..	25
Avoca .. ..	Tatchera, and western boundary of Gladstone	170
Avon, or Dunlop .. ..	Tanjil. Flows into Lake Wellington .. ..	84
Avon .. ..	Kara Kara. Source about a mile N. of Navarre. Flows into Lake Buloke	75
Axe Creek .. ..	Bendigo. Tributary of Campaspe .. ..	30
Back Creek .. ..	Moura. Falls into Broken Creek .. ..	45
Back Creek .. ..	Villiers. Falls into Moyne .. ..	20
Baillie's Creek .. ..	Ripon. Falls into Mount Emu Creek .. ..	20
Barkly .. ..	Wonnangatta. Falls into Macallister .. ..	24
Barr Creek .. ..	Gunbower. Falls into Murrabit .. ..	20
Barwon .. ..	Grant and Polwarth. Runs into Lake Connewarre	95
Bass .. ..	Mornington. Falls into Western Port near East Head	35
Bemm .. ..	Croajingolong. Falls into sea at Sydenham Inlet	60
Benambra Creek .. ..	Benambra. Near Lake Omeo .. ..	45
Bet Bet Creek .. ..	Between Talbot and Gladstone. Falls into Loddon	53
Big .. ..	Wonnangatta. Joins Goulburn, 16 miles S.W. of Mansfield	32
Birregurra Creek .. ..	Polwarth and Grenville. Falls into Barwon .. ..	20
Black .. ..	Wonnangatta. Falls into Goulburn .. ..	24
Boggy Creek .. ..	Delatite. Falls into King River .. ..	20
Boggy Creek .. ..	Tambo. Falls into Lake Tyers .. ..	27
Bradford Creek .. ..	Talbot and Bendigo. Joins Loddon .. ..	24
Branket Creek .. ..	Delatite. Falls into Delatite .. ..	30
Bream Creek .. ..	Grant. Falls into the sea W. of Barwon Heads	30
Brodribb .. ..	Croajingolong. Falls into Snowy River near its mouth	70
Broken .. ..	Delatite and Moira. Joins Goulburn, near Shepparton	110
Broken Creek .. ..	Moira, effluent of Broken River. Falls into Murray	120
Broken Creek .. ..	Ripon. Falls into Mount Emu Creek .. ..	20
Bruthen Creek .. ..	Buln Buln. Falls into Shoal Inlet .. ..	25
Buchan .. ..	Tambo. Tributary of Snowy River from westward	75
Buckland .. ..	Delatite. Falls into Ovens .. ..	30
Buffalo .. ..	Delatite. Falls into Ovens .. ..	50
Bullabul Creek .. ..	Gladstone. Falls into Loddon .. ..	24
Bullarook Creek .. ..	Talbot. Falls into Tullaroop Creek .. ..	35
Bundarra .. ..	Bogong. Tributary of Mitta Mitta .. ..	25
Buneeup .. ..	Part of eastern boundary of Mornington .. ..	20
Burnt Creek .. ..	Borong. Falls into Wimmera .. ..	25

## RIVERS—continued.

Name of River.	Position.	Approximate Length.
Burrumbeet Creek ..	Part of southern boundary of Ripon. Falls into Lake Burrumbeet	Miles. 23
Cabbage Tree Creek ..	Croajingolong. Falls into Brodrilb ..	27
Campaspe ..	Dalhousie, Rodney, Bendigo, and Gunbower. Flows into Murray at Echuca	155
Cann .. ..	Croajingolong. Falls into Tamboon Inlet, 7 miles west Cape Everard	50
Castle Creek ..	Delatite and Moira. Falls into Goulburn ..	40
Cherry-tree Creek ..	Kara Kara. Falls into Avoca .. ..	20
Chetwynd ..	Dundas. Falls into Glenelg .. ..	25
Cobungra Creek ..	Bogong. Falls into Victoria .. ..	26
Cochrane's Creek ..	Gladstone. Falls into Avoca .. ..	20
Coliban .. ..	Boundary between counties of Talbot and Dalhousie. Flows into Campaspe	60
Concongella Creek ..	Borong. Falls into Wimmera .. ..	25
Cornella Creek ..	Rodney. Falls into Lake Cooper .. ..	40
Corryong Creek ..	Benambra. Falls into Murray, 3 miles N. of Towong	55
Crawford .. ..	Normanby. Joins Glenelg at Dartmoor ..	50
Creighton's Creek ..	Delatite and Moira. Falls into Franjip ..	25
Cudgee Creek ..	Heytesbury. Falls into Hopkins .. ..	20
Cudgowa Creek ..	Benambra. Falls into Murray, 8 miles N. of Towong	40
Curdie's River ..	Heytesbury. Flows from Lake Purrumbete. Falls into sea, 28 miles S.E. from Warrnambool	50
Dabyminga Creek ..	Anglesey, western boundary. Falls into Goulburn	25
Dandenong Creek ..	Mornington, part of western boundary. Falls into Port Phillip Bay	30
Dargo .. ..	Dargo. Joins Mitchell River .. ..	68
Darlot's Creek ..	Normanby. Falls into Fitzroy .. ..	20
Dart .. ..	Benambra. Falls into Mitta Mitta .. ..	20
Delatite, or Devil's River	Boundary between Delatite and Wonnangatta. Joins the Goulburn, 6 miles below Darlingford	55
Deegay Ponds, or Major's Creek	Dalhousie. Falls into Goulburn .. ..	30
Delegete .. ..	Croajingolong. Joins Snowy River in New South Wales	22*
Diamond Creek ..	Evelyn. Falls into Yarra Yarra .. ..	24
Doma Mungi ..	Bogong. Falls into Murray .. ..	40
Drysdale Creek ..	Villiers. Falls into Merri .. ..	20
Dunmunkle Creek ..	Borong. Effluent of Wimmera .. ..	57
Dwyer's Main Creek	Dundas. Falls into Wannon .. ..	25
Emu Creek ..	Bourke. Falls into Saltwater .. ..	33
Eumerella ..	Normanby and Villiers. Falls into Lake Yambuk	80
Eurrimundra ..	Croajingolong. Falls into Bemm .. ..	20
Ferrer's Creek ..	Grenville. Falls into Woody Yaloak ..	23
Fiery Creek ..	Ripon. Falls into Lake Bolac .. ..	73

\* Length in Victoria only.



## RIVERS—continued.

Name of River.	Position.	Approximate Length.
Fifteen-mile Creek ..	Delatite and Moira. Joins Three-Mile Creek and falls into Ovens	Miles. 47
Fitzroy .. ..	Normanby. Falls into Portland Bay ..	26
Flynn's Creek ..	Buln Buln. Falls into La Trobe River ..	20
Ford's Creek ..	Delatite. Falls into Delatite .. ..	20
Franklin .. ..	Buln Buln. Falls into Corner Inlet, W. of Welshpool	25
Freestone Creek ..	Tanjil. Falls into Avon River .. ..	30
Fyan's Creek ..	Borong. Falls into Mount William Creek, near Lake Lonsdale	20
Gellibrand ..	Polwarth and Heytesbury. Falls into sea, 23 miles W. of Cape Otway	68
Genoa .. ..	Croajingolong. Falls into Mallacoota Inlet, 12 miles S.W. of Cape Howe	32*
Gibbo .. ..	Benambra. Falls into Mitta Mitta .. ..	25
Glenslg .. ..	Dundas, Follett, and Normanby. Falls into Discovery Bay; a bend at the mouth enters South Australia	290
Glenmaggie (or Gowwar) Creek	Tanjil. Falls into Macallister .. ..	25
Gnarkeet Ponds ..	Hampden, on eastern boundary. Falls into Lake Coranganite	24
Goulburn .. ..	Wonnangatta, Anglesey, Dalhousie, Moira, and Rodney. Joins Murray, 6 miles E. of Echuca	345
Grange Burn ..	Dundas and Normanby. Falls into Wannan	26
Gunbower Creek ..	Gunbower. Falls into Murray .. ..	80
Happy Valley Creek	Bogong. Falls into Ovens .. ..	20
Henty's Creek ..	Normanby. Falls into Wannan .. ..	23
Hodgson's Creek ..	Bogong. Falls into Ovens .. ..	20
Hollands .. ..	Delatite. Source at Wombat Hill and Tabletop. Joins Broken River at Benalla	40
Hopkins .. ..	Ripon, Hampden, Villiers, and Heytesbury. Falls into sea at Warrnambool	170
Howqua .. ..	Wonnangatta. Rises at Mount Howitt. Falls into Goulburn	47
Hughes' Creek ..	Anglesey, part of northern boundary of county. Falls into Goulburn	45
Indigo Creek ..	Bogong. Falls into Murray .. ..	23
Jackson's Creek ..	Bourke. Falls into Saltwater .. ..	55
Jamieson .. ..	Wonnangatta. Falls into Goulburn .. ..	42
Jim Crow Creek ..	Talbot. Falls into Loddon .. ..	29
Jingallala or Deddick	Croajingolong. Joins Snowy from eastward ..	37
Joyce's Creek ..	Talbot. Falls into Loddon .. ..	32
Kiewa .. ..	Bogong. Falls into Murray, 8 miles below confluence of Mitta Mitta with Murray	85
King .. ..	Delatite. Joins Ovens at Wangaratta .. ..	80
King Parrot Creek ..	Anglesey. Falls into Goulburn .. ..	30
Koetong Creek ..	Benambra. Falls into Murray .. ..	23
Koroite Creek ..	Dundas. Falls into Wannan .. ..	25
Kororoit Creek ..	Bourke. Falls into Port Phillip Bay .. ..	40

\* Length in Victoria only; total length, 60 miles.

## RIVERS—continued.

Name of River.	Position.	Approximate Length.
Lang Lang .. ..	Mornington. Falls into Western Port Bay ..	Miles. 30
La Trobe .. ..	Buln Buln. Falls into Lake Wellington. Boundary between Tanjil and Buln Buln	145
Leigh ( <i>see</i> Yarrowee).		
Lerderberg .. ..	Bourke. Falls into Werribee at Bacchus Marsh	32
Lindsay .. ..	Millewa. Falls into Murray .. ..	30
Little .. ..	Grant. Falls into Port Phillip Bay .. ..	40
Little Woody Yaloak	Grenville. Falls into the Woody Yaloak ..	20
Livingstone Creek ..	Benambra and Bogong. Falls into Mitta Mitta	32
Loddon .. ..	Talbot, and western boundary of Bendigo and Gunbower. Falls into Murray	210
Macallister .. ..	Tanjil and Wonnangatta. Falls into Thomson	100
Maribyrnong .. ..	Bourke. Falls into Yarra .. ..	23
Marraboob .. ..	Tatchera. Falls into Murray .. ..	35
Mather's Creek .. ..	Dundas. Falls into Glenelg .. ..	20
Merri .. ..	Villiers. Falls into sea at Warrnambool ..	44
Merri Merri Creek ..	Bourke. Falls into Yarra Yarra .. ..	45
Merriman's Creek ..	Buln Buln. Falls into sea at Ninety-mile Beach	60
Middle Creek .. ..	Talbot. Falls into Joyce's Creek .. ..	28
Mitchell .. ..	Boundary between Dargo and Tanjil. Falls into Lake King	80
Mitta Mitta .. ..	Benambra and Bogong. Joins Murray ..	167
McKenzie .. ..	Borong. Falls into Wimmera, 4 miles W. of Horsham	36
Moorarboob .. ..	Grant. Joins Barwon at Fyansford, near Geelong	90
Moroka .. ..	Wonnangatta. Joins Wonnangatta, 12 miles N. of Mount Wellington	25
Morwell .. ..	Buln Buln. Tributary of La Trobe .. ..	30
Mountain Creek .. ..	Croajingolong. Falls into Snowy .. ..	25
Mount Cole Creek .. ..	Borong and Kara Kara. Falls into Wimmera	18
Mount Emu Creek .. ..	Ripon, Hampden, and Heytesbury. Falls into Hopkins	165
Mount Greenock Creek	Talbot. Falls into Tullaroop Creek .. ..	30
Mount Hope Creek ..	Bendigo and Gunbower. Falls into Kow Swamp	120
Mount Pleasant Creek	Rodney. Falls into Campaspe .. ..	23
Mount William Creek	Borong. Falls into Lake Lonsdale, thence into Wimmera, 12 miles E. of Horsham	63
Moyne .. ..	Villiers. Falls into sea at Belfast .. ..	40
Muckleford Creek ..	Talbot. Falls into Loddon .. ..	20
Muddy or Pranjip Creek .. ..	Delatite and Molra. Falls into Goulburn ..	35
Murray .. ..	Northern boundary of State of Victoria ..	1,200*
Murrabit .. ..	Gunbower. Falls into Loddon .. ..	35
Murraboob .. ..	Tatchera. Falls into Loddon .. ..	35
Murrindal .. ..	Tambo. Falls into Buchan .. ..	35
Murrindindi Creek ..	Anglesey. Falls into Yea .. ..	20
Muston's Creek .. ..	Villiers. Falls into Hopkins .. ..	50
Myer's Creek .. ..	Bendigo .. ..	32
Myrtle Creek .. ..	Talbot, part of north boundary. Falls into Coliban	20
Naringhil Creek .. ..	Grenville. Falls into Woody Yaloak .. ..	29
Native Hut Creek .. ..	Grant. Falls into Barwon .. ..	25

\* Length in Victoria only; total length, 1,520 miles.

RIVERS—continued.

Name of River.	Position.	Approximate Length.
Nicholson ..	Dargo. Falls into Lake King .. ..	Miles. 50
Norton Creek ..	Lowan, part of eastern boundary. Falls into Wimmera .. ..	29
Outlet Creek ..	Weeah. Flows from Lake Hindmarsh into Lake Albacutya; thence north to Pine Plains .. ..	80
Ovens .. ..	Boundary between Bogong, Delatite, and Moira. Joins Murray below Wangaratta .. ..	132
Perry .. ..	Tanjil. Falls into Avon near Lake Wellington .. ..	35
Plenty .. ..	Bourke. East boundary of county. Falls into Yarra Yarra .. ..	32
Powlett .. ..	Mornington. Falls into sea .. ..	21
Pyramid Creek ..	Talbot, Bendigo and Gunbower. Falls into Loddon at Kerang .. ..	140
Reedy Creek ..	Bogong. Falls into Ovens .. ..	43
Richardson ..	Kara Kara. Joins Avon at Banyena .. ..	35
Rose .. ..	Delatite. Falls into Buffalo .. ..	30
Ryan's Creek ..	Delatite. Falls into Holland's Creek .. ..	30
Salt Creek ..	Hampden, outlet of Lake Bolac. Falls into Hopkins .. ..	35
Saltwater .. ..	Bourke. Joins the Maribyrnong .. ..	92
Serpentine Creek ..	Bendigo and Gunbower. Effluent of Loddon .. ..	35
Seven Creeks ..	Delatite and Moira. Falls into Goulburn .. ..	60
Shaw .. ..	Villiers. Falls into Lake Yambuk .. ..	32
Snowy .. ..	Tambo and Croajingolong. Rises in New South Wales. Falls into sea near Point Ricardo .. ..	103*
Snowy Creek ..	Bogong. Falls into Mitta Mitta .. ..	26
Spring Creek ..	Villiers. Falls into Merri .. ..	30
Stokes, or Emu Creek	Normanby. Joins the Glenelg, 5 miles N. of Dartmoor .. ..	30
Sugarloaf Creek ..	Dalhousie. Falls into Sunday Creek .. ..	30
Sunday Creek ..	Dalhousie. Falls into Goulburn .. ..	32
Surrey .. ..	Normanby. Falls into Portland Bay .. ..	23
Sutherland Creek ..	Grant. Falls into Moorarbool .. ..	20
Tallangatta Creek ..	Benambra. Falls into Mitta Mitta .. ..	34
Tambo .. ..	Boundary between Tambo and Dargo. Falls into Lake King .. ..	120
Tanjil .. ..	Buln Buln and Tanjil. Falls into La Trobe .. ..	45
Tarago .. ..	Buln Buln. Falls into Bunyip .. ..	22
Tarra .. ..	Buln Buln. Falls into Shoal Inlet, near Tarraville .. ..	27
Tarwin .. ..	Buln Buln. Falls into sea at Anderson's Inlet .. ..	55
Thomson .. ..	Tanjil. Falls into La Trobe .. ..	110
Thowgla Creek ..	Benambra. Falls into Corryong Creek .. ..	24
Thurra .. ..	Croajingolong. Falls into sea at Cape Everard .. ..	55
Timbarra .. ..	Tambo. Falls into Tambo .. ..	36
Toonginbooka ..	Tambo. Joins Snowy River .. ..	28
Tom's Creek ..	Tanjil. Falls into Lake Victoria .. ..	20
Trawalla Creek ..	Ripon. Falls into Mount Emu Creek .. ..	20
Tsheea Creek ..	Moira. Falls into Murray .. ..	25
Tullaroop Creek ..	Talbot. Falls into Loddon near Eddington, with Creswick's and Adekate Creeks .. ..	65
Tyers .. ..	Tanjil. Tributary of La Trobe .. ..	30

\* Length in Victoria only; total length, 300 miles.

## RIVERS—continued.

Name of River.	Position.	Approximate Length.
Tyrrell Creek ..	Kara Kara and Tatchera. Effluent of Avoca. Falls into Lake Tyrrell	Miles. 95
Valencia Creek ..	Tanjil. Falls into Avon .. .. .	25
Victoria .. ..	Bogong. Falls into Mitta Mitta, 8 miles W. of Lake Omeo	30
Violet Ponds or Honey-suckle Creek	Delatite and Moira. Falls into Seven Creeks..	35
Wabba Creek ..	Benambra. Falls into Cudgewa Creek ..	25
Wallpolla Creek ..	Millewa. Falls into Murray .. .. .	30
Wando .. .. .	Dundas. Falls into Glenelg .. .. .	25
Wannon .. .. .	Dundas, Ripon, Villiers, and Normanby. Falls into Glenelg	145
Watts .. .. .	Evelyn. Falls into Yarra Yarra .. .. .	23
Warrambine Creek ..	Grenville. Falls into Barwon .. .. .	36
Wellington .. ..	Wonnangatta. Falls into Macallister ..	21
Wentworth .. ..	Dargo. Falls into Mitchell .. .. .	40
Western Moorarbool	Grant. Falls into Moorarbool .. .. .	33
Werribee .. .. .	Bourke. West boundary of county. Falls into Port Phillip Bay	70
Wimmera .. .. .	Kara Kara, Borung, and Lowan. Falls into Lake Hindmarsh	190
Wingan .. .. .	Croajingolong. Falls into sea near Ram Head	26
Woody Yaloak .. .	Grenville. Flows from north into Lake Corangamite	60
Wongungarra .. .	Dargo and Wonnangatta. Falls into Wonnangatta	40
Wonnangatta .. .	Wonnangatta. Joins Mitchell .. .. .	80
Woori Yalook .. .	Evelyn. Joins Yarra Yarra .. .. .	23
Yackandandah Creek	Bogong. Falls into Kiewa .. .. .	25
Yarra Yarra .. .	Bourke and Evelyn. Falls into Hobson's Bay	150
Yarriambiack Creek	Borong and Karkaroc. Effluent of Wimmera. Falls into Lake Coorong	80
Yarrowee, or Leigh	Grant and Grenville. Joins Barwon at Inverleigh	80
Yea .. .. .	Anglesey. Falls into Goulburn .. .. .	40

## LAKES.

**Lakes.** Victoria contains numerous salt and fresh water lakes and lagoons; but many of these are nothing more than swamps during dry seasons. Some of them are craters of extinct volcanoes. Lake Corangamite, the largest inland lake in Victoria, covers 90 square miles, and is quite salt, notwithstanding it receives the flood waters of several fresh-water streams. It has no visible outlet. Lake Colac, only a few miles distant from Lake Corangamite, is a beautiful sheet of water, 10½ square miles in extent, and quite fresh. Lake Burrumbeet is also a fine sheet of fresh water, embracing 8 square miles. The Gippsland lakes—Victoria, King, and Reeve—are

situated close to the coast, and are separated from the sea only by a narrow belt of sand. Lake Wellington, the largest of all the Gippsland lakes, lies to the westward of Lakes Victoria and King, and is united to the first-named by a narrow channel. South-east of Geelong is Lake Connearre, connected with the sea at Point Flinders. The following is a list of the lakes in Victoria, with their localities and areas, supplied by the Surveyor-General, Mr. A. B. Lang :—

LAKES IN VICTORIA.

(Those lakes which contain fresh water are distinguished by the letter *f*, and those which consist of salt or brackish water are indicated by the letters *s* and *b* respectively.)

Name of Lake.	Position.	Approximate Area.
		Acres.
Albacutya ..	Weeah, 10 miles N. of Lake Hindmarsh ( <i>f</i> ) ..	14,430
Albert Park ..	South Melbourne ( <i>f</i> ) ..	105
Bael Bael ..	Tatchera, 9 miles W. of Kerang ( <i>f</i> ) ..	1,075
Baker ..	Tatchera, 7 miles S.E. of Castle Donnington ( <i>f</i> ) ..	700
Barracoota ..	Croajingolong, 6 miles W. of Cape Howe ( <i>f</i> ) ..	600
Beeac ..	Grenville, 10 miles N. of Colac ( <i>s</i> ) ..	1,500
Birdebush ..	Hampden, 8 miles N.W. of Camperdown ( <i>b</i> ) ..	64
Bitterang ..	Karkaroc, 45 miles N.W. of Lake Tyrrell ( <i>f</i> ) ..	180
Boga ..	Tatchera, 8 miles S.E. of Castle Donnington ( <i>f</i> ) ..	2,120
Bolac ..	Ripon, 6 miles E. of Wickliffe ( <i>f</i> ) ..	3,500
Bookaar ..	Hampden, 6 miles N.W. of Camperdown ( <i>b</i> ) ..	1,075
Boorooopki ..	Lowan, 14 miles E. of South Australian boundary line ( <i>f</i> ) ..	1,030
Boort ..	Gladstone, fed by overflow of Loddon ( <i>f</i> ) ..	1,127
Bringalbert ..	Lowan, 10 miles N.E. of Apsley ( <i>f</i> ) ..	250
Bullen Merri ..	Hampden, 1 mile S.W. of Camperdown ( <i>b</i> ) ..	1,330
Buloke ..	Borong, 4 miles N. of Donald ( <i>occasionally dry for a series of years</i> ) ( <i>f</i> ) ..	400
Bunga ..	Tambo, 3 miles S.W. of Lake Tyers ( <i>f</i> ) ..	300
Bungaa ..	Tanjil, 90-mile beach ( <i>b</i> ) ..	1,000
Buninjon ..	Ripon, 6 miles S.W. of Ararat ( <i>f</i> ) ..	430
Burn ..	Grenville, 10 miles N.E. of Colac ( <i>s</i> ) ..	130
Burrumbeet ..	Ripon, 10 miles W. of Ballarat ( <i>f</i> ) ..	5,200
Calvert ..	Grenville, 5 miles N. of Colac ( <i>s</i> ) ..	5,200
Cantala ..	Karkaroc, 44 miles N.W. of Lake Tyrrell ( <i>f</i> ) ..	250
Carchap ..	Lowan, 20 miles N. of Mostyn ( <i>f</i> ) ..	220
Catcarrong ..	Villiers, near township of Winslow ( <i>f</i> ) ..	80
Catherine ..	Polwarth, W. boundary of county, 13 miles from sea ( <i>f</i> ) ..	130
Centre ..	Lowan, 10 miles N.W. of Mostyn ( <i>f</i> ) ..	660
Charm ..	Tatchera, 10 miles N. of Kerang ( <i>f</i> ) ..	1,390
Clear ..	Lowan, 17 miles N. of Mostyn ( <i>f</i> ) ..	300
Colac ..	Polwarth, at Colac ( <i>f</i> ) ..	6,650
Colongulac ..	Hampden, 3 miles N. of Camperdown ( <i>b</i> ) ..	3,500
Connearre ..	Grant, 5 miles S.E. of Geelong ( <i>tidal</i> ) ..	3,880
Cooper ..	Rodney, 9 miles E. of Runnymede ( <i>f</i> ) ..	2,400
Coorong ..	Karkaroc, fed by Yarriambiack Creek ( <i>f</i> ) ..	2,000
Cope Cope ..	Kara Kara, 16 miles N.W. of St. Arnaud ( <i>f</i> ) ..	400

LAKES—*continued.*

(Those lakes which contain fresh water are distinguished by the letter *f*, and those which consist of salt or brackish water are indicated by the letters *s* and *b* respectively.)

Name of Lake.	Position.	Approximate Area.
		Acres.
Coragulac .. ..	Grenville, 7 miles N.W. of Colac ( <i>b</i> ) .. ..	90
Corangamite .. ..	Grenville ( <i>s</i> ) .. ..	57,700
Corringle .. ..	Tambo, 2 miles from coast ( <i>f</i> ) .. ..	400
Craven .. ..	Polwarth, 5 miles N.W. of Cape Otway ( <i>tidal</i> ) .. ..	200
Cullens .. ..	Tatchera, 8 miles N.W. of Kerang ( <i>f</i> ) .. ..	1,660
Cundare .. ..	Grenville, 12 miles N. of Colac ( <i>s</i> ) .. ..	350
Curlip .. ..	Croajingolong, fed by overflow of Snowy River ( <i>f</i> ) .. ..	400
Denison .. ..	Buln Buln, 28 miles N.E. of Alberton ( <i>f</i> ) .. ..	350
Dock .. ..	Borong, 6 miles S.E. of Horsham ( <i>f</i> ) .. ..	370
Doling Doling .. ..	Dundas, 3 miles N.E. of Hamilton ( <i>f</i> ) .. ..	50
Drung Drung or Taylor's .. ..	Borong, 11 miles S.E. of Horsham ( <i>f</i> ) .. ..	750
Duck .. ..	Tatchera, 6 miles N.W. of Kerang ( <i>f</i> ) .. ..	870
Duridwarrah .. ..	Grant, reserved for town of Geelong, 25 miles N.W. ( <i>f</i> ) .. ..	—
Elingamite .. ..	Heytesbury, 11 miles S.W. of Camperdown ( <i>f</i> ) .. ..	800
Elizabeth .. ..	Tatchera, 5 miles W. of Kerang ( <i>f</i> ) .. ..	200
Eyang .. ..	Hampden, 9 miles E. of Chatsworth ( <i>f</i> ) .. ..	180
Furnell .. ..	Croajingolong, 8 miles N.W. of Cape Everard ( <i>f</i> ) .. ..	800
Garnouk .. ..	Tatchera, 10 miles S.E. of Castle Donnington ( <i>f</i> ) .. ..	500
Garry .. ..	Moira, 10 miles N.W. of Shepparton ( <i>f</i> ) .. ..	1,700
Ghentghen .. ..	Ripon, 5 miles E. of Wickliffe ( <i>s</i> ) .. ..	40
Gherang Gherang .. ..	Grant, 3 miles E. of Winchelsea ( <i>f</i> ) .. ..	250
Gnarput .. ..	Hampden, at Northern extremity of Lake Corangamite ( <i>s</i> ) .. ..	5,500
Gnotuk .. ..	Hampden, 2 miles W. of Camperdown ( <i>s</i> ) .. ..	600
Goldsmith .. ..	Ripon, 7 miles S. of Beaufort ( <i>f</i> ) .. ..	2,130
Goulburn Weir .. ..	Moira and Rodney ( <i>f</i> ) .. ..	4,500
Green .. ..	Borong, 7 miles S.E. of Horsham ( <i>f</i> ) .. ..	250
Hattah .. ..	Karkaroc, 42 miles N.W. of Lake Tyrrell ( <i>f</i> ) .. ..	150
Hindmarsh .. ..	Lowan, fed by Wimmera River ( <i>f</i> ) .. ..	30,000
Jollicum .. ..	Hampden, 4 miles S.W. of Streatham ( <i>f</i> ) .. ..	130
Kakadra .. ..	Tanji, 7 miles E. of Sale ( <i>b</i> ) .. ..	452
Kanagulk .. ..	Lowan, 6 miles N.E. of Mostyn .. ..	870
Kangaroo .. ..	Tatchera, 11 miles N.W. of Kerang ( <i>f</i> ) .. ..	2,250
Kariah .. ..	Hampden, 5 miles N.E. of Camperdown ( <i>b</i> ) .. ..	350
Karnak .. ..	Lowan, 18 miles N.E. of Edenhope ( <i>b</i> ) .. ..	300
Keilambete .. ..	Hampden, 15 miles W. of Camperdown ( <i>b</i> ) .. ..	770
Kemi Kemi .. ..	Lowan, 2 miles S. of Edenhope ( <i>f</i> ) .. ..	130
Kennedy .. ..	Villiers, 8 miles N.W. of Peshurst ( <i>b</i> ) .. ..	690
Kerferd .. ..	Bogong, Beechworth Water Supply ( <i>f</i> ) .. ..	100
King .. ..	Tanjil, near Bairnsdale, 23 miles N.E. of Seacombe ( <i>tidal</i> ) .. ..	22,500
Konardin .. ..	Karkaroc, 44 miles N.W. of north shore of Lake Tyrrell ( <i>f</i> ) .. ..	300
Koreetnung .. ..	Hampden, 6 miles N.E. of Camperdown ( <i>s</i> ) .. ..	560
Kow .. ..	Gunbower ( <i>f</i> ) .. ..	6,800
Laaneoorie Weir .. ..	Bendigo and Gladstone ( <i>f</i> ) .. ..	1,620
Lalbert .. ..	Tatchera, 31 miles W. of Kerang ( <i>f</i> ) .. ..	1,250
Leaghur .. ..	Tatchera, 18 miles S.W. of Kerang ( <i>f</i> ) .. ..	130
Learmonth .. ..	Ripon, 11 miles N.W. of Ballarat ( <i>f</i> ) .. ..	1,200

## Introductory Remarks.

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### LAKES—continued.

(Those lakes which contain fresh water are distinguished by the letter *f*, and those which consist of salt or brackish water are indicated by the letters *s* and *b* respectively.)

Name of Lake.	Position.	Approximate Area.
		Acres.
Linlithgow ..	Villiers, 8 miles N.W. of Penschurst ( <i>b</i> ) ..	2,450
Little ..	Tatchera, 10 miles S.W. of Kerang ( <i>f</i> ) ..	80
Lockie ..	Karkaroc, 42 miles N.W. of Lake Tyrrell ( <i>f</i> )..	350
Long ..	Tatchera, 8 miles S.E. of Castle Donnington ( <i>f</i> ) ..	500
Lonsdale ..	Borong, 7 miles S.W. of Glenorchy ( <i>f</i> ) ..	6,000
Lookout ..	Tatchera, 14 miles W. of Kerang ..	130
Mallacoota ..	Croajingolong, 12 miles W. of Cape Howe ( <i>tidal</i> ) ..	1,700
Malmsbury ..	Dalhousie and Talbot, reservoir for northern gold-fields' population, borough of Malmsbury ( <i>f</i> ) ..	640
Mannaor ..	Tatchera, fed by overflow of Murray ( <i>f</i> ) ..	40
Marmal ..	Gladstone, 12 miles N.E. of Charlton ( <i>f</i> ) ..	250
Marsh, The ..	Tatchera, 10 miles N.W. of Kerang ( <i>f</i> ) ..	1,700
Meering ..	Tatchera, 11 miles S.W. of Kerang ( <i>f</i> ) ..	500
Melanydra ..	Tanjil, 6 miles E. of Sale ( <i>b</i> ) ..	153
Middle ..	Tatchera, 4 miles N. of Kerang ( <i>f</i> ) ..	560
Miga ..	Lowan, 20 miles N.W. of Mostyn ( <i>f</i> ) ..	230
Mitre ..	Lowan, 20 miles W. of Horsham ( <i>s</i> ) ..	1,280
Modewarre ..	Grant, 6 miles E. of Winchelsea ( <i>s</i> ) ..	1,025
Moodemere ..	Bogong, 3 miles W. of Rutherglen ( <i>f</i> ) ..	850
Morea ..	Lowan, 13 miles N. of Edenhope ( <i>f</i> ) ..	180
Mournpall ..	Karkaroc, 44 miles N.W. of Lake Tyrrell ( <i>f</i> ) ..	600
Mundi ..	Follett, 1 mile E. of South Australian boundary line ( <i>f</i> ) ..	1,280
Murdeduke ..	Grenville, 25 miles W. of Geelong ( <i>s</i> ) ..	2,800
Murphy's ..	Tatchera ( <i>f</i> ) ..	560
Natimuk ..	Lowan, 14 miles W. of Horsham ( <i>f</i> ) ..	922
Omeo ..	Benambra, 10 miles N.E. of Omeo ( <i>f</i> ) ..	1,966
Ondit ..	Grenville, 5 miles N. of Colac ( <i>s</i> ) ..	250
Oundell ..	Hampden, 5 miles S.W. of Streatham ( <i>f</i> ) ..	180
Paragalmir ..	Ripon, 6 miles E. of Wickliffe ( <i>s</i> ) ..	160
Pelican ..	Tatchera, 2 miles W. of Kerang ( <i>f</i> ) ..	94
Pertobe ..	Villiers, town of Warrnambool ( <i>tidal</i> ) ..	50
Pine ..	Borong, 8 miles S.E. of Horsham ( <i>f</i> ) ..	360
Pine Hut ..	Lowan, 22 miles N.W. of Mostyn ..	200
Pink Lakes ..	Weeah, 8 miles N. of Linga ..	1,000
Powell ..	Karkaroc, 36 miles N. of Lake Tyrrell ( <i>f</i> ) ..	322
Punpundhal ..	Hampden, W. of Lake Corangamite ( <i>s</i> ) ..	60
Purgagoolah ..	Croajingolong, 18 miles W. of Cape Howe ( <i>tidal</i> ) ..	30
Purumbete ..	Heytesbury, 4 miles S.E. of Camperdown ( <i>f</i> )..	1,450
Racecourse ..	Tatchera, 10 miles N.W. of Kerang ( <i>f</i> ) ..	196
Reedy ..	Tatchera, 3 miles N. of Kerang ( <i>f</i> ) ..	550
Rceve ..	Buln Buln, 2 miles S.E. of Seacombe on coast ( <i>tidal</i> ) ..	9,000
Repose ..	Villiers, 7 miles S.E. of Dunkeld ( <i>f</i> )..	280
Rosine ..	Grenville, 3 miles W. of Cressy ( <i>s</i> ) ..	380
Round ..	Tatchera, 10 miles S.W. of Kerang ( <i>f</i> ) ..	35
Salt ..	Weeah, 46 miles N.W. of Lake Albacutya ( <i>s</i> ) ..	4,480
" ..	Grenville, 9 miles N.E. of Colac ( <i>s</i> ) ..	870
" ..	Ripon, 6 miles N.E. of Streatham ( <i>s</i> ) ..	500
" ..	Ripon, 9 miles S. of Beaufort ( <i>s</i> ) ..	180
" ..	Lowan, 12 miles N.W. of Mostyn ( <i>s</i> ) ..	500
" ..	Lowan, 5 miles N.W. of Natimuk ( <i>s</i> ) ..	600

## LAKES—continued.

(Those lakes which contain fresh water are distinguished by the letter *f*, and those which consist of salt or brackish water are indicated by the letters *s* and *b* respectively.)

Name of Lake.	Position.	Approximate Area.
		Acres.
Salt .. ..	Tatchera, 13 miles N.W. of Kerang ( <i>s</i> ) .. ..	700
" .. ..	Tatchera, 8 miles W. of Kerang ( <i>s</i> ) .. ..	100
Sand Hill .. ..	Tatchera, 13 miles W. of Kerang ( <i>s</i> ) .. ..	160
Sea Lake .. ..	Karkaroc ( <i>f</i> ) .. ..	30
Spectacle (Great) .. ..	Tatchera, 10 miles S.W. of Kerang ( <i>f</i> ) .. ..	128
" (Little) .. ..	Tatchera, 10 miles S.W. of Kerang ( <i>f</i> ) .. ..	43
St. Mary's .. ..	Lowan, 4 miles W. of Mount Arapiles ( <i>f</i> ) .. ..	230
Swan .. ..	Mornington, in Phillip Island ( <i>f</i> ) .. ..	60
Sydenham .. ..	Croajingolong, 8 miles E. of Cape Conran ( <i>tidal</i> ) .. ..	2,300
Tamboon .. ..	Croajingolong, 8 miles W. of Cape Everard ( <i>tidal</i> ) .. ..	1,150
Tatutong .. ..	Hampden, W. of Lake Corangamite ( <i>s</i> ) .. ..	59
Tcham .. ..	Tatchera, near Birchip ( <i>f</i> ) .. ..	260
Terang .. ..	Hampden, 12 miles W. of Camperdown ( <i>f</i> ) .. ..	300
Terang Pom .. ..	Hampden, 11 miles N.E. of Camperdown ( <i>s</i> ) .. ..	500
Timboon .. ..	(See Colongulac.)	
Tobacco .. ..	Tatchera, 10 miles S.W. of Kerang ( <i>f</i> ) .. ..	25
Toolorook .. ..	Hampden, 4 miles S.E. of Lismore ( <i>b</i> ) .. ..	850
Tower Hill .. ..	Villiers, 7 miles N.E. of Belfast ( <i>f</i> ) .. ..	850
Turang-moroke .. ..	Ripon, 9 miles E. of Wickliffe ( <i>s</i> ) .. ..	250
Tyers .. ..	Tambo, 22 miles west of mouth of Snowy River ( <i>tidal</i> ) .. ..	3,950
Tyrrell .. ..	Karkaroc, fed by overflow of Avoca River ( <i>s</i> ) .. ..	42,600
Upper Coliban Reservoir	Talbot and Dalhousie ( <i>f</i> ) .. ..	574
Victoria .. ..	Tanjil, 21 miles E. of Sale ( <i>tidal</i> ) .. ..	28,500
Walwalla .. ..	Millewa, 13 miles S.E. of intersection of South Australian boundary line by Murray River ( <i>f</i> ) .. ..	600
Wallace .. ..	Lowan, at Edenhope ( <i>f</i> ) .. ..	450
Wangoom .. ..	Villiers, 6 miles N.E. of Warrnambool ( <i>f</i> ) .. ..	200
Waranga Basin .. ..	Rodney ( <i>f</i> ) .. ..	11,009
Wartook Reservoir .. ..	Borong ( <i>f</i> ) .. ..	2,556
Wau Wauka .. ..	Croajingolong, near Cape Howe ( <i>f</i> ) .. ..	600
Weerancanuck .. ..	Hampden, 7 miles N.E. of Camperdown ( <i>s</i> ) .. ..	1,280
Weering .. ..	Grenville, 17 miles N. of Colac ( <i>s</i> ) .. ..	921
Wellington .. ..	Tanjil, 8 miles E. of Sale ( <i>f</i> ) .. ..	34,500
Wendouree .. ..	Grenville, at Ballarat ( <i>f</i> ) .. ..	500
White .. ..	Lowan, 8 miles N.W. of Mostyn ( <i>s</i> ) .. ..	1,400
Wirraan .. ..	Hampden, 9 miles N. of Camperdown ( <i>s</i> ) .. ..	60
Wooronook .. ..	Kara Kara, 10 miles W. of Charlton ( <i>f</i> ) .. ..	250
Wurdee Boluc .. ..	Grant, 5 miles S.E. of Winchelsea ( <i>f</i> ) .. ..	440
Yallakar .. ..	Lowan, 7 miles N.E. of Edenhope ( <i>f</i> ) .. ..	870
Yambuk .. ..	Villiers, 10 miles W. of Belfast ( <i>tidal</i> ) .. ..	200
Yando .. ..	Tatchera, 22 miles S.W. of Kerang ( <i>f</i> ) .. ..	200
Yan Yean .. ..	Evelyn, reservoir for supply of metropolis, 22 miles N.E. of Melbourne ( <i>an artificial lake</i> ) ( <i>f</i> ) .. ..	1,360
Yeeangmaria .. ..	Ripon, 10 miles E. of Wickliffe ( <i>s</i> ) .. ..	75
Yellwell .. ..	Karkaroc, 44 miles N.W. of Lake Tyrrell ( <i>f</i> ) .. ..	200
Yerang .. ..	Karkaroc, 44 miles N.W. of Lake Tyrrell ( <i>f</i> ) .. ..	160



## THE FLORA OF VICTORIA.

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The early general accounts of the flora of Victoria by Baron Mueller have been, to some extent, superseded by the short but excellent accounts given by Mr. G. Weindorfer in the *Victorian Year-Book* for 1904, and by Mr. C. A. Topp, M.A., LL.B., in the Melbourne Handbook of the Australasian Association for the Advancement of Science, 1890. In several respects, however, these general views need amplification, especially as the progress of settlement, drainage, irrigation, and cultivation continues to affect the character and distribution of the native flora. The following remarks will serve to complete the accounts already given, as well as to draw attention to certain features which come prominently out in a general view of the flora, but have not previously been discussed.

The factors which influence a flora and determine its character are the result of the interaction of telluric, oceanic, and solar influences, and may be grouped under the following heads:—

1. The previous geological history of the country, and its relationship to other countries.
2. The present and past climate, in which the most important factors are—
  - (a) Average and annual temperature, and extremes of heat and cold.
  - (b) Average annual rainfall, and its distribution throughout the year.
  - (c) Character and depth of the soil.
  - (d) Prevailing winds and their intensity and direction, including the influence of drift sand, &c.

The two latter factors influence more the local than the general distribution through large areas, although the influence of wind on the flora of the coastal districts around Melbourne, and on that of large areas of the north and south-western districts, is very pronounced.

The previous geological history of Victoria is by no means certain, although evidences of elevation and subsidence are shown in many parts, and volcanic eruptions and lava outbursts in past ages have been responsible for the sudden destruction of the local flora over wide areas. In the same way, the existing evidence of glacial action points to the occurrence of a cold glacial age in the history of Victoria, when arctic conditions prevailed, and all the requirements were produced for the subsequent development of a homogeneous alpine flora on the tops of the lofty mountains as the cold receded and more favorable conditions prevailed, leaving arctic species stranded, as it were, on the top of every lofty mountain throughout the State. The

alpine flora of Victoria is, however, apparently more modern and hence less striking than that of Europe, although many features of similarity exist between the two. The more modern character of the Victorian alpine flora is, for instance, evidenced by the facts that the plain and alpine floras largely overlap, and that the latter shows less type differentiation than usual. Species which pass from alpine or sub-alpine regions to the plains are *Arabis perfoliata*, *Billardiera scandens*, *Correa Lawrenciana*, *Hypericum japonicum*, *Sagina procumbens*, and *Stellaria pungens*, although others are not wanting, such as *Drosera Archeri*, &c., which are exclusively restricted to high alpine elevations. Little doubt exists as to a land connexion with Tasmania in past ages by way of King Island, and this is borne out by the large number of species common to the two States, Tasmania and Victoria. New Zealand, on the other hand, is widely distinct in its flora from that of Victoria, so that, if New Zealand and Australia were ever connected, the separation must have occurred in very remote ages.

Present Climate.—The average annual rainfall of 26 inches approximates to that of England, and this, coupled with its warmer climate and continental connexions, makes the flora of Victoria somewhat more numerous and varied than that of Great Britain, in spite of the smaller area of the State. The idea that Victoria is much drier than Great Britain is hardly correct. The chief difference is that in Great Britain a few places are exceptionally wet (Ben Nevis, 151 inches per annum; one station in Lake district, 177 inches per annum), whereas in Victoria a few regions are exceptionally dry (the north-west portion of the Mallee). The Lake district in England, and the south-west coast of Scotland, with an annual rainfall of 40 inches, correspond exactly to the Otway Forest and South Gippsland, where the rainfall just exceeds 40 inches. Over a very large part of the east coast of England and Scotland the rainfall is below 25 inches. The average for London is, for instance, 24 inches—*i.e.*, below the average for Victoria; and in one drought year, when agriculture in Essex and neighbouring counties suffered greatly, it was as low as 16 inches. A point of great importance is that in all the wettest parts of Great Britain the flora is of a special character, and limited to a few bog, humus, or hygrophilous types, whereas it is in the drier regions that the flora is more abundant and varied—that agriculture is of most importance, and the land most valuable.

In Victoria, owing to its warmer climate, a higher rainfall is required to reach the limit at which it becomes detrimental to agriculture, and at which bog, humus, and hygrophilous floras prevail. Although this limit is reached in parts of South Gippsland, the Otways, and on some of the higher mountain ranges, it is only over limited areas, which represent a relatively small portion of the total surface of Victoria. The conditions are, therefore, very different to those prevailing on the west coasts of Ireland or Tasmania, where, owing to the high rainfall, enormous tracts of land are quite unsuited for the ordinary

practice of agriculture, though, naturally, not entirely useless. Even in Victoria, however, if the curves for rainfall and temperature coincided instead of being opposed—*i.e.*, if the rains of the south fell on the northern areas—the climate, flora, and agricultural possibilities of the State would be enormously improved, and irrigation would be largely unnecessary.

As it is, there are over 2,000 species of flowering plants and vascular cryptogams in Victoria; and when the lower cryptogams—Algæ, Musci, Fungi, &c.—are added, the species total fully 5,000. England possesses about 1,200 flowering plants and ferns; but, owing to its relatively large expanse of coast and its more uniformly moist climate, Algæ, Musci, and Fungi are better represented.

A very interesting feature in distribution is afforded by the fact that many almost subtropical species from New South Wales or even Queensland (*Hakea dactyloides*, *Livistona australis*, *Callitris calcarata*, &c.) extend down the coast into Victoria. The neighbourhood of the sea maintains a more equable temperature, and keeps the air more uniformly moist. Plants in general suffer more from cold dry air than from equally cold but moist air, so that under moist coastal conditions subtropical and even tropical plants can extend far to the south out of their proper geographical zones.

The climate of Victoria may be fairly compared with that of the south of France or Spain, but the flora is widely dissimilar as regards the species and genera, and even some of the orders (Proteaceæ) of which it is composed. A number of common British genera—*Hypericum*, *Stellaria*, *Cardamine*, *Drosera*, *Capsella*, &c.—are represented in Victoria, but mainly or entirely by distinct Australian species. A few cosmopolitans—*Spergularia rubra*, *Sagina procumbens*, *Myosurus minimus*, *Potentilla anserina*, *Oxalis corniculata*, *Portulaca oleracea*, *Polygonum hydropiper*, *Lemna minor*, *Potamogeton*, &c.—are, however, natives of Victoria, and they, with others, form a connecting link with the world's flora. Thus *Prunella vulgaris*, L., the "Self-Heal," and *Solanum nigrum*, the "Black Nightshade," are common English weeds, while native species of *Sida*, *Hibiscus*, *Anagallis*, *Heliotropium*, *Cyperus*, &c., also occur in Asia, Africa, and America. Such non-European plants as *Parietaria debilis*, *Dodonæa viscosa*, *Avicennia officinalis*, and *Tetragonia expansa* are especially interesting, since they connect our flora with that of the old and new worlds on the one hand and with that of New Zealand on the other.

The dominant general features of the Victorian flora are determined by the necessity of protection against periodic drought and intense sunlight. The latter affects, of course, exposed plants only, and is shown by the common presence of vertical leaves or phyllodia on so many of our forest trees, with the result that they yield relatively little shade, and at the same time transpire less actively than if horizontally expanded.

Various adaptations for surviving periods of drought are shown, such as the formation of reduced evaporating surfaces and fleshy leaves like those of the salt-bushes, by the transformation of branches which would bear leaves into thorns and prickles, such as *Acacia armata*, &c.

In addition, many herbaceous perennials in dry seasons or situations develop as annuals, surviving the dry period in the form of seed. The seeds of many Leguminosæ (*Acacias*, *Jacksonias*, *Viminaria denudata*, &c.) have impermeable cuticularized seed-coats when fully ripened, so that they may remain dormant in the soil for long periods of years, germinating when brought to the surface and the coats softened by heat, by the alkaline ash of bush fires, or by mechanical abrasion.

A few introduced trees, such as the Moreton Bay Fig, Maple, and Plane, shed a portion of their leaves in drought so that the remainder may have a chance of surviving, and the same may be shown to a limited extent by some of the native trees, although the latter are nearly all evergreen, the leaves being shed irregularly all the year round without ever leaving the tree entirely bare. The prevalence of evergreens in the native flora is the result of our mild winters, but introduced deciduous trees flourish admirably and are largely used for tree planting.

The erect, branchless, lower stems and thick fibrous bark of so many of our Eucalypti are probably protective adaptations against bush fires, and this peculiarity often causes them to be unaffected by a fire which would completely consume a European pine forest under similar conditions. The frequently delayed dehiscence of *Callistemon*, *Hakea*, *Banksia*, &c., especially under moist conditions, is probably also an adaptation to drought conditions or to recurrent bush-fires, for both causes clear the land of existent vegetation to a greater or less extent, and, at the same time, excite the escape by dehiscence of the seeds which are to replace it, and the germination of those dormant seeds whose coats have been softened by the heat and ashes.

The coast scrub of Tea-tree (*Leptospermum* and *Melaleuca*) protects itself against wind and sand-drift by growing close together, the leaves, which demand a fair exposure to light, being found at the upper surfaces and edges of the scrub only and giving its interior a peculiarly gloomy character. Where the scrub is dense, no plants grow beneath; but where it is less dense, a few mosses, grasses, and such orchids as *Caladenia*, *Pterostylis*, &c., may be found, and an introduced *Polygala*, *P. myrtifolia*, L., is sometimes abundant. The Mallee scrub of the north-west (shrubby Eucalypti) affords an instance of similar adaptation, but in this case to inland conditions.

In spite of its close connexion with the rest of Australia, the barriers to migration in the past have sufficed to enable Victoria to retain a fairly large number of endemic species, at least 46, although possibly some of the latest-described plants may prove to be merely varieties or

hybrids of species with a wider range. This appears especially to be the case with the genus *Pultenæa*, of which no less than five new species have been recently recorded, one of them, *P. Weindorferi*, Reader, being found comparatively near Melbourne. In any case, the comparison with England, which, in spite of its isolation as an island and larger area, has hardly any true endemic species, is very striking.

The endemic species of Victoria include *Eucalyptus alpina*, *Acacia tenuifolia*, *Pultenæa* (9 species), *Grevillea* (4 species), *Aster Benthami*, *Goodenia Macmillani*, *Prostanthera* (3 species), *Styphelia* (2 species), *Thelymitra* (2 species), *Prasophyllum* (4 species), *Stipa* (4 species), *Glyceria dives*, *Lepidosperma tortuosum*, and many others. There is, however, a smaller percentage of endemic species in Victoria than in any other State of Australia, owing to the greater range of conditions within its boundaries and to the close connexion with neighbouring States, the northern and western boundaries of Victoria being political rather than geographical or botanical.

The genera with endemic species, and more especially *Pultenæa*, *Grevillea*, *Acacia*, *Eucalyptus*, *Thelymitra*, and *Prasophyllum*, may be regarded as especially adapted to Victorian conditions and as characteristic representatives of its flora.

The latter is, however, in a transitional condition, and is rapidly undergoing modification as the result of civilization.

The chief factors tending to the disadvantage of the native flora are—the progress of deforestation, the drainage of swamps and swampy localities, sheep pasturing and the spread of rabbits, the increase of the area under cultivation or irrigation, and the introduction of hordes of alien weeds and garden escapes, many of which are not merely more or less aggressive weeds of cultivation—*Senecio*, *Carduus*, *Centaurea*, *Anagallis arvensis* (Pimpernel), *Sonchus* (Sow Thistle), and Tares (*Vicia*), &c.—but also establish themselves on pastures and virgin ground, largely ousting the native flora. Such plants are the Gorse, *Ulex europæus*, Perennial Thistle, *Carduus arvensis*, Onion Grass, *Romulea cruciata*, Blackberry Bramble, *Rubus fruticosus*, Briar, *Rosa rubiginosa*, Ragwort, *Senecio Jacobæa*, St. John's Wort, *Hypericum perforatum*, Stinkwort, *Inula graveolens*, Boxthorn, *Lycium horridum*, Prickly Pear, *Opuntia monacantha*, and many others. The list of proclaimed plants of Victoria now includes no less than 44 species, of which only the Nut Grass, *Cyperus rotundus*, Cotton Fireweed, *Erechtites quadridentata*, D.C., Chinese Scrub, *Cassinia arcuata*, the Mistletoes, *Loranthus celastroides* and *L. pendulus*, and the Prickly Acacia, *Acacia armata*, are native plants.

During the year 1915 six foreign plants have succeeded in establishing themselves as naturalized aliens in Victoria. In addition six other exotics have made their appearance for the first time, some of which may eventually establish themselves as aliens.

The following orchids have been recorded from Victorian localities:—*Caladenia leptochila*, Fitz., and *Diuris palachila*, Rogers, both previously only known from South Australia, and *Chiloglottis trapeziforme*, Fitz., previously only known from New South Wales. In addition the following species have been described as new to science and recorded from Victoria:—*Pterostylis alpina*, Rogers; *Pterostylis falcata*, Rogers, and *Pterostylis Toveyana*, Ewart & Sharman, whilst the name of *Pterostylis Mackibbini*, Fv. M., has been deleted from the Victorian Flora.

One striking peculiarity is to be noted—namely, that the introduced Pimpernel is ousting the two native Pimpernels, and the same applies in other cases also. Thus the native *Hypericum* is not particularly abundant, whereas the introduced *Hypericum*, or St. John's Wort, is spreading rapidly. The introduced Dodder, *Cuscuta epithimum*, L., seems to be more dangerous, especially to lucerne, than the native Didders; while the parasite *Cassytha* (Lauraceæ), sometimes mistaken for Dodder, hitherto has confined its attacks to native vegetation and left cultivated plants untouched.

The unusual luxuriance and powers of spreading shown by many introduced weeds is in some cases possibly the result of the stimulating effect of a change of climate, but in others is merely due to the fact that the weeds are allowed to grow on land from which cultivation excludes them in their original home. It would be interesting to know whether the production of alkaloids in certain feebly poisonous alien weeds increases in their new home, or whether such weeds appear to be more poisonous because stock eat them more freely in Victoria. This applies, for instance, to the Pimpernel (*Anagallis arvensis*), which has spread rapidly in Victoria, and was responsible for a heavy mortality among sheep at Lilydale, but in England does not seem to be specially dangerous to stock, possibly because green fodder is more abundant.

One feature of the native flora is, as is usually the case, the small number of useful economic plants it contains. Many of the forest trees produce good timber, but the latter is, in some cases, too hard, heavy, and brittle when seasoned to be of much value, except for special purposes where durability is all-important and little working required; while the softer woods are for the most part not very durable, or are very liable to warp and crack—at least under the methods of seasoning usually adopted here. It is for this reason that so much of the new forest planting has been confined to exotic trees; but, nevertheless, many native trees yield timber useful for beams, railway sleepers, piles, paving blocks, &c. With the improved methods of seasoning that have in many cases come into practical use, it has been found that many native timbers formerly little appreciated are really of great value. Unfortunately, most of our native forests have been despoiled of their most valuable timber trees without any forethought to the future before their value was fully realized, and without proper provision for artificial re-forestation. Natural re-forestation is too

slow and uncertain a process to be relied on in countries where population is fairly abundant and land is correspondingly valuable. The imports of timber into Victoria already reach a high figure, although a very large part is derived from timber trees which would grow equally well within the State. That there should be hardly any native fruits and no native cereal grains of any value as food for civilized man is hardly surprising when we consider that the commoner cereals and fruit trees are the result of ages of continual selection. Even the native fodder grasses and fodder plants are, with some notable exceptions, inferior in quality or objectionable on account of their armed fruits, inferior fertility, deficient nutritive properties, &c., and are being driven out by more suitable and adaptable introduced grasses.

All the Leguminosæ used as fodder (Clover, Trefoil, Vetch, Lucerne, Sainfoin, Peas, &c.), are introduced, so that if we exclude the *Acacia*, with its wattle-bark, this important order contains hardly any native representatives of pronounced economic value. A large number of our native flowers would possibly be capable of great improvement under cultivation, and other native plants might be found to develop useful economic properties under selective treatment. The cultivated plants of the world are mainly the result of selective adaptations from the floras of Europe and Asia, and no one seeing the original wild mustard for the first time could have predicted, without long trial extending over generations, the series of useful cultivated plants (cabbage, cauliflower, rape, mustard, brocoli, Brussels sprouts, turnips, &c.) to which this one genus would give rise. If only such investigations are made before it is too late, although we may regret, on sentimental grounds, the shrinkage of the native flora and the probable ultimate extinction of many of its representatives, it can only be regarded as the inevitable result of the progress of settlement, while the spread of the different weeds of cultivation is the usual, though by no means an unavoidable, accompaniment of the same change.

The proper establishment of the National Park at Wilson's Promontory will render it possible to preserve many species which seem in danger of extinction—at least, until such time as their economic possibilities have been thoroughly ascertained; and it is sincerely to be trusted that none of our endemic species will be suffered to become absolutely extinct when a special harbor and sanctuary exists for them. A species once extinct cannot be revived by any means; and to allow plants to become extinct before all their economic possibilities have been thoroughly tested is a wanton wasting of the hidden treasures which Nature scatters lavishly around us.

The flora of the National Park now contains over 600 species of native plants, that is nearly one-third of the whole flora of Victoria, and this number includes several plants which are rare or absent from other parts of Victoria. Many native plants formerly absent from the Park have now been planted there, and in the course of time it will probably represent the only large area where the entire native flora will be seen in its primitive condition and natural relationship.

## LEADING EVENTS IN VICTORIAN HISTORY.

**Principal events.** The following are the dates of some of the principal events connected with the discovery and history of Victoria, and of a few events of special interest which have occurred elsewhere during the period elapsed since such discovery:—

1770. 19th April.—Victorian land first discovered by Capt. James Cook, R.N., in command of His Majesty's ship *Endeavour*. —("Point Hicks," believed to be the present Cape Everard in Gippsland.)
1793. 4th June.—Western Port first entered by Surgeon George Bass, R.N.
- „ Nov. and Dec.—Discovery of Bass Strait, Midshipman Matthew Flinders, R.N., accompanied by Bass, having sailed round Tasmania in the sloop *Norfolk*.
1800. 4th to 9th Dec.—Lieutenant James Grant, R.N., in H.M.S. *Lady Nelson*, a gun brig of sixty tons burthen, bound from England to Port Jackson, first sailed through Bass Strait from the west. During the voyage Grant discovered and named Capes Bridgewater, Nelson, and Sir William Grant; Portland Bay; the Lawrence and Lady Julia Percy Islands; Capes Otway, Patton, Liptrap, &c.
1802. 5th January.—Entrance to Port Phillip Bay discovered by Acting-Lieutenant John Murray, R.N., in the *Lady Nelson*. The launch entered the Heads on 2nd, and the vessel on 15th February.
- „ 26th April.—Port Phillip Bay entered and examined by Flinders, who had been promoted to the rank of Commander. He was not aware that the Bay had been previously discovered by Murray.
1803. Jan. and Feb.—Port Phillip Bay surveyed, and the Yarra and Saltwater Rivers discovered, by Charles Grimes, Surveyor-General of New South Wales.
- „ 7th October.—Attempt made to colonize Port Phillip by Colonel David Collins, in charge of a party of convicts.
1804. 27th January.—Port Phillip abandoned by Collins as unfit for settlement.
1824. 16th December.—Hume and Hovell arrived at Corio Bay, having travelled overland from Sydney.
1826. 11th December.—An attempt to colonize Western Port, on its eastern side, near the site of the present township of Corinella, was made by Captain S. Wright, of H.M. 3rd Regiment, in charge of a party of convicts. The locality being sterile and scrubby, the establishment was withdrawn early in 1828.
1834. 19th November.—Permanent settlement founded at Portland Bay by Edward Henty.
1835. 29th May.—John Batman arrived in Port Phillip and made a treaty with the natives, by which they granted him 600,000 acres of land. The Imperial Government, however, refused to ratify the treaty.
- „ 28th August.—John Pascoe Fawcner's party sailed up the Yarra in the *Enterprise*, and founded Melbourne on the site previously selected by Batman. (Fawcner followed shortly after, and landed on the 18th October.)



1835. 28th August.—Proclamation by Sir Richard Bourke, claiming Port Phillip as part of New South Wales.
1836. April to Oct.—Major (afterwards Lieutenant-Colonel Sir) Thomas Livingstone Mitchell made extensive explorations in the Port Phillip District, the western portion of which he named Australia Felix.
- .. 29th September.—Regular Government established under Captain William Lonsdale, who was sent from Sydney to act as Resident Magistrate of the Port Phillip District.
1837. .. .. First post office established in Melbourne.
- .. 2nd March.—Governor Sir Richard Bourke arrived from Sydney and gave the name, Melbourne, to the principal town in the new settlement.
- .. 1st June.—First sale of Crown lands in Melbourne. Average price of half-acre town lots, £35.
1838. .. .. First Presbyterian minister, Rev. J. Forbes, arrived at Melbourne.
- .. 1st January.—*The Melbourne Advertiser* first published.
- .. 12th September.—First census of the colony. Population enumerated, 3,511, viz., 3,080 males and 431 females.
1839. 6th May.—Death of John Batman, one of the founders of Melbourne, aged 36 years.
- .. 30th September.—Mr. Charles Joseph La Trobe arrived from Sydney and took charge of the Port Phillip District under the title of Superintendent.
1840. .. January.—Discovery of Gippsland by Angus McMillan.
- .. 19th September.—Discontinuance of transportation to New South Wales announced.
1841. 8th February.—The first resident Judge appointed for Port Phillip.
- .. 1st September.—Savings Banks established in Melbourne.
1842. 12th August.—Melbourne incorporated as a Town by Act of the Legislature of New South Wales 6 Vict. No. 7.
1843. 13th September.—Subdivision of Port Phillip into four squatting districts.
1844. 24th December.—Petition for separation sent from Port Phillip to England.
1845. 4th December.—First steam vessel arrived at Western Australia.
1846. 11th February.—Great tornado in Melbourne.
1847. 26th June.—Royal Letters Patent, proclaiming Melbourne a City, were signed.
1848. 23rd January.—Dr. Perry, first Anglican Bishop of Melbourne, arrived in Port Phillip.
- .. 29th & 30th May.—Great rains and heavy floods in Melbourne.
1849. 12th October.—Geelong incorporated as a Town by Act of the Legislature of New South Wales 13 Vict. No. 40.
1850. 3rd July.—Construction of first Australian railway commenced at Sydney.
- .. 5th August.—Passing of the Separation Act.
1851. 6th February.—“Black Thursday.”—A day of tremendous heat and destructive fire, whereby a large tract of country was devastated. Several lives were lost, numbers of sheep, cattle, and horses perished, and a vast amount of property was destroyed.
- .. 1st July.—Port Phillip separated from New South Wales and created an independent colony, named Victoria, in honour of the Queen.
- .. July and Aug.—Discovery of gold in Victoria.

1852. 10th February.—Supreme Court of Victoria established.  
 .. .. Great rush of immigrants to Victoria.
1853. 3rd January.—Bank of Victoria opened.  
 .. 8th February.—Road districts (the origin of the present shires) established by Act 16 Vict. No. 40.
1854. 3rd July.—Foundation stone of Melbourne University laid.  
 .. Nov. and Dec.—Riots on Ballarat gold-field. (Eureka stockade taken on the 3rd December.)  
 .. 29th December.—Municipal institutions established by Act 18 Vict. No. 15.
1855. 12th March.—Electric telegraph first used.  
 .. 23rd November.—Constitution proclaimed in Victoria.
1856. 11th February.—Opening of Melbourne Public Library.  
 .. 19th March.—The ballot as a means of electing members of both Houses of Parliament prescribed by Act 19 Vict. No. 12.  
 .. 21st November.—Meeting of first Parliament under responsible government.
1857. 27th August.—Property qualification of members of the Legislative Assembly abolished by Act 21 Vict. No. 12.  
 .. 24th November.—Universal manhood suffrage for electors of the Legislative Assembly made law by Act 21 Vict. No. 33.
1858. 17th December.—Number of members of the Legislative Assembly increased to 78, to be returned for 49 Electoral Districts.
1859. 10th December.—Separation of Queensland from New South Wales.
1860. 20th August.—Burke and Wills started from Melbourne on their ill-starred expedition across Australia, to die at Cooper's Creek on their return journey in the following June.
- 1861 .. .. Anti-Chinese riots at gold-fields in New South Wales.  
 .. .. Burke and Wills perish at Cooper's Creek, near Innamincka, South Australia.
1862. September.—Council of Education appointed.  
 .. 20th October.—Bendigo railway opened.
1863. 6th July.—Northern Territory added to South Australia.
1864. 9th September.—First manufacture of sugar in Queensland.
1865. 28th May.—Death of Angus McMillan, discoverer of Gippsland.  
 .. 25th July.—Deadlock in Victorian Parliament, owing to the Legislative Assembly tacking a Tariff Bill to the Appropriation Bill, which was laid aside by the Legislative Council.
- 1866 .. .. Maori War in New Zealand concluded; peace declared.
1867. 6th February.—Customs Tariff imposing import duties on a number of articles, with a view of affording protection to native industries, came into operation under Act 31 Vict. No. 306.  
 .. 14th August.—Beginning of the Lady Darling grant deadlock. During the eleven months it continued, all Government accounts remained unpaid.
1868. 10th June.—Transportation to Australasia ceased.
1869. 1st January.—Property qualification of members and electors of the Legislative Council reduced by Act 32 Vict. No. 334.  
 .. 4th September.—Death of John Pascoe Fawkner, one of the founders of Melbourne, aged 77 years.
1870. 29th December.—Payment of members of Parliament provided for.  
 .. June-July.—Federal Conference was held at Melbourne.

1871. 17th May.—Import duties on many articles increased, with the view of affording further protection to native industry.
1872. 12th June.—Branch of Royal Mint opened in Melbourne.
1873. 1st January.—A system of free, secular, and compulsory education introduced.
1874. 27th September.—Sir John and Alex. Forrest arrived at Overland Telegraph line from Murchison, Western Australia.
1875. 31st December.—State aid to religion withdrawn in Victoria.
1876. 2nd November.—Number of members of the Legislative Assembly increased to 86, and boundaries of Electoral Districts altered so as to increase the number to 55, by Act 40 Vict. No. 548.
1877. 11th January.—Installation of Rev. Dr. Moorhouse as Anglican Bishop of Melbourne.
1878. 8th January.—“Black Wednesday.” Wholesale dismissal of public servants.
- „ 27th March.—Payment of Members Bill passed by Legislative Council, after a long conflict between the two Houses.
- „ 1st July.—Purchase of Melbourne and Hobson's Bay railway by Government.
1879. .. .. The first artesian bore in Australia sunk in New South Wales.
1880. 6th February.—Fortnightly mail contract service between Victoria and England commenced.
- „ 22nd March.—Women admitted to Melbourne University.
- „ 13th April.—Foundation stone of the new Anglican Cathedral laid.
- „ 1st October.—First Victorian International Exhibition opened in Melbourne.
- „ 23rd November.—Death of Sir Redmond Barry.
- „ .. .. Australian frozen meat first delivered in London.
- „ Nov.-Dec.—Federal Conference, Melbourne, decided on Chinese restriction.
1881. 28th November.—Property qualification of members and electors of the Legislative Council further reduced, number of provinces increased to 14, of members to 42, and tenure of seats fixed at 6 instead of 10 years.
1882. 15th February.—Frozen meat first shipped from New Zealand to London.
1883. 1st November.—Public Service Act passed.
- „ 14th June.—Railway, Melbourne to Sydney, completed.
1884. 1st February.—Victorian railways placed under the control and management of three Commissioners, under Act 47 Vict. No. 767.
1885. 9th December.—Imperial Act constituting a Federal Council of Australasia brought into operation in respect to Victoria by Act 49 Vict. No. 843.
1886. 25th January.—Federal Council initiated, first session being at Hobart.
1887. December.—Gold discovered at Yilgarn, Western Australia.
1888. 1st February.—Weekly mail contract service between Australia and England commenced by vessels of the Peninsular and Oriental and Orient services running alternately.
- „ 1st August.—Second Victorian International Exhibition opened in Melbourne.
- „ 22nd December.—Number of members of the Legislative Council increased to 48, and number of members of the Legislative Assembly to 95; Electoral Districts altered from 55 to 84, nearly all of them being single electorates.

1889. 2nd May.—Direct railway communication established between Brisbane and Adelaide.
1890. 21st October.—Responsible government proclaimed in Western Australia.
1891. 2nd March.—Federal Conference at Sydney.
1892. 17th March.—Railway Commissioners suspended by the Government.
1893. April and May.—Financial panic. Four banks and a number of other financial institutions stopped payment.
1894. .. .. Central Federation League established in Melbourne.
1895. January.—Conference at Hobart of the Premiers of Australia, when it was decided to commit the duty of framing a Federal Constitution to a convention chosen by the electors.
1896. March.—Federal Enabling Acts passed by all the States except Queensland.
1897. 2nd March.—Australian Federal Convention opened in Adelaide.
1898. 3rd June.—Federal Referendum Bill submitted to the electors of Victoria, New South Wales, and Queensland. The reference to the other States was made at a subsequent date.
1899. 28th January.—Conference of Premiers of all the Australian Colonies and Tasmania held in Melbourne, to consider the amendments suggested in the Draft Commonwealth Bill by the Parliament of New South Wales, at which a compromise was arrived at.
- .. 27th July.—Amended Commonwealth Bill approved at referendum in Victoria by 152,653 votes against 9,805.
- .. 28th October.—First Victorian troops left for South African war.
1900. 9th July.—Queen assented to Commonwealth of Australia Constitution Act 1900.
- .. 25th December.—Mr. Barton formed first Federal Ministry.
1901. 1st January.—Official proclamation of Commonwealth of Australia.
- .. 18th January.—Old-age pensions came into force in Victoria.
- .. 22nd January.—Death of Queen Victoria. Accession of King Edward VII. His Majesty's coronation took place on 9th August, 1902.
- .. 9th May.—Duke of Cornwall and York opened first Federal Parliament.
- .. 8th October.—Inter-State free-trade established by the introduction of a provisional Tariff by resolution of the Commonwealth House of Representatives.
1902. 1st January.—Methodist churches formed into one united body.
- .. 1st June.—South African War; peace announced.
- .. .. Last year of severe drought in Australia, which had extended over several years.
1903. .. .. Break up of drought followed by a record harvest.
- .. 5th October.—Sir Samuel Griffith (Chief Justice), Sir E. Barton, and Mr. R. E. O'Connor appointed Judges of first High Court of Australia.
1904. 15th December.—Assent given to Commonwealth Conciliation and Arbitration Act.
1905. 25th April.—Royal Letters Patent for the Constitution of the Transvaal Colony issued.
- .. 29th August.—Peace arranged between Japan and Russia.
1906. 1st September.—Papua taken over by the Commonwealth of Australia.
- .. 12th October.—Messrs. I. A. Isaacs and H. B. Higgins appointed to the High Court Bench.

1907. 14th January.—Earthquake in Jamaica, with terrible loss of life.  
 „ 8th August.—New Tariff introduced into the Federal Parliament, providing generally for large protective increases in Customs duties.
1908. 20th April.—Railway accident at Sunshine. Forty-four persons were killed and 412 injured.  
 „ 22nd July.—Tercenary of Canada.  
 „ 29th August.—Visit of the American Fleet, consisting of sixteen battle ships, to Melbourne.  
 „ 8th October.—Yass-Canberra selected as the site of Federal Capital.  
 „ 6th November.—Selection of Federal Capital site confirmed by Senate.  
 „ 28th December.—Disastrous earthquake in Sicily, the coasts of Calabria and Eastern Sicily being devastated, and the City of Messina and other towns almost obliterated. The deaths numbered 77,283 persons.
1909. 1st January.—Old-age Pensions Act came into force in the United Kingdom.  
 „ 4th February.—South African Constitution, providing for the federation of the various South African colonies, drafted by the National Convention.  
 „ 25th March.—The *Nimrod* returned to New Zealand from Antarctic regions. Sir Ernest Shackleton and three members of his party reached a point within 112 miles of the South Pole.  
 „ 27th April.—Insurrection in Turkey. Deposition of the Sultan, Abdul Hamid, and appointment of his successor, Mahommed V.  
 „ 13th August.—Financial agreement between the Commonwealth and States arrived at by Premiers, the principal clause providing that the States receive annually 25s. per head of population from the Customs revenue.  
 „ 21st December.—Lord Kitchener arrived at Port Darwin to commence a tour of inspection of the Australian Military Forces.
1910. 27th January.—Conference between Premiers of Victoria and South Australia *re* border railways.  
 „ 12th February.—Lord Kitchener's Report on Defence received by the Minister of Defence.  
 „ 28th February.—Arrival in London of Right Hon. Sir G. H. Reid, P.C. K.C.M.G., to take up the position of High Commissioner for the Commonwealth.  
 „ 14th March.—The Victorian Commission, appointed to inquire into the Murray waters question, presented its report, strongly expressing the view that navigation interests should be secondary to those of irrigation.  
 „ 18th March.—First aeroplane flight in Victoria made by Mr. Harry Houdini, who reached a height of 100 feet.  
 „ 6th May.—Death of King Edward VII.  
 „ 9th May.—Proclamation of King George V.  
 „ 20th May.—Funeral of the late King Edward VII. An imposing memorial service, attended by 100,000 people, was held in Melbourne.  
 „ 30th May.—Opening of the Prahran-Malvern electric tramway.  
 „ 31st May.—Commencement of the South African Union.  
 „ 18th July.—Railway accident at the Richmond station. A train running express on the Brighton line crashed into the rear of a stationary train, telescoping two carriages, killing nine people, and injuring more than 400 other passengers.

1910. 9th August.—Nugget weighing 224 ozs., valued at about £900, found at the Poseidon gold-field.
- „ 14th August.—Death of Florence Nightingale, the famous organizer of army nursing, aged 90 years.
- „ 6th September.—Arrival of Admiral Sir Reginald F. H. Henderson, K.C.B., to advise on the naval defence of Australia.
- „ 24th September.—Gift of £10,000 made by the trustees of the Edward Wilson estate to the re-building fund of the Children's Hospital.
- „ 3rd October.—Revolution in Portugal, flight of King Manoel, and the establishment of a republican form of government.
- „ 12th October.—Arrival in Hobson's Bay of the *Terra Nova*, en route for the Antarctic regions.
- „ 18th October.—Printing of Commonwealth bank notes started.
- „ 4th November.—Opening of the first Parliament of the South African Union by H.R.H. the Duke of Connaught.
- „ 16th November.—The first vessels of the Australian Navy—H.M.A.S. *Yarra* and *Parramatta*—arrived in Australian waters.
1911. 3rd January.—Anarchist Club attacked by police and military in London. Desperate defence by besieged. Detective shot. Building accidentally fired. Two dead bodies found in ruins.
- „ 19th January.—Representatives of New South Wales, Victoria, and South Australia met in Melbourne to discuss the Murray River water question.
- „ 3rd March.—Commonwealth Naval Board appointed.
- „ 13th March.—Report on the naval defence of Australia by Admiral Sir Reginald F. H. Henderson, K.C.B., published, in which he recommended that the Australian Navy should consist of 52 vessels, to be constructed in 22 years. The total cost was estimated at £40,000,000.
- „ 24th March.—The steam-ship *Yongala* wrecked off the Queensland coast, with a loss of all on board, numbering 141 persons.
- „ 4th April.—The destroyer *Warrego* launched at New South Wales dock-yards.
- „ 1st May.—Penny postage came into force with other portions of the Commonwealth and with all other British Dominions.
- „ 22nd May.—Disputed boundary case, South Australia *v.* Victoria, decided by judgment of the Federal High Court. Victoria to retain territory in dispute.
- „ 23rd May.—Imperial Conference opened in London.
- „ 22nd June.—The Commonwealth officially represented at the Coronation of King George V. by the Right Honorable the Prime Minister (Mr. A. Fisher).
- „ 1st July.—Compulsory military training of all boys between 14 and 18 years of age introduced throughout Australia.
- „ 31st July.—Arrival and swearing in of Lord Denman as Governor-General of the Commonwealth.
- „ 16th August.—Death of Cardinal Moran, at Sydney.
- „ 14th September.—M. Stolypin, Russian Premier, assassinated.
- „ 25th September.—Explosion on the French battle-ship *La Liberté*. 143 persons were killed or were missing, and 91 were seriously injured.

1911. 30th September.—Italy declared war against Turkey. Italian Fleet bombarded Tripoli.
- „ October.—Rising in China against the Manchu dynasty.
- „ 20th November.—The Mawson Antarctic expedition left Melbourne.
- „ 30th November.—Tariff Bill introduced in the Federal Parliament.
1912. 30th January.—Heat wave throughout large portion of Australia during end of January and beginning of February.
- „ 2nd February.—The estate of the late Mr. W. R. Hall, of Sydney, valued at £2,311,837.
- „ 9th February.—First wireless message sent from Melbourne (Domain Station).
- „ 10th February.—Death of Lord Lister, discoverer of antiseptic surgery.
- „ 12th February.—China declared a constitutional republic under the presidency of Yuan-Shih-Kai.
- „ 7th March.—Captain Amundsen reached Hobart in the *Fram* and announced that, on 14th December, 1911, he had reached the South Pole.
- „ 20th March.—Destructive typhoon on north-west coast of Western Australia—72 men lost their lives. The steamer *Koombana* wrecked with 50 souls aboard, who were all lost.
- „ 23rd March.—Foundation stone of new Melbourne Hospital laid by His Excellency the Governor.
- „ 2nd April.—Victorian loan of £1,500,000 issued.
- „ 11th April.—Irish Home Rule Bill introduced in the House of Commons.
- „ 14th April.—Wreck of *Titanic*, with loss of 1,635 lives, by collision with an iceberg off Cape Race.
- „ 24th May.—First prize (£1,750) granted to Mr. W. B. Griffin, Chicago, U.S.A., for Federal Capital design.
- „ 24th May.—Mrs. W. R. Hall, Sydney, donated £1,000,000 to charity, and educational and religious advancement—half the income to be spent in New South Wales, one-fourth in Victoria, and one-fourth in Queensland—as a memorial to her late husband.
- „ 15th July.—Savings Bank branch of Commonwealth Government Bank began business in Victoria.
- „ 29th July.—Death of the Mikado of Japan.
- „ 4th September.—Railway collision at Dudley-street, West Melbourne. Two persons were killed and many injured.
- „ 14th September.—First sod turned of Transcontinental Railway Line to Western Australia (Port Augusta to Kalgoorlie).
- „ 8th October.—Declaration of War by Montenegro against Turkey. Beginning of Balkan War.
- „ 10th October.—Maternity allowance (of £5 for each birth) came into force throughout Australia.
- „ 12th October.—Disaster at North Lyell mine, Tasmania, owing to an outbreak of fire. Forty one miners were killed.
- „ 15th October.—Treaty of peace signed by Italy and Turkey.
- „ 22nd October.—Authorizing motion moved by Mr. Watt, in Assembly, for electrification of Victorian railways. Cost estimated at £2,349,437.
- „ 9th November.—Dr. Woodrow Wilson elected President of United States.
- „ 16th November.—Cable from Sydney to New Zealand laid by Pacific Cable Board.
- „ 24th December.—Viceroy of India wounded by a bomb thrown from a house top in Delhi—two attendants were killed.

1913. 7th January.—Congress of Australasian Association for the Advancement of Science met in Melbourne.
- „ 17th January.—M. Poincare elected President of France.
- „ 19th January.—Opening of the Commonwealth Bank of Australia.
- „ 10th February.—The *Terra Nova* reached Oamaru, New Zealand, and announced that Captain Scott, Lieutenant Bower, and Dr. Wilson died on 21st March, 1912, and Captain Oates and Petty Officer Evans shortly before that date. The catastrophe occurred on the return journey from the South Pole, which was reached on 18th January, 1912.
- „ 12th February.—First sod turned of the Transcontinental Railway at Kalgoorlie.
- „ 25th February.—Deaths of Lieutenant Ninnis and Dr. Mertz reported by wireless telegraphy from Dr. Mawson's Antarctic Expedition. Lieutenant Ninnis died on 4th December, 1912, and Dr. Mertz on 17th January, 1913.
- „ 10th March.—H.M.A.S. *Melbourne*, of the Australian Navy, arrived at Fremantle.
- „ 12th March.—Foundation stone of Federal Capital at Canberra laid by Lord Denman.
- „ 1st May.—First Commonwealth bank note issued.
- „ 4th June.—King's Birthday honours announced. Mr. E. Carlile, ex-Parliamentary draftsman, received the honour of knighthood.
- „ 22nd July.—New Melbourne Hospital opened by Mrs. Grice, wife of the president.
- „ 6th August.—Inter-State Commission appointed, consisting of Mr. A. B. Piddington, K.C. (chairman), Messrs. G. Swinburne, M.L.A., and N. C. Lockyer, Comptroller of Customs, members.
- „ 19th September.—The *Australia*, first Commonwealth flagship, and *Sydney*, second Commonwealth cruiser, reached Albany.
- „ 29th November.—Hon. A. L. Stanley appointed Governor of Victoria.
1914. 27th January.—Lord Denman, Governor-General of Australia, resigned position.
- „ 9th February.—The Right Hon. Ronald Craufurd Munro Ferguson, P.C., appointed Governor-General of the Commonwealth.
- „ 17th February.—Sir Arthur Stanley, new Governor of Victoria, arrived at Fremantle.
- „ 13th March.—Railway accident at Exeter, New South Wales. Fourteen persons were killed and sixteen injured.
- „ 27th March.—French steamer *St. Paul*, bound from New Caledonia to Brisbane, wrecked on Smith's Rock, off Cape Morton, with a loss of twenty lives.
- „ 2nd May.—Fatal accident at the Great Extended Hustler's mine, Bendigo. Seven miners were killed.
- „ 12th May.—The Right Hon. Sir Ronald Munro Ferguson arrived at Fremantle.
- „ 29th May.—Wreck of the steamer *Empress of Ireland* in St. Lawrence River, Canada. The wreck was caused through a collision with a collier, and over 1,000 lives were lost.
- „ 16th June.—Sir Alexander Peacock, K.C.M.G., chosen as Premier, vice Hon. W. A. Watt resigned.
- „ 28th June.—Assassination in Sarajevo, capital of Bosnia, of Archduke Franz Ferdinand (heir presumptive of Austria-Hungary) and his wife.



1914. 26th July.—Encounter in Dublin streets between an armed civilian force and the military. Four persons were killed and a number wounded.
- „ 28th July.—Austria declared war against Serbia.
- „ 1st August.—Germany declared war against Russia.
- „ 3rd August.—State of war exists between France and Germany.
- „ 4th August.—Great Britain declared war against Germany.
- „ „ „ Australian fleet placed under control of the British Admiralty, and a force of 20,000 soldiers offered by the Commonwealth Government for service in Europe.
- „ 5th August.—Siege of Liege (Belgium) by the German troops commenced.
- „ 6th August.—British cruiser *Amphion* struck a mine and sank with a loss of 130 lives.
- „ 9th August.—Germans occupied town of Liege.
- „ 12th August.—Great Britain and France declared war against Austria.
- „ 13th–19th August.—Visit to Victoria of members of the British Association for the Advancement of Science.
- „ 15th August.—British Expeditionary Force landed at Boulogne, France.
- „ 17th August.—Japan issued an ultimatum to Germany, asking for the evacuation of Kaio Chao.
- „ 18th August.—First detachment of Australian Imperial Expeditionary Force left Sydney to take part in the war.
- „ 19th August.—Death of Pope Pius X.
- „ 20th August.—Germans occupied Brussels.
- „ 23rd August.—Japan declared war against Germany.
- „ 23rd–26th August.—British troops heavily engaged at Mons and Cambrai. They inflicted heavy losses and themselves sustained 6,000 casualties. They executed a masterly retreat in the face of overwhelming numbers.
- „ 28th August.—British naval victory over the German fleet at Heligoland Bight.
- „ 30th August.—It was announced by the Prime Minister (the Right Hon. Joseph Cook) that further contingents of Australian soldiers (in addition to original 20,000) were to be raised for service at the front.
- „ „ „ German Samoa taken by New Zealand troops and British warships.
- „ 1st September.—Great Austrian defeat by the Russians in Galicia.
- „ 5th September.—British cruiser *Pathfinder* sunk by German submarine.
- „ „ „ Elections for the Federal Parliament. The Labour Party was returned to power.
- „ 7th September.—German army fell back from Paris.
- „ 8th September.—Sir Henniker Heaton, originator of penny postage, died in Geneva, Switzerland.
- „ 8th September.—Pacific cable cut by a German cruiser at Fanning Island.
- „ 9th September.—The *Oceanic*, a converted cruiser, wrecked off the coast of Scotland.
- „ „ „ Battle of the Marne. Victory for the French and British arms.
- „ 10th September.—General retreat of the German army over the River Marne.
- „ 11th September.—Disastrous explosion at Ralph's Mine, Huntly, New Zealand. Forty-five men were killed.
- „ „ „ Herbertshohe (German New Guinea) captured and occupied by a landing force from H.M.A.S. *Australia*.

1914. 12th September.—Simpsonshafen (German New Guinea) occupied by the Australian forces.
- „ 13th September.—Rabaul (German New Guinea) captured and occupied by Australian troops.
- „ 15th September.—The retreat of the Germans ceased by their making a stand on the River Aisne, where they occupied strong defensive positions.
- „ 19th September.—Admiral Patey reported the loss of the Australian submarine *AE1* with 35 officers and men.
- „ 22nd September.—Three British cruisers—the *Aboukir*, *Hogue*, and *Cressy*—torpedoed and sunk by German submarines in the North Sea with great loss of life.
- „ 24th September.—Kaiser Wilhelm's Land occupied by the Australian Expeditionary Force.
- „ 29th September.—The Melbourne Stock Exchange, which had been closed at the beginning of the war, was re-opened.
- „ „ „ Indian troops reported to have arrived at Marseilles, France.
- „ 9th October.—The city of Antwerp captured by the German forces.
- „ 12th October.—The seat of government of Belgium removed from Ostend to Havre.
- „ 14th October.—The British cruiser *Hawke* sunk by a German submarine.
- „ „ „ Canadian Expeditionary Force arrived in England.
- „ 17th October.—British warships sank four German destroyers off the Dutch coast.
- „ 22nd October.—Federal Parliament passed a grant of £100,000 in aid of the Government of Belgium.
- „ 26th October.—The Boer rebel Maritz defeated.
- „ 27th October.—Further rebellion in South Africa headed by Generals De Wet and Beyers.
- „ 28th October.—Rebel forces under General Beyers defeated in South Africa.
- „ 30th October.—Turkey takes part in war with Germany and Austria.
- „ „ „ British cruiser *Hermes* sunk by German submarine in the Strait of Dover.
- „ 1st November.—Naval encounter off Valparaiso between five German and three British cruisers. The British cruisers *Good Hope* and *Monmouth* were sunk, the whole of the crews of both vessels being lost.
- „ „ „ Australian Imperial Force (first convoy) and New Zealand Expeditionary Force sailed from Albany, Western Australia.
- „ 5th November.—Great Britain declared war against Turkey.
- „ 7th November.—Tsing-tau fortress surrendered by the Germans to the Japanese and British forces.
- „ 9th November.—Destruction of the German raider *Emden* at North Cocos Island by H.M.A.S. *Sydney*.
- „ 13th November.—Great defence of Ypres in Belgium by the British and French troops terminated in favour of the Allies.
- „ 14th November.—Death of Field Marshal Lord Roberts, aged 82, in France, while on a visit to the Indian troops at the front.
- „ 16th November.—Germans defeated the Russians in East Prussia.
- „ 19th November.—Control of islands captured by the Japanese in the Pacific handed over to Australia.
- „ 24th November.—Serious German reverse at Lodz.
- „ 26th November.—British battleship *Bulwark* blown up accidentally in Sheerness Harbor, with severe loss of life.

1914. 2nd December.—The capture of the South African rebel leader General De Wet announced.
- „ „ „ Austrians captured Belgrade.
- „ 3rd December.—Federal Budget introduced. The revenue for the year estimated at £24,495,401, and the expenditure at £37,583,715. The deficiency chiefly due to war expenditure (£11,742,050) to be met by loan from British Government of £10,500,000 and the issue of Treasury Bills totalling £2,500,000.
- „ 5th December.—The Australian Imperial Force (first convoy) and the New Zealanders landed in Egypt for the defence of that country and to undergo war training in the vicinity of Cairo.
- „ „ „ The German cruisers *Scharnhorst*, *Gneissau*, *Nurnberg*, and *Leipzig* were sunk by a British squadron off Falkland Islands.
- „ 8th December.—Great victory of the Serbians over the Austrians.
- „ 15th December.—Serbians re-entered Belgrade.
- „ 16th December.—Three English towns—Hartlepool, Whitby, and Scarborough—shelled by German cruisers. About 120 persons were killed and over 400 injured.
- „ 17th December.—Egypt annexed by Great Britain.
- „ 19th December.—Torpedo boat destroyer *Derwent* launched from ship building yards, Sydney.
- „ — December.—Second convoy of Australian troops left for Egypt.
1915. 1st January.—Shooting outrage by two Turks at Broken Hill. A train of picnickers was attacked, with the result that four passengers were killed and six wounded. The Turks were pursued and shot dead.
- „ „ „ H.M.S. *Formidable* (15,000 tons) torpedoed by a German submarine in the English Channel. The loss of life amounted to about 500 persons.
- „ 19th January.—A Zeppelin air raid occurred over the east coast of England.
- „ 24th January.—A British squadron, under the command of Vice-Admiral Beatty, intercepted a strong German squadron making its way to the English coast. The Germans endeavoured to escape, but lost a battle cruiser, the *Blucher*, with great loss of life before getting clear. Three other German battle cruisers were seriously damaged.
- „ 25th January.—The British and French defeated the Germans at La Bassee. The Germans lost 20,000 men in this attempt to break through to Calais.
- „ 30th January.—The s.s. *Tokomaru* (6,084 tons), a New Zealand liner, was sunk without warning by a German submarine in the English Channel. The crew were saved by a trawler.
- „ 2nd February.—Turkish troops, to the number of 12,000, made an attack on the Suez Canal, but were repulsed, their casualties numbering 2,400.
- „ 5th February.—After a search extending over eight weeks, the Customs Department abandoned the effort to find the missing trawler *Endeavour*.
- „ 8th February.—Archbishop Cerretti, Papal delegate, arrived in Sydney on a visit to Australia.
- „ 18th February.—Germany declared a blockade of the British coast.
- „ 19th February.—British and French warships bombarded the Turkish defences at the Dardanelles.

1915. 24th February.—Riot at Singapore by the mutiny of a native regiment. Nineteen British soldiers and sailors, three native soldiers, and fourteen civilians were killed. French and Japanese marines were landed to assist the British troops. The riot was quelled.
- „ 1st March.—Complete blockade of Germany declared by the Allies.
- „ 10th March.—The *Prince Eitel Friedrich*, a German converted cruiser, entered Newport News, United States, and was interned until the termination of the war. The *Kron Prinz Wilhelm*, an armed merchantman, the last of the German raiders, was also interned at Hampton Roads, Virginia.
- „ 11th March.—Death of T. A. Browne (Rolfe Boldrewood), famous Australian novelist, aged 88 years.
- „ 10th-13th March.—Great British attack at Neuve Chapelle. The Germans sustained 20,000 casualties.
- „ 14th March.—The German raider *Dresden* destroyed by the British steamers *Kent* and *Glasgow*, near the island of Juan Fernandez, off Chili.
- „ 18th March.—Three vessels of the Allied fleets—the *Irresistible*, the *Ocean*, and the *Bowet*—sunk by mines in the Dardanelles.
- „ 19th March.—Russians captured Przemysl from the Austrians and took 100,000 prisoners.
- „ 28th March.—The s.s. *Falaba* (4,806 tons) sunk off the Welsh coast by a German submarine, with the loss of 100 persons.
- „ 9th April.—Death of Dr. Moorhouse, formerly Bishop of Melbourne, at Taunton, in Somersetshire, aged 89 years.
- „ „ „ The battle of Les Espargues won by the French.
- „ „ „ Fine general rains throughout Victoria, signaling the break-up of the drought.
- „ 12th April.—Death, at the age of 78 years, of James Johnston, who was the sole survivor of the wreck of the *Dunbar*, at the Gap, South Head, Sydney, 58 years before.
- „ 14th April.—Heavy fighting took place on the Euphrates River, Mesopotamia, where 15,000 Turks were defeated by the British.
- „ 24th April.—The first steel rail rolled at the Broken Hill Proprietary Company's works, Newcastle, New South Wales.
- „ 25th April.—Australian, British, and French troops landed under circumstances of extraordinary difficulty at Gallipoli Peninsula.
- „ 27th April.—Loss of the French warship *Leon Gambetta* (12,352 tons), which was torpedoed by a submarine in the Adriatic. One hundred and thirty-six of the crew were rescued.
- „ 7th May.—The great Cunard Atlantic liner *Lusitania* was torpedoed by a German submarine, with a loss of 1,399 lives. The vessel was sunk off Old Head, close to the fishing town and summer resort of Kinsale, near Cork, on a voyage from New York to Liverpool.
- „ 12th May.—H.M.S. *Goliath* (12,950 tons) torpedoed by a submarine at the Dardanelles, with a loss of 500 men.
- „ 13th May.—The Australian submarine *AE2* lost in the Dardanelles. The crew were taken prisoners by the Turks.
- „ 19th May.—Major-General Sir William Bridges, commander of the Australian troops at the Dardanelles, succumbed to wounds sustained in action.
- „ 24th May.—Italy declared war against Austria.

1915. 26th May.—The British auxiliary cruiser *Princess Irene* (6,000 tons), which was engaged as a mine-layer, was blown up at Sheerness, with a loss of 270 lives.
- „ 27th May.—Italian army entered Austria.
- „ 28th May.—The British battleship *Triumph* (11,800 tons) torpedoed by a German submarine at the Dardanelles. Most of the crew were saved.
- „ 29th May.—The British battleship *Majestic* sunk by a submarine at the Dardanelles.
- „ 2nd June.—New steel works at Newcastle, New South Wales, erected by the Broken Hill Proprietary Company, were opened by the Governor-General. The cost of the plant, &c., was £1,500,000.
- „ 3rd June.—Przemsyl re-taken from the Russians by the Germans.
- „ 15th June.—Italians invested Gorizia.
- „ 23rd June.—Lemberg re-taken from the Russians by the Austrians.
- „ 29th June.—It was announced that the Federal Government and Queensland State Government had arrived at an agreement in regard to the Queensland sugar crop. The State Government undertook to acquire and the Federal Government to sell the crop. The sum involved amounted to £2,000,000.
- „ 5th July.—A British submarine sank a German battleship in the Baltic Sea.
- „ 10th July.—German South West Africa conquered by General Botha. A force of 3,400 Germans surrendered and was transferred to Union territory.
- „ 14th July.—War Census Bill introduced in the House of Representatives by the Federal Attorney-General. The measure provided for the registration of the manhood and wealth of Australia.
- „ 18th July.—Death of Professor G. W. L. Marshall Hall, who occupied the Ormond Chair of Music at the Melbourne University, aged 53 years.
- „ 21st July.—The Italian armoured cruiser *Guiseppi Garibaldi* (7,234 tons) sunk by an Austrian submarine in the Adriatic. The majority of the crew were saved.
- „ 2nd August.—Death of Sir John Downer, K.C.M.G., in Adelaide, aged 71 years.
- „ 5th August.—Warsaw captured from the Russians by the Germans.
- „ 7th August.—The British landed a large force at Suvla Bay. The Turks were engaged, but the objective of the British was not attained.
- „ „ „ Battle of Hooge, in West Flanders, won by the British.
- „ 14th August.—The British transport *Royal Edward* (11,117 tons) sunk by a submarine in the Ægean Sea. The persons lost numbered about 1,000.
- „ 15th August.—Information received of atrocities on Armenians by Turks in Northern and Eastern Anatolia. Over 500,000 persons are believed to have been massacred.
- „ 17th August.—The Russian fortified town of Koono, on the Niemen River, in Northern Poland, captured by the Germans.
- „ 18th August.—War Income Tax Bill introduced in the House of Representatives. The tax on incomes from personal exertion is payable on incomes exceeding £156, and the rate ranges from 3d. to 5s. in the £1, the last-mentioned rate being payable on incomes exceeding £7,600.

1915. 19th August.—A British submarine, *E13*, was lost through running ashore on the Danish islands of Saltholm. German destroyers opened fire, and fifteen of the British crew were killed.
- „ 21st August.—Naval battle in the Gulf of Riga. Germans suffered severe losses and evacuated the gulf.
- „ 22nd August.—The White Star liner *Arabic* (15,801 tons) torpedoed by a German submarine off the Irish coast, on a voyage from Liverpool to New York. Thirty-three lives were lost.
- „ 25th August.—War declared by Italy against Turkey.
- „ 1st September.—First Commonwealth war loan of £5,000,000 over applied for, the tenders amounting to £13,380,000.
- „ 2nd September.—The British transport *Southland* (11,899 tons) torpedoed in the Ægean Sea while conveying Australian troops from Alexandria to the Dardanelles. The vessel was beached in Mudros Bay, and out of 2,000 troops on board the casualties numbered only 33.
- „ 4th September.—The British steamer *Hesperian* (10,920 tons) torpedoed off the south coast of Ireland, on a voyage from Liverpool to Montreal. Twenty-six persons were lost.
- „ 20th September.—Vilna captured by the Germans from the Russians.
- „ 25th September.—British defeated the Germans at Loos.
- „ 30th September.—The *Brisbane*, the first Australian built cruiser, launched at Sydney.
- „ „ „ The *Benedetto Brim* (13,215 tons), Italian battleship, blown up at Brindisi, with a loss of 333 persons.
- „ 5th October.—Detachments of the Allied troops landed at Salonika.
- „ 6th October.—Russia broke off diplomatic relations with Bulgaria.
- „ 12th October.—German troops captured Belgrade from the Serbians.
- „ 13th October.—Miss Edith Cavell, a British nurse, shot in Brussels by the Germans.
- „ 22nd October.—The Hon. A. Fisher, Prime Minister, accepted the position of High Commissioner for the Commonwealth in London.
- „ 28th October.—The British transport *Marquette* torpedoed in the Ægean Sea. Ten New Zealand nurses lost their lives.
- „ 7th November.—Nish, temporary Serbian capital, captured by the Bulgarians.
- „ 8th November.—The *Ancona*, an Italian emigrant liner, sunk in the Mediterranean by an Austrian submarine. Two hundred and eight persons perished.
- „ 12th November.—It was announced that the Imperial Government had decided to convene an Imperial Council in which the Dominions would participate.
- „ 15th November.—Russians in Eastern Galicia inflicted great losses on Austro-Germans.
- „ 17th November.—The British hospital ship *Anglia* struck a mine in the English Channel. Those on board numbered 375, of whom 300 were saved.
- „ 26th November.—It was announced that no males of military age (18 to 45 years) would be allowed to leave Australia without passports.
- „ 30th November.—The Bulgarians captured Monastir from the Serbians.
- „ 2nd December.—Major-General Townshend, commander of the British forces, marching on Bagdad, compelled to retire in the face of superior numbers of Turkish troops.
- „ 25th December.—Anzac and Suvla Bay evacuated by the Allied troops, practically without casualties.