

VICTORIAN YEAR - BOOK, 1912-13.

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*.

History of
early
discoverers
and
settlers.

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.

Frobisher.

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, but his efforts proved unsuccessful. De Quiros may be regarded as the last of the Southern European explorers, whose work was now taken up by the Dutch.

De Quiros.

In 1595 the Dutch East India Company was formed, with headquarters 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.

Dutch ex-
ploration.

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 19th 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.

Cook's description of Botany Bay was so favorable that in 1787 Phillip, 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, where he formally took possession of the country on 26th January, 1788, in the name of His Majesty King George III.

The first landing effected in Victoria was in 1797, from a vessel wrecked on Furneaux Island, in Bass Strait. Mr. Clarke, the supercargo, 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 of whom sailed through the strait separating Australia from Van Diemen's Land, and circumnavigated the latter island, 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.

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.

In 1824, a young Australian-born explorer, Hamilton Hume, of Lake George, in company with Captain Hovell, 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 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.

Westernport
Settlement.

Sturt and
Macleay,
on the
Murray.

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 headquarters, 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*.

Portland
Settlement.

Whilst 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 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.

Dutton.

Henty.

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

Port Phillip Settlement.

Batman.

Geelong.

The Yarra.

Melbourne.

But Batman was not to have things all his own way. John Pascoe Fawcner, who was one of the children whose brightness had illumined 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. Fawcner 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 Fawcner settlement.

Fawcner.

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, and Malvern; the

towns of Brighton, Port Melbourne, Williamstown, Northcote, Caulfield, Camberwell, 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 5,596 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 127,000 dwellings, with a population of 628,430 at the end of 1912.

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.

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 were despatched to Ballarat, and the disturbance was speedily quelled. 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 1912 was 73,048,216 ounces, valued at £291,703,453, this being about one-half the quantity recorded for the whole of Australia.

WOOL PRODUCTION.

Important as was the discovery of gold in aiding the early develop- Wool.
ment 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 seasonal conditions have been favorable, with the result that the sheep increased to 13,857,804 in 1912.

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 1911-12, the wool production was 110,463,041 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

STATISTICS OF VICTORIAN PROGRESS, 1842 to 1912.

	1842.	1850.	1855.	1861.	1871.	1881.	1891.	1901.	1911-12.
Population, 31st December ..	23,799	76,162	364,324	541,800	747,412	879,886	1,157,678	1,210,882	1,375,081
Revenue .. £	87,296	259,433	2,728,656	2,592,101	3,784,422	5,186,011	8,343,588	7,712,099	10,009,796
Expenditure from Revenue .. £	124,681	196,440	2,612,807	3,092,021	3,659,534	5,108,642	9,128,699	7,672,790	9,999,342
Public Funded Debt .. £	..	..	480,000	6,345,060	11,994,800	22,426,592	48,638,897	49,546,275	60,712,216
Gold produced .. oz.	..	..	2,793,065	1,967,453	1,355,477	858,850	876,400	789,562	516,254
Wool produced .. lbs.	2,752,330	16,345,468	22,470,443	22,640,745	37,177,646	45,970,560	76,503,635	73,235,138	110,463,041
Butter produced .. "	..	..	..	..	..	..	16,708,778	46,857,672	80,507,474
Agriculture—									
Land in cultivation .. acres	8,124	52,341	115,060	427,241	798,918	1,582,998	2,512,593	8,647,459	5,109,849
Wheat .. bushels	55,360	556,167	1,148,011	3,607,727	4,500,795	8,714,377	13,679,268	12,127,382	20,891,877
Oats .. "	66,100	99,585	614,614	2,136,430	3,299,889	3,612,111	4,455,551	6,724,900	4,585,826
Wine .. gallons	..	4,621	38,430	84,057	181,643	539,191	1,554,130	1,981,475	983,423
Live Stock—Horses .. No.	4,065	21,219	534,118	628,092	799,509	1,286,677	1,812,104	1,602,384	1,647,127
" Cattle .. "	100,792	378,806	4,677,872	6,239,258	10,002,381	10,287,265	12,928,148	10,841,790	13,857,304
" Sheep .. "	1,404,333	6,082,783	9,260	43,480	177,447	239,926	286,780	350,370	348,069
" Pigs .. "	..	..	20,686	..	12,341,995	16,718,521	21,711,608	18,927,340	28,150,198
Total Imports—Value .. £	277,427	744,925	12,007,939	13,828,606	14,557,820	16,252,108	16,006,748	18,646,097	29,396,275
" Exports—Value .. £	198,783	1,041,796	13,493,338	10,991,377	9,201,942	11,481,567	13,802,598	12,686,880	25,087,263
Imports, Oversea—Value .. £	..	..	..	12,209,794	12,843,451	12,318,128	11,403,922	13,075,269	19,165,680
Exports .. "	..	..	..	10,991,377	9,201,942	11,481,567	13,802,598	12,686,880	25,087,263
Shipping .. tonnage	78,025	195,117	1,133,283	1,090,002	1,355,025	2,411,002	4,715,109	6,715,491	10,305,186
Railways open .. miles	..	..	..	214	276	1,247	2,764	3,238	3,528
Telegraph wire .. "	..	..	..	2,536	2,472	6,626	13,989	15,356	17,408
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	159,092,001
Newspapers .. "	147,160	381,158	2,349,656	4,277,179	5,172,970	11,440,732	22,729,005	27,104,344	36,125,728
Savings Bank Deposits .. £	..	52,697	173,090	582,796	1,117,761	2,569,438	5,715,637	9,662,006	20,248,238
Factories—									
Number of ..	..	..	278	531	1,740	2,488	8,141	3,240	5,126
Hands employed ..	..	..	..	..	19,468	43,209	52,225	66,529	111,948
Value of machinery, plant, land and buildings .. £	..	..	..	..	3,626,340	8,068,101	16,472,859	12,298,500	18,257,893
Value of articles produced .. £	..	..	..	..	..	13,370,836	22,390,251	19,473,780	41,697,863
State Education—									
Number of Primary schools ..	..	61	370	671	988	1,757	2,233	1,967	2,141
Expenditure on Education .. £	..	..	115,099	162,547	274,384	546,285	726,711	701,034	1,172,709
Total value of rateable property in municipalities .. £	..	..	..	29,633,091	50,166,078	87,642,450	203,351,360	185,101,998	275,078,517
Friendly Societies—									
Number of Members ..	..	..	1,698	7,166	35,706	47,908	89,269	101,045	145,439
Total funds .. £	..	..	..	..	213,004	475,954	961,933	1,370,692	2,246,396

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.

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

The population of the State at the end of 1842 was 23,799; and at the end of 1912 it had increased to 1,375,081. During the period 1842-1912 the revenue steadily increased from £87,296 to £10,000,000. There was no public debt until after separation. In 1855 the State indebtedness was £480,000, in 1912 the funded debt had reached £60,712,216, 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 5,110,000 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 1912 there were 3,528 miles; 2,586 miles of telegraph wires had been erected up to 1861, and 17,403 miles up to the end of 1911. 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 £20,243,238 in 1912.

The expenditure on State education amounted to £115,000 in 1855, and had increased to £1,172,709 in 1911-12, the amount spent since the introduction of the present Act in 1873 being £28,876,552. Members of friendly societies numbered 1,698 in 1856, and 145,439 in 1911—the funds amounting to £213,000 in 1871 and £2,246,396 in 1911. Hands employed in factories rose from 19,468 in 1871 to 111,948 in 1911. The total value of rateable property in municipalities, which was £29,600,000 in 1861, aggregated £275,078,517 in 1911-12.

GEOGRAPHICAL POSITION, AREA, AND CLIMATE.

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.

Area of
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-six years ended with 1912 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-six years ended with 1912, 29.93 inches; the average number of days on which rain fell was 134, and the average yearly rainfall was 25.54 inches.

PHYSICAL GEOGRAPHY, GEOLOGY, AND FAUNA OF VICTORIA.

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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.

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.

Rivers and
lakes.

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. Leonards 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.

Slates and sandstones of ordovician age, all acutely folded, and more or less cleared, 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-porphyrries, 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.

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.

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.

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.

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 Deans 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 (*Macropodidae*) 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 billiardieri*) 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 (*Phalangeridae*) 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 weasels (*Phascologale*) 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, apparently, 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 novae-zelandiae*) 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 southern forms are nearly all found also in Tasmania, and include the blackfish (*Gadopsis marmoratus*), and the eel (*Anguilla australis*). 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 Commonwealth experimental trawler will, undoubtedly, add to our knowledge of the marine fishes, and lead to important economic developments.

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 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 (*Bulinus 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 lady-birds (*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.

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 (*Astacopsis 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.

Centipedes are common, especially in the warmer parts, but do not seem to do much harm to human beings.

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 recently 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 every thing 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 the rightful owners of the names.

MOUNTAINS AND HILLS.

The highest mountain in Victoria is the Bogong Range,* situated in the county of the same name, 6,508 feet above the sea-level; the next highest peaks are—Mount Feathertop, 6,306 feet; Mount Painter, 6,160 feet; Mount Hotham, 6,100 feet; and Mount Cope, 6,027 feet; all situated in the same county; also the Cobboras, 6,030 feet, situated in the county of Tambo. These, so far as is

Mountains
and hills.

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

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. J. M. Reed, I.S.O., there are 32 peaks between 5,000 and 6,000 feet high, and 37 peaks between 4,000 and 5,000 feet 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	—
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 ..	463
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 Cruachan	Tanjil	2,766
Arapiles ..	Lowan ..	1,176	Bendock ..	Croajingolong	—
Ararat ..	Ripon and Borung	2,020	Ben Nevis ..	Kara Kara	2,876
Ararat ..	Mornington	—	Bernard ..	Delatite ..	1,611
Arnold ..	Anglesey, Evelyn and Wonnangatta	4,300	Bindi ..	Tambo ..	—
Arthur's Seat	Mornington	1,031	Big Hill ..	Borong ..	895
Atkinson ..	Bourke ..	461	Big Hill ..	Bourke ..	—
Avoca ..	Kara Kara	2,461	Big Hill ..	Evelyn ..	—
Bainbridge ..	Dundas ..	—	Birch's Bald Hill	Talbot ..	—
Bald Cone ..	Anglesey ..	1,300	Black Hill ..	Grant ..	2,310
Bald Head ..	Dargo ..	4,502	Black Hill ..	Grenville ..	1,685
Bald Hill ..	Delatite ..	5,020	Black Range	Anglesey ..	—
Bald Hill ..	Mornington	680	Black Range	Borong ..	1,903
Bald Hill ..	Ripon ..	1,117	Black Range	Polwarth ..	—
Bald Hill ..	Talbot ..	1,956	Black Range	Lowan ..	—
Balmattum Range	Delatite ..	—	Blackwood, or Myrning	Bourke ..	2,432
Bankin's Hill	Ripon and Talbot	1,504	Bland ..	Bourke ..	—
Barambogio Ranges	Bogong ..	1,220	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 ..	2,860
			Bolton East ..	Talbot ..	1,921
			Bolton West	Talbot ..	2,055

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.
Boon or Bowen	Croajingolong	4,500	Cathedral ..	Anglesey ..	2,120
Boswell ..	Ripon ..	1,748	Cavendish ..	Dundas ..	—
Boulder ..	Buln Buln ..	1,725	Cavern ..	Talbot and ..	1,588
Boulder Range	Buln Buln ..	1,010		Ripon ..	—
Boundary Hill	Anglesey ..	—	Chalamber ..	Ripon ..	1,549
Breach Peak	Anglesey ..	1,634	Chalicum ..	Ripon ..	1,594
Brenanah ..	Gladstone ..	—	Charlton Hill	Dargo ..	2,090
Brigg's Bluff	Borong ..	—	Chaucer ..	Normanby ..	—
Brook's Hill	Bourke ..	—	Christmas Hills	Evelyn ..	—
Broom Hill ..	Gladstone ..	1,220	Clare Peak or	Delatite ..	4,986
Brown's Hill	Heytesbury	—	Mt. Dunn		—
Brown's Hill	Ripon and ..	1,594	Clarke's Hill	Grenville and ..	2,380
	Talbot ..	—		Talbot ..	—
Bryarty's Hill	Evelyn ..	—	Clay ..	Normanby ..	622
Buangor ..	Kara Kara	3,247	Cobbler ..	Delatite ..	5,349
Buckle ..	Croajingolong	1,461	Cobboras No. 1	Tambo ..	6,030
Buckrabanyule	Gladstone ..	—	Cobboras No. 2	Tambo and ..	—
Budd ..	Anglesey ..	1,970		Benambra ..	—
Budgee Budgee	Tanjil and ..	—	Coghill's Hill	Talbot and ..	1,639
	Wonnangatta	—		Ripon ..	—
Buffalo (The	Delatite ..	5,645	Cole ..	Ripon ..	—
Horn)		—	Colite ..	Grant ..	—
Buffalo (The	Delatite ..	5,221	Commissioner's	Kara Kara	1,408
Hump)		—	or Reserve		—
Bulla Bulla ..	Croajingolong	—	Hill		—
Bullanerook	Bourke ..	2,306	Concongella Hill	Borong ..	1,376
Bullarook Hill	Talbot ..	2,092	Concord ..	Anglesey ..	1,500
Buller ..	Wonnangatta	5,935	Conical Hill ..	Evelyn ..	—
Bullioh ..	Benambra ..	2,360	Consultation ..	Talbot ..	—
Buninyong ..	Grant ..	2,443	Coopragambra	Croajingolong	—
Burramboot	Rodney ..	—	Cooyatong ..	Benambra ..	3,270
Burrows ..	Benambra ..	4,181	Cope ..	Bogong ..	6,027
Burrunbeet Hill	Ripon ..	—	Corn Hill ..	Wonnangatta	4,395
Burts Hill ..	Evelyn ..	640	Corranwarrabul	Evelyn and ..	2,077
Bute ..	Grenville ..	—	or Mt. Dan-	Mornington	—
Byron ..	Lowan ..	—	denong		—
Callender ..	Ripon ..	—	Cotteril ..	Bourke ..	679
Camel ..	Rodney ..	—	Crinoline (Li-	Wonnangatta	4,600
Camel's Hump	Bourke and ..	3,295	gar)		—
or (Alexander's	Dalhousie	—	Cromwell's Nob	Wonnangatta	5,300
Crown)		—	Cunningham ..	Anglesey ..	1,920
Cameron ..	Talbot ..	—			—
Camp Hill ..	Ripon ..	1,389	Dandenong ..	Evelyn and ..	2,077
Cann or Mt.	Croajingolong	1,754		Mornington	—
Bemm		—	Dargo Hill ..	Dargo ..	—
Cannibal Hill	Mornington	—	Darriweel ..	Grant ..	—
Cardinal, The	Ripon ..	1,185	Davidson's	Borong ..	891
Carlyle ..	Croajingolong	—	Rocks		—
Castle Hill ..	Borong ..	—	Dawson ..	Tambo ..	—
Castle Hill ..	Wonnangatta	4,860	Deddick ..	Croajingolong	—
Cathcart Hill	Ripon ..	1,021	Delegete Hill	Croajingolong	4,307

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.
Delusion ..	Benambra & Dargo	4,507	Forest Hill ..	Talbot ..	—
Despair ..	Anglesey ..	—	Franklin ..	Talbot ..	2,092
Diamond Hill ..	Bendigo ..	1,104	Franklin Range	Bogong ..	—
Difficult ..	Borong ..	2,656	Friday ..	Dargo ..	2,700
Dingle Range	Bogong ..	—	Fullerton's	Wonnangatta	5,400
Diogenes ..	Dalhousie ..	—	Spring Hill		
Direction ..	Kara Kara ..	—	Fyans ..	Hampden ..	957
Disappointment	Bourke and Anglesey	2,631	Gap ..	Talbot ..	—
Djoandah ..	Wonnangatta	2,000	Gaspard ..	Talbot ..	—
Doboobetic ..	Kara Kara ..	—	Gellibrand ..	Grenville ..	871
Donkey Hill	Kara Kara ..	1,280	Genoa Peak	Croajingolong	1,607
Donna Buang	Evelyn ..	4,080	Gibbo ..	Benambra ..	5,763
(Acland)			Glasgow ..	Talbot ..	—
Drummond ..	Borong ..	—	Glenrowen ..	Moirs ..	1,680
Dryden ..	Borong ..	—	Good Morning	Ripon ..	1,716
Dundas ..	Dundas ..	1,538	Bill		
Duneed ..	Grant ..	710	Gowar ..	Gladstone ..	—
Easton ..	Tanjil ..	3,250	Graham ..	Evelyn ..	—
Eccles ..	Normanby ..	584	Granyah ..	Benambra ..	3,620
Eckersley ..	Normanby ..	537	Green Hill ..	Dalhousie ..	—
Egbert ..	Gladstone ..	—	Green Hill ..	Delatite ..	1,330
Egerton ..	Grant ..	—	Green Hill ..	Grenville ..	2,050
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, Gnargoein 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 ..	1,962
Erip ..	Grenville ..	1,539	Hermit, The	Bogong ..	—
Everard ..	Croajingolong	1,200	Hesse ..	Grenville ..	—
Everett ..	Delatite ..	5,100	Higinbotham	Bogong and	5,800
Ewing Hill ..	Anglesey ..	893	Heights	Dargo ..	—
Fainter ..	Bogong ..	6,160	Hoad ..	Dargo ..	2,160
Fainting Range	Tambo ..	—	Hoddle Range	Buln Buln ..	—
Fatigue ..	Buln Buln ..	2,110	Holden ..	Bourke ..	1,452
Feathertop ..	Bogong ..	6,306	Hollowback ..	Talbot and	1,842
Ferguson's Hill	Heytesbury	708		Ripon	
Flinders Peak	Grant ..	1,154	Hollowback or	Kara Kara	1,687
(late Station Peak)			Rock Hill		
Flint Hill ..	Ripon ..	1,059	Hooghly ..	Gladstone ..	1,190
Forest Hill ..	Tambo and Benambra on the N.S.W. frontier	5,000	Hope ..	Gunbower ..	613
			Hope ..	Benambra ..	4,505
			Hore's Hill ..	Benambra ..	—
			Hotspur ..	Villiers ..	—
			Hotham ..	Bogong and	6,100
				Dargo	
			Howe Hill ..	Croajingolong	1,288
			Howitt ..	Wonnangatta	5,718

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.
Hume Range	Bourke, Anglesey, and Evelyn	—	Loinman ..	Karkaroc ..	—
Hunter ..	Buln Buln ..	1,136	Longwood Hill	Delatite ..	1,255
Ida ..	Dalhousie and Rodney	1,537	Lookout ..	Tanjil ..	3,500
Indigo Hill ..	Bogong ..	970	Lookout ..	Tanjil ..	1,400
Jeffcott ..	Kara Kara	—	Lyall ..	Mornington	—
Jenkins ..	Weeah ..	339	Macedon ..	Bourke and Dalhousie	3,325
Jess ..	Weeah ..	300	Mackenzie or Mt. Tallarook	Anglesey ..	2,654
Johnson's Hill	Tanjil and Wonnangatta	3,682	Mackersey ..	Dundas ..	—
Juliet ..	Evelyn ..	3,631	Magdala ..	Wonnangatta	—
Kangaroo Range	Normanby ..	—	Maindample	Delatite ..	—
Kay ..	Croajingolong	3,284	Major ..	Moirs ..	1,251
Kent ..	Wonnangatta	5,129	Mannibadar ..	Grenville ..	1,540
Kerang ..	Gladstone ..	—	Maramingo Hill	Croajingolong	1,271
Kerang ..	Gunbower ..	—	Martha ..	Mornington	545
Kerang Moorah	Polwarth ..	—	Martin ..	Bogong ..	—
Kernot ..	Tanjil ..	4,675	Matlock ..	Wonnangatta	4,544
Kersop Peak	Buln Buln ..	636	Maxwell ..	Anglesey ..	740
Killawarra ..	Moirs ..	—	Melbourne Hill	Bourke ..	1,975
Kineaid ..	Normanby ..	664	Meningorot ..	Hampden ..	766
Kinross ..	Grenville ..	908	Mercer ..	Grenville ..	—
Kirk's Hill ..	Ripon ..	—	Meuron ..	Polwarth ..	713
Koala ..	Dalhousie ..	—	Misery ..	Ripon ..	—
Koang ..	Hampden ..	894	Misery ..	Mornington	766
Koorooyugh or Smeaton Hill	Talbot ..	—	Mitchell ..	Talbot ..	—
Kooyoorra ..	Gladstone ..	—	Moliagul ..	Gladstone ..	1,251
Korong ..	Gladstone ..	1,400	Monmot ..	Ripon ..	—
Kororot ..	Bourke ..	—	Monda ..	Evelyn and Anglesey	2,974
Kurtweeton ..	Hampden ..	—	Monk, The ..	Talbot ..	1,511
Lady Franklin	Bogong ..	1,789	Monument Hill or Upton Hill	Delatite ..	1,750
Lady Mount ..	Ripon ..	—	Moolort ..	Talbot ..	—
Langdale Pike	Polwarth ..	—	Moormbool ..	Dalhousie ..	—
Landsborough Hill	Kara Kara	1,901	Moorokyle ..	Talbot ..	—
Langi Ghiran	Ripon ..	3,122	Moornambool or Good Morning Bill	Ripon ..	—
La Trobe ..	Buln Buln ..	2,366	Moorul ..	Talbot ..	—
La Trobe's Range	Polwarth ..	—	Moriae ..	Grant ..	839
Lawaluk ..	Grenville ..	—	Morton's Hill	Ripon ..	1,515
Leading Hill	Mornington	—	Mueller ..	Tanjil ..	4,900
Leinster ..	Dargo and Benambra	—	Murrindal ..	Tambo ..	—
Leonard ..	Buln Buln ..	1,860	Murramurrang-bong	Bogong ..	—
Leura ..	Hampden ..	1,027	Myrtoon ..	Hampden ..	713
Lianiduk ..	Karkaroc ..	—	McLean's Hill	Ripon ..	1,529
Livingstone ..	Bogong ..	4,007	McLeod ..	Tambo ..	5,057
Liptrap ..	Buln Buln ..	551	Naninia ..	Ripon ..	—
Loch ..	Bogong ..	5,900	Napier ..	Normanby ..	1,453

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.
Navarre Hill	Kara Kara	1,355	Rock Hill or	Kara Kara	1,687
Nibo ..	Anglesey ..	—	Mt. Hollow-		
Noorat ..	Hampden ..	1,026	back		
Northwood Hill	Dalhousie ..	654	Rocky Peak	Polwarth ..	2,380
Norgate ..	Buln Buln ..	1,390	Ross ..	Ripon ..	—
Notch Hill ..	Dargo ..	4,507	Rouse ..	Villiers ..	1,213
Nowa Nowa	Tambo ..	—	Sabine ..	Polwarth ..	1,911
Oberon ..	Buln Buln ..	1,968	Saddleback Hill	Ripon ..	1,548
Ochertyre ..	Bogong ..	—	Samaria ..	Delatite ..	3,138
One-Mile Hill	Talbot ..	1,596	Sargent ..	Talbot ..	—
One-tree Hill	Evelyn ..	—	Scallan's Hill	Borong ..	885
One-tree Hill	Kara Kara	1,590	Scobie ..	Rodney ..	—
One-tree Hill	Mornington	1,523	Selwyn ..	Wonnangatta	—
One-tree Hill	Normanby ..	—		and Dela-	
One-tree Hill	Ripon ..	1,680		tite	
Paradox ..	Anglesey ..	—	Separation ..	Delatite ..	—
Patrick Point	Kara Kara	2,323	Serra Range	Dundas and	—
Peter's Hill ..	Polwarth ..	1,280		Ripon	
Phipps ..	Bogong and	4,600	Seymour Hill	Dalhousie ..	751
	Dargo		Shadwell ..	Hampden ..	965
Pierpoint ..	Normanby ..	891	Sherwin's	Evelyn ..	—
Pigeon Hill ..	Talbot ..	1,300	Range		
Pilot Range ..	Bogong ..	—	Shillinglaw ..	Wonnangatta	—
Pine Mount ..	Benambra ..	—	Singapore ..	Buln Buln ..	451
Pitnibar ..	Benambra ..	4,100	Singleton ..	Wonnangatta	—
Piper ..	Dalhousie ..	—	Sister Rises, The	Hampden ..	—
Pisgar (or Petit)	Ripon and Tal-	1,771	Sisters ..	Anglesey ..	—
	bot		Skene ..	Wonnangatta	—
Pleasant ..	Rodney ..	—	Smeaton Hill	Talbot ..	—
Pollock ..	Grant ..	—	Smith's Hill	Ripon ..	1,572
Porepunkah	Bogong ..	1,368	Snake Hill ..	Dargo ..	4,260
Pomdon ..	Heytesbury	949	Snake's Ridge	Buln Buln ..	—
Powlet's Hill	Talbot ..	1,288	Snodgrass ..	Anglesey ..	—
Pretty Boy ..	Tanjil and	1,587	Spring Hill ..	Gladstone ..	—
	Wonnangatta.		Spring Hill ..	Ripon ..	—
Prospect ..	Anglesey ..	1,025	Spring Hill ..	Talbot ..	2,270
Puckapunyal	Dalhousie ..	1,368	Square Mount	Dargo ..	5,210
Puzzle Range	Anglesey ..	—	Stanley ..	Bogong ..	3,444
Pyramid Hill	Gunbower ..	—	Stavely ..	Villiers ..	1,071
Quoin Hill, The	Talbot and	—	Steel's Hill ..	Evelyn ..	—
	Ripon		Steiglitz ..	Bourke ..	—
Raven's Hill	Kara Kara	—	Stewart ..	Anglesey ..	2,016
Ravenscroft	Ripon and	—	Strickland ..	Anglesey and	4,000
Hill	Talbot			Evelyn	
Raymond ..	Croajingolong	975	St. Bernard ..	Bogong and	5,060
Red Hill ..	Buln Buln ..	—		Dargo	
Red Hill (Mount	Ripon ..	1,211	St. George ..	Polwarth ..	—
Weejort)			St. Gwinear's	Tanjil ..	4,950
Red Hill ..	Grant ..	1,390	St. Leonard's	Evelyn and	3,304
Red Hill ..	Mornington	740		Anglesey	
Richmond ..	Normanby ..	766	St. Mary's ..	Ripon ..	—
Riddell ..	Evelyn ..	2,750	St. Phillack ..	Tanjil ..	5,140

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.
Stirling ..	Delatite and Wonnangatta	5,700	Tyers ..	Tanjil ..	4,660
Strathbogie Ranges	Delatite ..	—	Ulrich Peak ..	Delatite ..	5,050
Sturgeon ..	Dundas and Villiers	1,946	Upton or Monument Hill	Delatite ..	1,750
Sugarloaf (Bear's)	Evelyn ..	—	Useful ..	Wonnangatta and Tanjil	4,720
Suggan Buggan	Tambo ..	—	Valentia ..	Wonnangatta	—
Survey Peak	Anglesey ..	—	Vandyke ..	Normanby ..	—
Table Top ..	Delatite ..	4,900	Vaughan's Hill	Talbot ..	1,760
Talbot ..	Lowan ..	1,072	Vereker ..	Buln Buln ..	2,092
Talbot Peak	Tanjil ..	—	Victoria Range	Dundas ..	—
Tallarook or Mackenzie	Anglesey ..	2,654	View Hill ..	Bendigo ..	1,182
Tambo ..	Benambra and Dargo	4,707	Vite Vite ..	Hampden ..	—
Tamboritha ..	Wonnangatta	5,381	Wagra ..	Benambra ..	2,638
Tanjil Hill ..	Tanjil ..	1,300	Wallace ..	Grant ..	1,583
Tara ..	Tambo ..	2,009	Walterson ..	Tambo ..	—
Tarngower	Talbot ..	1,868	Warrambat or Timbertop	Wonnangatta	—
Tawanga ..	Bogong ..	4,151	Warrenheip ..	Grant ..	2,463
Taylor ..	Dargo ..	1,571	Warrion Hill, Gt.	Grenville ..	921
Telegraph Hill	Ripon ..	1,854	Warrnambool	Hampden ..	712
Templar ..	Tatchera ..	—	Watershed Hill	Ripon ..	—
Tennyson ..	Croajingolong	3,422	Waverly ..	Wonnangatta	3,346
Terrick Terrick	Gunbower ..	—	Weatherboard Hill	Ripon ..	1,826
Thackeray ..	Dundas ..	—	Weejort, Ripon	(See Red Hill)	1,211
The Bluff ..	Wonnangatta	4,850	Wellington ..	Mornington	314
The Brothers	Benambra ..	4,667	Wellington (Trig)	Wonnangatta and Tanjil	5,355
The Monolith (Buffalo Mts.)	Delatite ..	4,686	Wellington (Nap-Nap-Marra)	Tanjil ..	5,269
The Sisters ..	Benambra and Dargo	4,038	Wermatong Hill	Benambra ..	—
Thorn ..	Delatite and Wonnangatta	5,000	Western Hill	Tanjil ..	1,825
Tikatory Hill	Delatite ..	2,002	Wheeler's Hill	Delatite ..	1,857
Timbertop, or Warrambat	Wonnangatta	—	Wheeler's Hill	Talbot ..	2,380
Tinga Ringy..	Croajingolong	4,771	White Hill ..	Delatite ..	5,025
Tom's Cap ..	Buln Buln ..	1,258	Whitelaw ..	Tanjil ..	4,875
Tongio ..	Tambo ..	—	Whittaker's ..	Croajingolong	—
Tooborac Hills	Dalhousie ..	—	Widderin ..	Hampden ..	1,132
Toole-be-wong	Evelyn ..	—	William ..	Ripon and Borung	3,829
Torbreck ..	Anglesey and Wonnangatta	5,001	William ..	Bourke and Dalhousie	2,689
Tower Hill ..	Villiers ..	323	Wills ..	Bogong ..	5,758
Traawoul ..	Anglesey ..	—	Wilson ..	Buln Buln ..	2,350
Trig Hill ..	Delatite ..	5,040	Wilson ..	Bourke ..	—
Tucker's Hill	Borong ..	1,200	Wiridgil ..	Hampden ..	—
Tulgarna ..	Benambra ..	2,101	Wombat ..	Delatite ..	2,659
Twins, The ..	Delatite and Wonnangatta	5,582	Wombat Hill	Talbot ..	2,250
			Yandoit Hill	Talbot ..	—
			Zero, Mount	Borong ..	—

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 Surveyor-General, Mr. J. M. Reed, I.S.O., according to the latest information, are as follows:—

RIVERS IN VICTORIA.

Name of River.	Position.	Approximate Length.
		Miles.
Aberfeldy	Tanjil. Falls into Thomson	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	39
Back Creek	Moirra. 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,	Tambo. Falls into Lake Tyers	27
Bradford Creek	Talbot and Bendigo. Joins Loddon	24
Brakeet Creek	Delatite. Falls into Delatite	30
Bream Creek	Grant. Falls into the sea W. of Barwon Heads	30

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

RIVERS—continued.

Name of River.	Position.	Approximate Length.
		Miles.
Brodrick	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
Bunee	Part of eastern boundary of Mornington	20
Burnt Creek ..	Borong. Falls into Wimmera	25
Burrumbet Creek ..	Part of southern boundary of Ripon. Falls into Lake Burrumbet	23
Cabbage Tree Creek	Croajingolong. Falls into Brodrick	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 Pranjip	25
Cudgee Creek ..	Heytesbury. Falls into Hopkins	20
Cudgewa 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 Warnambool	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

RIVERS—continued.

Name of River.	Position.	Approximate Length.
Delegete	Croajingolong. Joins Snowy River in New South Wales	Miles. 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
Fifteen-Mile Creek ..	Delatite and Moira. Joins Three-Mile Creek and falls into Ovens	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
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
Glenelg	Dundas, Follett, and Normanby. Falls into Discovery Bay; a head at the mouth enters South Australia	290
Glenmaggie (or Gow-war) Creek	Tanjil. Falls into Macallister	25
Gnarkeet Ponds ..	Hampden, on eastern boundary. Falls into Lake Corangamite	24
Goulburn	Wonnangatta, Anglesey, Dalhousie, Moira, and Rodney. Joins Murray, 6 miles E. of Echuca	345
Grange Burn ..	Dundas and Normanby. Falls into Wannon ..	26
Gunbower Creek ..	Gunbower. Falls into Murray	80
Happy Valley Creek	Bogong. Falls into Ovens	20
Henty's Creek ..	Normanby. Falls into Wannon	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

* Length in Victoria only.

† Length in Victoria only; total length, 60 miles.

RIVERS—continued.

Name of River.	Position.	Approximate Length.
		Miles.
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 Narrangeanong ..	30
Koetong Creek ..	Benambra. Falls into Murray ..	23
Koroite Creek ..	Dundas. Falls into Wannon ..	25
Kororoit Creek ..	Bourke. Falls into Port Phillip Bay ..	40
Lang Lang ..	Mornington. Falls into Western Port Bay ..	30
La Trobe ..	Buln Buln. Falls into Lake Wellington. Boundary between Tanjil and Buln Buln	145
Leigh (see 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
Marraboora ..	Tatchera. Falls into Murray ..	35
Mather's Creek ..	Dundas. Falls into Glenelg ..	20
Merri	Villiers. Falls into sea at Warnambool ..	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
Moorabool ..	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 Moira. Falls into Goulburn ..	35
Murray	Northern boundary of State of Victoria ..	1,200*
Murrabit	Gunbower. Falls into Loddon ..	35
Murraboora ..	Tatchera. Falls into Loddon ..	35
Murrindal ..	Tambo. Falls into Buchan ..	25

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

RIVERS—continued.

Name of River.	Position.	Approximate Length.
		Miles.
Muston's Creek ..	Villiers. Falls into Hopkins	50
Myer's Creek ..	Bendigo	32
Myrtle Creek ..	Talbot, part of north boundary. Falls into Colibau ..	20
Naringhil Creek ..	Grenville. Falls into Woody Yaloak ..	29
Native Hut Creek ..	Grant. Falls into Barwon	25
Nicholson ..	Dargo. Falls into Lake King	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

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

RIVERS—continued.

Name of River.	Position.	Approximate Length.
		Miles.
Trawalla Creek ..	Ripon. Falls into Mount Emu Creek ..	20
Tsheea Creek ..	Moirā. 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
Tyrrell Creek ..	Kara Kara and Tatchera. Effluent of Avoca. Falls into Lake Tyrrell ..	95
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 Yallock ..	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	Borung 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.

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 Connemawarre, 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. J. M. Reed, I.S.O.:—

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
Beac ..	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
Boorookpi ..	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>) ..	600
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
Burrumbet ..	Ripon, 10 miles W. of Ballarat (<i>f</i>) ..	5,200
Calvert ..	Grenville, 5 miles N. of Colac (<i>s</i>) ..	5,200
Caatala ..	Karkaroc, 44 miles N.W. of Lake Tyrrell (<i>f</i>) ..	250
Carchap ..	Lowan, 20 miles N. of Mostyn (<i>f</i>) ..	220
Catearrong ..	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
Connemawarre ..	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 Yarriambiak 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
Corringale ..	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
Danison ..	Bulu Bulu, 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
Durdidwarrah ..	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 ..	Moirs, 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>) ..	5,800
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 ..	Moirs and Rodney (<i>f</i>) ..	4,500
Green ..	Borong, 7 miles S.E. of Horsham (<i>f</i>) ..	250
Hattah ..	Karkarooc, 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
Kakydra ..	Tanjil, 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 ..	Karkarooc, 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
Laanecoerie 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

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 Penshurst (<i>b</i>) ..	2,450
Little ..	Tatchera, 10 miles S.W. of Kerang (<i>f</i>) ..	80
Lockie ..	Karkarooc, 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 ..	Karkarooc, 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 ..	Karkarooc, 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
Reeve ..	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 ..	Karkarooc (<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>) ..	50
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
Tooliorook ..	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	Karkarooc, 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
Woonook	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	Karkarooc, 44 miles N.W. of Lake Tyrrell (<i>f</i>) ..	200
Yerang	Karkarooc, 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 characters 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 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 species 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*, *Dodonaea 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 *Pultenaea*, 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*, *Pultenaea* (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 *Pultenaea*, *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.

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 epithymum*, 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.

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, Lucern, 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.)
1798. 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.

1802. 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.
1803. 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 Fawkner's party sailed up the Yarra in the *Enterprise* and founded Melbourne on the site previously selected by Batman. (Fawkner followed shortly after, and landed on the 18th October.)
- „ „ „ 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. 30th September.—Mr. Charles Joseph La Trobe arrived from Sydney and took charge of the Port Phillip District under the title of Superintendent.
1840. 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.
1851. 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. 21st 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.
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. 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.
- 1867. 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.
- 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 the 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.
1888. 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 & 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. 22nd 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.—Peace of South Africa 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. 22nd July.—Tercentenary 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 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 Darwin to commence a tour of inspection of the Australian Military Forces.
- 1910. 4th January.—Wreck of s.s. *Waikare* off the coast of New Zealand.
- „ 26th January.—Severe floods in Paris, causing extensive damage, and rendering thousands of people homeless.
- „ 27th January.—Conference between Premiers of Victoria and South Australia *re* border railways.
- „ 23rd February.—Completion of the railway line to the Powlett River coal-field.
- „ 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.
- „ 31st March.—S.S. *Pericles*, bound for London, struck on an uncharted rock off Cape Leeuwin, W.A., and sank. No lives were lost.
- „ 13th April.—General election for the Federal Parliament.
- „ 20th April.—Resignation of the Deakin-Cook Ministry. Mr. A. Fisher, leader of the Labour party, commissioned to form a Cabinet.
- „ 29th April.—Labour Ministry sworn in.
- „ 6th May.—Death of King Edward VII.

1910. 9th May.—Proclamation of King George V.
 „ 9th May.—Eclipse of the sun, partial in Victoria, total in Southern Tasmania.
 „ 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.
 „ 1st July.—Opening of the fourth Parliament of the Commonwealth.
 „ 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.
 „ 5th August.—Amended award of Mr. Justice Higgins in the boot trade dispute, increasing total wages in Australia by £70,000 per annum, and benefiting 5,000 adult workmen.
 „ 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.
 „ 1st September.—Toll system for telephones made universal throughout Australia.
 „ 6th September.—Arrival of Admiral Sir Reginald F. H. Henderson, K.C.B., to advise on the naval defence of Australia.
 „ 7th September.—Opening of the Victorian Training Ship *John Murray*.
 „ 7th September.—Heavy floods in country. Goulburn River 30 feet above summer-level.
 „ 15th September.—Wreck of the ship *Carnarvon Bay* off King Island. All hands were saved.
 „ 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 republican form of government.
 „ 5th October.—Departure of the Prime Minister, Hon. A. Fisher, to represent the Commonwealth at the opening of the South African Union Parliament.
 „ 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.
 „ 19th November.—Cyclone at Broome, W.A., destroying a large number of houses and business premises, and scattering the pearling fleet. Three white and many coloured men were drowned, and the damage to property exceeded £40,000.
 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.
 „ 9th January.—Congress of Australasian Association for the Advancement of Science opened in Sydney, under the presidency of Professor O. Masson, of the Melbourne University.
 „ 19th January.—Representatives of New South Wales, Victoria, and South Australia met in Melbourne to discuss the Murray River water question.

1911. 20th January.—The steamer *British Transport* reached Western Australia with the crew of the missing ship *Parisiana* (which was destroyed by fire on the voyage from New York to Melbourne) on board. Crew found on St. Paul's Island. Cargo valued at £200,000 destroyed.
- „ 13th February.—The steamer *New Guinea* wrecked in Disaster Bay, near Eden, New South Wales. The crew were saved.
- „ 16th February.—The agricultural implement makers went out on strike. The Sunshine Harvester Works, at Braybrook, were principally affected.
- „ 20th February.—The State boundary case, South Australia *v.* Victoria, opened in the High Court.
- „ 3rd March.—Commonwealth Naval Board appointed.
- „ 12th March.—Strike of agricultural implement makers in South Australia. This brought the Victorian strike within the operation of the Commonwealth Arbitration Act.
- „ 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 steamship *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 dockyards.
- „ 26th April.—Referenda proposals of the Fisher Ministry rejected by a large majority of the Commonwealth electors.
- „ 1st May.—Penny postage came into force with other portions of the Commonwealth and with all other British Dominions.
- „ 10th May.—Agricultural implement makers' strike declared off by secret ballot of the members of the union.
- „ 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.
- „ 24th May.—Appointment of Sir John M. F. Fuller, Bart., as State Governor of Victoria.
- „ 31st May.—Federal Land Tax test case of *Osborne v. Commonwealth Government* decided in favour of the latter.
- „ 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.
- „ 2nd August.—A strike declared at sugar-cane fields in Queensland. Shorter hours and higher wages demanded. About 1,800 men were affected.
- „ 14th August.—Strike in the Queensland sugar industry settled.
- „ 16th August.—Death of Cardinal Moran, at Sydney.
- „ 5th September.—Federal Parliament opened after recess.
- „ 14th September.—M. Stolypin, Russian Premier, assassinated.
- „ 21st September.—Death of Sir Robert Hart, for 40 years Inspector-General of Maritime Customs in China.
- „ 25th September.—Railway accident on the Yea-Alexandra line. Sixteen persons were injured.

1911. 25th September.—Explosion on the French battleship *La Liberté*. 143 persons were killed or were missing, and 91 were seriously injured.
- „ 28th September.—Professor Baldwin Spencer, of the Melbourne University, appointed to organize the supervision and protection of aborigines in the Northern Territory.
- „ 30th September.—Italy declared war against Turkey. Italian Fleet bombarded Tripoli.
- „ October.—Rising in China against the Manchu dynasty.
- „ 9th November.—Resignation of Mr. Balfour from leadership of the Unionist party in the British House of Commons.
- „ 16th November.—Elections held for the State Legislative Assembly.
- „ 17th November.—Strike of the miners at the Mount Lyell mine, Tasmania, terminated.
- „ 20th November.—The Mawson Antarctic expedition left Melbourne.
- „ 25th November.—General increase in seamen's wages in Australia, and eight hours' day granted under decision of Mr. Justice Higgins.
- „ 30th November.—Tariff Bill introduced in the Federal Parliament.
- „ 5th December.—Opening of the State Parliament.
- „ 21st December.—Prorogation of the Federal Parliament.
1912. 2nd January.—Mr. W. F. Fitzpatrick, Chief Railway Commissioner, made C.M.G. in connexion with New Year honours.
- „ 13th January.—Mr. W. Cattnach left Melbourne for United States in order to encourage the immigration to Victoria of experienced American irrigationists.
- „ 17th January.—Opening of State Premiers' Conference in Melbourne.
- „ 27th January.—Death announced of Professor Irving, at one time professor of classical and comparative philology and logic in Melbourne University.
- „ 30th January.—General strike, involving 43 workers' unions, commenced in Brisbane. The origin of this strike was the refusal of the Brisbane tramway management to permit the wearing of distinctive badges by unionist employés.
- „ 30th January.—Heat wave throughout large portion of Australia during end of January and beginning of February, temperatures ranging as high as 110 degrees in shade.
- „ 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 Tuan-Chi-Kai.
- „ 13th February.—Marconi Wireless Telegraph Company Ltd. issued a writ against the Commonwealth Government for alleged infringement of patent.
- „ 27th February.—Judge Higgins decided in Arbitration Court that the Brisbane union tramway men had the right to wear a distinctive badge; but that he had no power to order the reinstatement of those dismissed for so doing.
- „ 1st March.—Coal miners' strike in England commenced.
- „ 6th March.—Brisbane general strike declared off.
- „ 7th March.—Captain Amundsen reached Hobart in the *Fram*, announced that on 14th December, 1911, he had reached the South Pole.
- „ 11th March.—Death of Sir William Zeal.
- „ 11th March.—Opening of Education Congress in Melbourne.
- „ 20th March.—Destructive typhoon on north-west coast of Western Australia—72 men lost their lives. The steamer *Koomdana* wrecked with 50 souls aboard, who were all lost.

1912. 23rd March.—Foundation stone of Melbourne Hospital laid by His Excellency the Governor.
- „ 1st April.—Commonwealth postage stamp selected—Kangaroo on white Australia.
- „ 2nd April.—Victorian loan of £1,500,000 issued.
- „ 6th April.—English coal miners decided to resume work.
- „ 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.
- „ 3rd May.—Representative party of American land-seekers arrived in Melbourne, their object being the inspection of irrigable lands suitable for settlement.
- „ 14th May.—Sudden death of King of Denmark.
- „ 17th May.—Mr. D. C. K. Miller appointed manager of Commonwealth Bank.
- „ 18th May.—Reconstruction of State Ministry. Mr. Watt assumed the office of Premier, and Mr. Murray that of Chief Secretary.
- „ 21st-24th May.—Dockers' strike, followed by strike of transport workers—150,000 men affected. Australian shipments delayed.
- „ 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, 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.
- „ 11th June.—Sir R. Baden-Powell visited Melbourne.
- „ 15th June.—Dr. Wollaston, late Comptroller of Customs, made K.C.M.G. in connexion with birthday honours.
- „ 21st June.—Settlement by arrangement arrived in libel action, *Clarke v. Norton*. Defendant apologized and paid £1,000 damages.
- „ 25th June.—Death of Mr. W. R. Guilfoyle, formerly director of Melbourne Botanical Gardens.
- „ 26th June.—Death announced of Sir George White, hero of the Ladysmith defence.
- „ 12th July.—Right Honorable James Bryce, British Ambassador at Washington, U.S.A., entertained by Federal Government at Parliament House.
- „ 13th July.—Official opening of Murrumbidgee Irrigation scheme (Burrinjuck Dam).
- „ 15th July.—Savings Bank branch of Commonwealth Government Bank began business in Victoria.
- „ 29th July.—Death of the Mikado of Japan.
- „ 11th August.—Mr. Cattinach returned from his immigration mission in Canada.
- „ 20th August.—Death of General Booth, head of the Salvation Army, at the age of 83 years.
- „ 1st September.—Death of Mr. J. S. Butters, formerly mayor of Melbourne, aged 83.
- „ 4th September.—Railway collision at Dudley-street, West Melbourne. Two persons were killed and many injured.
- „ 14th September.—Turning first sod of Transcontinental Railway Line to Western Australia (Port Augusta to Kalgoorlie).
- „ 7th October.—Lord Denman, Governor-General, left Sydney for Melbourne, owing to resumption of Sydney Government House by State.
- „ 8th October.—Declaration of War by Montenegro against Turkey. Beginning of Balkan War.

1912. 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.
- „ 20th October.—Death of Mr. Henry Henty, one of the early settlers of Portland, aged 79 years.
- „ 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.
- „ 17th November.—Death of Mr. Justice O'Connor, of the High Court of Australia.
- „ 16th December.—New head office for the State Savings Bank opened in Elizabeth-street.
- „ 24th December.—Viceroy of India wounded by a bomb thrown from a house top in Delhi—two attendants were killed.

CONSTITUTION AND GOVERNMENT.

Separation
from New
South
Wales.

Prior to the first day of July, 1851, the district known as Port Phillip formed part of the Colony of New South Wales. This district was, under the provisions of an Imperial Act of 5th August, 1850, entitled "An Act for the Better Government of Her Majesty's Australian Colonies," separated from New South Wales, and constituted into a self-governing colony under the name of Victoria. Its territories were defined as those "comprised within the said District of Port Phillip, including the town of Melbourne, and bounded on the north and north-east by a straight line drawn from Cape Howe to the nearest source of the River Murray, and thence by the course of that river to the eastern boundary of the Colony of South Australia."

Pursuant to the provisions of the Imperial Act the Governor and Legislative Council of New South Wales passed the Victorian Electoral Act in 1851, which provided that a Legislative Council be constituted for Victoria, consisting of thirty members, ten to be nominated by the Crown, and twenty to be elected by the inhabitants of the new colony. This Act also divided Victoria into sixteen electoral districts, as follows:—

1. Northern Division of Bourke County.
2. Southern Bourke County, Evelyn, and Mornington.
3. County of Grant.
4. Counties of Normanby, Dundas, and Follett.
5. Counties of Villiers and Heytesbury.
6. Counties of Ripon, Hampden, Grenville, and Polwarth.
7. Counties of Talbot, Dalhousie, and Anglesey.
8. Pastoral District of Gippsland.
9. Pastoral District of Murray, except that part included in Anglesey.