

## WOOL PRODUCTION.

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

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 1908-9, the wool production was 87,536,450 lbs., nearly all of which was exported. Prior to 1890 no returns were prepared to show the average weight of fleeces. Since that year, however, records have been kept, and the average (sheep and lambs) for the whole period may be put down at 5 lbs. 8½ ozs. This may be taken as an indication of the suitability of Victoria in soil, climate, and natural pasturage for sheep-breeding.

## GENERAL PROGRESS.

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

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

## STATISTICS OF VICTORIAN PROGRESS, 1842 TO 1908.

	1842.	1850.	1855.	1861.	1871.	1881.	1891.	1901.	1907-8.
Population, 31st December ..	23,799	76,162	364,324	541,800	747,412	879,886	1,157,678	1,210,882	1,273,313
Revenue .. £	87,296	259,433	2,728,656	2,592,101	3,734,422	5,186,011	8,343,588	7,712,099	8,314,480
Expenditure from Revenue .. £	124,631	196,440	2,612,807	3,092,021	3,659,534	5,108,642	9,128,699	7,672,780	7,862,246
Public Funded Debt .. £	..	..	480,000	6,345,060	11,994,800	22,426,502	43,638,897	49,546,275	53,180,487
Gold produced .. oz.	..	..	2,793,065	1,967,453	1,355,477	858,850	576,400	789,562	721,210
Wool produced .. lbs.	2,752,330	16,345,468	22,470,443	22,640,745	37,177,646	45,970,560	76,503,635	73,235,188	93,082,341
Butter produced .. "	..	..	..	..	..	..	16,703,786	46,857,572	63,746,854
<b>Agriculture—</b>									
Land in cultivation .. acres	8,124	52,341	115,060	427,241	793,918	1,582,908	2,512,593	3,647,459	4,126,823
Wheat .. bushels	55,360	556,167	1,148,011	3,607,727	4,500,795	8,714,377	13,679,268	12,127,382	12,100,780
Oats .. "	66,100	99,535	614,614	2,136,430	3,299,889	3,612,111	4,455,551	6,724,900	5,201,408
Wine .. gallons	..	4,621	9,372	47,568	713,589	539,191	1,554,130	1,981,475	1,365,000
Live Stock—Horses .. No.	4,065	21,219	33,430	84,057	181,643	278,195	440,696	392,237	424,048
" Cattle .. "	100,792	378,806	534,113	628,092	799,509	1,286,677	1,812,104	1,602,384	1,842,807
" Sheep .. "	1,404,333	6,032,783	4,577,872	6,239,258	10,002,381	10,267,265	12,928,148	10,841,790	14,146,794
" Pigs .. "	..	9,260	20,686	43,480	177,447	239,926	286,780	350,370	211,002
Imports—Value .. £	277,427	744,925	12,007,939	13,532,452	12,341,995	16,718,521	21,711,608	19,297,340	27,202,954
Exports—Value .. £	198,783	1,041,796	18,493,338	13,828,606	14,557,820	16,252,103	16,006,743	18,646,097	27,277,992
Shipping .. tonnage	78,025	195,117	1,133,283	1,090,002	1,355,025	2,411,902	4,715,109	6,715,491	8,460,061
Railways open .. miles	..	..	..	214	276	1,247	2,764	3,238	3,401
Telegraph wire .. "	..	..	..	2,586	3,472	6,626	13,989	15,356	16,326
Postal business—Letters .. No.	97,490	381,151	2,990,992	6,109,929	11,716,166	26,308,347	62,526,448	83,973,499	122,508,040
" Newspapers .. "	147,160	381,158	2,349,656	4,277,179	5,172,970	11,440,732	22,729,005	27,104,344	27,959,631
Savings Bank Deposits .. £	..	52,697	173,090	582,796	1,117,761	2,569,438	6,715,687	9,662,006	13,350,885
<b>Factories—</b>									
Number of .. "	..	..	278	531	1,740	2,488	3,141	3,249	4,530
Hands employed .. "	..	..	..	..	19,468	43,209	52,225	66,529	90,903
Value of machinery, plant, land and buildings .. £	..	..	..	..	3,626,340	8,068,101	16,472,859	12,298,500	15,148,100
Value of articles produced .. £	..	..	..	..	..	13,370,836	22,390,251	19,478,780	30,399,945
<b>State Primary Education—</b>									
Number of schools .. "	..	61	370	671	988	1,757	2,233	1,967	2,019
Expenditure on .. £	..	..	115,099	162,547	274,384	546,285	726,711	701,034	850,514
Total value of rateable property in municipalities .. £	..	..	..	29,638,091	50,166,078	87,642,459	203,351,360	185,101,993	232,725,666
<b>Friendly Societies—</b>									
Number of Members .. "	..	..	1,098	7,166	35,706	47,908	89,269	101,045	120,002
Total funds .. £	..	..	..	..	213,004	475,954	961,933	1,370,692	1,793,186

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.

The population of the State at the end of 1842 was 23,799; and at the end of 1908 it had increased to 1,273,313. During the period 1842-1908, the revenue steadily increased from £87,296 to over £8,300,000. There was no public debt until after separation. In 1855 the State indebtedness was £480,000, in 1908 the funded debt had reached £53,180,000, which has been spent on revenue-yielding and other works of a permanent character, and during the last financial year the net return from the reproductive works was almost sufficient to meet the total interest due for the year upon the public debt. The land in cultivation in 1842 was slightly over 8,000 acres; it now amounts to 4,127,000; in the number of horses, cattle, and pigs increases are generally shown. The value of imports in 1842 was £277,427; in 1908 it was over £27,000,000. Exports amounted to £198,783 in 1842; and in 1908 to £27,278,000. No railways or telegraphs were in existence up to the end of 1855; in 1861 there were 214 miles of railway open, in 1908 there were 3,401 miles; 2,586 miles of telegraph wires had been erected up to 1861, and 15,326 miles up to the end of 1907. Postal business in letters and newspapers shows a large increase, and the deposits in savings banks rose from £52,697 in 1850 to £13,350,885 in 1908.

The expenditure on State primary education amounted to £115,000 in 1855, which had increased to £850,514 in 1907-8—the amount spent since the introduction of the present Act in 1873 being £24,247,425. Members of friendly societies numbered 1,698 in 1856, and 120,002 in 1907—the funds amounting to £213,000 in 1871 and £1,793,000 in 1907. Hands employed in factories rose from 19,468 in 1871 to 90,903 in 1907. The total value of rateable property in municipalities, which was £29,600,000 in 1861, aggregated £232,726,000 in 1907-8.

## 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

Area of  
Victoria.

miles. Great Britain, exclusive of the islands in the British Seas, contains 88,309 square miles, and is therefore slightly larger than Victoria.

The southernmost point in Victoria, and in the whole of Australia, is Wilson's Promontory, which lies in latitude 39 deg. 8 min. S., longitude 146 deg. 26 min. E., the northernmost point is the place where the western boundary of the State meets the Murray, latitude 34 deg. 2 min. S., longitude 140 deg. 58 min. E.; the point furthest east is Cape Howe, situated in latitude 37 deg. 31 min. S., longitude 149 deg. 59 min. E.; the most westerly point is the line of the whole western frontier, which, according to the latest correction, lies upon the meridian 140 deg. 58 min. E., and extends from latitude 34 deg. 2 min. S. to latitude 38 deg. 4 min. S., or 242 geographical miles.

Climate.

From its geographical position, Victoria enjoys a climate more suitable to the European constitution than any other State upon the Continent of Australia. In the fifty-two years ended with 1908, 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-two years ended with 1908, 29.93 inches; the average number of days on which rain fell was 131, and the average yearly rainfall was 25.44 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 Cobbaras, 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, on the west, is formed under the lee of a projecting tongue of volcanic rocks. 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 coastline 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 of uncertain age. Long regarded as palæozoic, they have of late years, on very slender evidence, been spoken of as cretaceous. The results of more recent work on them have not yet been published.

Another series of rocks, and possibly older, of basic composition, is found to the north of 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.

Slates and sandstones of ordovician age, all acutely folded, and more or less cleaved, occur. Limestones are practically absent. One large area is situated in the east, and the same rocks re-appear in the

centre of the State. From Ballarat westward is a large mass of rocks having similar characters, and generally regarded as ordovician. Recently many places which were thought to be occupied by silurian rocks have yielded ordovician fossils, as will be seen on comparing the last two editions of the geological map. Since then ordovician, in the place of silurian, has been proved in several places on the Mornington Peninsula.

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

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

Devonian. A long and narrow belt of quartz-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 fault-scarp over 2,000 feet in height, have yielded no fossils, but are provisionally regarded as upper palæozoic. The Cathedral Range, near Marysville, belongs probably to the same series.

Certain sandstones on the Avon with *Lepidodendron* are, it is considered, of this 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. Carboniferous.

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

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* and *Outtrim*. Jurassic.

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 fluvatile, 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 fluvatile 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. Tertiary.

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 an extensive outpouring 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 billardieri*) is identical with the Tasmanian one, and the other common one (*M. ualabatus*) ranges far to the north of our boundaries. A few other northern forms come down south as far as the Dividing Range. The small kangaroo-rats (*Bettongia*), dwelling in thick scrub, are hard to catch sight of, and still harder to shoot.

The Australian opossum family (*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. 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-selandiae*) 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 cousin (*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, just equipped, 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 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 (*Latrodectes scelio*), which is identical with the New Zealand form. It is black with a scarlet, or deep orange spot on the hinder end of its back. The so-called “tarantula,” 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 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 bee is stingless, but is 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 can mention only the fresh-water crayfish, 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.

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 (*Limnodynastes quinquestrata*), 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 Fainter, 6,160 feet; Mount Hotham, 6,100 feet; and Mount Cope, 6,015 feet; all situated in the same county; also the Cobboras, 6,030 feet, situated in the county of Tambo. These, so far as is known, are the only peaks which exceed 6,000 feet in height; but,

<sup>Mountains  
and hills.</sup>

\* The highest mountain on the Australian Continent is Mount Kosciusko in New South Wales; one peak of which is 7,323 feet high.

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 26 peaks between 5,000 and 6,000 feet high, and 31 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	Baringhup ..	Talbot ..	785
			Barker ..	Talbot and Bendigo	—
Acland (Donnabuang)	Evelyn ..	4,080	Bass Range ..	Mornington	—
Acland ..	Polwarth ..	—	Bankin's Hill	Ripon and Talbot	1,504
Aitken ..	Bourke ..	1,683	Battery ..	Delatite ..	—
Aitken's Hill	Bourke ..	1,606	Baw Baw ..	Evelyn ..	5,062
Alexander ..	Talbot ..	2,435	Bealiba ..	Gladstone ..	—
Alexander's Head	Bourke ..	350	Bear's Hill ..	Bendigo ..	—
Alexander's Crown (See Camel's Hump)			Beckworth ..	Talbot ..	2,087
			Bellarine ..	Grant ..	463
Alexina ..	Anglesey ..	1,526	Bell's Hill ..	Grenville ..	1,611
Almond Peak	Ripon ..	—	Bemm ..	Croajingolong	1,754
Ana'kie ..	Grant ..	1,350	Benambra ..	Benambra ..	4,843
Angus ..	Tanjil ..	—	Ben Cruachan	Tanjil ..	2,765
Anne ..	Delatite ..	1,417	Bernard ..	Delatite ..	1,611
Arapiles ..	Lowan ..	1,176	B'ndi ..	Tambo ..	—
Ararat ..	Ripon and Borung	2,020	Bendock ..	Croajingolong	—
			Ben Nevis ..	Kara Kara	2,875
Ararat ..	Mornington	—	Big Hill ..	Borong ..	895
Arnold ..	Anglesey, Evelyn and Wonnangatta	—	Big Hill ..	Bourke ..	—
			Big Hill ..	Evelyn ..	—
Arthur's Seat	Mornington	1,031	Birch's Bald Hill	Talbot ..	—
Atkinson ..	Bourke ..	461	Black Mount	Rodney ..	—
Avoca ..	Kara Kara	2,461	Black Hill ..	Grant ..	2,310
Bakery Hill ..	Grant ..	1,420	Black Hill ..	Grenville ..	1,685
Bald Cone ..	Anglesey ..	1,300	Black Range	Anglesey ..	—
Bald Head ..	Dargo ..	4,502	Black Range	Borong ..	1,903
Bald ..	Dargo and Bogong	5,541	Black Range	Polwarth ..	—
			Black Range	Lowan ..	—
Bald Hill ..	Mornington	680	Blackwood, or Myrning	Bourke ..	2,432
Bald Hill ..	Ripon ..	1,117	Bland ..	Bourke ..	—
Bald Hill ..	Talbot ..	1,956	Blowhard ..	Ripon ..	1,664
Balmattum Range	Delatite ..	—	Blue Mountain	Bourke ..	—
Bainbridge ..	Dundas ..	—	Blue Range ..	Delatite ..	—
Barambogie Ranges	Bogong ..	1,220	Bogong ..	Bogong ..	6,508
Baranhet ..	Delatite ..	—	Boiler Plain	Dargo ..	5,150
			Bolangum ..	Kara Kara	1,225
			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 ..	Croajingolong	4,500	Cathcart Hill	Ripon ..	1,021
Boswell ..	Ripon ..	1,748	Cathedral ..	Anglesey ..	2,120
Boulder ..	Buln Buln ..	1,725	Cavendish ..	Dundas ..	—
Boulder Range	Buln Buln ..	1,010	Cavern ..	Talbot and Ripon	1,588
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 ..	—
Brock's Hill	Bourke ..	—	Christmas Hills	Evelyn ..	—
Broom Hill ..	Gladstone ..	1,220	Clare Peak ..	Delatite ..	4,986
Brown's Hill	Heytesbury	—	Clarke's Hill	Grenville and Talbot	2,380
Brown's Hill	Ripon and Talbot	1,594	Clay ..	Normanby ..	622
Bryarty's Hill	Evelyn ..	—	Cobbler ..	Delatite ..	5,349
Buangor ..	Kara Kara and Ripon	3,247	Cobboras ..	Tambo ..	6,030
Buckle ..	Croajingolong	1,465	Coghill's Hill	Talbot and Ripon	1,639
Buckrabanyule	Gladstone ..	—	Cole ..	Ripon ..	—
Budd ..	Delatite ..	1,970	Colite ..	Grant ..	—
Budgee Budgee	Tanjil and Wonnangatta	—	Commissioners Hill	Kara Kara	1,408
Buffalo (The Horn)	Delatite ..	5,645	Concungella Hill	Borong ..	1,376
Buffalo (The Hump)	Delatite ..	5,221	Concord ..	Anglesey ..	1,500
Bulla Bulla ..	Croajingolong	—	Conical Hill ..	Evelyn ..	—
Bullancrook	Bourke ..	2,306	Consultation ..	Talbot ..	—
Bullarook ..	Talbot ..	2,400	Coopragambra	Croajingolong	—
Buller ..	Wonnangatta	5,934	Cooyatong ..	Benambra ..	3,270
Bullich ..	Benambra ..	2,360	Cope ..	Bogong ..	6,015
Buninyong ..	Grant ..	2,443	Corn Hill ..	Wonnangatta	4,395
Burramboot	Rodney ..	—	Corranwarrabul or Mt. Dandenong	Mornington	2,077
Burrowa ..	Benambra ..	4,181	Cotterill ..	Bourke ..	679
Burrumbet Hill	Ripon ..	—	Crinoline (Ligar)	Wonnangatta	4,500
Burts Hill ..	Evelyn ..	640	Cunningham ..	Anglesey ..	1,920
Bute ..	Grenville ..	1,540	Dandenong ..	Evelyn and Mornington	2,077
Byron ..	Lowan ..	—	Dargo Hill ..	Dargo ..	—
Callender ..	Ripon ..	—	Darriwil ..	Grant ..	—
Camel ..	Rodney ..	—	Davidson's Rocks	Borong ..	891
Camel's Hump or (Alexander's Crown)	Bourke and Dalhousie	3,295	Dawson ..	Tambo ..	—
Cameron ..	Talbot ..	—	Deddick ..	Croajingolong	—
Camp Hill ..	Ripon ..	1,389	Doboobetic ..	Kara Kara	—
Cann ..	Croajingolong	1,754	Delegete Hill	Croajingolong	4,307
Cannibal Hill	Mornington	—	Despair ..	Anglesey ..	—
Carlyle ..	Croajingolong	1,189	Diamond Hill	Bendigo ..	1,104
Cardinal, The	Ripon ..	—	Difficult ..	Borong ..	2,657
Castle Hill ..	Borong ..	—			
Castle Hill ..	Wonnangatta	4,860			

## 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.
Dingle Range	Bogong ..	—	Glasgow ..	Talbot ..	—
Diogenes ..	Dalhousie ..	—	Glenrowen ..	Moirá ..	1,680
Direction ..	Kara Kara ..	—	Good Morning	Ripon ..	1,716
Disappointment	Bourke and	2,631	Bill		
	Anglesey		Gowar ..	Gladstone ..	—
Djoandah ..	Wonnangatta	2,000	Graham ..	Evelyn ..	—
Donkey Hill	Kara Kara	1,280	Granyah ..	Benambra ..	3,620
Drummond ..	Borong ..	—	Green Hill ..	Dalhousie ..	—
Dryden ..	Borong ..	—	Green Hill ..	Delatite ..	1,330
Dundas ..	Dundas ..	1,535	Green Hill ..	Grenville ..	2,050
Duneeed ..	Grant ..	710	Greenock ..	Talbot ..	—
Easton ..	Tanjil ..	3,250	Gregory ..	Evelyn, Won-	4,000
Eccles ..	Normanby ..	590		angatta,	
Eckersley ..	Normanby ..	529		and Tanjil	
Egbert ..	Gladstone ..	—	Hamilton ..	Hampden ..	1,050
Egerton ..	Grant ..	—	Happy Hill ..	Tanjil ..	1,900
Elephant ..	Hampden ..	1,294	Hardie's Hill	Grenville ..	—
Eliza ..	Mornington	530	Hat Hill ..	Delatite ..	2,544
Ellery ..	Croajingolong	4,251	Haunted Hill	Buln Buln ..	600
Ellery E. Bump	Croajingolong	3,908	Heath Point..	Normanby ..	627
Emu ..	Ripon ..	1,687	Helen ..	Anglesey ..	1,902
Emu ..	Hampden ..	893	Hermit ..	Bogong ..	—
Emu Hill ..	Grenville ..	1,010	Hesse ..	Grenville ..	—
Enterprise ..	Wonnangatta	—	Higinbotham	Bogong and	5,800
Erica ..	Tanjil ..	4,800	Heights	Dargo	
Erip ..	Grenville ..	1,539	Hoad ..	Dargo ..	2,160
Everard ..	Croajingolong	1,200	Hoddle Range	Buln Buln ..	—
Everett ..	Delatite ..	5,100	Holden ..	Bourke ..	1,452
Ewing Hill ..	Anglesey ..	893	Hollowback ..	Talbot and	1,842
Fainter ..	Bogong ..	6,160		Ripon	
Fainting Range	Tambo ..	—	Hollowback ..	Kara Kara	1,687
Fatigue ..	Buln Buln ..	2,110	Hooghly ..	Gladstone ..	1,190
Feathertop ..	Bogong ..	6,306	Hope ..	Gunbower ..	613
Ferguson's Hill	Polwarth ..	708	Hope ..	Benambra ..	4,505
Flint Hill ..	Ripon ..	1,059	Hore's Hill ..	Benambra ..	—
Forest Hill ..	Tambo on	5,000	Hotspur ..	Villiers ..	—
	the N.S.W.		Hotham ..	Bogong ..	6,100
	frontier		Howe Hill ..	Croajingolong	1,292
Forest Hill ..	Talbot ..	—	Howitt ..	Delatite ..	5,718
Franklin ..	Talbot ..	2,092	Hume Range	Bourke, Angle-	—
Franklin Range	Bogong ..	—		sey, and	
Friday ..	Dargo ..	2,700		Evelyn	
Fullerton's	Wonnangatta	5,400	Hunter ..	Buln Buln ..	1,136
Spring Hill			Ida ..	Rodney ..	1,537
Fyans ..	Hampden ..	957	Indigo Hill ..	Bogong ..	970
Gap ..	Talbot ..	—	Jeffcott ..	Kara Kara	—
Gaspard ..	Talbot ..	—	Jenkins ..	Weeah ..	339
Gellibrand ..	Grenville ..	871	Jess ..	Weeah ..	300
Genoa Peak	Croajingolong	1,611	Juliet ..	Evelyn ..	3,631
George ..	Polwarth ..	—	Kangaroo	Normanby ..	—
Gibbo ..	Benambra ..	5,764	Range		

## 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.
Kay ..	Croajingolong	3,284	Mannibadar ..	Grenville ..	—
Keilawarra ..	Moira ..	—	Maramingo ..	Croajingolong	1,274
Kent ..	Wonnangatta	5,129	Martha ..	Mornington	544
Kerang ..	Gladstone ..	—	Martin ..	Bogong ..	—
Kerang ..	Gunbower ..	—	Matlock ..	Wonnangatta	4,544
Kerange Moor- ah	Polwarth ..	—	Maxwell ..	Anglesey ..	740
Kernot ..	Tanjil ..	4,675	Melbourne Hill	Bourke ..	—
Kersop Peak	Buln Buln ..	740	Meningerot ..	Hampden ..	766
Kincaid ..	Normanby ..	655	Mercer ..	Grenville ..	—
Kinross ..	Hampden ..	908	Meuron ..	Polwarth ..	713
Kirk's Hill ..	Ripon ..	—	Misery ..	Ripon ..	—
Koala ..	Dalhousie ..	—	Misery ..	Mornington	766
Koang ..	Hampden ..	891	Mitchell ..	Talbot ..	—
Koorooyugh or Smeaton Hill	Talbot ..	—	Moliagul ..	Gladstone ..	1,251
Kooyoora ..	Gladstone ..	—	Monmot ..	Ripon ..	—
Korong ..	Gladstone ..	1,408	Monda ..	Evelyn and Anglesey	2,974
Kororoit ..	Bourke ..	—	Monk, The ..	Talbot ..	1,511
Kurtweeton ..	Hampden ..	—	Monument Hill	Delatite ..	1,750
Lady Franklin	Bogong ..	1,789	Moolort ..	Talbot ..	—
Lady Mount ..	Ripon ..	—	Moorokyle ..	Talbot ..	—
Langdale Pike	Polwarth ..	—	Moornambool	Ripon ..	—
Landsborough Hill	Kara Kara	1,903	Moorul ..	Talbot ..	—
Langi Ghiran	Ripon ..	3,123	Moriac ..	Grant ..	839
La Trobe ..	Buln Buln ..	2,366	Mormbool ..	Dalhousie ..	—
La Trobe's Range	Polwarth ..	—	Morton's Hill	Ripon ..	1,515
Lawaluk ..	Grenville ..	—	Mueller ..	Tanjil ..	4,900
Leading Hill	Mornington	—	Murindal ..	Tambo ..	—
Leinster ..	Dargo and Benambra	—	Murramurrang- bong	Bogong ..	—
Leonard ..	Buln Buln ..	1,860	Myrtoon ..	Hampden ..	713
Leura ..	Hampden ..	1,030	McLean's Hill	Ripon ..	1,529
Lianiduk ..	Karkaroc ..	—	Nanimia ..	Ripon ..	—
Livingstone ..	Bogong ..	4,007	Napier ..	Normanby ..	1,453
Liptrap ..	Buln Buln ..	551	Navarre Hill	Kara Kara	1,355
Loch ..	Bogong ..	5,900	Nibo ..	Anglesey ..	—
Loinman ..	Karkaroc ..	—	Noorat ..	Hampden ..	1,024
Longwood Hill	Delatite ..	1,255	Northwood Hill	Dalhousie ..	654
Lookout ..	Tanjil ..	3,500	Norgate ..	Buln Buln ..	1,390
Lookout ..	Tanjil ..	1,400	Notch Hill ..	Dargo ..	4,507
Lyall ..	Mornington	—	Nowa Nowa	Tambo ..	—
Macedon ..	Bourke and Dalhousie	3,324	Oberon ..	Buln Buln ..	1,968
Mackenzie ..	Anglesey ..	2,654	Ochtertyre ..	Bogong ..	—
Mackersey ..	Dundas ..	—	One-Mile Hill	Talbot ..	1,596
Magdala ..	Wonnangatta	—	One-tree Hill	Evelyn ..	—
Maindample	Delatite ..	—	One-tree Hill	Kara Kara	1,590
Major ..	Moira ..	1,251	One-tree Hill	Mornington	1,523
			One-tree Hill	Normanby ..	—
			One-tree Hill	Ripon ..	1,680
			Paradox ..	Anglesey ..	—

## 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.
Patrick Point	Kara Kara	2,323	Seymour Hill	Dalhousie ..	751
Peter's Hill ..	Polwarth ..	1,280	Shadwell ..	Hampden ..	962
Phipps ..	Bogong and Dargo	4,600	Sherwin's Range	Evelyn ..	—
Pierrepoint ..	Normanby ..	936	Shillinglaw ..	Wonnangatta	—
Pigeon Hill ..	Talbot ..	1,300	Serra Range	Dundas and Ripon	—
Pilot Range ..	Bogong ..	—	Singapore ..	Buln Buln ..	451
Pine Mount ..	Benambra ..	—	Singleton ..	Wonnangatta	—
Pininbar ..	Benambra ..	4,100	Sister Rises, The	Hampden ..	—
Piper ..	Dalhousie ..	—	Sisters ..	Anglesey ..	—
Pisgar (or Petit)	Ripon and Talbot	1,771	Skene ..	Wonnangatta	—
Pleasant ..	Rodney ..	—	Smeaton Hill	Talbot ..	—
Pollock ..	Grant ..	—	Smith's Hill	Ripon ..	1,572
Porpunkah	Bogong ..	1,368	Snake's Ridge	Buln Buln ..	—
Porndon ..	Heytesbury	947	Snodgrass ..	Anglesey ..	—
Powlet's Hill	Talbot ..	1,288	Spring Hill ..	Gladstone ..	—
Pretty Boy ..	Tanjil and Wonnangatta	1,587	Spring Hill ..	Ripon ..	—
Prospect	Anglesey ..	1,025	Spring Hill ..	Talbot ..	2,270
Puckapanyal	Dalhousie ..	1,368	Square Mount	Dargo ..	5,210
Puzzle Range	Anglesey ..	—	Stanley ..	Bogong ..	3,444
Pyramid Hill	Gunbower ..	—	Station Peak	Grant ..	1,154
Quoin Hill ..	Talbot and Ripon	—	Stavelly ..	Villiers ..	1,070
Raven's Hill	Kara Kara	—	Steel's Hill ..	Evelyn ..	—
Ravenscroft Hill	Ripon and Talbot	—	Steiglitz	Bourke ..	—
Raymond ..	Croajingolong	980	Stewart ..	Anglesey ..	2,016
Red Hill ..	Buln Buln ..	—	Strickland ..	Anglesey ..	4,000
Red Hill (Mount Weejort)	Ripon ..	1,211	St. Bernard ..	Bogong ..	5,060
Red Hill ..	Grant ..	1,390	St. George ..	Polwarth ..	—
Red Hill ..	Mornington	740	St. Gwinear ..	Tanjil ..	4,950
Richmond ..	Normanby ..	727	St. Leonard's	Evelyn and Anglesey	3,304
Riddell ..	Evelyn ..	—	St. Mary's ..	Ripon ..	—
Rock Hill ..	Kara Kara	1,687	St. Phillack ..	Tanjil ..	5,140
Rocky Peak	Polwarth ..	2,380	Stirling ..	Delatite and Wonnangatta	5,700
Ross ..	Ripon ..	—	Strathbogrie Ranges	Delatite ..	—
Rouse ..	Villiers ..	1,220	Sturgeon ..	Dundas ..	1,946
Sabine ..	Polwarth ..	1,912	Sugarloaf (Bear's)	Evelyn ..	—
Saddleback Hill	Ripon ..	1,548	Suggan Buggan	Tambo ..	—
Samaria ..	Delatite	3,138	Survey Peak	Anglesey ..	—
Sargent ..	Talbot ..	—	Table Top ..	Delatite ..	—
Scallan's Hill	Borong ..	885	Talbot ..	Lowan ..	1,072
Scobie ..	Rodney ..	—	Talbot Peak	Tanjil ..	—
Selwyn ..	Wonnangatta and Delatite	—	Tallarook ..	Anglesey ..	2,652
Separation ..	Delatite ..	—	Talgarna ..	Benambra ..	2,101
			Tambo ..	Benambra ..	4,707
			Tamboritha ..	Wonnangatta	5,381

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.
Tanjil Hill ..	Tanjil ..	1,300	Vite Vite ..	Hampden ..	—
Tara ..	Tambo ..	2,009	Wagra ..	Benambra ..	2,638
Tarrangower ..	Talbot ..	1,861	Wallace ..	Grant ..	1,583
Taylor ..	Dargo ..	1,571	Walterson ..	Tambo ..	—
Telegraph Hill ..	Ripon ..	1,854	Warrambat ..	Wonnangatta ..	—
Templar ..	Tatchera ..	—	Warrenheip ..	Grant ..	2,463
Tennyson ..	Croajingolong ..	3,422	Warrion Hill, Gt.	Grenville ..	921
Terrick Terrick ..	Gunbower ..	—	Warnambool ..	Hampden ..	712
Thackeray ..	Dundas ..	—	Watershed Hill ..	Ripon ..	—
The Brothers ..	Benambra ..	4,667	Waverly ..	Wonnangatta ..	3,346
The Monolith (Buffalo Mts.) ..	Delatite ..	4,686	Weatherboard Hill ..	Ripon ..	1,826
The Sisters ..	Benambra and Dargo ..	4,038	Weejort, Ripon ..	(See Red Hi l)	1,211
Thorn ..	Delatite and Wonnangatta ..	5,000	Wellington ..	Mornington ..	314
Timbertop, or Warrambat ..	Wonnangatta ..	—	Wellington (Trig) ..	Wonnangatta and Tanjil ..	5,355
Tingaringy ..	Croajingolong ..	4,771	Wellington (Nap-Nap-Marra) ..	Tanjil ..	5,269
Tikator Hill ..	Delatite ..	2,002	Wermatong Hill ..	Benambra ..	—
Tom's Cap ..	Buln Buln ..	1,258	Western Hill ..	Tanjil ..	1,825
Tongio ..	Tambo ..	—	Wheeler's Hill ..	Delatite ..	1,857
Tooborac Hills ..	Dalhousie ..	—	Wheeler's Hill ..	Talbot ..	2,380
Torbreck ..	Anglesey and Wonnangatta ..	5,001	Whitelaw ..	Tanjil ..	4,875
Towanga ..	Bogong ..	4,151	Whittaker's ..	Croajingolong ..	—
Tower Hill ..	Villiers ..	322	Widderin ..	Hampden ..	1,132
Traawool ..	Anglesey ..	—	William ..	Ripon and Borung ..	3,827
Tucker's Hill ..	Borong ..	1,200	William ..	Bourke and Dalhousie ..	2,689
Twins, The ..	Delatite and Wonnangatta ..	5,582	Wills ..	Bogong ..	5,758
Tyers ..	Tanjil ..	4,660	Wilson ..	Buln Buln ..	2,350
Upton Hill ..	Delatite ..	1,750	Wilson ..	Bourke ..	—
Useful ..	Wonnangatta and Tanjil ..	4,720	Wiridgil ..	Hampden ..	—
Valentia, ..	Wonnangatta ..	—	Wombat ..	Delatite ..	2,659
Vandyke ..	Normanby ..	—	Wombat Hill ..	Talbot ..	2,250
Vaughan's Hill ..	Talbot ..	1,760	Yandoit Hill ..	Talbot ..	—
Vereker ..	Buln Buln ..	2,092	Zero, Mount ..	Borong ..	—
Victoria Range ..	Dundas ..	—			
View Hill ..	Bendigo ..	1,182			

## 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 and 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 follow:—

## RIVERS IN VICTORIA.

Name of River.	Position.	Approximate Length.
Aberfeldy .. ..	Tanjil. Falls into Thomson .. ..	Miles. 35
Acheron .. ..	Anglesey. Falls into Goulburn .. ..	35
Agnes .. ..	Buln Buln. Falls into Corner Inlet .. ..	23
Aire .. ..	Polwarth. Falls into sea, 6 miles W. of Cape Otway	25
Albert .. ..	Buln Buln. Falls into Port Albert .. ..	25
Avoca .. ..	Tatchera, and western boundary of Gladstone	170
Avon, or Dunlop .. ..	Tanjil. Flows into Lake Wellington .. ..	84
Avon .. ..	Kara Kara. Source about a mile N. of Navarre	75
Axe Creek .. ..	Bendigo. Tributary of Campaspe .. ..	30
Back Creek .. ..	Moira. Falls into Broken Creek .. ..	45
Back Creek .. ..	Villiers. Falls into Moyne .. ..	20
Baillie's Creek .. ..	Ripon. Falls into Mount Emu Creek .. ..	20
Barkly .. ..	Wonnangatta. West of 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
Bream Creek .. ..	Grant. Falls into the sea W. of Barwon .. ..	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.
Brodribb .. ..	Croajingolong. Falls into Snowy River near its mouth	70
Broken .. ..	Delatite and Moira. Joins Goulburn, near Shepparton	110
Broken Creek ..	Moira, effluent of Broken River. Falls into Murray near Lake Moira	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
Bundarraha .. ..	Bogong. Tributary of Mitta Mitta.. ..	25
Buneepp .. ..	Part of eastern boundary of Mornington ..	20
Burnt Creek .. ..	Borong. Falls into Wimmera .. ..	25
Burrumbeet Creek ..	Part of southern boundary of Ripon. Falls into Lake Burrumbeet	23
Cabbage Tree Creek	Croajingolong. Falls into Brodribb .. ..	27
Camspaspe .. ..	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
Chetwynd .. ..	Dundas. Falls into Glenelg .. ..	25
Cherry-tree Creek ..	Kara Kara. Falls into Avoca .. ..	20
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 Campspaspe	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 Warrnambool	50
Dabyminga Creek .. ..	Anglesey, western boundary. Falls into Goulburn	25
Dandenong Creek .. ..	Mornington, part of western boundary. Falls into Port Phillip Bay	30
Dargo .. ..	Dargo. Joins Mitchell River .. ..	68
Darlot's Creek .. ..	Normanby. Falls into Fitzroy .. ..	20
Dart .. ..	Benambra. Falls into Mitta Mitta .. ..	20
Delatite, or Devil's River	Boundary between Delatite and Wonnangatta. Joins the Goulburn, 6 miles below Darlingford	55
Deegay Ponds, or Major's Creek	Dalhousie. Falls into Goulburn .. ..	30

## 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
Dummunkle 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
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, at Corner Inlet, W. of Welshpool ..	25
Fyan's Creek .. ..	Borong. Falls into Mount Wiliam 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 bend at the mouth enters South Australia	290
Glenmaggie (or Cow war) Creek	Tanjil. Falls into Macallister River .. ..	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 ( <i>see</i> Yarrowee).		
Lerderberg ..	Bourke. Falls into Werribee at Bacchus Marsh	32
Lindsay .. ..	Millewa. Falls into Murray ..	30
Little .. ..	Grant. Falls into Port Phillip Bay ..	40
Little Woody Yaloak	Grenville. Falls into the Woody Yaloak ..	20
Livingstone Creek ..	Benambra and Bogong. Falls into Mitta Mitta	32
Loddon .. ..	Talbot, and western boundary of Bendigo and Gunbower. Falls into Murray	210
Macallister ..	Tanjil and Wonnangatta. Falls into Thomson	100
Marraboob ..	Tatchera. Falls into Murray ..	35
Mather's Creek ..	Dundas. Falls into Glenelg ..	20
Merri .. ..	Villiers. Falls into sea at Warrnambool ..	44
Merri Merri Creek ..	Bourke. Falls into Yarra Yarra ..	45
Merriman's Creek ..	Buln Buln. Falls into sea at Ninety-mile Beach	60
Middle Creek ..	Talbot. Falls into Joyce's Creek ..	28
Mitchell .. ..	Boundary between Dargo and Tanjil. Falls into Lake King	80
Mitta Mitta ..	Benambra and Bogong. Joins Murray ..	167
McKenzie .. ..	Borong. Falls into Wimmera, 4 miles W. of Horsham	36
Moorarboob ..	Grant. Joins Barwon at Fyansford, near Geelong	90
Moroka .. ..	Wonnangatta. Joins Wonnangatta, 12 miles N. of Mount Wellington	25
Morwell .. ..	Buln Buln. Tributary of La Trobe ..	30
Mountain Creek ..	Croajingolong. Falls into Snowy ..	25
Moyne .. ..	Villiers. Falls into sea at Belfast ..	40
Mount Cole Creek ..	Borong and Kara Kara. Falls into Wimmera	18
Mount Emu Creek ..	Ripon, Hampden, and Heytsbury. 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
Muckleford Creek ..	Talbot. Falls into Loddon ..	20
Muddy or Pranjip Creek	Delatite and Moira. Falls into Goulburn ..	35
Murray .. ..	Northern boundary line of State of Victoria ..	1,200*
Murrabit .. ..	Gunbower. Falls into Loddon ..	35
Murrindal .. ..	Tambo. Falls into Buchan ..	35

\* 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 Coliban	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 Lake Wellington ..	38
Plenty ..	Bourke. East boundary of county ..	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
Salt Creek ..	Hampden, outlet of Lake Bolac. Falls into Hopkins	35
Saltwater ..	Bourke. Joins the Yarra at Footscray ..	115
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 ..	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 Buayip .. ..	22
Tarra ..	Buln Buln. Falls into Shoal Inlet, near Tarra-ville	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 ..	Moira. Falls into Murray ..	25
Tullaroop Creek ..	Talbot. Falls into Loddon near Eddington, with Creswick's and Adekate Creeks ..	65
Tyers ..	Tanjil. Tributary of La Trobe ..	30
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 ..	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 ..	Borong and Karkaroc. Effluent of Wimmera. Falls into Lake Coorong ..	80
Yarrowee, or Leigh Yea ..	Grant and Grenville. Joins Barwon at Inverleigh Anglesey. Falls into Goulburn ..	80 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
Baef 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
Barracootta ..	Croajingolong, 6 miles W. of Cape Howe ( <i>f</i> ) ..	600
Beeac ..	Grenville, 10 miles N. of Colac ( <i>s</i> ) ..	1,500
Birdebush ..	Hampden, 8 miles N.W. of Camperdown ( <i>b</i> ) ..	64
Bitterang ..	Karkaroc, 45 miles N.W. of Lake Tyrrell ( <i>f</i> ) ..	180
Boga ..	Tatchera, 8 miles S.E. of Castle Donnington ( <i>f</i> ) ..	2,120
Bolac ..	Ripon, 6 miles E. of Wickliffe ( <i>f</i> ) ..	3,500
Bookaar ..	Hampden, 6 miles N.W. of Camperdown ( <i>b</i> ) ..	1,075
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
Burrumbeet ..	Ripon, 10 miles W. of Ballarat ( <i>f</i> ) ..	5,200
Calvert ..	Grenville, 5 miles N. of Colac ( <i>s</i> ) ..	5,200
Cantala ..	Karkaroc, 44 miles N.W. of Lake Tyrrell ( <i>f</i> ) ..	250
Carchap ..	Lowan, 20 miles N. of Mostyn ( <i>f</i> ) ..	220
Catcarrong ..	Villiers, near township of Winslow ( <i>f</i> ) ..	80
Catherine ..	Polwarth, W. boundary of county, 13 miles from sea ( <i>f</i> ) ..	130
Centre ..	Lowan, 10 miles N.W. of Mostyn ( <i>f</i> ) ..	660
Charm ..	Tatchera, 10 miles N. of Kerang ( <i>f</i> ) ..	1,390
Clear ..	Lowan, 17 miles N. of Mostyn ( <i>f</i> ) ..	300
Colac ..	Polwarth, at Colac ( <i>f</i> ) ..	6,650
Colongulac ..	Hampden, 3 miles N. of Camperdown ( <i>b</i> ) ..	3,500
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
Corringle .. ..	Tambo, 2 miles from coast ( <i>f</i> ) .. ..	400
Craver .. ..	Polwarth, 5 miles N.W. of Cape Otway ( <i>tidal</i> ) .. ..	200
Cullens .. ..	Tatchera, 8 miles N.W. of Kerang ( <i>f</i> ) .. ..	1,660
Cundare .. ..	Grenville, 12 miles N. of Colac ( <i>s</i> ) .. ..	350
Curlip .. ..	Croajingolong, fed by overflow of Snowy River ( <i>f</i> ) .. ..	400
Denison .. ..	Buln Buln, 28 miles N.E. of Alberton ( <i>f</i> ) .. ..	350
Dock .. ..	Borong, 6 miles S.E. of Horsham ( <i>f</i> ) .. ..	370
Doling Doling .. ..	Dundas, 3 miles N.E. of Hamilton ( <i>f</i> ) .. ..	50
Drung Drung or Taylor's .. ..	Borong, 11 miles S.E. of Horsham ( <i>f</i> ) .. ..	750
Duck .. ..	Tatchera, 6 miles N.W. of Kerang ( <i>f</i> ) .. ..	870
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 .. ..	Karkaroc, 42 miles N.W. of Lake Tyrrell ( <i>f</i> ) .. ..	150
Hindmarsh .. ..	Lowan, fed by Wimmera River ( <i>f</i> ) .. ..	30,000
Jollicum .. ..	Hampden, 4 miles S.W. of Streatham ( <i>f</i> ) .. ..	130
Kakydra .. ..	Tanjil, 7 miles E. of Sale ( <i>b</i> ) .. ..	452
Kanaguik .. ..	Lowan, 6 miles N.E. of Mostyn .. ..	870
Kangaroo .. ..	Tatchera, 11 miles N.W. of Kerang ( <i>f</i> ) .. ..	2,250
Kariah .. ..	Hampden, 5 miles N.E. of Camperdown ( <i>b</i> ) .. ..	350
Karnak .. ..	Lowan, 18 miles N.E. of Edenhope ( <i>b</i> ) .. ..	300
Keilambete .. ..	Hampden, 15 miles W. of Camperdown ( <i>b</i> ) .. ..	770
Kemi Kemi .. ..	Lowan, 2 miles S. of Edenhope ( <i>f</i> ) .. ..	130
Kennedy .. ..	Villiers, 8 miles N.W. of Peshurst ( <i>b</i> ) .. ..	690
Kerferd .. ..	Bogong, Beechworth Water Supply ( <i>f</i> ) .. ..	100
King .. ..	Tanjil, near Bairnsdale, 23 miles N.E. of Seacombe ( <i>tidal</i> ) .. ..	22,500
Konardin .. ..	Karkaroc, 44 miles N.W. of north shore of Lake Tyrrell ( <i>f</i> ) .. ..	300
Koreetnung .. ..	Hampden, 6 miles N.E. of Camperdown ( <i>s</i> ) .. ..	560
Kow .. ..	Gunbower ( <i>f</i> ) .. ..	6,800
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 ..	Karkaroc, 42 miles N.W. of Lake Tyrrell ( <i>f</i> ) ..	350
Long ..	Tatchera, 8 miles S.E. of Castle Donnington ( <i>f</i> ) ..	500
Lonsdale ..	Borong, 7 miles S.W. of Glenorchy ( <i>f</i> ) ..	6,000
Lookout ..	Tatchera, 14 miles W. of Kerang ..	130
Mallacoota ..	Croajingolong, 12 miles W. of Cape Howe ( <i>tidal</i> ) ..	1,700
Malmsbury ..	Dalhousie and Talbot, reservoir for northern gold-fields' population, borough of Malmsbury ( <i>f</i> ) ..	640
Mannaor ..	Tatchera, fed by overflow of Murray ( <i>f</i> ) ..	40
Marmal ..	Gladstone, 12 miles N.E. of Charlton ( <i>f</i> ) ..	250
Marsh, The ..	Tatchera, 10 miles N.W. of Kerang ( <i>f</i> ) ..	1,700
Meering ..	Tatchera, 11 miles S.W. of Kerang ( <i>f</i> ) ..	500
Melanydra ..	Tanjil, 6 miles E. of Sale ( <i>b</i> ) ..	153
Middle ..	Tatchera, 4 miles N. of Kerang ( <i>f</i> ) ..	560
Miga ..	Lowan, 20 miles N.W. of Mostyn ( <i>f</i> ) ..	230
Mitre ..	Lowan, 20 miles W. of Horsham ( <i>s</i> ) ..	1,280
Modewarre ..	Grant, 6 miles E. of Winchelsea ( <i>s</i> ) ..	1,025
Moodemere ..	Bogong, 3 miles W. of Rutherglen ( <i>f</i> ) ..	850
Morea ..	Lowan, 13 miles N. of Edenhope ( <i>f</i> ) ..	180
Mournpall ..	Karkaroc, 44 miles N.W. of Lake Tyrrell ( <i>f</i> ) ..	600
Mundi ..	Follett, 1 mile E. of South Australian boundary line ( <i>f</i> ) ..	1,280
Murdeduke ..	Grenville, 25 miles W. of Geelong ( <i>s</i> ) ..	2,800
Murphy's ..	Tatchera ( <i>f</i> ) ..	560
Natimuk ..	Lowan, 14 miles W. of Horsham ( <i>f</i> ) ..	922
Omeo ..	Benambra, 10 miles N.E. of Omeo ( <i>f</i> ) ..	1,966
Ondit ..	Grenville, 5 miles N. of Colac ( <i>s</i> ) ..	250
Oundell ..	Hampden, 5 miles S.W. of Streatham ( <i>f</i> ) ..	180
Paragalmir ..	Ripon, 6 miles E. of Wickliffe ( <i>s</i> ) ..	160
Pelican ..	Tatchera, 2 miles W. of Kerang ( <i>f</i> ) ..	94
Pertobe ..	Villiers, town of Warrnambool ( <i>tidal</i> ) ..	50
Pine ..	Borong, 8 miles S.E. of Horsham ( <i>f</i> ) ..	360
Pine Hut ..	Lowan, 22 miles N.W. of Mostyn ..	200
Powell ..	Karkaroc, 36 miles N. of Lake Tyrrell ( <i>f</i> ) ..	322
Punpundhal ..	Hampden, W. of Lake Corangamite ( <i>s</i> ) ..	60
Purgagoolah ..	Croajingolong, 18 miles W. of Cape Howe ( <i>tidal</i> ) ..	30
Purumbete ..	Heytesbury, 4 miles S.E. of Camperdown ( <i>f</i> ) ..	1,450
Racecourse ..	Tatchera, 10 miles N.W. of Kerang ( <i>f</i> ) ..	196
Reedy ..	Tatchera, 3 miles N. of Kerang ( <i>f</i> ) ..	550
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 .. ..	Karkaroc ( <i>f</i> ) .. ..	30
Spectacle (Great) .. ..	Tatchera, 10 miles S.W. of Kerang ( <i>f</i> ) .. ..	128
" (Little) .. ..	Tatchera, 10 miles S.W. of Kerang ( <i>f</i> ) .. ..	43
St. Mary's .. ..	Lowan, 4 miles W. of Mount Arapiles ( <i>f</i> ) .. ..	230
Swan .. ..	Mornington, in Phillip Island ( <i>f</i> ) .. ..	60
Sydenham .. ..	Croajingolong, 8 miles E. of Cape Conran ( <i>tidal</i> ) .. ..	2,300
Tamboon .. ..	Croajingolong, 8 miles W. of Cape Everard ( <i>tidal</i> ) .. ..	1,150
Tatutong .. ..	Hampden, W. of Lake Corangamite ( <i>s</i> ) .. ..	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 .. ..	Karkaroc, fed by overflow of Avoca River ( <i>s</i> ) .. ..	42,600
Upper Coliban Reservoir	Talbot and Dalhousie ( <i>f</i> ) .. ..	574
Victoria .. ..	Tanjil, 21 miles E. of Sale ( <i>tidal</i> ) .. ..	28,500
Walwalla .. ..	Millewa, 13 miles S.E. of intersection of South Australian boundary line by Murray River ( <i>f</i> ) .. ..	600
Wallace .. ..	Lowan, at Edenhope ( <i>f</i> ) .. ..	450
Wangoom .. ..	Villiers, 6 miles N.E. of Warrnambool ( <i>f</i> ) .. ..	200
Waranga Basin .. ..	Rodney ( <i>f</i> ) .. ..	11,009
Wartook Reservoir .. ..	Borong ( <i>f</i> ) .. ..	2,556
Wau Wauka .. ..	Croajingolong, near Cape Howe ( <i>f</i> ) .. ..	600
Weerancanuck .. ..	Hampden, 7 miles N.E. of Camperdown ( <i>s</i> ) .. ..	1,280
Weering .. ..	Grenville, 17 miles N. of Colac ( <i>s</i> ) .. ..	921
Wellington .. ..	Tanjil, 8 miles E. of Sale ( <i>f</i> ) .. ..	34,500
Wendouree .. ..	Grenville, at Ballarat ( <i>f</i> ) .. ..	500
White .. ..	Lowan, 8 miles N.W. of Mostyn ( <i>s</i> ) .. ..	1,400
Wirraan .. ..	Hampden, 9 miles N. of Camperdown ( <i>s</i> ) .. ..	60
Wooronook .. ..	Kara Kara, 10 miles W. of Charlton ( <i>f</i> ) .. ..	250
Wurdee Boluc .. ..	Grant, 5 miles S.E. of Winchelsea ( <i>f</i> ) .. ..	440
Yallakar .. ..	Lowan, 7 miles N.E. of Edenhope ( <i>f</i> ) .. ..	870
Yambuk .. ..	Villiers, 10 miles W. of Belfast ( <i>tidal</i> ) .. ..	200
Yando .. ..	Tatchera, 22 miles S.W. of Kerang ( <i>f</i> ) .. ..	200
Yan Yean .. ..	Evelyn, reservoir for supply of metropolis, 22 miles N.E. of Melbourne ( <i>an artificial lake</i> ) ( <i>f</i> ) .. ..	1,360
Yeeangmaria .. ..	Ripon, 10 miles E. of Wickliffe ( <i>s</i> ) .. ..	75
Yellwell .. ..	Karkaroc, 44 miles N.W. of Lake Tyrrell ( <i>f</i> ) .. ..	200
Yerang .. ..	Karkaroc, 44 miles N.W. of Lake Tyrrell ( <i>f</i> ) .. ..	160

## THE FLORA OF VICTORIA.

BY ALFRED J. EWART, D.Sc., Ph.D., F.L.S., Government Botanist,  
and Professor of Botany, Melbourne University.

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 Laurenciana*, *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—Algae, 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, Algae, 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 (*Hoëka dactyloides*, *Livistona australis*, *Callitris calcarata*, &c.) extend down the coast into Victoria. The neighbourhood of the sea maintains a more equable temperature, and keeps the air more uniformly moist. Plants in general suffer more from cold dry air, than from equally cold but moist air, so that under moist coastal conditions subtropical and even tropical plants can extend far to the south out of their proper geographical zones.

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

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

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

In addition, many herbaceous perennials in dry seasons or situations develop as annuals, surviving the dry period in the form of seed. The seeds of many Leguminosæ (*Acacias*, *Jacksonias*, *Viminaria denudata*, &c.) have impermeable cuticularized seed-coats when fully ripened, so that they may remain dormant in the soil for long

periods of years, germinating when brought to the surface and the coats softened by heat, by the alkaline ash of bush fires, or by mechanical abrasion.

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

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

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

In spite of its close connexion with the rest of Australia, the barriers to migration in the past have sufficed to enable Victoria to retain a fairly large number of endemic species, at least 46, although possibly some of the latest-described plants may prove to be merely varieties or hybrids of species with a wider range. This appears especially to be the case with the genus *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* (2 species), *Stipa* (2 species), *Poa* (2 species), *Lepidosperma tortuosum*, and many others. There is, however, a smaller percentage of endemic species in Victoria than in any other State of Australia, owing to the greater range of conditions within its boundaries and to the close connexion with neighbouring States, the northern and western boundaries of Victoria being political rather than geographical or botanical.

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

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

The chief factors tending to the disadvantage of the native flora are—the progress of deforestation, the drainage of swamps and swampy localities, sheep pasturing and the spread of rabbits, the increase of the area under cultivation or irrigation, and the introduction of hordes of alien weeds and garden escapes, many of which are not merely more or less aggressive weeds of cultivation—*Senecio*, *Carduus*, *Centaurea*, *Anagallis arvensis* (Pimpernel), *Sonchus* (Sow Thistle), and Tares (*Vicia*), &c.—but also establish themselves on pastures and virgin ground, largely ousting the native flora. Such plants are the Gorse, *Ulex europæus*, Perennial Thistle, *Carduus arvensis*, Onion Grass, *Romulea cruciata*, Blackberry Bramble, *Rubus fruticosus*, Briar, *Rosa rubiginosa*, Ragwort, *Senecio Jacobæa*, St. John's Wort; *Hypericum perforatum*, Stinkwort, *Inula graveolens*, Boxthorn, *Lycium horridum*, Prickly Pear, *Opuntia monacantha*, and many others. The list of proclaimed plants of Victoria now includes no less than 42 species, of which only the Nut Grass, *Cyperus rotundus*, 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 epithimum*, L., seems to be more dangerous, especially to lucerne, than the native Didders; while the parasite *Cassytha* (Lauraceæ), sometimes mistaken for Dodder, hitherto has confined its attacks to native vegetation and left cultivated plants untouched.

One curious feature of the native flora is the small number of useful economic plants it contains. A few of the forest trees produce good timber, but the latter is usually 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. There are practically no native fruits and no native cereal grains of any value as food for civilized man. Even the native fodder grasses and fodder plants are, with a few notable exceptions, inferior in quality or objectionable on account of their armed fruits, and are being driven out by more suitable and adaptable introduced grasses.

All the Leguminosæ used as fodder (Clover, Trefoil, Vetch, &c.), are introduced, so that if we exclude the *Acacia*, with its wattle-bark, this important order contains no 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.

### PRINCIPAL EVENTS.

The following are the dates of some of the principal events which have occurred since the establishment of the Commonwealth on 1st January, 1901. For principal events prior to that year the reader is referred to previous issues of this work:—

Principal events.

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|---------------|---|
| 1901. January | 1st—Proclamation and inauguration of the Commonwealth at Sydney, and swearing in of the Rt. Hon. E. Barton, first Prime Minister, and other members of the Ministry. State departments of Customs and Excise transferred, whilst those of the Post and Telegraph and Defence followed on 1st March. |
| „ January     | 22nd—Death of Queen Victoria. Accession of King Edward VII. His Majesty's Coronation took place on 9th August, 1902.  |

1901. March 31st—Eleventh census of Victoria, and third simultaneous census of Australia and New Zealand.
- „ May 9th—Opening of the first Parliament of the Commonwealth of Australia, in Melbourne, by His Royal Highness the Duke of Cornwall and York, Heir-Apparent to the Throne, under commission from His Majesty King Edward VII.
- „ October 8th—Inter-State free-trade established by the introduction of a provisional tariff by resolution of the Commonwealth House of Representatives.
- „ October 6th—Inauguration of the Federal High Court, and the swearing-in of Sir Samuel Griffith, late Chief Justice of Queensland, as Chief Justice, and of the Right Hon. Sir Edmund Barton, K.C., late Prime Minister of the Commonwealth, and the Hon. R. E. O'Connor, K.C., as judges.
- „ December 16th—Commonwealth elections. Female franchise exercised for the first time in Victoria.
1904. February 1st—The British Government decided on important changes in the British Army, including the establishment of an Army Council, on the lines of the Board of Admiralty.
- „ March 17th—Death of H.R.H. the Duke of Cambridge. The deceased peer was a grandson of King George III., and first cousin of the late Queen Victoria.
- „ April 8th—Signing of Convention adjusting foreign and colonial questions at issue between Great Britain and France.
1905. February 1st—Beginning of the poundage system in English mail contracts.
- „ February 15th—Opening of the Continuation School, Melbourne. The purpose is to give an advanced education to those who wish to qualify as teachers.
- „ April 25th—Royal Letters Patent for the Constitution of the Transvaal colony issued. There is to be a Legislative Assembly, to be re-elected every four years, the franchise being extended to every burgher of the late Boer Republic who was entitled to vote for its first Volksraad; and all white Britishers earning £100 per annum, or occupying a house with a rental of £10 per annum. Power of initiating taxation bills is withheld from the chamber. Members are to receive £2 per day during the session, but not more than £200 per annum. The House comprises the Lieutenant-Governor of the Transvaal, between six and nine official members, and between thirty and thirty-five elected members. The debates will be conducted in English, but, with the President's consent, the Dutch language may be used by members.
- „ May 16th.—Agreement signed between the Butter Export Committee and the White Star, Lund, and Aberdeen lines of steamers, for the carriage of butter. The freight reduction effected by the contract is 50 per cent. on former rates, and the temperature of the butter in transit is not to exceed 20 deg.
- „ May 24th—Empire Day—first observation in Melbourne.

1905. August 12th—Treaty signed between Great Britain and Japan, renewing, for ten years, the old treaty, and adding thereto.
- „ August 29th—Peace arranged between Japan and Russia.
- „ September 26th—Text of the English-Japanese treaty made public. The preamble states that the Governments have agreed upon articles having for their object:—First, the consolidation, maintenance, and general peace of the regions of Eastern Asia and India; second, the preservation of the common interests of all the powers in China, by ensuring the independence and integrity of the Chinese Empire, and the principle of equal opportunities in commerce and industry to all nations in China; third, the maintenance of the territorial rights of the high contracting parties, and the defence of their special interests, in the said regions.
- „ October 30th—Annexation under an Order-in-Council, of Town of North Melbourne and Borough of Flemington and Kensington, to City of Melbourne.
1906. January 1st—Importation of opium into Australia prohibited (other than for medical purposes).
- „ January 29th—Death of King Christian IX. of Denmark, father of the reigning Queen of England.
- „ February 9th—Government loan of £1,600,000, for the purpose of redeeming in part a loan falling due in London, floated with decided success in Melbourne.
- „ February 19th—Opening of the Imperial Parliament by His Majesty the King.
- „ February 22nd—Loss of the sailing vessel *Speke*, wrecked on Phillip Island.
- „ February 23rd—Tobacco Commission's report (a majority report) to Prime Minister. Nationalization of the tobacco industry favoured.
- „ March 14th—Death of Mr. G. S. Coppin, veteran actor, at the age of 86 years.
- „ March 18th—Death of Mr. Geo. Lansell, pioneer quartz miner of Bendigo, at the age of 83 years.
- „ March 19th—Mr. L. F. B. Cussen appointed to the Supreme Court Bench.
- „ April 18th—Great earthquake at San Francisco.
- „ April 23rd—Melbourne University jubilee celebrations commenced.
- „ April 29th—Census of New Zealand taken.
- „ June 10th—Death of the Right Hon. R. J. Seddon, Prime Minister of New Zealand.
- „ July 12th—Wireless telegraphy installed—Queenscliff (Victoria) to Devonport (Tasmania).
- „ September 1st—Papua Act came into operation by proclamation of the Governor-General.
- „ October 8th—Commonwealth free-trade instituted, by disappearance of the Western Australian special Tariff.
- „ October 12th—Hon. I. A. Isaacs, K.C., Attorney-General, and Hon. H. B. Higgins, K.C., appointed to the High Court Bench.
- „ November 1st.—Strike in the building trade in Melbourne. About 1,000 men directly affected. The demand of the strikers was that 44 hours, instead of 48 hours, constitute a week's work at the current rate of wages. After being on strike for ten weeks, both sides agreed that the dispute should be submitted to Justice Cussen for arbitration, and he decided that the men should continue to work 48 hours per week, but receive an increase of wages.

1906. November 21st—Celebration of the first 50 years of Responsible Government in Victoria.
- „ November 30th—Conference of the Statisticians of the Australian States and New Zealand (with Mr. G. H. Knibbs, Commonwealth Statistician, president), convened for the purpose of securing uniformity in the compilation of statistical information, and of preventing overlapping between the Commonwealth and States.
- „ December 2nd—Judgment delivered by the Privy Council in *Webb v. Outtrim*, affirming the liability of members of the Commonwealth Public Service to pay State income tax.
- „ December 12th—Elections for the third Commonwealth Parliament held.
- „ December 12th—New constitution of the Transvaal Colony proclaimed.
1907. January 7th—Opening of the eleventh session of the Australasian Association for the Advancement of Science at Adelaide.
- „ January 14th—Earthquake in Jamaica, with terrible loss of life.
- „ January 19th—Cooktown (Queensland) wrecked by a hurricane.
- „ January 21st—Mr. Townsend MacDermott, "father of the bar" in Victoria, died at Ballarat, in the 89th year of his age.
- „ January 28th—Rev. Dr. John G. Paton, missionary of the Presbyterian Church, died at the age of 83.
- „ March 7th—Station and all cars destroyed by fire on the Brighton Electric Tramway line.
- „ March 13th—Buildings for Talbot Colony of Epileptics opened at Clayton by Lady Talbot.
- „ March 13th—Explosion on the French Battleship *Jena*, in Toulon Harbor, 118 deaths resulting.
- „ March 17th—The steamship *Suevic* wrecked on Lizard Head, coast of Cornwall, England. The passengers and crew were saved.
- „ March 26th—Opening of the Navigation Conference in London.
- „ April 15th—Opening of the Imperial Conference in London, at which the Commonwealth of Australia was represented by the Hon. Alfred Deakin, the Prime Minister, and the other self-governing British Dependencies by their respective Premiers. The results of the Conference were as follow:—The right to cancel the Naval Agreement was affirmed; the privilege of coining silver was conceded; favorable consideration was promised to schemes for facilitating cable and postal communication throughout the Empire; concessions were considered probable in regard to Suez Canal dues; and a secretariat was established to devote its time exclusively to Imperial affairs and to keep regular communication between Premiers.
- „ May 24th—Memorial to the late Queen Victoria unveiled in Alexandra-avenue.
- „ July 10th—Opening of telephone between Melbourne and Sydney.
- „ July 24th—Death of the Rev. John Watsford, first Australian to enter the Wesleyan ministry, aged 86.
- „ July 30th—Appointment of Mr. W. H. Moule to the County Court Bench, *vice* Judge Molesworth, deceased.
- „ July 30th—Resignation of Sir John Forrest, P.C., G.C.M.G., as Treasurer of the Federal Government.
- „ August 8th—New Tariff introduced into the Federal Parliament, providing generally for large protective increases in Customs duties.



1907. August 13th—Union Steam Navigation Company's steamer *Kawatiri* totally wrecked at Macquarie Heads, Tasmania, with a loss of six lives.
- „ August 14th—Colonel Stanley appointed State Military Commandant, *vice* Colonel Ricardo, deceased.
- „ August 14th—Allowances of members of the Federal Legislature increased from £400 to £600 per annum.
- „ September 17th—The committee of the Melbourne Hospital accept an offer of £100,000 by the trustees of the Edward Wilson Estate towards the erection of new hospital buildings.
- „ September 26th—The colony of New Zealand proclaimed a "Dominion."
- „ September 28th—Strike of bakers in Melbourne for an increase in wages from £2 10s. to £2 14s. per week. The request was eventually agreed to on the 2nd October.
- „ October 23rd—Opening of the First Australian Exhibition of Women's Work at the Exhibition Building, Melbourne.
- „ November 4th.—Opening of a new Dental Hospital in Melbourne.
- „ November 13th—Coal strike in New South Wales—all the collieries in the Hunter River District remained idle till 21st November.
- „ November 30th—Wallach's Buildings, Elizabeth-street, Melbourne, destroyed by fire, the damage being estimated at £70,000.
- „ December 11th—Parliamentary Buildings, Wellington, New Zealand, destroyed by fire.
1908. January 1st—Commonwealth Meteorological Bureau opened.
- „ January 1st—Lieutenant Shackleton, with party, left Lyttelton, New Zealand, in the *Nimrod*, on an expedition to the South Polar regions.
- „ January 14th—Death of Mr. R. L. J. Ellery, C.M.G., Government Astronomer of Victoria for 42 years; aged 81.
- „ January 15th to 20th—Record stretch of hot weather, six days over 100 deg. in the shade.
- „ January 20th—Great fire at Newcastle (New South Wales), damages estimated at £150,000.
- „ February 1st—King of Portugal and Crown Prince assassinated at Lisbon.
- „ February 14th—Death of Mr. David Syme, proprietor of the *Age* newspaper, aged 81 years.
- „ March 1st—Death of the Marquis of Linlithgow, first Governor-General of the Commonwealth of Australia, at Pau, in the South of France.
- „ March 19th—Death of Mr. Howard Willoughby, a former editor of the *Argus* newspaper, aged 69 years.
- „ April 7th—Jubilee celebration of the Church of England Grammar School, Melbourne.
- „ April 8th—Mr. Asquith appointed to the position of Prime Minister in the Imperial Cabinet.
- „ April 20th—Disastrous railway accident at Braybrook Junction (Sunshine). A train from Bendigo ran into one leaving the Braybrook platform for Melbourne, 44 persons being killed, and 412 injured. Damages to the amount of £129,000 were awarded to the injured, and to the relatives of those killed.
- „ April 22nd—Death of Sir Henry Campbell-Bannerman, who, a few weeks previously, had resigned the position of Prime Minister of Great Britain.

1908. April 28th—Inter-State Conference of Premiers at State Parliament House, Melbourne.
- „ May 11th—Death of Mr. Chas. Cameron Kingston, first Minister of Trade and Customs in the Commonwealth Ministry.
- „ May 14th—Opening of the Franco-British Exhibition, in London, by the Prince of Wales.
- „ June 15th to 24th—Pan-Anglican Congress of the Church of England, held in London, when representatives (clerical and lay) from every diocese throughout the world assembled to discuss great questions bearing on the work of the church in all countries. The total offerings amounted to £333,208, which is to be devoted principally to missionary work.
- „ June 26th—Adverse decision by the High Court of Australia on the New Protection, by which the Commonwealth Parliament endeavoured to regulate the conditions of labour in the manufacture of agricultural machinery within the States.
- „ July 2nd—Opening of the State Parliament.
- „ July 8th—Death of Sir Thomas Fitzgerald, C.B., the eminent surgeon, aged 70 years.
- „ July 24th—Strike of tramway employés at Sydney, New South Wales. The strike collapsed in six days, when the men resumed work.
- „ July 22nd—Tercentenary of Canada. Opening of the ceremonies connected with the three-hundredth anniversary of the landing of Samuel Champlain, French explorer, on the spot where Quebec now stands.
- „ July 27th—Arrival of Sir Thomas David Gibson-Carmichael, Baronet, K.C.M.G., Governor-elect of the State.
- „ July 28th—Turkey having adopted a constitutional form of Government, the Sultan takes the oath of fidelity to the new constitution.
- „ August 29th.—Arrival of the United States fleet, composed of 16 battle-ships, in Hobson's Bay. The fleet, which was under the command of Admiral Sperry, remained one week in Victoria, and was received with great enthusiasm.
- „ September 9th—Lord Dudley sworn in as Governor-General of Australia.
- „ September 16th—Opening of the Commonwealth Parliament.
- „ November 3rd—Election of Mr. Taft as President of the United States.
- „ November 6th—Yass-Canberra, New South Wales, chosen by the Commonwealth Parliament, as the site for the Federal capital.
- „ November 10th—The Deakin Ministry defeated in the Commonwealth Parliament.
- „ November 13th—A Labour Ministry, with Mr. Fisher as Prime Minister, sworn in.
- „ November 14th—The *Fall of Halladale*, a four-masted barque, wrecked near Curdie's Inlet, Victoria, without loss of life.
- „ November 26th—Mr. G. H. Reid resigns the leadership of the Federal Opposition.
- „ December 7th—Dissolution of the State Legislative Assembly, and prorogation of Parliament.
- „ December 15th—Prorogation of the Federal Parliament.
- „ December 28th—Disastrous earthquake in Sicily, the coasts of Calabria and Eastern Sicily being devastated, and the City of Messina, and other smaller towns, almost obliterated. The deaths are estimated at over 200,000 persons.
- „ December 29th—General elections for the Legislative Assembly.