

8 square miles. The Gippsland lakes—Victoria, King, and Reeve—are situated close to the coast, and are separated from the sea by only a narrow belt of sand. Lake Wellington, the largest of all the Gippsland lakes, lies to the westward of Lakes Victoria and King, and is united to the first-named by a narrow channel. South-east of Geelong is Lake Connearre, connected with the sea at Point Flinders.

A list of mountains and hills, rivers and lakes in Victoria appears in the *Victorian Year-Book* for 1915-16. This was revised by the Surveyor-General, Mr. A. B. Lang, and contains information in regard to heights, lengths, and areas respectively.

PHYSICAL GEOGRAPHY AND GEOLOGY OF VICTORIA.

An article contributed by Mr. H. Herman, B.C.E., M.M.E., F.G.S., Director of Victorian Geological Survey, on the "Physical Geography and Geology of Victoria," appeared in the *Year-Book* for 1916-17 on pages 54 to 61.

ADDENDUM TO ABOVE ARTICLE.

Supplied by Mr. Herman in May, 1919.

Since the 1916-17 article was written, Mr. Chapman has established the age of the Mansfield phosphate-rock series as Upper Cambrian; has fixed the age of portion of the limestones and shales of Limestone Creek in the Upper Murray district, where there has been a seeming conflict between palæontological and field evidence, as Middle Devonian; and has also obtained new evidence which helps to support McCoy's opinion that the Triassic is represented in the Bacchus Marsh area, some of the plant forms being identical with Queensland forms of that age. Lower Ordovician beds have been identified near Knockwood on the Upper Goulburn. The Mansfield Upper Cambrian phosphate beds, with *Salterella* and Crustaceans associated with Radiolarian cherts, contain graptolite types formerly considered to be distinct Lower Ordovician, in which system the beds described were accordingly placed in the article referred to above. Pending further research, it may be assumed that the graptolite species concerned existed in Upper Cambrian times.

Cherts and graptolite bearing slates of Lower Ordovician (possibly older) age have been found in the Parish of Budgerie, in the heart of the South Gippsland Jurassic area. Cherts, jaspers, and diabases at Howqua, County of Wonnangatta, have now been classed as Cambrian; closely associated with them are Upper Ordovician phosphate bearing rocks. At Narracan South bauxite clays have been found; they have not yet been prospected sufficiently to determine their usefulness for commercial purposes. Freshwater limestone at Bennett's Tank and other Mallee localities is probably Pleistocene. Torquay bore material shows Janjukian glauconitic materials and clays to 70 feet below high-water mark, followed probably by the Angelsea estuarine Miocene series. Structural surveys at Bendigo have thrown a good deal of

new light on the structure of the field. Boring operations have revealed important facts regarding the physiography of the Latrobe valley and the Port Albert region.

THE FLORA OF VICTORIA.

An article by Alfred J. Ewart, D.Sc., Ph.D., F.L.S., Government Botanist and Professor of Botany and Plant Physiology, Melbourne University, appeared in the *Year-Book* for 1916-17, pages 62 to 68.

ADDENDUM TO ABOVE ARTICLE.

Received from Professor Ewart in May, 1919.

During the period 1917-18 two foreign plants succeeded in establishing themselves as naturalized aliens in Victoria. In addition, two other exotics made their appearance for the first time, and may eventually establish themselves as aliens.

The following species were added to the list of the native flora :—*Solanum violaceum*, R. Br. (*Solanaceæ*), previously recorded from New South Wales and Queensland; *Drakæa Huntiana*, F. v. M., previously recorded from New South Wales; *Thelymitra canaliculata*, R. Br., previously recorded from Western Australia; *Thelymitra grandiflora*, Fitz., previously recorded from South Australia; *Thelymitra luteo-cilium*, Fitz., previously recorded from South Australia.

Additions to the list of the native flora during the period February to April, 1919, are as follow :—

Pultenæa polifolia, Cunn., and *Pultenæa procumbens*, Cunn. (*Leguminosæ*), both species were previously recorded from New South Wales only. *Acacia Dawsoni*, R. T. Baker (*Leguminosæ*) previously recorded from New South Wales only. *Loranthus longiflorus*, Desr. (*Loranthaceæ*) previously recorded from New South Wales, Queensland and North Australia. *Brachycome microcarpa* F. v. M. (*Compositæ*), previously recorded from New South Wales and Queensland. *Gnaphalium indicum*, L. (*Compositæ*), previously recorded from New South Wales, Queensland, North Australia, also Asia, Africa, and Polynesia. *Pterostylis pusilla*, Rogers (a species new to science) (*Orchidaceæ*), Victoria, and South Australia. *Calochilus cupreus*, Rogers (*Orchidaceæ*), previously recorded from South Australia only.

During the period four foreign plants have been recorded as having established themselves as naturalized aliens. These are :—*Rubus phœnicolasius*, Maxim. (*Rosaceæ*), a native of Japan. *Paronychia chilensis* D.C. (*Caryophyllaceæ*), native to South America. *Withania somnifera*, Dunn (*Solanaceæ*), a native of Europe, Asia and Africa. *Lolium subulatum*, Vis., "Wimmera Rye Grass" (*Gramineæ*.) The *Withania* is capable of becoming a troublesome weed, whereas *Lolium subulatum* is likely to prove itself a valuable grass in dry districts.

In addition six other exotics have made their appearance for the first time. They are :—*Statice Thouini*, Vis. (*Plumbaginaceæ*),

Martynia fragrans, Lindl. (*Pedaliaceæ*), *Alhagi camelorum*, Fisch. (*Leguminosæ*), *Selago corymbosa*, L. (*Scrophulariaceæ*), *Lychnis coronaria*, Desr. (*Caryophyllaceæ*), *Hypericum tetrapterum*, Fries. (*Hypericineæ*). So far as can be judged at present none of these, with the possible exception of the last-named, is likely to prove a serious weed.

THE FAUNA OF VICTORIA.

An article on the "Fauna of Victoria," by the late T. S. Hall, M.A., D.Sc. (University of Melbourne), and Mr. J. A. Kershaw, F.Z.S., Curator of the National Museum, Melbourne, appeared in the *Year-Book* for 1916-17, on pages 68 to 78.

ADDENDUM TO ABOVE ARTICLE.

Supplied by Mr. J. A. Kershaw, in May, 1919.

Since the publication of the above article no additions have been made to the larger Victorian vertebrates. Two additional venomous snakes have been recorded, while the number of non-venomous blind snakes (*Typhlopidae*) has been increased to nine species.

The chief additions, however, are among the invertebrate fauna. In the Mollusca six new species of Octopus (*Cephalopoda*) and a number of Sea-urchins, Starfish and Brittle-stars (*Echinoderms*) have been discovered along the coast, chiefly through the investigations of the Federal Trawler *Endeavour*.

In the insect fauna numerous additions have been made, more particularly in the Coleoptera, Diptera, and Neuroptera.

THE HISTORY OF VICTORIA.

An article on this subject contributed by Ernest Scott, Professor of History in the University of Melbourne, appeared in the *Year-Book* for 1916-17, pages 1 to 31.

The following are the headings of the sections into which the article is divided:—

Discovery—The finding of Victoria—The beginnings of settlement—Public policy—Self-government—Responsible government—Early constitutional changes—The constitutional quarrels—Industrial legislation—Political—Public policy—Victoria and the Commonwealth.

Included in the article are five maps or charts and one illustration as mentioned below :—

Grant's original chart of his discoveries on Victorian coast (1800).
Grimes's chart of Port Phillip.

Map showing routes of Hume and Hovell and other explorers.
Illustration of first house in Victoria (1826)—Sealer's hut at Western Port.

Mr. Bass's eye-sketch of Western Port (1798).

French map of "Terre Napoléon" showing the Victorian coast from Wilson's Promontory westward (1808).

CHRONOLOGICAL TABLE OF LEADING EVENTS.

The *Year-Book* for 1916-17 contained, on pages 31 to 50, a chronological table of leading events in Victorian history for the years 1770 to 1900 inclusive, and of leading events in Victorian and other history for the years 1901 and 1916 inclusive. The leading events for 1917 were given in the volume for 1917-18, pages 5 to 9.

Some of the principal events in Victorian and other history during 1918 are given in the table which follows :—

1918.	4th	January.—The British hospital ship <i>Rewa</i> from Gibraltar, which displayed red-cross lights and markings, was torpedoed and sunk in the English Channel. The wounded on board were saved, but three of the crew were drowned.
"	8th	January.—The Hughes Ministry resigned office in consequence of the proposal to introduce conscription having been defeated on the question being submitted to the people by referendum.
"	9th	January.—The Governor-General commissioned the Right Hon. W. M. Hughes to form another Ministry.
"	17th	January.—A conference of State Treasurers held in Melbourne to discuss the financial relations between the Commonwealth and States.
"	20th	January.—Tidal wave inundated Mackay, Queensland. Twenty people were drowned, and the town was ruined, the damage being estimated at £1,500,000.
"	"	" The German vessels <i>Goeben</i> and <i>Breslau</i> attacked portion of the British Fleet near the entrance to the Dardanelles. The <i>Breslau</i> was forced into a mine-field and sank, 173 of the crew being saved. Two of the British monitors were lost, 178 men out of a total of 311 on board being rescued. The <i>Goeben</i> struck a mine, and was beached.
"	28th	January.—Air raids on London, during which 47 persons were killed and 169 injured.
"	2nd	February.—Phenomenal storm at Brighton, Victoria. The wind attained a velocity estimated at 120 miles an hour. Houses were demolished, and two deaths occurred.
"	7th	February.—The Prime Minister (the Right Hon. W. M. Hughes) invited to attend an Imperial Conference in London.
"	9th	February.—Peace treaty signed at Brest Litovsk between the Ukraine and the Central Powers.
"	12th	February.—The manufacture of and traffic in liquor prohibited in Canada.

1918. 16th February.—A flotilla of German destroyers made a swift raid on the patrol forces in the Straits of Dover and sank a trawler and seven drifters.
- „ 18th February.—Air raids on England. The estimated casualties were—deaths, 27; injured, 41.
- „ 19th February.—Russia agreed to sign the peace terms drawn up by Germany.
- „ 26th February.—Jericho captured by the British troops under General Sir Edmund Allenby.
- „ „ „ The British hospital ship *Glenart Castle* was sunk by a German submarine. One hundred and fifty-three lives were lost, including eight nurses.
- „ 27th February.—It was announced that the missing steamers *Matunga* and *Wairuna* were amongst those captured by the German raider *Wolf*.
- „ 3rd March.—Peace treaty signed at Brest Litovsk between the Bolsheviks and the Central Powers.
- „ 10th March.—Death of Sir John Madden, G.C.M.G., Lieutenant-Governor and Chief Justice of Victoria, aged 74 years.
- „ 13th March.—The Bowser Ministry was defeated in a division in the Legislative Assembly on the Railway Department estimates, and resigned office.
- „ 21st March.—The Hon. H. S. W. Lawson commissioned by the Governor to form an Administration.
- „ „ „ The Germans with overwhelming numbers commenced a terrific offensive on the west front. This was directed particularly against the British lines, and a great advance was made by the enemy towards Paris. The salient held by the British in the Ypres region was also considerably reduced. The first attack was made between Arras and La Fere, but the offensive afterwards extended to other regions.
- „ 22nd March.—Peronne captured by the Germans.
- „ 24th March.—The Newman (Roman Catholic) College, which is affiliated to the Melbourne University, dedicated by the Apostolic Delegate, Archbishop Cattaneo.
- „ 25th March.—Bapaume captured by the Germans.
- „ 26th March.—The Australians, who had been resting, were brought into action to stop the German advance on Amiens.
- „ 9th April.—The British Army in France was hard pressed, and compelled to yield ground.
- „ 10th April.—Sir W. H. Irvine, K.C., K.C.M.G., appointed Chief Justice of Victoria.
- „ 23rd April.—A raid was made by the British Navy on the Ostend and Zeebrugge destroyer and submarine bases. To block the harbors five cruisers filled with concrete were run aground and abandoned by their crews. The object sought was gained. The losses were heavy, and numbered 188 killed, 16 missing, and 384 wounded.
- „ 25th April.—The Australians recaptured Villers-Bretonneux, an important position east of Amiens, which had been taken by the Germans the previous day.
- „ 27th April.—The Germans captured Kemmel Hill.
- „ 29th April.—The German advance checked on the west front.
- „ 7th May.—Roumania signed a treaty of peace at the dictation of the Central Powers at Bucharest.

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1918. 9th May.—A British naval force dashed to the entrance of the Ostend harbor and sank the obsolete cruiser *Vindictive* between the piers and across the entrance to the harbor. The casualties were light.
- „ 11th May.—Death of Mr. George A. Elmslie, leader of the Victorian Labour party, aged 57 years.
- „ 27th May.—The Germans commenced a second offensive against the Allies on the west front by attacking them in the Champagne district and south of Ypres.
- „ 2nd June.—The Germans reached the Marne.
- „ 10th June.—Attack launched by the Germans in the direction of Paris between Montdidier and Noyon. The attack was made against the French on a front of about 23 miles, and in its initial stages met with success.
- „ 12th June.—It was announced that the Commonwealth wool clip had been sold to the British Government for the currency of the war and one year afterwards.
- „ 15th June.—The Americans checked the advance of the Germans at Chateau Thierry on the Marne.
- „ 19th June.—The Commonwealth Government purchased the sugar crop of Queensland for the current and following season at £21 per ton.
- „ 23rd June.—The Germans definitely held by the Allies.
- „ 24th-28th June.—The Italians defeated the Austrians on the Piave. The losses of the latter were estimated at 200,000.
- „ 26th June.—The s.s. *Wimmera*, on a voyage from Auckland to Sydney, was sunk by striking a mine. The passengers and crew on board numbered 151, of whom 26 were drowned.
- „ 27th June.—The British hospital ship *Llandovery Castle*, 11,423 tons, was torpedoed by a German submarine. Of 258 on board (including 80 members of the Canadian army medical corps and 14 nurses) only 24 were saved.
- „ 4th July.—President Wilson announced that more than one million American troops were in France.
- „ 4th July.—Hamel captured by the Australians.
- „ 15th July.—The Germans commenced a third offensive, the attack being launched between Chateau Thierry and Rheims and also eastward of Rheims.
- „ 16th July.—News received that the ex-Czar Nicholas had been shot by the Bolsheviks.
- „ 18th July.—Counter offensive by the Allies commenced between Fontenoy (north of the Aisne) and Belleau (north-west of Chateau Thierry). This met with great success, and was followed by other offensives, which continued with little intermission until the end of the war.
- „ 27th July.—The cruiser *Adelaide* launched in Sydney.
- „ 3rd August.—The hospital ship *Warilda* torpedoed on a voyage from France to England by a German submarine. There were 800 persons on board, of whom 120 were drowned.
- „ 8th August.—The British and French armies defending Amiens launched a strong attack on a 20-mile front from the the Ancre, near Albert, to the Avre, near Montdidier. This developed into a sweeping advance, and in four days the Allies had reached the outskirts of Chaumes, Roye, and Lassigny, the depth of the advance in that region being from 15 to 20 miles.

1918. 11th August.—Sudden death of Judge Johnston, senior County Court Judge, Victoria, aged 62 years.
- „ 2nd September.—Mont St. Quentin and Peronne captured by the Australians.
- „ 3rd September.—Death of Lord Forrest, aged 71, at sea on a voyage to England.
- „ 10th September.—Arrival at Sydney of the French Mission to Australia.
- „ 11th September.—Death in London of the Right Hon. Sir George H. Reid, G.C.M.G., former High Commissioner for Australia.
- „ 14th September.—The Allies continued their advance, the Americans reaching a position within 17 miles of Metz.
- „ 15th September.—It was announced that leave had been given to 7,000 Anzacs, who had left Australia in the first few months of the war, to return on furlough.
- „ „ „ An offensive commenced by the Allies on the Macedonian front against the Bulgarians, which resulted in the complete route of the latter.
- „ 23rd September.—Great victory by the British under General Allenby over the Turks in Palestine. About 90,000 prisoners were taken.
- „ 30th September.—Bulgaria accepted the terms stated by the Allies, and was granted an armistice.
- „ 3rd October.—Cambrai captured by the British forces.
- „ 11th October.—French Mission headed by General Pau arrived in Melbourne.
- „ 20th October.—Lille retaken from the Germans.
- „ 28th October.—Turkey granted an armistice by the Allies.
- „ October-November.—Influenza epidemic in United Kingdom, India, New Zealand, South Africa, and elsewhere. It received the name of Spanish influenza as it had originated in Spain.
- „ 1st November.—The Germans driven back to the Scheldt. Valenciennes captured by the Allies.
- „ 3rd November.—Austria surrendered to the Allies.
- „ 11th November.—End of the Great War. Germany signed terms of armistice granted by the Allies.
- „ 12th November.—Emperor Charles of Austria abdicated.
- „ 18th November.—Surrender of the greater portion of the German navy to the Allies. The vessels were interned at Scapa Flow, in the Orkney Islands.
- „ November.—Number of deaths from influenza in Quarantine Station, Sydney, of soldiers who had arrived from overseas in transports.
- „ 29th November.—The German Emperor abdicated the throne.
- „ 14th December.—British elections held. Great victory for the Coalition party led by Mr. Lloyd George.
- „ 18th December.—Riot at Port Darwin; the Administrator (Dr. Gilruth) assaulted.

PROGRESS OF STATE SINCE 1842.

The following table has been prepared to illustrate the advance made by the State 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 as the date of

STATISTICS OF VICTORIAN PROGRESS, 1842 TO 1918.

	1842.	1850.	1855.	1861.	1871.	1881.	1891.	1901.	1917-8.
Population, 31st December ..	23,799	76,162	364,324	541,800	747,412	879,886	1,157,678	1,210,882	1,430,758
Revenue .. £	87,296	259,433	2,728,656	2,592,101	3,734,422	5,186,011	8,343,588	7,712,009	12,672,787
Expenditure from Revenue .. £	124,631	196,440	2,612,807	3,092,021	3,659,534	5,108,642	9,123,699	7,672,780	12,031,169
Public Funded Debt .. £	..	..	480,000	6,345,060	11,994,800	22,426,502	43,638,897	49,546,275	78,191,361
Gold produced .. oz.	..	..	2,793,065	1,967,453	1,355,477	858,850	576,400	789,562	471,271
Wool produced .. lbs.	2,752,330	16,345,468	22,470,443	22,640,745	37,177,646	45,970,560	76,503,635	73,235,138	105,424,682
Butter produced .. "	..	..	..	..	..	..	154,130	46,857,572	..
Butter produced .. "	..	..	..	..	..	..	16,703,786	..	..
Agriculture—									
Land in cultivation .. acres	8,124	52,341	115,060	427,241	793,916	1,582,998	2,512,593	3,647,459	5,782,954
Wheat .. bushels	55,360	556,167	1,148,011	3,607,727	4,500,795	8,714,377	13,679,268	12,127,382	37,737,552
Oats .. "	66,100	99,585	614,614	2,136,430	3,299,889	3,612,111	4,455,551	6,724,900	6,141,287
Wine .. gallons	..	4,021	9,372	47,568	173,589	589,191	1,554,130	1,981,475	800,068
Live Stock—Horses .. No.	4,065	21,219	33,430	84,057	181,643	278,195	440,696	392,237	514,061
Cattle .. "	100,792	378,806	534,113	628,092	799,509	1,286,677	1,812,104	1,602,384	1,371,049
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	14,760,013
Pigs .. "	..	9,260	20,686	43,480	177,447	239,926	286,780	350,370	323,159
Total Imports—Value .. £	277,427	744,925	12,007,939	13,532,452	12,341,995	16,718,521	21,711,608	18,927,340	..
Exports—Value .. £	193,783	1,041,796	13,493,338	13,828,606	14,557,820	16,252,103	16,006,743	18,646,097	..
Imports, Oversea—Value .. £	..	..	..	10,991,377	9,201,942	11,481,507	13,802,598	12,686,880	20,656,786†
Exports .. £	..	..	..	12,209,794	12,848,451	12,318,128	11,403,922	13,075,259	18,713,776†
Shipping .. tonnage	78,025	195,117	1,133,283	1,090,002	1,355,025	2,411,902	4,715,109	6,715,491	5,745,113
Railways open .. miles	..	..	..	214	276	1,247	2,704	3,238	4,157
Telegraph wire .. "	..	..	..	2,586	3,472	6,626	13,989	15,356	29,606
Postal business—Letters .. No.	97,490	381,651	2,990,992	6,109,929	11,716,166	26,308,347	62,526,448	83,973,494	197,330,163
Newspapers .. "	147,160	381,158	2,349,656	4,277,179	5,172,970	11,440,732	22,729,005	27,104,344	36,695,699
Savings Bank Deposits .. £	..	52,697	173,090	582,796	1,117,761	2,569,438	5,715,687	9,662,006	30,756,929
Factories—									
Number of .. "	..	..	278	531	1,740	2,488	3,141	3,249	5,627
Hands employed .. "	..	..	..	4,395	19,468	43,209	52,225	66,529	113,241
Value of machinery, plant, land, and buildings .. £	..	..	..	..	4,725,125	8,014,296	16,472,859	12,298,500	26,460,282
Value of articles produced .. £	..	..	..	..	..	13,370,836	22,390,251	19,478,780	67,066,715
State Education—									
Number of Primary schools ..	..	61	370	671	988	1,757	2,293	1,967	2,202
Expenditure on Education .. £	..	..	115,099	162,547	274,384	546,285	726,711	701,034	1,385,075
Total value of rateable property in municipalities .. £	..	..	..	20,638,091	50,166,078	87,642,459	203,351,360	185,101,993	331,336,715
Friendly Societies—									
Number of Members ..	..	..	1,698	7,166	35,706	47,908	89,269	101,045	153,035
Total funds .. £	..	..	..	..	213,004	475,954	961,933	1,370,604	3,017,503

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.
 * Owing to the Commonwealth authorities having discontinued the keeping of records of Inter-State trade, the value of the total imports and exports of the State are not available for a later year than 1909. For that year the imports were valued at £28,150,198 and the exports at £29,896,275.
 † Exclusive of bullion and specie.

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

The population of the State at the end of 1842 was 23,799; and at the end of 1918 it had increased to 1,430,758. During the period 1842-1918 the revenue steadily increased from £87,296 to £12,673,000. There was no public debt until after separation. In 1855 the State indebtedness was £480,000; in 1918 the funded debt had reached £78,191,361, which has been spent on revenue-yielding and other works of a permanent character. The land in cultivation in 1842 was slightly over 8,000 acres; it now amounts to 5,782,954 acres. In the number of horses, cattle, and pigs increases are generally shown. The value of oversea imports in 1861 was £10,991,377; in 1917-18 it was £20,656,786. Oversea exports amounted to £12,209,794 in 1861, and to £18,713,776 in 1917-18. No railways or telegraphs were in existence up to the end of 1855; in 1861 there were 214 miles of railway open and in 1918 there were 4,157 miles; 2,586 miles of telegraph wires had been erected up to 1861, and 29,606 miles up to the 30th June, 1918. Postal business in letters and newspapers has expanded rapidly during the period covered by the table, and there has also been a large increase in Savings Bank deposits, which rose from £52,697 in 1850 to £30,756,929 in 1918.

The expenditure on education amounted to £115,000 in 1855, and had increased to £1,385,075 in 1917-18. Members of friendly societies numbered 1,698 in 1856, and 158,035 in 1917—the funds amounting to £213,000 in 1871 and £3,017,503 in 1917. Hands employed in factories rose from 19,468 in 1871 to 118,241 in 1917-18. The total value of rateable property in municipalities, which was £29,600,000 in 1861, was £831,336,715 in 1917-18.

CONSTITUTION AND GOVERNMENT.

The Present Constitution.

After the establishment of the Federal Government it became evident that the representation of the States in the States Houses was excessive, and steps were taken to reform the States Constitutions. Accordingly an Act "to provide for the Reform of the Constitution" was passed in Victoria and reserved for the Royal assent on 7th April, 1903. After an interval of some months the Royal assent was proclaimed on 26th November, 1903. This Act, entitled *The Constitution Act 1903*, provided for a reduction in the number of responsible Ministers from ten to eight, and in their salaries from £10,400 to £8,400; and decreased the number of members of the Legislative Council from 48 to 35, including one special representative for the State railways and public servants; but increased the number of electoral provinces from fourteen to seventeen, each being now represented by two members elected for six years—one retiring every three years by rotation, except at a general election, when one-half of the members are to be elected for only three years. The

Reform Act
1903.