

PART ONE

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*Demographic Development*

STATISTICAL RECORDING

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The first official statistics in Victoria derive from a decision taken by Sir Richard Bourke, Governor of New South Wales, within whose jurisdiction lay both Port Phillip and Portland Bays. Realising that settlement in these two areas was likely to be permanent, he took steps to record its progress, and in 1836 dispatched George Stewart, a Sydney magistrate, in a revenue cutter to report on the state of affairs in the Port Phillip settlement. Stewart's report stated that the District comprised a population of 177, of whom 142 were males and 35 females, and that there were 26,000 sheep and a number of horses and horned cattle. It is not certain that Stewart's report included the Portland Bay settlement; nevertheless, it provided the first official information about the Colony as at 25 May 1836.

The second Census of that area, then known as the Port Phillip District, was carried out on 29 September 1836. A third Census was taken nearly two years later in September 1838, and additional enumerations were held in 1841 and 1846. The need for frequent Censuses was caused by a lack of other statistics, especially vital statistics, which would have enabled the authorities to estimate the population.

In 1851 Port Phillip was separated from New South Wales, created an independent Colony, and named Victoria. The Census of 1851 was taken on 2 March, before the ratification of the new Colony's constitution on 1 July. Until 1853 the only records of Victoria's vital statistics were parish and church registers. This system was inadequate for statistical purposes, and in March 1853 the Registration Act was passed, providing for the compulsory registration of births, deaths, and marriages in Victoria. William Henry Archer, then Acting Registrar General of the newly established Registrar General's Office in Victoria, was made responsible for planning and implementing the system for the Colony. He had migrated to Victoria in 1852, having practised as an actuary in England where he had also been assistant to the famous Dr William Farr, the "vital" statistician, and to F. G. Neison, possibly the most eminent statistician and actuary of the day.

The initial difficulties of implementing the Registration Act were great. It was based on the English system, which was not always suitable to the circumstances of the new and thinly populated Colony, and difficulties arose from indifference to, or ignorance of, the Act among many settlers. Furthermore, the countryside was almost devoid of roads, and the peculiar conditions of life on the goldfields, where people were constantly on the move, added to the problems of the Registrar. One of Archer's first tasks was to find competent Deputy Registrars for the various districts and subdivisions of Victoria.

By 1855 seventy-six Deputy Registrars and fifty-one Assistant Deputy Registrars had been appointed, and, in addition, 133 ministers of religion registered marriages at which they officiated. At the end of each quarter the Deputy Registrars transmitted duplicates of their registers of births and deaths to the central office, retaining the original document in their own possession. These schedules underwent a thorough examination in the Central Office for the detection of errors and omissions, and, when finally ascertained to be as correct as possible, were bound in volumes and indexed. The death registers then underwent examination by medical personnel who classified diseases and ages, tabulated mortality, and calculated the percentage of deaths from various causes. These returns were published by the Assistant Registrar General from time to time in the Government Gazette. An abstract of vital statistics for Melbourne and Victoria was published for the first time in 1855 in the Registrar General's first annual report. The period covered was the year ending 30 June 1854. The report showed the number of births registered in Melbourne and suburbs, and in the remainder of the Colony, marriages celebrated by various denominations (and whether the partners were illiterate), deaths registered in Melbourne and suburbs and in the remainder of the Colony by disease group, and a detailed table of deaths from individual causes registered in each month.

The first population Census of Victoria as a separate Colony was taken in 1854. The Census publications and the Registrar General's reports on vital statistics were important sources of statistical information, but the development of regular statistical reports can be traced to annual returns supplied by the Governor to the Colonial Office in London. These returns, known as "Blue Books", were the forerunners of Statistical Registers. However, they were mainly documents for the guidance of the administration rather than statistical publications in their own right.

The first Statistical Register of Victoria appears to have been issued by the Colonial Secretary, Captain Lonsdale, in November 1851, but it was not until 21 September 1854 that Archer issued his "humble attempt to commence a series of Registers . . . that may . . . faithfully reflect the progress of this extraordinary Colony". The Register was an octavo volume of 447 pages. The following year it was increased to foolscap size under the title *Statistics of the Colony of Victoria* and was published annually by the Registrar General until 1873; after that edition the Government Statist took charge of the publication. In the early stages the Registrar General's Department was subdivided into six branches: Registration of Births, Deaths, and Marriages; Statistics; Blue Books; Patents; Census; and the administration of the Compulsory Vaccination Act. The statistical section of the Registrar General's Office in Victoria eventually became a separate body under the direction of Henry Heylyn Hayter.

Hayter was born at Edenvale in Wiltshire, England, in 1821, and was educated at Charterhouse and in Paris. He arrived in Victoria in 1852, and joined Archer's statistical staff as a temporary assistant five years later. Hayter was a brilliant scholar, and following the promotion of Archer to the position of Registrar General, was appointed Assistant Registrar General in 1859. On 14 May 1874 he became the first Government Statist for Victoria and earned a reputation as an outstanding statistician. In 1870 he was appointed to the Royal Commission which inquired into the Public Service, and in 1879,

when he was in London as secretary to the Berry "embassy", was twice examined by a committee of the House of Commons about his successful analysis of Victorian statistics. He also wrote and published poetry, as well as geographical and historical accounts of Victoria and New Zealand. When in March 1895 he died at his home in Armadale, Melbourne, at the age of 74, he had been appointed a Companion of the Most Distinguished Order of St Michael and St George, named an Officer of the Order of Public Instruction by the French Government, and made a Chevalier of the Order of the Italian Crown.

One of his most significant achievements was the publication of the first (1873) *Victorian Year Book* in 1874. Until 1873 the statistical publications in Victoria had consisted of the yearly Register, the Monthly Reports on Vital Statistics, and occasional pamphlets such as *Progress and Statistics*, *Progress of Victoria*, and *Facts and Figures, Statistical and General*. It had become necessary, however, to publish an annual summary of Victorian statistics, containing not only bare tabulations, but also analyses of the figures, and the *Victorian Year Book* was to fulfil this role. Hayter clearly stated his intentions in the preface to the first *Year Book* : " It will be my endeavour in this succession of volumes to record facts with correctness and impartiality ; to comment on them only so far as may be necessary to elucidate them properly ; to set up no theories except such as may be fairly deducible from the materials before me ; and, in drawing inferences, to exercise perfect fairness to all sections of the community." The *Year Books* closely followed the statistical sequence of the Register and their individual parts consisted of : Blue Book ; Population ; Finance ; Interchange ; Production ; Law and Crime ; Accumulation ; Vital Statistics ; and Religious, Moral, and Intellectual Progress.

One of Hayter's major tasks was to reorganise the statistical office to ensure that the machinery would be available to carry out a Census under the strict and exact statistical conditions he considered necessary. His reorganisation was perhaps the one act which advanced Victoria's statistics to the standard acclaimed by Sir Charles Dilke in his book *Greater Britain*. He commented : " The most economical position which Victoria occupies is easily ascertained, for her statistics are the most perfect in the world. The arrangement is a piece of exquisite mosaic."

Hayter supervised the taking of the Victorian Censuses of 1871, 1881, and 1891, and his report on the 1881 Census served as a model upon which many other colonies later based their own Census reports. It was a brilliant analysis of the Census results and also showed the organisation of the Census and the methods used in the compilation of data. Unusual interest was attached to the Census of 1881, as it was a simultaneous Census of British dominions ; it was also the first time that the population of the Australian colonies was enumerated at the same date. The various colonies, progressing separately, had developed their own systems of keeping statistics, and, as early as 1854, Archer had pressed for co-ordination of statistical work in the various colonies. Thereafter many proposals were made but, in fact, the divergence became more and more pronounced. A conference of statisticians was held in Melbourne in 1861 and some agreement was reached that comparable information was desirable. At a second conference, held in Hobart in 1875, Hayter represented Victoria. The aim was to establish a uniform

system of statistical reporting throughout Australia, but the disparity of legal requirements in the various colonies made this difficult. However, the 1881 Census of Victoria was carried out as part of an Australia-wide survey, with most of the data collected on a uniform basis, and the foresight of Hayter and his fellow statisticians in Hobart ensured its success.

Hayter's successor was his assistant, James J. Fenton, who carried on the administration of the Statist's Office for eight years. The Commonwealth of Australia was constituted in January 1901, and the first statistical conference after Federation was held in Hobart in January 1902. The object of the conference, which Fenton attended as Victorian representative, was to secure uniformity among the States in the preparation of statistical returns. In September 1903 another conference was held in Melbourne. The new Government Statist for Victoria, W. McLean, attended, and the main topic was the uniformity of population statistics.

McLean was born in Scotland in 1844 and arrived in Australia in 1864. He had held several positions in the Public Service, having been Chief Clerk in the Premier's Office, and Accountant and later Secretary of the Education Department. His position as Government Statist was, however, of short duration; after a period of less than three years he was succeeded by E. T. Drake. Drake was born at sea in November 1856, and arrived in Australia the following year. He was educated in Melbourne at the Church of England Grammar School and at Hawthorn Grammar School. In 1903 he became Inspector under the Audit Act, and was later Chief Clerk of the State Audit. He was nominated Government Statist in January 1906 and, at the end of that year, attended the statisticians' conference held in Melbourne.

Under the provisions of section 51 of the Commonwealth Constitution, power was conferred on the Commonwealth Parliament to make laws for the Commonwealth with respect to census and statistics. The *Census and Statistics Act* 1905 was passed, providing for the appointment of a Commonwealth Statistician and the creation of the Bureau of Census and Statistics. The Act also specified that the Census should be taken in 1911, and in every tenth year thereafter, and that statistics were to be collected annually in relation to all or any of the following matters: population; vital, social, and industrial matters; employment and non-employment; imports and exports; interstate trade; postal and telegraphic matters; factories, mines, and productive industries generally; agricultural, horticultural, viticultural, dairying, and pastoral industries; banking, insurance, and finance; railways, tramways, shipping, and transport; land tenure and occupancy; and any other prescribed matter. The Commonwealth Bureau of Census and Statistics was established in 1906 and was to be instrumental in achieving uniformity of certain Australian statistics. The Commonwealth Statistician presided over the 1906 Conference which defined the relations between the Commonwealth Bureau and State offices. It was determined that each State statistician was to represent the Commonwealth Statistician for the purpose of administering the Commonwealth Act; that the collection and compilation of statistical information by the State statistical offices should be co-extensive, and, within the limits indicated by the adopted forms, should be uniform in method, order, and date of compilation; that each State office should be adequately equipped; and that statistical publications of the Commonwealth and States

should be uniform in size and order of matter. Unanimously, the State statisticians pledged support and assistance to the Commonwealth Statistician in his approved operations.

Besides directing the work of the statistical office, the Government Statist also supervised the registration of births, deaths, and marriages in Victoria. Through the *Births, Deaths and Marriages Transfer Act* 1893 the Office of the Registrar General was abolished and his powers transferred to the Government Statist. This was a unique development, since originally the Statistics Branch had been part of the Registrar General's Office, and under his control and direction. The Victorian *Government Statist Act* 1908 also transferred the duties of the Actuary for Friendly Societies and Trade Unions to the Government Statist. It further stipulated that no person should be appointed to the office of the Government Statist unless he had passed the final examination of the Institute of Actuaries of Great Britain and Ireland, or of the Faculty of Actuaries of Scotland, or examinations of an equivalent standard set and examined by the University of Melbourne.

Drake was Government Statist for only two years. His successor, A. M. Laughton, F.I.A., F.F.A., F.S.S., was appointed in 1908, and held the position for a record number of 25 years. Born in the Orkneys in 1868, Laughton was associated with actuarial and insurance work for the greater part of his life. He was on the staff of life assurance companies in Britain and Australia for over twenty years, was elected president of the Insurance Institute in Victoria in 1907, and in 1920 became president of the Actuarial Society of Australia.

In 1911 the first Commonwealth Census was taken under the Commonwealth Constitution and the new Census and Statistics Act. The Commonwealth Statistician sought the services of each State statistician as a State Supervisor, and Laughton filled this role for Victoria.

During the First World War statistics assumed additional importance in planning the country's economy, but because of the shortage of funds and manpower, the publication of the Victorian *Statistical Register* was discontinued in 1917 and has not been resumed. Economic problems following the war drew attention to deficiencies in Australian statistical data. The creation of the Bureau of Census and Statistics, and the close and increasing liaison between officers dealing with the same subjects in the State and Commonwealth fields, did much to promote uniformity in the official statistical collections and methods, although there were still seven distinct statistical systems in operation. With a view to furthering uniformity the Prime Minister, the Rt Hon. S. M. Bruce, proposed to the 1923 Premiers' Conference that State statistical services be transferred to the Commonwealth. At the time Tasmania alone agreed, and this transfer was effected in 1924. Since then, the integrated office has functioned in that State as the Commonwealth Office, which also serves the State's statistical needs.

Laughton retired from the position of Government Statist in 1933, and was succeeded by Mr Oswald Gawler, F.I.A. in 1934. Mr Gawler was born in 1889 at Black Rock, Victoria, and was the first Victorian Statist born in the State. He was educated at Wesley College in Melbourne. Like his predecessor he had worked with insurance offices in Melbourne and Sydney, but in 1911 he had joined the Public Service in Western Australia. During the First World War Mr Gawler served with the A.I.F. In 1921

he left the Western Australian Public Service and became a consulting actuary in Melbourne and a member of the Stock Exchange. He moved to South Australia in 1929 and joined the Public Service in that State, remaining there until his appointment as Government Statist for Victoria.

The process of achieving uniformity in Australian statistics was further advanced during Mr Gawler's time. He was the Victorian representative at ten conferences of Commonwealth and State statisticians and participated in developments achieved in relation to uniformity of agricultural statistics, new collections of statistics of building operations and motor vehicles, and the effects of new post-war consumption patterns on the Retail Price Index. Like his predecessor, Mr Gawler was the chief statistician of the State during a time of war. He had to supervise the adaptation of statistics to a wartime situation and, after the end of hostilities, was faced with the restoration of statistical services discontinued during the war. Because of the war no Population Census had been held in 1941, and the fourth Australian Census was taken in 1947. Mr Gawler was associated with the preparations for the 1947 Census, as well as with the 1954 Census, but he retired later in 1954, and Mr V. H. Arnold, F.I.A., A.A.I.I., A.S.A., became the new Government Statist for Victoria.

Mr Arnold was born in 1914 in Croydon, England, and was educated at Perth Modern School and the University of Western Australia. He joined the A.M.P. Society in Perth in 1932. After his appointment as Government Statist and Actuary, he became the actuarial member of the State Superannuation Board in 1954. In 1958 he was appointed Chairman of the Board of Inquiry into Industrial Accidents, and when the Victorian Government Statist's Office became integrated with the Commonwealth Bureau of Census and Statistics in 1958, Mr Arnold also became the first Deputy Commonwealth Statistician for Victoria. In 1960 he was elected President of the Actuarial Society of Australasia, and in the following year became Chairman of the Third Party Insurance Premiums Committee. In 1967 he became Chairman of the State Superannuation Board.

In the years following Mr Arnold's appointment, considerable changes in development, reorganisation, and expansion affected most of the activities of the Government Statist's Office. The increasing volume and importance of statistical information stressed the need for uniformity, which could only be achieved if State statistical offices were integrated with the Commonwealth Bureau. Negotiations between the Prime Minister and the State Premiers resulted finally in the acceptance, by all State Governments, of draft agreements to integrate their respective statistical offices with that of the Commonwealth. Subsequently an agreement was made in May 1958 between the Commonwealth and the State of Victoria, to establish the Integrated Statistical Service. The function of this was to collect and publish statistics and supply statistical information for both parties. The Government Statist retained his title and existing duties, and added those of the office of Deputy Commonwealth Statistician for Victoria. Existing services and collections were to be continued and provision was made for diversifying statistical matter. It was stipulated that the *Victorian Year Book* and *Victorian Pocket Year Book* would continue to be published. To enable him to carry out his duties, the Deputy Commonwealth Statistician and Government Statist was given access to appropriate statistical records.

The Victorian Parliament passed the *Statistics Act 1958* to consolidate the law relating to the Government Statist and statistics in the State. The Government Statist continued as the head of the Government Statist's Branch in the Department of the Chief Secretary with the right to collect statistical information from the State Government Departments, municipal councils, and every institution, corporation, and company in Victoria. He was also given authority to require the occupiers of land to furnish him with information relating to its cultivation and produce, the machinery used, the persons employed, and details about stock, and to obtain statistics from any factory, mine, or other establishment of productive industry or storage in relation to employees, power employed, articles produced, materials used, machinery employed, capital invested, and any other matter in connection with the establishment.

By this time the large volume of statistical information could no longer be handled efficiently by manual methods. Mechanical processing of statistical data became necessary and in 1958 the Government Statist decided to use the Powers-Samas system for the mechanical tabulation of factory returns. The following year the Victorian Office, now integrated with the Commonwealth Bureau, installed Hollerith machines—two sorters, one tabulator, one reproducer, and several key punches and punch verifiers. Soon many of the important statistical collections were processed mechanically, and the advantages of greater speed and more detailed tables became apparent.

The Commonwealth Statistician decided to instal a computer network in all States to supersede the existing mechanical tabulation equipment. The first computer for the Victorian Office was delivered to the premises in May 1965. It was a Control Data 3200 8K CPU and its peripheral equipment included four magnetic tape readers, one paper tape reader/punch, one card reader, and one printer. During the following years, the Automatic Data Processing Branch of the Bureau was expanded, larger capacity computers and additional peripheral equipment were installed, and more highly trained staff were engaged. The Computer Service Centre now performs not only statistical functions, but is also used for a wide range of accounting and administrative work for other government departments.

The increasing importance of statistics in planning and research, not only by the public sector of the economy, but also by private enterprise, greatly increased the demand for statistics, and existing collections were therefore enlarged and new ones instituted. The new collections aimed mainly at improving and enlarging the knowledge of various economic and social fields, for example, the labour force survey, capital expenditure and stocks, finance companies, retail hire purchase and other instalment credit, overseas investment, mining and quarrying censuses, monthly building approvals, quarterly housing finance, survey of earnings and hours, survey of awards and determinations, hospital morbidity, industrial accidents, crime statistics, and school censuses.

The shortcomings of many important economic statistical series and the recognition that many of these series had a common origin led to the idea of integrating economic censuses and surveys. This was one of the most important projects undertaken by the Bureau in the late 1960s and the early 1970s, and was part of a nation-wide project to integrate future economic censuses in such a way that the collections made in each industry



would fit together without overlap, duplication, or omission in coverage, and produce a range of economic data defined according to a common system of concepts. In a similar way, economic surveys were to be drawn from the same list of economic units as those of the censuses and were to use the same classifications; thus they could be related to, and replaced by, census figures as these became available. To do this it was necessary to standardise all data collected, e.g., valuations of stock, purchases, sales, etc., and to prepare a register of businesses operating in Australia. This register is maintained on magnetic tape and can be used for addressing collection forms, preparing collection registers, and other similar tasks. An Australian Standard Industrial Classification (A.S.I.C.) has been compiled as part of the Bureau's integration of economic censuses and surveys. The A.S.I.C. defines the industries in the economy for statistical purposes, thus permitting the scope of the different collections to be specified without gaps or overlapping between them. It also sets out standard rules for identifying the statistical units and for coding them to the industries of the classification.

The growth of the Bureau in Victoria can be gauged by comparing the number of staff employed at the time of integration with the Commonwealth in 1958, with the number of persons now employed. In 1958 the Victorian Office employed some one hundred persons, and by June 1971 the staff numbered 496.

When Mr Arnold became Government Statist in 1954 the *Victorian Year Book* was in its eighty-second year of publication. In the post-war years, the Victorian economy expanded greatly, while social changes had taken place so rapidly that the contents of the *Year Book* needed to be re-examined. This involved revision of the scope of the statistical information as well as the descriptive articles, whose purpose was to set the tables in a wider context. This task has been carried out since 1959 under the supervision of Mr H. L. Speagle, M.A., B.Ed., the Editor of Publications, who became responsible for the *Victorian Year Book* in that year. The first *Year Book* in the new series was the seventy-fifth volume, published in 1961. Besides revised statistical information, it published new special articles, dealing mainly with Victoria's industries, institutions, geography, and culture.

In 1956 another innovation, the *Victorian Pocket Year Book*, had been introduced. It shows statistical information similar to that in the *Victorian Year Book* in a concise form, and is a handy booklet for quick reference.

In addition to the *Year Books*, the Victorian Office publishes many other publications which are distributed free of charge. The *Victorian Monthly Statistical Review* provides monthly and quarterly statistics of economic indicators. Other periodical publications which deal with specialised subjects relate to building, demography, secondary production, finance, local government, transport, primary production, and social statistics. Altogether about 140 publications are prepared annually and released at regular intervals.

## CENSUSES

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The use of the census in ancient times for military or taxation purposes is a familiar one. Censuses of modern times are designed to provide information for both economic and social purposes for use not only by government but also by private users. In recent times world organisations such as the United Nations Organization have made considerable progress in promoting comparability in census taking between countries.

### STATE CENSUSES

#### *Early enumerations*

The enumerations of the people taken up to the time of the establishment of the Port Phillip District as a separate Colony in 1851 were generally, though not invariably, carried out in conjunction with the Censuses of New South Wales.

An officer sent in 1836 by Sir Richard Bourke, then Governor of New South Wales, to report upon the newly settled Port Phillip District, reported that on 25 May 1836 the population exclusive of Aborigines (of whom no estimate was made) consisted of 177 persons. A later return made by Captain Lonsdale, the first Resident Magistrate of the District, shows that the population on 29 September 1836 was 224. Two years later, by which time a considerable stream of migration, chiefly from New South Wales and Tasmania, had set in, it was decided to take a Census as a result of which the population was found to number 3,511 on 12 September 1838.

#### *Censuses of 1841, 1846, and 1851*

These enumerations were made in the Port Phillip District in connection with the New South Wales Censuses. In 1841 the population was recorded as 11,738; it had increased to 32,879 in 1846, and to 77,345 in 1851. The Census of 1851 was taken on 2 March before the proclamation of the Port Phillip District as a separate Colony on 1 July 1851.

#### *Census of 1854*

This was the first Census taken of Victoria as a separate Colony. Mainly as a result of the gold discoveries in 1851 a large influx of population had taken place, and it was therefore decided to enumerate the population on 26 April 1854. An Act was passed providing for the taking of the Census, and the various forms of schedules employed in the 1841 Census of the United Kingdom were adapted to the circumstances

and requirements of the Colony, which was divided into twenty-six districts, each in the charge of an enumerator. Police magistrates were appointed enumerators for their respective districts, except in Melbourne, where the Town Clerk acted as enumerator. The number of sub-enumerators employed was 194, their rate of pay depending on the nature and extent of the country they had to traverse, and on the number of people to be enumerated. The questions related to name, age, sex, religion, conjugal condition, education, and occupation. Returns were also collected for the area of land alienated. The population was tabulated according to counties and pastoral districts, electoral districts and provinces, goldfields, seaport towns, rural and mining districts, and towns and villages. The population enumerated was 236,798, including 2,500 Aborigines, and the estimated cost of the Census was £11,000.

#### *Census of 1857*

The Victorian gold rushes continued to cause a considerable addition to the population; another Census was taken on 29 March 1857. For the purpose of making the preliminary arrangements for the Census of 1857, a Commission was appointed by the Government to prepare the form of the householders schedule and to frame regulations and instructions for the guidance of the officers engaged in carrying out the provisions of the Census Act. The Commissioners obtained the co-operation of the municipal and other local authorities, and were thus enabled to frame a scheme of subdivision of the Colony whereby the greater part of the enumeration was taken and supervised by local agencies. The enumerators were selected by the local authorities, but were appointed by, and responsible to, the Government. A new and useful regulation framed by the Commissioners was that which required the sub-enumerators to fill in a return showing the name and residence of every householder with whom a blank schedule had been left. The Colony was divided into sixty Census districts which were again subdivided into 907 sub-enumerators' districts. The total number of persons employed in collecting the returns was 1,005, of whom sixty were enumerators, 930 sub-enumerators (of whom 477 performed their duties on horseback), and fifteen were Chinese interpreters or assistant sub-enumerators.

The schedule used at the Census of 1857 included questions on name, relation to head of household, conjugal condition, sex, age, rank, profession or occupation, birthplace, nationality, religion, education, and description of house. The tabulation of results was carried out on a similar plan to that adopted in 1854. The total population at the Census of 1857 was 410,766, including 1,768 Aborigines.

#### *Censuses of 1861, 1871, and 1881*

The *Census Act* 1861 provided that the Census should be conducted entirely by the Registrar General, and not by a Commission as had been the case in the preceding Census. This provision was also continued in the subsequent Census Acts of Victoria. The Census of 1861 was taken on 7 April; that of 1871 on 2 April; and that of 1881 on 3 April.

In 1861 and 1871 the general method of dividing the Colony into districts for Census purposes was the same as that adopted in 1857. In 1861

the Colony was divided into sixty-seven Census districts; in 1871 it was divided into sixty districts. In 1876 the Electoral Act Amendment Act was passed and the electoral districts upon which the enumerators' districts at previous Censuses were based were changed. In 1881 the Colony was entirely re-divided for Census purposes so that the Census districts might fit in as far as possible with the counties, which are permanent territorial divisions. The number of districts into which the Colony was divided for Census purposes in 1881 was seventy-eight.

In 1871 there were sixty enumerators and 1,568 sub-enumerators, and in 1881 there were seventy-eight enumerators and 1,869 sub-enumerators.

The nature of the information sought to be obtained at the Censuses of 1861, 1871, and 1881 was prescribed in the householders schedules appended to the Census Acts. In 1861 it comprised the same questions as in 1857, and an additional column was introduced for "health", in which entries were to be made of cases of sickness, infirmity, or accident, to determine reasons for unemployment. In 1871 the schedule was identical with that of 1861, but information was sought on land occupied or cultivated on holdings of more than one acre, and for numbers of livestock kept, while the inquiry as to rank, profession, or occupation was supplemented by a column specifying past occupation. The scope of the inquiry at the Census of 1881 was the same as in 1871 except for the inclusion in 1881 of a question on the type of educational establishment being attended and the exclusion of the question on land tenure.

For the first time in Australia, the Government Statist in Victoria used a manual card system for tabulating the 1881 Census results. When preparing individual tabulations the cards were sorted into groups according to required characteristics and the totals entered in columns of specially prepared summary sheets. This was an improvement on counting and handling the original householders schedules. In all operations connected with the 1881 Census the staff used mechanical appliances where possible and by means of these saved much clerical labour.

The population enumerated in 1861 was 540,322, of whom 1,694 were Aborigines. By 1871 the number of inhabitants had increased to 731,528 (1,330 were Aborigines), and by 1881 it had increased to 862,346 (780 were Aborigines). The total population of Melbourne and suburbs in 1861 was 139,916; by 1881 the number enumerated in Greater Melbourne had increased to 282,947. The total number of inhabited dwellings in Victoria was 129,196 in 1861, 150,618 in 1871, and 170,086 in 1881.

#### *Census of 1891*

The 1891 Census of Victoria, as well as those of all the other Australasian Colonies, was taken as referring to midnight on Sunday, 5 April of that year; this time corresponded to that appointed for enumerating the population of the United Kingdom and most of the outlying portions of the British Empire.

The subjects of inquiry were the same as in 1881 except that a separate question on occupational status appeared for the first time. There was also a question on average wages paid by employers; the answers were used to prepare estimates of gross income in categories of employment. For the information of the Education Department, separate provision was made for

obtaining information as to the name, sex, and place of residence of every child under 15 years of age, whether receiving education, and, if so, at what place.

The eighty-four electoral districts were taken as the basis for the Census districts, of which there were ninety altogether. Each Census district was divided by the enumerator into sub-districts of such size that in populous areas the work of enumeration could be completed in three days, namely, one day for delivering and two days for collecting the schedules. There were ninety enumerators and 2,330 sub-enumerators employed, 1,310 to travel on horseback. There were also forty-five interpreters to the Chinese. Four of the sub-enumerators were females.

The scheme of tabulation was carried out in accordance with the terms of the agreement arrived at by the Census Conference of 1890. A card system of tabulation was used similar to that used in 1881, but additional duplicate cards were used in those cases which were to be processed immediately without waiting for the finalisation of the main tabulations. Certain details of birthplaces, persons over 85 years of age, university graduates, divorced persons, and sick persons were tabulated in this way. The total number of duplicate cards used was about 30,000. Mechanical devices were again used to speed up the processing of the Census information.

The population of Victoria enumerated on 5 April 1891 was 1,140,653, of whom 565 were Aborigines. The population of Greater Melbourne at the same date was 490,896. The total number of dwellings in Victoria was 241,560, of which 224,021 were inhabited, 15,846 were uninhabited, and 1,693 were under construction.

#### *Census of 1901*

This Census was taken under the provisions of the *Census Act 1900*, on Sunday, 31 March 1901. No general report of this Census was issued, and the available information about Census methods is meagre. Generally, the system of preparation for, and the method of collection and tabulation of, the 1901 Census were carried out on much the same lines as in 1891. Census districts adopted in 1891 were used again for the 1901 Census. The State electoral districts were treated as enumerators' districts except in four cases; these were each subdivided into two or more Census districts. Ninety-four enumerators, 2,235 sub-enumerators, and thirty-seven interpreters to the Chinese were employed. Six of the sub-enumerators were women.

The Act specified the following subjects of inquiry: name, sex, age, marital status and duration of marriage, number of children born to each marriage, relation to head of the household, profession or occupation, sickness or infirmity, religion, education, birthplace and (where the person was born abroad) period of residence in Victoria, and nationality; and the materials of the dwelling and the number of rooms contained therein. Provision was also made for the collection of statistics as to the area, tenure, and cultivation of occupied land held in connection with or in the vicinity of the dwelling occupied, and details of livestock kept.

The population of Victoria increased from 1,140,653 in 1891 to 1,201,341 in 1901 including 271 Aborigines. The population of Melbourne and suburbs increased during the same period from 490,896 to 496,079, and the number of dwellings in Victoria from 241,560 to 253,656.

## COMMONWEALTH CENSUSES

*Census of 1911*

Under section 51 of The Commonwealth of Australia Constitution Act 1900, the Commonwealth Government was empowered to make laws for the peace, order, and good government of the Commonwealth, with respect to *inter alia* Census and statistics. In exercising this power a Census and Statistics Act was passed in 1905, and in the following year the Commonwealth Bureau of Census and Statistics was created. Part III of the 1905 Act provided for the taking of a Census decennially, and in accordance with this provision a Census of the Commonwealth was taken for the night between 2 and 3 April 1911.

The householders schedule referred to in the *Census and Statistics Act* 1905 consisted of a householders card and a personal card for each person in the household. The particulars which were asked for on the personal card in regard to each individual were set out under fourteen headings. New questions asked in the 1911 Census were date of existing marriage, children born to previous marriage, date of arrival in Australia if born overseas, race, occupation of employer, and duration of unemployment if out of work. Provision was made for the statement of cases of blindness and deaf-mutism, but questions about sickness and accidents were omitted from the card. One of the principal objects in providing the householders card as well as the personal card was to obtain detailed information for dwellings. The householder was required to fill in the class of building, material of outer walls, number of rooms, nature of occupancy, and weekly rent payable.

The Victorian Government Statist, A. M. Laughton, acted as the State Supervisor for Victoria. Large maps were prepared for the States showing the partition of the State into Census (enumerators') districts and the maps were forwarded to the State supervisors. The supervisors then selected for each Census district a qualified person willing to undertake the duties of enumerator at a specified rate of pay. When the appointment of each enumerator had been notified, a list of instructions was forwarded to him together with a large scale map of his division for subdivision into collectors' districts. These districts were to be of such size that the work of distributing and collecting the Census forms could be readily carried out in a specified time. The collection of the forms in populous areas was to be finalised within eight days of the Census date and in the scattered country districts within twenty-two days. After approval of each subdivisional scheme, a map of each collector's district was prepared for the collectors. The collectors were nominated by the enumerator and approved by the Commonwealth Statistician. The number of enumerators employed in Victoria for the 1911 Census was ninety-five and the number of collectors, 2,322.

Although devices for mechanical tabulation of Census data were already used in other countries, many of these were still in the experimental stage. However, an assessment of the advantages the machines offered at the time led to the decision not to use any of those offering for the punching, sorting, and tabulating of the cards. With few exceptions the tabulations were carried out entirely by means of hand-sorting and personal counting. The

exception to this rule was the use of electrically operated Burroughs adding machines when tabulating data according to localities. For various computations involved in the compilation of the Census figures, considerable use was made of the Millionaire calculating machine and several models of the Brunsviga.

The population of Victoria reached 1,315,551 in 1911 and the population of Melbourne increased to 588,971. By 1911, 44.77 per cent of the Victorian population resided in the Metropolitan Area. The total number of occupied dwellings in Victoria at the Census was 272,683, and the number of unoccupied dwellings 11,246.

#### *Census of 1921*

The Census of 1921 was the second carried out under the central direction of the Commonwealth Bureau of Census and Statistics and was taken under the authority of the *Census and Statistics Act 1905-1920*.

The Census schedule consisted of a personal slip containing information concerning one person only and a dwelling slip containing the names of all persons who passed the night of 3 and 4 April 1921 in each dwelling. Additional questions asked at the 1921 Census related to the birthplace of parents, nationality, reason for unemployment, number of children under 14 years dependent on head of household, number of persons usually in residence, and, in regard to dwellings, the material used for roofing.

For the 1921 Census the organisation of the Commonwealth Electoral Department was used. The Commonwealth Electoral Officer in each State became the Deputy Supervisor of Census, each electoral division became a Census division, and the divisional returning officer became the Census enumerator for that division, while the sub-enumerators supervising the work in Census subdivisions generally were the officers engaged in the electoral organisation as assistant returning officers or as electoral registrars. When the apportionment of a State subdivision into collectors' districts had been approved, the enumerator was instructed to procure suitable persons to act as collectors. The collecting staff employed at the Census time in Victoria comprised one deputy supervisor, twenty-one enumerators, 286 sub-enumerators, and 2,268 collectors. The Lands and Survey Branch of the Home and Territories Department prepared the Census maps. The Commonwealth electoral maps were used as a basis and were largely supplemented by maps obtained from various State departments and other sources. The 1921 Census marked the first occasion on which automatic machines were used for the tabulation of a Census in Australia. The replies shown on the Census slips were assigned numerical codes and the codes were punched on Hollerith cards. Electric card sorters and counters and a tabulating machine processed thousands of these cards per hour.

The population of Victoria at the 1921 Census increased to 1,531,280 and the population of Melbourne and suburbs to 782,979. The proportion of persons living in the Metropolitan Area increased from 44.77 per cent at the time of the 1911 Census to 51.13 per cent at the 1921 Census. The number of dwellings enumerated in the State was 346,284, of which 14,994 were unoccupied.

#### *Census of 1933*

The 1933 Census was taken under the authority of the *Census and Statistics Act 1905-1930*. In accordance with the provisions of this Act

the Census should have been taken in 1931. However, owing to economy in government expenditure in the depression years, it was decided to defer the Census, which was subsequently held on 30 June 1933.

The previous Censuses were held near the end of March or beginning of April, but in 1933 and subsequently, the Census day has been at or near 30 June.

At the 1933 Census the householders schedule was a combination of the dwelling and personal slips used in the previous Census; particulars concerning each inmate of the dwelling had to be inserted in columns under the name of each individual on the schedule. The number of questions was eighteen, together with six sub-headings, and also six questions concerning the description of the dwelling. Additional questions included in the 1933 schedule related to orphanhood, war service, industry, and income, while questions relating to children born to marriage, birthplace of parents, and occupation of employer were omitted and a few other questions were modified. The personal slip was still used, though for a different purpose—it was issued to individuals who objected to having their particulars entered on the householders schedule and was required mainly for boarders, servants, persons in hotels, institutions, etc. In Victoria, an additional form was distributed at the request of the Government Statist. This related to the number of poultry and livestock on the premises.

For the 1933 Census the organisation of the Commonwealth Electoral Department was again used. The Census divisions were thus identical with the electoral divisions, and Census subdivisions were either divided or grouped on the basis of electoral subdivisions. The Census subdivisions were apportioned into collectors' districts suitable for the most economic distribution and collection of the Census schedules. The Census staff in Victoria in 1933 comprised one deputy supervisor, twenty enumerators, 278 sub-enumerators, and 2,653 collectors. Automatic machines were again used for the 1933 Census, processing and tabulation of the Census results being carried out in Canberra.

The population of Victoria increased between 1921 and 1933 by 288,981 persons, and reached 1,820,261 at 30 June 1933. The number of Victorians living in the Metropolitan Area increased further to 991,934 and comprised 54.49 per cent of the population of the State. The number of occupied dwellings in Victoria at the Census was 432,872, and unoccupied 18,763.

#### *Census of 1947*

The fourth Census undertaken by the Commonwealth Bureau of Census and Statistics was taken on 30 June 1947 under the provisions of the *Census and Statistics Act* 1905–1946. The Census should have been taken in 1941 but because of war conditions it was postponed until 1947.

In 1947 the number of questions relating to each person was thirteen, together with nine sub-headings, and there were nine questions with twelve sub-headings relating to each dwelling. The personal questions asked in 1933 regarding orphanhood, blindness, and deaf-mutism, foreign language, place of schooling, war service, and income were omitted in 1947, while the question relating to existing marriage was expanded to again include particulars of the number of children born to that marriage. The questions regarding occupation were re-arranged to assist householders filling in the



schedule by providing separate subsections for persons not engaged in industry, those usually engaged in industry but out of employment at the time of the Census, and those engaged in industry at the time of the Census. There were additional questions about the dwelling relating to the material of the roof, gas, electricity and water supply, toilet, washing and cooking facilities, and date of building.

In 1947 the help of the Commonwealth Electoral Branch was enlisted again. The organisation was similar to the 1933 Census with the exception that while in 1933 the Commonwealth Electoral Officer in each State was made directly responsible to the Commonwealth Statistician, the Chief Electoral Officer for the Commonwealth was appointed as Chief Field Supervisor of Census and became responsible for the organisation of the field staff and the distribution and collection of the Census material. The field staff in Victoria consisted of a deputy field supervisor, twenty enumerators, 269 sub-enumerators, and 2,951 collectors. The preparation of the maps and plans required for the field staff was carried out by the Australian Survey Corps of the Department of the Army in Melbourne. The compilation took about nine months, the number of maps prepared was about 3,700 and the number of diagrams about 12,000. As in the previous two Censuses, Hollerith machines were employed for the processing of the Census results. The number of columns on the cards had been increased from forty-five to eighty with a resulting increase in potential space for additional codes. As office accommodation for the large number of temporary employees required for the Census tabulating staff could not be provided in Canberra, suitable office accommodation was secured in Sydney and the Census Office was established there in June 1947.

The population of Victoria reached 2,054,701. The population of the Melbourne Metropolitan Area now comprised 59.69 per cent of the total population of Victoria and stood, at the Census date, at 1,226,409 persons. The Census results showed the results of migration and of the long-term drift of the population from the countryside into urban centres and the metropolitan area. The total number of occupied dwellings in Victoria enumerated at the 1947 Census was 527,406 ; unoccupied dwellings numbered 11,412.

#### *Census of 1954*

The fifth Australian Census should have taken place in 1951 but this year was considered too near in time to the Census of 1947. It was therefore decided to take the fifth Census in 1954 as being the mid-point of the period 1947 to 1961, since it was planned that the sixth Census would be taken in 1961 in conformity with the general practice of holding Censuses in the first year of each decade.

For the 1954 Census a composite householders schedule of the same size as schedules used in 1933 and 1947 was again used. However, a horizontal arrangement of questions replaced the vertical arrangement in order to facilitate subsequent processing of the data. The question relating to dependent children was omitted and an additional question concerning place of work was added to supplement other particulars on occupation and industry. Some questions regarding dwellings were omitted, namely, persons sleeping out, water service, toilet, washing and cooking facilities, and material of roof. Additional questions relating to nature of tenancy (tenants paying rental to

a government authority were asked to write "Tenant (G)", possession of kitchen and bathroom, and whether or not the dwelling was on a rural holding, were added to the schedule.

The services of the electoral officers were used again in the 1954 Census and the divisions and subdivisions for Commonwealth electoral purposes provided the basic geographical subdivisions of the State used for Census purposes. At the Censuses of 1921, 1933, and 1947, Census divisions and subdivisions coincided exactly with electoral divisions and subdivisions (except for some degree of further subdivision or grouping where convenient). The electoral subdivisions (and collectors' districts within them) which existed in 1947 were retained for the 1954 Census (ignoring intercensal changes in electoral boundaries) and grouped into Census divisions which conformed as closely as possible with 1954 electoral division boundaries. The number of Census divisions in Victoria at the 1954 Census was thirty-three, the number of Census subdivisions 258, and the number of collectors' districts 3,680.

Hollerith machines were again used in processing the Census results. A notable development in the use of machines in the 1954 Census was the introduction of "mark sensing". The information contained in completed schedules was coded and the codes marked with a graphite pencil direct on to machine cards using the "cages" provided on the card for the purpose. The cards were then passed through a machine which electrically sensed the graphite marks and converted them into punched holes on the same cards. These were then ready for normal machine processing. For tabulation purposes four combination machines, Census Trios, especially designed for Census work, were used. These machines greatly increased the automatic nature of the machine card processing. Each Trio consisted of a special sorting machine with facilities for counting, sorting, and checking cards; a tabulating unit which accumulated totals as required and produced a printed record of them; and a summary punch which produced punched total cards containing data corresponding to the totals printed. Four high speed sorters were also used for additional tabulation work.

The enumerated population of Victoria at 30 June 1954 was 2,452,341, which was 27 per cent of the Australian population. The increase of about 400,000 between the 1947 and the 1954 Censuses was due in almost equal parts to migration intake and natural increase. The population of Melbourne and suburbs increased to 1,524,111 and constituted 62.15 per cent of the Victorian population. The increase in population in Victoria was also reflected in a corresponding increase in dwellings. The total number of dwellings recorded at the 1954 Census was 688,181, of which 27,491 were unoccupied.

### *Census of 1961*

The sixth Commonwealth Census was taken in 1961. It reverted to the original pattern of early Censuses envisaged by the statisticians, namely, to hold the Census in the first year of every decade. A householders schedule similar to the 1954 schedule was used again in the 1961 Census; the only additional questions asked related to qualifications used in present occupation, the State or Territory of usual residence, and whether the household had a television set.

For the organisation and administration of the Census activities, the States were divided, as in previous Censuses, into Census divisions, subdivisions and collectors' districts. Census subdivisions and divisions were formed in such a way that they approximated closely to Federal electoral boundaries operative in 1961. The comparability of the data for collectors' districts between the Censuses was to be preserved. Although some of the collectors' districts had to be subdivided because of changes in local government boundaries, increases in density of population, etc., the new collectors' districts could usually be re-grouped to maintain comparability. Maps for the 1961 Census were prepared by the Census Division of the Bureau. Basic material for maps and aerial photographs was obtained from the States, semi-government authorities, and private map publishers. The number of Census divisions in Victoria in the 1961 Census was thirty-three; there were 298 Census subdivisions and 4,290 collectors' districts. The field staff engaged totalled 4,438, of whom 4,087 were collectors.

A comprehensive scheme of publicity, aimed at reaching all sections of the community and designed to assist the distribution, completion, and collection of householders schedules, was planned by the News and Information Bureau of the Department of the Interior and the Chief Field Supervisor of Census. The programme commenced in April 1961 and increased in intensity towards Census day. There was a subsequent short follow-up campaign. For the first time a short official film was also prepared for use in theatres and on television. As an adjunct to publicity in foreign language newspapers, copies of a statement in seven languages (English, German, Italian, Maltese, Polish, Yugoslav, and Greek) which was prepared for use by Census collectors who might experience language difficulties with migrants, were distributed for display in appropriate clubs and other meeting places.

The methods of processing the collected data in 1961 were similar to those used in 1954. The original coding, sensing, and punching of the cards in 1961 was done in Sydney, while the sorting and tabulating of the punched cards was carried out in the Census Office in Canberra. The 1961 Census was the last Census to use machine tabulation for the processing of the collected data.

The population of Victoria at the 1961 Census stood at 2,930,113. During the preceding seven years it had increased by 477,772, an increase of 2.5 per cent per annum. The population of the Melbourne Metropolitan Area increased to 1,911,895, thus comprising 65.2 per cent of the total State population. The number of dwellings enumerated was 837,918, of which 47,389 were unoccupied.

#### *Census of 1966*

The seventh Australian population Census was held only five years after the previous Census had been taken in 1961. Originally, it had been intended to take Censuses at ten year intervals, but because of the general demand for better quality and more frequent statistics in the field of demography by both public and private interests, it was decided to hold a Census in 1966, five years after the preceding one.

Additional questions asked in the 1966 Census related to the level of schooling completed, the usual hours worked per week by persons having jobs, and the number of motor vehicles stationed at the dwelling.



Questions relating to duration and cause of unemployment and State or Territory of usual residence were omitted. Many other questions were modified or enlarged. Of thirty-three questions asked on the schedule, twenty-four related to personal particulars and nine to particulars of dwellings. The definition of the labour force was modified to conform with the recommendations of the Eighth International Conference of Labour Statisticians, 1954. Commuting patterns of the work force were derived from some questions.

One of the significant features of the 1966 Census was the new method used in the delimitation of urban boundaries. The Twenty-seventh Conference of Statisticians of Australia in August 1965 decided that in delimiting urban centres, certain uniform criteria (e.g., population density, dwelling density, and land use) should be applied throughout Australia. A detailed description of the criteria applied is contained in the Census publications. Around each principal urban centre with a population of 75,000 or more two boundaries were drawn. The outer boundary circumscribed the area which was expected to be in close economic and social contact with the principal urban area for the next two or three decades. The inner boundary delimited the principal urban area. In Victoria two principal urban centres were identified. These were the Melbourne Metropolitan Area (population 2,110,168) within the Melbourne Statistical Division (2,230,580), and Urban Geelong (105,059) within the Geelong Statistical District (111,364).

The population of Victoria at 30 June 1966 was 3,219,526 ; occupied dwellings numbered 888,984 and unoccupied dwellings 64,757.

#### *Census of 1971*

Planning for the 1971 Census began while the release of results of the 1966 Census was still at a relatively early stage. In order to review thoroughly the content of the Census schedule and of Census tabulations, major users of Census statistics were invited to join two special committees of Census users. These committees met several times and were kept informed of the progress of the Census.

From the views expressed by members of these committees it became apparent that there were many topics for which reliable statistics were lacking and for which information could most appropriately be collected at a Census. Not all of the topics suggested could be included on the schedule without imposing an unreasonable burden on the householder, thus affecting the overall quality of the response to the Census. However, as the final list of questions would be longer than in 1966, ways of making the schedule easier to complete were investigated. A booklet schedule was designed to accommodate tick-box style questions ; it was tested in Sydney in July 1969 and again, with revisions, in Melbourne in April 1970, with satisfactory results.

New methods for recruitment, training, and controlling field workers were also adopted for the 1971 Census after testing in Melbourne. The processing of the Census extended over a period of a year during which time nearly a thousand clerical assistants worked on the transcription of information from the Census schedules to anonymous computer tape records.

Preliminary results of the 1971 Census showed the population of Victoria to be 3,496,161. The population of the Melbourne Statistical Division was 2,497,993 of which Urban Melbourne comprised 2,388,941. The term

“metropolitan” was dropped for the 1971 Census and a new category “major urban” introduced, covering all urban centres with 100,000 or more inhabitants. Urban Geelong had 115,047 inhabitants in June 1971.

## ABORIGINALS

*Aboriginal prehistory*

Radiocarbon 14 age estimations have established that man colonised Australia over 30,000 years ago, and there are hints of even greater antiquity. To date, less archaeological research has been carried out in Victoria than in most other States, but there are indications of comparable antiquity for settlement during the later stages of the Pleistocene ice age, when Victoria and Tasmania were connected by land. Bass Strait was formed by a rising sea level about 10,000 years ago. Prehistorians therefore infer that the Tasmanian Aborigines moved through Victoria before this submergence, and that the material possessions of the early Tasmanians must have resembled those current in Victoria at that time. It is also relevant that stone implements excavated on Pleistocene age sites in Australia, including Keilor near Melbourne, possess the same characteristics as stone tools excavated in north-western Tasmania and dated older than 8,000 years. The most characteristic tools are termed scrapers. These are varieties of trimmed flakes which have been struck from cores ; frequently the cores themselves have also been utilised as tools. Their uses are conjectural, although likely functions were chopping, pounding, cutting, and wood shaving.

Ancient human fossils have been recovered in Victoria. The Cohuna cranium and the nearby Kow Swamp skeletons are under detailed investigation. They possess rugged "archaic" features, exhibiting traits which are reminiscent of Middle Pleistocene Javanese fossils. On the other hand, the two crania from adjacent soil pits at Keilor (termed Keilor and Green Gully) are in marked contrast, with their "modern" structural pattern consisting of a well rounded frontal area, moderate palate, and well filled vault. These also have Indonesian parallels in the presumed Late Pleistocene Wadjak remains in Java. Keilor may be older than 9,000 years, while the Green Gully burial occurred over 6,000 years ago. As the Kow Swamp remains are around 10,000 years of age, it suggests either the possible co-existence of two groups, or variants within a continuum. However, neither is considered to belong to a Negritoid race, and this once popular concept, together with the theory that Tasmanians were racially distinct from the mainlanders, has been abandoned by most authorities. Pleistocene Victorian prehistory must be visualised, therefore, as part of a continuum stretching from Tasmania to Indonesia. Future analysis of the numerous Kow Swamp burials should contribute considerably to an understanding of Aboriginal origins.

Recent fieldwork at Keilor has demonstrated that the river flats were frequented by hunters almost 20,000 years ago. Giant marsupials also lived there about 30,000 years ago, and although claims have been made that associated pebbles were trimmed artificially at this site, the contemporaneity of man with the extinct fauna remains to be proven conclusively. It is known that similar marsupials inhabited the Western District, perhaps as recently as 15,000 years ago. There are sites near Terang and Lake Colongulac where the association of extinct fauna and Aboriginal implements seems possible, but these discoveries were made before the development of modern archaeological techniques. In any case, fieldwork in other States has demonstrated that human occupation of Australia is contemporary with the giant marsupial fauna. It has been suggested that man, both directly as hunter and indirectly as fire-making agent, caused its extinction. It is also probable that prehistoric man effected many other changes in the landscape through intensive burning.

There can be little doubt that the Aboriginals witnessed volcanic eruptions on the basalt plains, as several eruptions post-dated their arrival. However, legends collected during the nineteenth century and cited as descriptions of these eruptions are better explained as wishful thinking on the part of eager European questioners.

#### *Prehistoric culture*

Excavations, so far limited to south-eastern Australia, including Keilor, Cape Otway, and Wilsons Promontory in Victoria, indicate that Aboriginal stone craftsmanship over that region was more highly skilled and diversified 1,000 to 5,000 years ago than at the time of European contact. By immediate pre-settlement times the production of several specialised implement types had ceased. These included delicately trimmed blades termed micro-liths. This is a reminder that although the Aboriginals are known as a Stone Age people, stone utilisation played a relatively unimportant role in Victorian economy and technology. The explanation is probably that the Aboriginals had adjusted to Victorian conditions which furnished them with a variety of plant and animal raw materials whose archaeological survival is uncommon.

Nineteenth century accounts of Aboriginal society, studied in conjunction with museum collections of ethnographic specimens, afford rich testimony to the crafts of the Victorian Aboriginal, particularly in basketry, skin dressing, and wood working. Some of the finest wooden objects were engraved with tools which had been made from the lower jaws of possums or wallabies, and others by miniature stone chisels, with ground working edges. Use of the tula-adze, a chisel common elsewhere in Australia for similar tasks, is not recorded within Victoria, and its characteristic stone flake has not been found. Some Victorian weapons decorated with intricate geometric designs are among the most attractive specimens of Aboriginal art. Photographs showing some of these artefacts are shown in the illustrations following page 32.

Skin cloak preparation was a feature of daily life. Usually possum skins were preferred, and the task of cleaning and pegging them out was a laborious one. Skins were sewn together with sinews, using bone awls, and were rendered both pliable and decorative with incised geometric markings on the inside of the skin. One of the few cloaks which has survived



measures 7 ft 6 inches by over 5 ft and contains eighty-one possum pelts.

It has not been sufficiently appreciated how aesthetic a sense pervaded Victorian life. Weapons, utensils, clothing, and sometimes even the interior walls of bark shelters were decorated. Each bark sheet was blackened over a fire, and simple drawings were scratched over this surface. Unfortunately, only two examples apparently survive. Their style resembles some of the motifs of the undated painted rocks, which are, however, uncommon in Victoria. About twenty-five painted shelters are known, almost all of them in the Grampians and the Victoria Range; only one engraved figure has been recorded.

A few ceremonial sites survive, demarcated by stone arrangements, while myths are associated with many natural features. Probably the best known antiquity in Victoria, however, is the extensive diabase quarry on the slopes of Mt William, north-east of Lancefield. It was still in operation when Melbourne was established, and the axes were widely in demand. Less permanent antiquities include scattered "canoe trees". These are eucalypts, whose scarred trunks still preserve the outline of bark removed for the simple canoes used on Victorian waterways.

Unfortunately, in the nineteenth century before the development of anthropological teaching, observers seldom understood the closely knit social and ceremonial structure of tribal society. Most accounts are superficial or anecdotal and concentrate on those matters of greatest interest to the writer. Tribal behaviour was interpreted in terms of European morality and political prejudices. It is not surprising that the Aborigines were claimed by most commentators to lack all religious concepts, or that "chiefs" were thought, erroneously, to rule tribes after the fashion of American Indians. It is possible, however, that individual leaders held more power than in other regions of the continent. Tribal organisation in Victoria can be reconstructed only conjecturally, which is of limited value. The total number of tribes is disputed; possibly there were about thirty. Several distinct languages were claimed, but probably most regional differences were not great. Recent opinion assumes a common linguistic origin for Victoria, but allows two major sub-groups within it.

#### *Population in 1835*

All population estimates are conjectural, as the population was ravaged by smallpox before European settlement. When the first official count was taken by the Board for the Protection of the Aborigines in 1877, only 774 natives of pure descent survived. Estimates made by early settlers ranged between 3,000 and 7,500 for the State, that is, between 12 and 30 square miles for each Aboriginal. Fifteen thousand may be postulated as the extreme limit, because this was a hunting-fishing-gathering society, where, despite regional bounties, the land only fed a population adapted for survival during the leanest season.

#### *Batman's Treaty*

On 6 June 1835 some natives of Port Phillip "ceded" 600,000 acres to John Batman and the Port Phillip Association. Unfortunately for Batman, the treaty was repudiated by the British Government which denied the Aboriginal title to the land. Indeed, if the eight "chiefs" who affixed their mark to the document had comprehended what it meant, they would

have agreed that there was such an intimate spiritual bond between the tribal land and its people that they could not have sold this birthright. Judging from the official reaction which this treaty provoked, it is best considered as a calculated bluff by the Association to force the issue on permission to settle in areas remote from Sydney's control. Batman's policy deserves credit as a rare, although expedient, example of conciliatory race relations and a token recognition of compensation. Yet an absence of anthropological understanding is evident in this treaty, which was probably modelled on Penn's agreement with American Indians, and it expressed sentiments more appropriate to South Seas trading than to Aboriginal society. Whatever the merits of Association welfare, the economic motive of pastoral expansion dominated.

*Port Phillip : 1835 to 1838*

In Britain, the post-Reform Bill Parliament, motivated by genuine humanitarianism, appointed a select committee in 1836 to report on native populations in colonial possessions. Governors Bourke and Gipps to some extent reflected this principle in their native policies. Gipps had Europeans executed for murdering Aborigines at Myall Creek in New South Wales in 1838, and Bourke instructed the Resident Police Magistrate, Lonsdale, to be humane to the Port Phillip Aborigines. Lonsdale arrived with 500 red night caps, 200 check suits, and 250 blankets for them. Bourke visited Melbourne in 1837, commended Lonsdale's work, and anticipated mutually beneficial race relations.

However, worthy intentions and uninformed enthusiasm proved insufficient. George Langhorne, who was sponsored by the Government and the Port Phillip Association from 1836, was unsuccessful in his missionary work, which was centred chiefly on a school near the present Royal Botanic Gardens, and death among the Aborigines, chiefly from disease and liquor, ended Lonsdale's attempt to develop a native police force. Armed conflicts were minimal in the Melbourne area, yet within four years the population of the Yarra tribe fell from perhaps 350 to 200, with disease a chief scourge. In the spreading pastoral areas there were signs of European brutality owing to isolation, privation, fear, and Aboriginal sheep spearing.

*The Protectorate : 1838 to 1850*

Victoria was the only colony in which the new British concept of protection for native people was implemented. In 1838 an official communication informed Gipps that a Chief Protector and four assistants had been appointed for the Port Phillip District: G.A. Robinson, who had been working for Tasmanian Aborigines, was in charge at an annual salary of £500; his assistants, each on a salary of £250, were coming from England. Robinson was to be based in Melbourne and the others were to live with the tribes, learn the language, induce them to cease nomadism, instruct them in agricultural and building pursuits, distribute food and clothing, collect data on their customs, preach Christian doctrine, and instil moral behaviour. In 1839 the assistants were based, respectively, in the Goulburn, Loddon, Geelong, and Mornington Peninsula areas. It is significant that, at this time, nine of the twenty salaried officers in the Port Phillip administration performed functions partly connected with Aboriginal welfare. Within four years £25,000 had been expended, and when the

scheme was abandoned in 1850 the total cost had been £42,200, an extraordinary sum for the decade of the Irish famine.

Although the Protectorate was an enlightened concept ameliorating the Aborigines' hardship to some extent, it was chiefly a failure. Robinson was a poor administrator and even worse at maintaining good relations with his staff and the Government; two of the assistants were incompetent; pastoralists were antagonistic, as they refused to co-operate with protectors who demanded that land be reserved from pastoral occupation; and the Aborigines continued to die through disease and drink. Too much was spent on staff salaries and not enough on food and health services. It is doubtful whether anyone could have succeeded against European antipathy. The decision to abandon the Protectorate was recommended by a committee of the New South Wales Legislative Council on the basis of written denunciations made by forty-five justices of the peace, almost all of whom were squatters, and none of whom had visited Victorian settlements; no informed witnesses were questioned. It was not recognised that by destroying hunting lands the Europeans had destroyed the Aborigines' spiritual past, their present, and their expectations for the future.

*Guardian Thomas : 1850 to 1861*

William Thomas was the dedicated champion of Victorian Aborigines from 1839 until his death in 1867. His diaries describe the arduous life he endured living with them, and indicate his personal friendship for many of them. Robinson consistently ignored his assistant's advice or requests, but after Separation, Thomas became Guardian of Aborigines and remained an influential consultant on government policy. During his time a modicum of protectorate policy was retained, even though he was the sole full-time official. During the decade of gold discoveries, annual expenditure on Victorian Aborigines fluctuated between £1,000 and £2,000, of which Thomas received a salary of £600. From the inception of responsible government in 1855 the same electoral laws applied to Aborigines and non-Aborigines.

Public opinion was to some extent affected by the developing missionary activity during the 1850s, and in 1858 the Victorian Parliament appointed a select committee to inquire about Aboriginal welfare. Its recommendations, a modified version of Thomas' advice, resulted in the appointment, on 18 June 1860, of the first public body in Australia to deal specifically with Aboriginal affairs and particularly with protection.

*Central Board for the Protection of Aborigines : 1861 to 1885*

About 2,000 Aborigines now survived in the Colony, but the seven Board members, of whom four were active in mission affairs and three were Members of Parliament, began working energetically. (They met twenty-seven times during 1862.) They intended spending £11,500 during their first year, but government economy limited them to £6,000. Working closely with Anglican, Presbyterian, and Moravian mission authorities, the Board adapted Thomas' scheme by establishing native reservations and supply depots in various parts of the Colony. By 1874, 24,692 acres had been reserved in thirteen localities, and seventeen depots, supervised by honorary correspondents, distributed

stores. Government stations at Lakes Tyers, Wellington (Ramahyuck), Hindmarsh (Ebenezer), and Condah, and at Framlingham and Healesville (Coranderrk), were supervised by managers or missionaries, and had resident populations totalling about 500; several times annual expenditure exceeded £10,000. During this time R. Brough Smyth, Secretary to the Board until 1875, assembled the data for *The Aborigines of Victoria* (1878).

The Board received statutory authority by the *Aborigines Protection Act* 1869, the definition of "Aboriginal" including all part-Aboriginals who habitually associated and lived with Aboriginals. It prohibited the sale of spirituous liquor, while Regulations under this Act in 1871 gave the Board wide powers over Aboriginal domicile, child custody, and contracts.

The guiding principles of the Board and the legislation were self-support and education. Some believed that the segregation of Aboriginals in reserves would isolate them from the evils of European society. Food and clothing were available to the aged and infirm at stations and depots, but the self-righteous attempts to inculcate habits of industry required the able-bodied to work hard for little return. Crops of hops, arrowroot, and vegetables were produced with some success.

High Aboriginal mortality rates continued, however, and the count of 1877 revealed an Aboriginal population of 774 full blood and 293 mixed blood persons. Concentration in villages on reserves encouraged pulmonary diseases, and exile from tribal territories may have increased psychological problems. Unsuitability of supplies also constituted a factor in the death rate. While European clothing of Victorian proportions was available, diet was deficient in protein. Quantities of flour, oatmeal, rice, sugar, tea, and tobacco were consumed, and 10,508 lb of soap was dispensed in 1877. By 1876 the significant mortality, together with public allegations of mismanagement on stations, resulted in the appointment of a Royal Commission. A Board of Inquiry into Coranderrk station followed in 1882. A related factor was that the decline in numbers was accompanied by mounting administrative costs. In 1885, £11,342 was spent, 81 per cent of it on the 556 station residents. It was widely noted that part-Aboriginals constituted a growing proportion of those on stations, and official reports indicated that drastic action was needed to curb expenditure.

#### *Aboriginal cricketers : 1866 to 1868*

Perhaps the most colourful episode in the story of Victoria's detribalised Aboriginals was their entry into the field of international cricket. In 1866 interested pastoralists in the Edenhope area recruited a number of Aboriginals. On Boxing Day 1866, before a crowd of 10,000, they made an undistinguished entry on the Melbourne Cricket Ground, but the following week they defeated the Corio team, and returned to win at Melbourne.

The team sailed for England in February 1868, a decade before the first representative Australian Eleven. They played forty-seven matches in England, both winning and losing fourteen. Johnny Mullagh was the outstanding player. In forty-five matches he scored 1,698 runs, took 257 wickets, and even acted as wicketkeeper.

*Self-help and extinction : 1885 to 1901*

The 1882 Board of Inquiry extolled the European values of self-reliance and virtue and, with the *Aborigines Protection Act* 1886, all part-Aboriginals were expected to conform to this pattern by leaving the reserves, fending for themselves, and integrating with the European community. Its effect was the exclusion of such persons under 34 years from the definition of "Aboriginal" and without a special Board permit their residence on any reserve was prohibited. Through this legal device Victoria's station population was virtually halved. By 1893, 227 of the 233 "legally white" residents on stations had been excluded and expenditure dropped to £6,057; in 1900 Aboriginal welfare cost under £5,000. It was intended that the ageing, full-blood Aboriginals should work harder to cut station expenses, but, in practice, no great pressure was exerted, as the death rate seemed likely to solve the problem. The Central Board observed in 1902 that its 388 wards were steadily decreasing in number, as were managerial expenses, and considered that, as the Aboriginal would probably become extinct within twenty years, those remaining should be treated generously. Fewer Aboriginals required fewer stations and depots. Between 1887 and 1902, 12,543 acres of reserve land were returned to the Crown and most supply depots were closed.

*1910 to 1957*

By 1910 it was evident that it was impossible and unjust to exclude part-Aboriginals. The policy was too harsh and the prejudice of citizens too great to allow for their absorption into the community, and the Board constantly received petitions from half-castes with no legal right to support. The definition of "Aboriginal" was therefore extended by the *Aborigines Act* 1910, the Chief Secretary claiming that maintenance costs would not substantially increase. Indeed, total annual expenditure never exceeded £4,500 between 1903 and 1921. In 1912 the Aboriginals of mixed ancestry receiving support from the Board outnumbered the 133 full bloods. A decade passed before the Board issued another report. In 1917 the Board decided to concentrate all activities on the 4,000 acre reserve at Lake Tyers, established as an Anglican mission in 1862 with State financial assistance and taken over by the State in 1908. Other stations were closed, although some Aboriginals continued to live on in these areas. Additional cottages were erected at Lake Tyers and the transfer was completed by 1926, by which time the Aboriginal population maintained or assisted by the Board numbered eighty-eight full bloods and 303 part-Aboriginals. The consolidating Acts of 1915 and 1928 did not alter the provisions of the *Aborigines Act* 1910.

*Aborigines Welfare Board : 1957*

In 1957 the McLean Report on the *Aborigines Act* and its Regulations suggested major policy changes, involving a reversion to the concept of assimilation. The recommendations were implemented in the *Aborigines Act* 1957 and consolidated in 1958. The Central Board for the Protection of Aborigines became the Aborigines Welfare Board and this change of emphasis was deliberate. Under the Chairmanship of the Chief Secretary, Board membership was increased to include the

Under Secretary, members nominated by the Ministers of Education, Housing, and Health, and five others, two of whom were to be Aborigines and one an expert in anthropology or sociology. The Board was to encourage the assimilation of full-blooded Aborigines as well as those of Aboriginal descent while promoting their moral, intellectual, and physical welfare. Under the *Aborigines (Houses) Act* 1959 the Board could contract with the Housing Commission to build houses for Aborigines, but in 1965 the Aborigines (Amendment) Act modified the Board membership, and made the Minister of Housing responsible.

In 1960 Aborigines within the meaning of the Act numbered about 2,260, but few of them were full bloods. A Superintendent of Aborigines' Welfare was appointed in 1958, and during 1958–59 expenditure by the Board totalled £33,587; during 1960–61 the net expenditure on Lake Tyers alone was £27,774. Attention was directed to Aboriginal welfare throughout the State and was not confined to Lake Tyers.

#### *Present position*

The existing legislation was repealed by the *Aboriginal Affairs Act* 1967, which came into effect from January 1968. The Act established a Ministry of Aboriginal Affairs, having a Minister, a Director, and an Aboriginal Affairs Advisory Council, at least three members of which are Aborigines. An important phase in Victorian Aboriginal affairs opened with the passage of the *Aboriginal Lands Act* 1970, which became effective in 1971. This Act transferred the ownership of two Aboriginal reserves to those Aborigines whose domicile entitled their names to be entered on the registers of residents. These persons constitute bodies corporate, respectively known as the Lake Tyers Aboriginal Trust and the Framlingham Aboriginal Trust. Each Trust has an elected committee of management of seven.

Over 5,000 persons of Aboriginal descent live in Victoria, and the number is increasing. Legally all Aborigines are citizens and subject to no civil disabilities or discrimination; it remains a community responsibility to ensure that this is a reality.

#### *Conclusion*

Much has been written about the Victorian Aborigines and their way of life since the early nineteenth century, and the principal works have included R. Brough Smyth's *The Aborigines of Victoria* (1878), A. W. Howitt's *The native tribes of south-east Australia* (1904), and E. J. B. Foxcroft's *Australian native policy* (1941); more recent studies are *Cricket walkabout* (1967) and *The prehistory of Australia* (1969) by D. J. Mulvaney, and Peter Corris' *Aborigines and Europeans in western Victoria* (1968).

## IMMIGRATION

*From settlement to the gold rushes*

On 19 November 1834 Edward Henty, the first permanent settler in Victoria, landed at Portland Bay in the Port Phillip District. Many Launceston people had already known about the quality of the country on the northern side of Bass Strait from sealers as well as from the published accounts of the Hume and Hovell expedition in 1824, and the Henty family were to be the fore-runners of a vigorous pastoral expansion from Van Diemen's Land to the mainland shores.

Soon after Major Mitchell's return to Sydney in 1836, with his vivid accounts of the richness and potential of the soil, the first overlanders began to cross from the north. Some British migrants coming to Australia also landed in the Port Phillip District, and by 1840 there were over 10,000 persons in the District. Ten years later the population was approximately 76,000, the greater part of whom were British immigrants. At that time migration to Australia presented many problems. New South Wales had been founded as a convict colony and the cost of the passage, varying from £20 to £60, was prohibitive to the ordinary labourer. The long, arduous journey of approximately four months on the uncomfortable, cramped ships meant that North America was much more attractive, especially as it was easier to return to England. Between 1836 and 1850, 47,197 unassisted persons from Britain arrived at Port Phillip.

However, assisted passages were also available under various schemes. Britain at the time had wide unemployment, whereas New South Wales had a labour shortage. With the cessation of transportation to New South Wales in 1840, the labour problem, already difficult, became worse, and the British Government, partly influenced by the ideas of Edward Gibbon Wakefield, put forward the idea of linking land and immigration. The Ripon Regulations of the early 1830s were the first to suggest that money obtained from the sale of lands could be applied to assist immigration. In 1842 a law passed by the British Parliament apportioned half of Australia's land revenue for encouraging immigration.

Land and Emigration Commissioners were appointed in England to ensure that the persons assisted were suitable for the colonists' needs. They therefore selected only certain classes, namely, farm servants and shepherds, a limited number of artisans chiefly belonging to the building trades, and female domestic servants, practically all of whom were granted free passages. This method probably supplied the greatest number of assisted immigrants, although it is impossible to be certain because figures

available do not differentiate between the various forms of assisted passage. Another assistance scheme was known as the "bounty system". Since some colonists were not satisfied with the type of assisted immigrant selected by the Commissioners, they employed private labour agents in England to recruit for them. On the arrival of approved immigrants, the Government paid the colonist a bounty almost equal to the cost of passage. This method was, however, discontinued after the mid-1840s. Between 1838 and 1850, 28,632 persons were assisted, of whom 14,902 were males and 13,730 were females. The almost equal number of both sexes was an attempt to balance the existing disproportion in the Colony.

*Effects of gold discoveries*

The character of immigration changed during the 1850s. In terms of numbers, the Victorian gold rushes were a landmark in immigration history. The turnover of population was very high; young single men rather than families predominated, with many intending only to stay long enough to make their fortune. At least many thought this way in the beginning. Probably, after a few years in the Colony, a great number of them changed their minds. Whatever their motives, sufficient of the new immigrants remained to help change Victoria from a minor pastoral settlement to one of the most celebrated British colonies, and the population rose from 77,345 persons in March 1851 to 540,322 in April 1861. However, in spite of the great increase in population, labour requirements were not satisfied as most newcomers went digging for gold. Altogether 486,763 unassisted persons came to Victoria between 1851 and 1859; assisted migrants during this period numbered 86,227.

Overall, the gold rush helped develop Victoria as the most populated colony in Australia. In 1850 Victoria had a population of 76,162 persons and New South Wales had 189,341. Ten years later the figures were 538,234 and 348,546, respectively. Population figures for the six Australian Colonies in 1850 and 1860 are shown below:

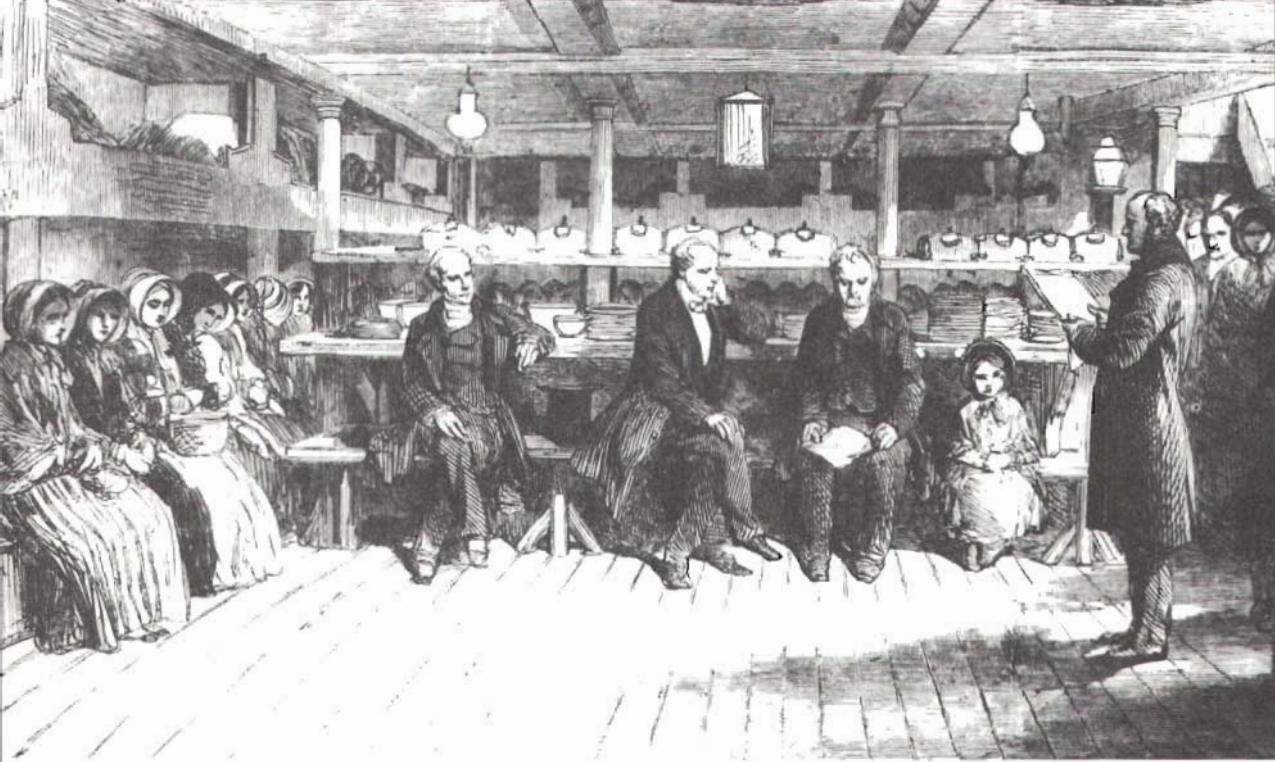
Year	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.
1850	189,341	<b>76,162</b>	n.a.	63,700	5,886	68,870
1860	348,546	<b>538,234</b>	28,056	125,582	15,346	89,821

n.a.: Not available.

The granting of responsible government in 1855 caused significant changes in the system of assisted migration. From this time, half the land revenue no longer went automatically into an immigration fund. Instead, the whole proceeds went into general revenue, and the immigration fund depended on Parliamentary grants. These fluctuated according to economic conditions. Also during the 1850s the remittance system was introduced. A portion of the passage money was required to be remitted by an employer or friend and the Government bore the rest of the expense. The only stipulation was that immigrants obtained in this way were to be persons of the same classes as those eligible for selection by the Emigration Commissioners.

A few philanthropic organisations like the Society for the Promotion of Female Emigration, and the Highland and Island Emigration Society





Migrants *en route* to Melbourne on the *Madagascar*, 1853.  
*La Trobe Collection, State Library of Victoria*

Sealers and their hut at Western Port, 1826.  
*La Trobe Collection, State Library of Victoria*





Aboriginal bark canoe on the Yarra River near Healesville, c. 1879.

*Dr. F. B. Smith*

Aboriginals in possum skin cloaks at Coranderrk (Healesville), c. 1879.

*Dr. F. B. Smith*





a



b



c



d



e

Aboriginal artefacts : a. Bark drawing, 84cm by 60cm, from the Lake Tyrrell area. The design is scratched on smoked bark and includes traditional motifs and European features. Probably collected c. 1860, it is the earliest known surviving Australian bark. b. Wooden parrying shield with geometric design, approximately 1m long. c. Ground edge chisel, 19.5cm long. d. Curved fighting club, a standard weapon used in combat together with the parrying shield. e. Possum jaw engraving tool, 17cm long.

a. D. A. Casey; b-e. National Museum of Victoria



Portland showing the ship *Francis Bently*, 1858, by T. Robertson  
T. J. Fraby Collection, State Library of Victoria

also helped supply immigrants to Victoria at this time. Perhaps the best known was Caroline Chisholm's Family Colonisation Loan Society. She tried to exclude young men whose only purpose was to go to the diggings, and to choose as many family groups and young girls as possible. Immigrants were required to advance two thirds of their passage money, and the Society advanced the rest as a loan, repayable when the settler was established in the Colony.

Gold was not the only factor which influenced the great change in the character of immigration into Victoria after 1852. While gold generated the growth of shipping lines on the Australian run, ship-builders and owners were providing swifter vessels, notably the clipper, which facilitated migration.

#### *Immigration restrictions*

Immigration into Victoria until the 1850s was predominantly British, and the first immigration restriction Act was framed against Europeans. This was the *Convict Prevention Act* 1852, which debarred ticket-of-leave holders from entering the Colony, and required immigrants to produce evidence of their absolute freedom, failing which they were to be treated as convicts and placed under arrest. The measure was introduced principally because of the fear that the goldfields would be overrun by criminals.

However, during the 1850s non-British immigrants began to arrive in substantial numbers, with Chinese and Germans being the most numerically significant, in that order. Future immigration restriction Acts applied mainly to the Chinese. They had first begun to arrive in Victoria in 1853 and at the Census of 1854, 2,000 were enumerated. In 1855 an Act was passed limiting the number of Chinese males a ship might bring to Victoria to one to every 10 tons, and making it compulsory that the sum of £10 be paid for each immigrant. Despite these stringent provisions which were largely evaded, the Chinese, who landed in the adjacent colonies and came to Victoria overland, had increased to 25,370 by 1857; at the end of 1859 it was estimated that they numbered no less than 42,000. The Census of 1861 showed that many Chinese had left, probably for New South Wales, the number remaining in Victoria being only 24,732. In 1865 the Act which imposed restrictions on Chinese immigration was repealed, but by 1881 the number of Chinese in the Colony had further fallen to 12,128.

The agitation against the Chinese again became intense at the beginning of the 1880s. By that time thousands, who had in earlier years found a living on the goldfields, had drifted into other occupations, and several city industries, notably cabinet making, felt the effects of cheap labour competition. In 1881 the Victorian Parliament, acting in conjunction with that of New South Wales, not only re-imposed the £10 poll tax, but prohibited any ships from bringing in more than one Chinese passenger for every 100 tons of the vessel's burthen. This tended to lower the number of Chinese still further; later the Commonwealth's *Immigration Restriction Act* 1901 also controlled entry. The Chinese population of Victoria decreased from 24,732 in 1861 to 4,179 in 1921.

#### *Rise of the birth rate, 1860 to 1880*

By the end of the 1850s immigration had ceased to be the main factor in population increase, and during the 1860s and 1870s natural increase

(excess of births over deaths) became the major factor as is shown in the following table :

VICTORIA—INCREASE OF POPULATION BY EXCESS OF BIRTHS  
OVER DEATHS, AND THE GAIN OR LOSS BY MIGRATION

Period	Increase during period		
	Natural	Net migration	Total
1860-1864	69,249	7,682	76,931
1865-1869	74,639	24,120	98,759
1870-1874	81,902	7,444	89,346
1875-1879	66,473	-10,824	55,649

During this period, assisted immigration declined steeply, although the last assisted immigrant in this era was admitted in 1882. Indeed, in times of stress, the opposition of wage earners in Australia to the subsidised importation of additional competitors for employment forced most of the colonial governments to abandon assisted immigration. During the latter part of the 1870s persons leaving the Colony exceeded those entering it. Natural increase also declined during the period.

The net immigration figure from Tasmania of 30,994 was almost as high as that from Britain (33,043) for the same period. It was also in this period that New South Wales was making up the leeway in population growth because of its much greater gain through net migration.

*Prosperity and depression*

The 1880s, especially the latter years of the decade, were years of hitherto unequalled prosperity. Land values became highly inflated, wages and prices were very high, and expenditure by many sections of the community tended to be lavish. Moreover, Victoria occupied a more important position as a manufacturing colony than any other part of Australia, and by this time Melbourne had attained a considerable reputation overseas for its rapid economic development.

The net immigration figures for the years 1885 to 1889 were remarkable, especially when compared with those of the 1860s and 1870s. The gain of 85,457 through immigration was even more than that by natural increase (83,704). Prosperity undoubtedly was an important attraction, but the relatively swift and comfortable passages, lasting 40 to 45 days, provided by the ocean steamers of the Peninsular and Oriental, and Orient companies, and the French Messageries Maritimes, probably persuaded many British and European people to emigrate.

In the early 1890s the spell of apparently endless prosperity was broken and a period of commercial depression and financial crisis followed. This was the beginning of an exodus which continued into the first years of the twentieth century. The main causes were the recurring droughts, which affected the prosperity and progress of the agricultural, pastoral, and manufacturing industries; the restriction of credit as a result of loss of confidence, and the stoppage of large public works; and the discovery of gold in Western Australia. As Victoria had quite a large gold mining

population and since economic conditions were unfavourable, it is not difficult to understand why, in the 1890s and early 1900s, there was a substantial net emigration to Western Australia and departures to South Africa exceeded arrivals by some 10,000.

*From Federation to 1920*

Although the Federal Parliament was given power under the Constitution to deal with all matters concerning immigration, it was content at first to confine itself to measures of a negative kind, for example, passing the *Immigration Restriction Act* 1901. It was not until 1920 that the Commonwealth began to take a centralised approach, as opposed to the various individual policies of the States, to the problem of immigration. When assisted immigration was revived in Victoria in 1907 it was reproduced in much the same manner as it had been practised during the gold rushes. The emphasis was still on particular classes of persons who were especially needed, such as farm labourers, domestic servants, and workmen in certain trades. Those who would be prepared to occupy and develop land in the various irrigation districts served by State instrumentalities were also encouraged, and assisted passages were granted to persons who were nominated by friends or relatives in Victoria. Persons from the United States of America as well as Britain could now be nominated. In the years immediately before the First World War immigration to Victoria increased greatly, largely because of these assisted immigrants. Of these, 43,227 arrived between 1911 and 1915, and the net immigration for the period 1910 to 1914 was 64,191. The gain from migration ceased during the First World War.

*Commonwealth initiatives in the 1920s*

After the First World War a major change occurred in the control of immigration. In 1920, by agreement with the States, the Commonwealth took responsibility for recruiting, examining, and transporting assisted immigrants. The States, however, were still responsible for the number of migrants assisted through nominations and requisitions. After the passing of the Empire Settlement Act of 1922, the Commonwealth and Britain agreed to share the expense of providing assisted passages. In carrying out this scheme of imperial migration, stress had been placed on land settlement. Western Australia, New South Wales, and Victoria entered into joint agreements with the Commonwealth and Britain to establish British settlers on the land. The results were disappointing as the cost of these schemes greatly exceeded the estimates, and the numbers fell far short of expectations. As a result of these disappointments, the Commonwealth Government in 1926 created the Development and Migration Commission whose role was to appraise developmental projects seeking to exploit natural resources and encourage immigration. The Commission was disbanded in the early 1930s during the depression.

Nevertheless, immigration to Victoria in the 1920s was quite considerable; only two earlier intercensal decades had shown a greater net immigration (the 1850s and the 1880s). The assistance given by the Commonwealth and British Governments had much to do with the increase. In the nine years 1921 to 1929 Victoria received 65,239 assisted migrants and the net migration for the period was 80,414.

*From 1930 to 1945*

The economic depression of the late 1920s and early 1930s reversed the trend of migration once again, so that for the eight years 1930 to 1937 there was a net emigration from Australia of 10,675. Large scale immigration ceased during the Second World War.

*Post-war immigration*

After the war, the Commonwealth Government entered upon a vigorous immigration programme through the machinery of a separate Department of Immigration which was created in July 1945. Earlier, control of immigration had been carried out by a branch of the Department of the Interior. Among the reasons for this planned large scale immigration were the desire to develop Australia's resources in order to strengthen and diversify the economy, and to increase living standards; the realisation of the need to populate and develop Australia as rapidly as possible for reasons of national security; the desire to help many refugees and others in Europe who were unable or unwilling to return to their former homelands; and the knowledge that the low birth rate during the depression would mean an insufficient work force in the future to meet the needs of expansion.

This new policy was to prove a major break with the past, for the Commonwealth Government, while revising the traditional assisted schemes for British migrants (April 1947), also encouraged large scale non-British immigration. Assisted migration agreements or arrangements have been made with Germany, the Netherlands, Italy, Greece, Malta, Austria, Spain, Belgium, Turkey, and Yugoslavia. Many thousands of new immigrants came to Australia and of these Victoria received a large share. Between 1947 and 1966 Victoria's population increased by 1,164,825. Of this increase, 501,998 (43.1 per cent) were born overseas. It has been estimated that of all overseas born persons living in Australia at 30 June 1966 about 32 per cent were living in Victoria. In 1966 the major birthplaces of the overseas born were Britain and the Republic of Ireland (239,406), Italy (111,219), Greece (64,275), Germany (37,270), the Netherlands (34,646), Malta (26,452), Poland (24,697), Yugoslavia (24,634), and New Zealand (11,683).

Part of the attraction has undoubtedly been the post-war economic expansion in Victoria. During this century natural increase (excess of births over deaths) has been the dominant factor in population increase. However, in several years between 1949 and 1956 the gain from net migration actually exceeded natural increase. Another interesting point is that although the assisted migration schemes introduced a great many non-British immigrants to Australia in the post-war period, from January 1947 to December 1970 assisted British migrants (numbering 966,821) still exceeded other assisted migrants (761,742).

Although the Commonwealth Government has taken over most immigration functions, the Victorian State Government, through its own Immigration Office established in 1946, plays an important part in British assisted migration. It receives personal nominations for relatives and friends and employer nominations for workers, and is also responsible for the reception and after-care arrangements for those migrants. Between



January 1947 and December 1970 the State approved 63,644 personal nominations involving 158,802 persons. Under personal and group nominations 152,185 British migrants have arrived in Victoria. Many of these migrants have been skilled technicians sponsored by group nominations such as the Victorian Railways, Melbourne and Metropolitan Tramways Board, and the State Electricity Commission. Their arrival has greatly augmented Victoria's labour force.

In July 1970 the Commonwealth Government announced a series of new studies relating to immigration and population. These included investigations into desirable future population levels for Australia to which immigration programmes should contribute; the cost and benefits of immigration to Australia under current conditions; and time-span surveys of migrants during their early years in Australia. The population studies and the cost-benefit analysis of immigration are being financed by the Commonwealth Department of Immigration and are being carried out at the Australian National University and the University of Sydney, respectively. The time-span surveys of migrants are being made by the research staff of the Department of Immigration. Among a series of other measures taken by the Commonwealth Government has been the appointment of authorities on urbanisation and environment as consultants on the immigration programme.

Immigration has been affected mainly by the favourable economic conditions of the gold rushes of the 1850s, the economic expansion of the 1880s, and the years since the Second World War. The amount of government assistance and the presence in Victoria of friends and relatives, or of national groups, are other factors which have always had a significant influence on immigration.

## POPULATION

*Growth*

The first settlers in the Port Phillip District were mainly pastoralists who, since 1842, had been represented on the Legislative Council of New South Wales. However, Sydney was far away and difficult to reach, and the settlers complained that the distant government was only remotely concerned with the interests of the area. Dissatisfaction with the system eventually led to the separation of the District from New South Wales and the creation in 1851 of the Colony of Victoria.

The population of the District in May 1836 consisted of 142 males and 35 females. This increased steadily as settlers arrived from Britain and Van Diemen's Land (Tasmania), and others with their flocks and herds overland from New South Wales. By March 1851 Victoria had over 77,000 people.

The whole character of the community was radically altered following the discovery of gold in 1851. The first finds were at Clunes and Warrandyte. The predominantly pastoral community suddenly found itself invaded by an influx of a diverse population attracted from all parts of the world, and the small port of Melbourne became crowded with shipping. At the time of the 1851 Census the population of Victoria numbered 77,345 ; by 1861 it was 540,322 ; and by the 1881 Census had increased to 862,346. As the State registration system of births and deaths only came into operation in mid-1853, the exact relationship between the natural increase and the increase through migration is not available for this period. However, of a total increase of 785,000 in the 30 years to 1881, probably 45 per cent can be attributed to the excess of births over deaths, and 55 per cent to net migration, which was the more important component at the beginning of the period but which tapered off to a less significant proportion in the 1860s and actually was negative in the latter half of the 1870s.

Between 1881 and 1913 the natural increase amounted to 547,274 but the net increase from immigration was only 9,537. Before 1892 there was a net inflow of migrants into Victoria, but the financial crisis of 1892 was followed by a period of prolonged depression and population was attracted to Western Australia following gold discoveries there. Between 1892 and 1907 departures exceeded arrivals by 185,202. In three years, 1896, 1902, and 1903, the population of Victoria actually decreased, the net migration out of Victoria being higher than the natural increase.

Between 1914 and 1939 the population of Victoria increased by 31 per cent, most of this being natural increase. The population intake through

net migration was very low during most of the period and in the depression years between 1929 and 1937 there was a net migration of 13,535 persons out of Victoria.

The years following the Second World War have witnessed great economic expansion in Victoria and the period has been characterised by a notable population increase, as was the period 1851 to 1881. Since the end of the Second World War a programme of planned large scale immigration has been one of Australia's major objectives, and in 1966 Victoria had almost 32 per cent of the overseas born people in Australia. Unlike the experience between 1851 and 1881, the natural increase in this period exceeded the intake from net migration.

Only a handful of people resided in the new settlement in 1835. Victoria's population reached the first million in 1887, the second in 1945, and the third million in 1962, only seventeen years later. If current trends of development and growth continue, the fourth and possibly the fifth million could be reached before the turn of the century.

*Age distribution, masculinity, and conjugal condition*

Victoria's population in its early years showed a large excess of males over females; in 1854 there were 188 males for every 100 females. The gap between the number of males and females narrowed and by the time of the 1881 Census the masculinity ratio for Victoria had decreased to 110; in fact, in urban areas including Melbourne, females outnumbered males.

The large inflow of migrants in the 1850s also affected the age distribution of the population; more than half the males and almost half of the females in the new Colony at the 1854 Census were between the ages of 20 and 44 years, and the number of elderly persons was negligible. By 1881, although the Census presented a picture of a young vigorously growing colony with one half of the population under 20 years of age, it also showed an increasing proportion of people in the higher age groups. The increase in the number of elderly persons in the community was reflected in an increase in the proportion of females widowed from 2.52 per cent in 1854 to 5.30 per cent in 1888. The steady increase in the proportion of elderly persons can be traced through later Censuses.

In 1854, when there was an exceptional shortage of women of marriageable age, the proportion of females who were single was 53.68 per cent compared with 68.97 per cent of males. Ever married males were 31.03 per cent of all males compared with 46.32 per cent of females. By 1881 this disparity had lessened and ever married females were 36.02 per cent of all females compared with 31.09 per cent of males.

The masculinity ratio was reduced by the emigration from Victoria arising from the depression which began in the early 1890s and which did not lift until 1914. It fell to 101.07 in 1901 and to 99.34 in 1911, the first Census year in which the number of females for the State as a whole was greater than the number of males.

A decreasing birth rate and longer life expectancy began to be reflected in the age distribution of the population. Between 1881 and 1911 the proportion of population under 20 years decreased from 50 to 41 per cent, while the age group 20-44 years increased from 32 to 38 per cent and the proportion of persons aged 65 years and over more than doubled.

The age distribution of the population at the 1933 Census reflected the general trend which had already appeared in the nineteenth century—the decrease in the relative importance of younger age groups and the increasing proportion of elderly persons in the community. The low number of children under five years in 1933, which was nearly identical with that recorded at the 1911 Census, was mainly due to the sudden fall in births in the years immediately preceding the Census. To illustrate the increase in life expectancy, in the period 1881 to 1890 a male could expect, on the average, to live for 47 years, while between 1932 and 1934 his expectation of life was 63 years. The expectation of life for females during the same period increased from 51 years to 67 years. For the period 1960 to 1962 life expectancy for males was 68 years and for females 74 years. The survival to later ages is reflected in the average age of the population, which for males rose from 25.38 years in 1851 to 31.11 years in 1933, and for females from 20.21 years to 32.20 years. Following increased migration and higher numbers of births in the post-war years the average ages in 1966 were 30.65 for males and 32.45 for females. The 1911 Census and subsequent Censuses have shown a higher average age for females than for males.

The immigration programme in the years following the Second World War, with preference for young men, altered the masculinity ratio which in 1947 had stood at only 97.41, that is, there were approximately 97 males for every 100 females in the State. In that year females outnumbered males not only in the higher age groups but also at ages 20–34 years. In 1966, when masculinity of the population was 100.52, there were generally more males than females in ages under 60 years, with a large surplus of males aged under 45 years.

The high post-war birth rate profoundly altered the age structure of the Victorian population: there was a sharp increase in the number of young persons and children in the community, the proportion aged under 21 years increasing from 32.63 per cent in 1947 to 39.79 per cent in 1966. At the same time persons aged 21 to 64 declined from 58.57 per cent to 51.61 per cent. The proportion of elderly persons remained approximately the same. The responsibility of rearing the young, looking after the elderly, and developing the State generally now involved heavier individual burdens on the active population.

Generally there has been an increase in the proportion of ever married males and females (i.e., married, divorced, and widowed) in the population aged 15 years and over.

VICTORIA—PROPORTION OF EVER MARRIED  
MALES AND FEMALES IN POPULATION AGED  
15 YEARS AND OVER, 1881 TO 1966  
(per cent)

Sex	Census				
	1881	1911	1933	1947	1966
Male	48.23	51.32	58.75	67.80	69.59
Female	60.18	57.20	63.37	72.50	77.31

In 1881 ever married males were 48.23 per cent of the male population aged 15 years or more, and the corresponding proportion of females was 60.18. By 1966 the proportion of ever married males in the population aged 15 years and over had increased to 69.59 per cent and that for females to 77.31 per cent. Whilst temporary fluctuations have occurred, e.g., a surplus of females in the 20–44 age group had the effect of temporarily decreasing the proportion of married females in 1911, the upward trend has continued over the long term.

#### *Birthplace*

In 1854 the majority of the population were immigrants, by far the largest proportion coming from the British Isles. Only 13 per cent of Victorians had been born in the Colony. By 1881 there was a profound change in the position; nearly 58 per cent of the population had been born in Victoria and the percentage of persons whose birthplace was overseas (excluding New Zealand) had decreased from 82 to 37. The overseas population, always predominantly from Great Britain and Ireland, had decreased to less than 15 per cent by the time of the 1911 Census. This trend continued and by 1947 the Australian born population of Victoria had increased to 91 per cent, the highest ever recorded in the history of the State. The proportion of the population born in the United Kingdom and the Republic of Ireland had decreased to the lowest figure of 6.5 per cent. After 1947 the Australian born component of the Victorian population began to decline as a proportion, and in 1966 twenty-one persons out of every hundred living in Victoria had been born overseas. The number of immigrants coming from European countries other than the United Kingdom and the Republic of Ireland showed a significant increase and in 1966 comprised 11.76 per cent of the population.

#### VICTORIA—BIRTHPLACES OF THE POPULATION

Birthplace	Census 1947		Census 1966	
	Number	Per cent	Number	Per cent
Victoria	1,683,126	81.92	2,259,913	70.19
Remainder of Australia	192,975	9.39	279,015	8.67
Australian born	1,876,101	91.31	2,538,928	78.86
United Kingdom and Republic of Ireland	126,013	6.13	239,406	7.44
Other Europe	29,677	1.45	378,771	11.76
Other	22,910	1.11	62,421	1.94
Total	2,054,701	100.00	3,219,526	100.00

#### *Literacy*

Illiteracy was never high in Victoria; even in 1854 only 8.7 per cent of the population over 15 years of age could not read. The ability to write was especially high among the younger age groups as suggested by the number of men and women who could sign the marriage register during the period from 1886 to 1890. Between these years 98 per cent

of men and women could write their names on the registration forms. The system of free and compulsory primary education introduced in 1872 helped to increase literacy in Victoria and in 1911 practically every person over the age of 15 years could read and write.

### *Religion*

The religious denominations of the population at the Census in 1854 showed that 46 per cent were Church of England, 19 per cent Roman Catholic, 18 per cent Presbyterian, and 6 per cent Methodist. By 1881 the proportions had changed to Church of England 36 per cent, Roman Catholic 24 per cent, Presbyterian 15 per cent, and Methodist 13 per cent. In these years the numbers who did not state their religion were not numerous. The very large increase from 1933 onwards in the number of persons who apparently were unwilling to answer this question may be attributed to the explicit statement in the householders schedule and personal slip that an answer was not obligatory.

The proportion not answering the question on religion since 1933 has affected comparability of figures with earlier years, but the following table shows the proportions revealed by those who elected to answer the question on religion :

VICTORIA—RELIGION OF THE POPULATION

Particulars	Census 1933		Census 1966	
	Number	Per cent	Number	Per cent
Church of England	626,172	34.40	923,078	28.67
Roman Catholic (a)	342,135	18.79	889,495	27.63
Presbyterian	276,699	15.20	387,108	12.02
Methodist	193,096	10.61	279,300	8.68
Orthodox	(b)	(b)	100,387	3.12
Other Christian	129,241	7.11	233,733	7.26
Non-Christian	10,065	0.55	35,248	1.09
No religion and indefinite	7,287	0.40	37,443	1.16
No reply	235,566	12.94	333,734	10.37
<b>Total</b>	<b>1,820,261</b>	<b>100.00</b>	<b>3,219,526</b>	<b>100.00</b>

(a) Includes Roman Catholic and Catholic.

(b) Included with "Other Christian". Separate figures are not available for 1933, but the number of persons of Orthodox creed probably amounted to a few thousand only.

### *Occupations*

Following the gold discoveries in 1851, the 1854 Census showed 36,332 persons engaged in gold mining; this number increased to 87,428 in 1857, when about four persons out of every ten living in Victoria resided on the goldfields. Later Censuses showed a steady decline in the importance of this occupation and by 1881 the number of persons engaged in gold mining had decreased to 35,189.

Care must be exercised when comparing figures for occupations between various Censuses. The first attempt to classify occupations was made in 1846 when they were placed under seven headings. A more sophisticated system was adopted in 1854 and the new classifications evolved by 1871

and 1891 further improved the coverage in this area. Before 1933 no real distinction was made between occupation, industry, and occupational status. When the Censuses asked for occupation they really meant industry as well; the two were not separated. However, general trends in changes of the occupations of the people can be deduced.

During the latter part of the nineteenth century and the beginning of the twentieth century manufacturing industries developed further and the protective policies gradually adopted by governments indicated that manufacturing interests were exercising considerable power in the community. In 1881 there were 2,488 factories employing 43,208 hands in Victoria; in 1913 the number of factories had increased to 5,613 and the number of hands to 118,744.

Despite the temporary disruption brought by the First World War and its aftermath of reconstruction, 1919 marked the beginning of an expansionary period in which industrial production increased. During the depression of the early 1930s the economic development of Victoria suffered a severe setback; unemployment was high and growth was retarded.

Since 1947 there have been significant changes in the industries of the population. Although the total work force showed a large increase, the proportion of persons engaged in primary industries, including mining and quarrying, decreased from 14.17 per cent in 1947 to 8.51 per cent in 1966. The manufacturing industries, on the other hand, increased though their proportion of the total work force only rose from 30.50 to 31.84 per cent. The tertiary (service) industries showed a much faster growth and they now employ almost one half of the population in the work force. The economy of Victoria, which in the early period was based on primary production and mining and later became dominated by manufacturing industries, is now becoming increasingly oriented towards the service industries.

VICTORIA—INDUSTRY OF THE POPULATION, CENSUS 1966

Industry group	Males	Females	Persons	Percentage of work force		
				Males	Females	Persons
Primary production	92,791	19,179	111,970	9.76	4.49	8.13
Mining and quarrying	4,799	400	5,199	0.51	0.09	0.38
Manufacturing	311,680	126,810	438,490	32.80	29.71	31.84
Electricity, gas, water, and sanitary services (production, supply, and maintenance)	31,416	2,383	33,799	3.30	0.56	2.45
Building and construction	104,783	4,093	108,876	11.03	0.96	7.91
Transport, storage, and communication	86,104	13,077	99,181	9.06	3.06	7.20
Finance and property	30,219	20,520	50,739	3.18	4.81	3.68
Commerce	135,139	81,352	216,491	14.22	19.06	15.72
Public authority (n.e.i.) and defence services	41,966	11,254	53,220	4.42	2.64	3.87
Community and business services (Incl. professional) (a)	65,087	88,322	153,409	6.85	20.69	11.14
Amusements, hotels and other accom- modation, cafes, personal service, etc.	34,444	46,077	80,521	3.62	10.80	5.85
Other industries and industry inadequately described or not stated	11,799	13,354	25,153	1.25	3.13	1.83
Total in work force	950,227	426,821	1,377,048	100.00	100.00	100.00
Persons not in work force	663,677	1,178,801	1,842,478			
Grand total	1,613,904	1,605,622	3,219,526			

(a) Includes police, fire brigades, hospitals, medical and dental services, education, and business services such as consultancy engineering and surveying, accountancy and auditing, industrial and trade associations, advertising, etc.

*Urbanisation*

The proportion of Victorians living in Melbourne and suburbs at the height of the gold rush in 1854 was 32 per cent ; in 1861 it decreased to 26 per cent ; but from then on it began to rise ; every subsequent Census year with the exception of 1901 has shown an increasing proportion of the State population living in the capital city, and by 1911 nearly 45 persons out of each 100 living in Victoria resided in the metropolis.

The process of urbanisation of the Victorian population has been a long one. The Statistician's Report on the 1881 Census shows that the urban municipalities in 1871 and in 1881 were slightly more populous than the rural ones. In 1891, the population of Victoria's four main urban areas, Greater Melbourne, Ballarat, Bendigo, and Geelong, comprised just over 50 per cent of the population of the State and in 1921, 51.13 per cent of the Victorian population resided in the Melbourne Metropolitan Area alone.

The drift of people into capital cities and other urban areas has become a characteristic of post-war Australia. Melbourne and the other urban areas have been growing at a faster rate than other areas of the State. Over two thirds of the population of the State now live in Melbourne alone and an additional fifth in the other urban areas.

VICTORIA—URBAN AND RURAL POPULATION,  
CENSUS 1971 (a)

Population	Persons	Percentage of State total
Urban		
Melbourne	2,388,941	68.33
Other	677,859	19.39
Total urban	3,066,800	87.72
Total rural	427,101	12.22
Migratory	2,260	0.06
Total Victoria	3,496,161	100.00

(a) Field count totals.



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# VITAL STATISTICS

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The most important year in the history of Victoria's vital statistics was 1853 when the Victorian Government passed the Registration Act introducing compulsory registration by the Registrar General of births, deaths, and marriages. In the earlier years of settlement parochial and church registers were the only records of Victoria's vital statistics.

The first Annual Report of the Registrar General was published in 1855 and covered the year ending 30 June 1854. It showed the number of births registered in Victoria, the number of marriages celebrated by various denominations, and the causes of deaths tabulated in age groups and month of registration. From 1860 the Registrar General published a monthly abstract of vital statistics for Melbourne only in a publication entitled the *Monthly Report on Vital Statistics*. In 1874 the Office of the Government Statist was created and the name of the publication was altered to the *Government Statist's Report on the Vital Statistics of Melbourne and Suburbs*. These reports were last published in the early 1900s.

Summaries of vital statistics were also published in *Statistical Registers* for Victoria. The first such register was published in 1854 but it was only in 1861 that detailed tables appeared in a chapter on vital statistics. The registers were published annually until 1916.

In 1874 the first *Victorian Year Book* was published, and in it appeared a chapter dealing with vital statistics. Analyses and summaries of births, deaths, and marriages have been published regularly in all subsequent issues of the *Victorian Year Book*. In recent years the vital statistics of Victoria have appeared in *Causes of Death, Demography, and Marriages, Births, and Deaths : Preliminary Statement*.

### BIRTHS

In the new settlement of the Port Phillip District the first birth was registered in 1836 and it was the only birth for that year. Three years later the annual number of births exceeded 100 and in 1842 the number recorded was over 1,000. The total number of births in the first fourteen years of settlement amounted to about 16,000.

After the gold discoveries in 1851 the population began to increase very rapidly. The net intake through immigration reached unprecedented heights and the number of births rose every year. As early as 1859 the annual number of birth registrations reached over 22,000. The crude birth rate, which stood at 44.71 births per 1,000 mean population in 1862,

began a general decline after that year, mainly because of a changing age structure of the population. By 1880 it had decreased to 30.76.

The general prosperity of the 1880s was reflected in a temporary halt in the trend of the declining birth rate, but during the depression after 1892 both the birth rate and the actual number of births began to decrease and the low natural increase (births minus deaths) combined with large scale emigration from Victoria resulted in a population decline in the State in 1896, 1902, and 1903.

The principal demographic factors affecting the level of crude birth rates are the proportion of women in the child bearing ages in the population, their age distribution, and the proportion of such women who are married. These factors may vary considerably at different periods and to compare fertilities, total births should be related to the number of women of child bearing age, or nuptial births to the number of married females of such age.

The following table shows the crude birth rates, the fertility rates, and the nuptial fertility rates for the period 1860-1862 to 1910-1912. (The population of Victoria before this period was too small for rates based on such figures to have any statistical significance.)

#### VICTORIA—CRUDE BIRTH RATES AND FERTILITY RATES

Period	Actual rates			Index numbers (Base : 1860-1862 = 100)		
	Crude birth rate (a)	Fertility rate (b)	Nuptial fertility rate (c)	Crude birth rate (a)	Fertility rate (b)	Nuptial fertility rate (c)
1860-1862	43.27	215.41	306.14	100.00	100.00	100.00
1870-1872	37.13	187.62	297.83	85.81	87.10	97.29
1880-1882	30.93	143.17	299.02	71.48	66.46	97.67
1890-1892	33.17	143.74	296.81	76.66	66.73	96.95
1900-1902	25.64	103.94	226.11	59.26	48.25	73.86
1910-1912	24.73	99.84	219.73	57.15	46.35	71.77

(a) Crude birth rate : Number of births per 1,000 mean population.

(b) Fertility rate : Number of births per 1,000 females aged 15-44.

(c) Nuptial fertility rate : Number of nuptial births per 1,000 married females aged 15-44.

NOTE. These rates represent averages for 3 years centred on Census population.

The comparative magnitude of the decline in the above rates can be measured by the index numbers by taking 1860-1862 as the base. While the nuptial fertility remained relatively constant during the following thirty years, the fertility rate decreased sharply by one third. This was due to the increased proportion of females in the younger ages which contained a large number of single females and an overall higher proportion of spinsters in all age groups between the ages of 15 and 44 years. The crude birth rate similarly reflected the changing age structure of the population but did not decline as much as the fertility rate because it was not as directly affected by movements in numbers of females in the child bearing age groups.

During the depression years after 1892 economic and social conditions were responsible for a general decline in birth and fertility rates. The Census of 1901 revealed a serious surplus of females over males in the ages between 20 and 30 years, and this tended to depress the prospective number of marriages with the resultant effect on the number of births in the State.

Between 1920 and 1927 the number of birth registrations in each year exceeded 35,000 but the economic depression in the 1930s led to a significant decline in the number of children born in Victoria. In 1932 only 27,464 births were registered in the State, just slightly more than the number recorded in 1868, 64 years earlier. The low birth rate during the depression years had serious repercussions in the post-war period, when the number of young persons entering the work force in the 1950s was not sufficient to meet the needs of the expanding economy. This was one of the reasons for introducing a programme of planned large scale migration into Australia after the end of the Second World War.

After 1941 births in Victoria showed a significant increase. While the increase during the war would have been caused by a sudden rise in marriages between 1940 and 1942, several factors combined to bring the number of births to over 50,000 by 1951 and eventually to 60,000 by 1957. The higher level of post-war marriages, large scale immigration, and improved economic conditions were among the most important of these factors.

In spite of the large increase in the absolute number of births in the post-war period the nuptial fertility rate remained below the 1920-1922 level, reflecting a general trend towards smaller families since the last century. An increase in the numbers of married females in the age group 15-44 years contributed to the rise in the total fertility rates between the years 1946-1948 and 1960-1962.

#### VICTORIA—CRUDE BIRTH RATES AND FERTILITY RATES

Period	Actual rates			Index numbers (Base : 1920-1922 = 100)		
	Crude birth rate	Fertility rate	Nuptial fertility rate	Crude birth rate	Fertility rate	Nuptial fertility rate
1920-1922	23.29	96.94	190.70	100.00	100.00	100.00
1932-1934	15.32	64.58	123.35	65.78	66.62	64.68
1946-1948	22.74	100.56	157.54	97.64	103.73	82.61
1953-1955	22.37	107.50	148.66	96.05	110.89	77.55
1960-1962	22.27	110.83	153.43	95.62	114.33	80.46
1965-1967	19.98	96.68	137.25	85.79	99.73	71.97

See notes to previous table.

A temporary decline in the total number of births occurred after 1962 but a steep rise in the number of marriages of the "post-war babies" started to have a significant effect in 1968 when the number of children born showed a marked increase. Births in 1971 numbered 75,498.

## MARRIAGES

The first marriage in Victoria after permanent settlement in 1834 was celebrated in 1837. In the following year fifteen couples were married and in 1851 the annual number of marriages exceeded 1,000. By 1910 over 10,000 marriages were recorded and in 1971 the number of annual registrations exceeded 32,000.

The number of marriages in the community depends on several factors, among the more important being the propensity or the willingness to marry, the numerical balance between the sexes, and the social and economic conditions at the time. The numerical balance between the sexes in Australia and Victoria has often been a significant factor in limiting the number of marriages. During the early periods of the settlement the masculinity ratio was exceptionally high; in 1854, during the gold rush, there were 188 males for each 100 females and the surplus of males in the age groups in which most people are married was even more significant. However, in subsequent years the population became more balanced, the gap between the number of males and females in the community narrowed, and there was an actual surplus between 1871 and 1881 of prospective brides in certain age groups.

VICTORIA—MASCULINITY OF THE POPULATION  
IN CERTAIN AGE GROUPS (a)

Age group (years)	Census year				
	1854	1857	1861	1871	1881
17-19	n.a.	107.41	119.87	91.44	94.40
20-24	208.01	157.33	147.71	94.44	93.70
25-29	280.29	231.47	202.30	113.70	101.82
30-34	283.31	239.28	245.55	138.00	103.09

(a) Number of males per 100 females.

After the financial crisis in Victoria in the early 1890s the number of marriages decreased sharply and the marriage rate declined to less than 6 per 1,000 mean population in 1893. Many men left the Colony in search of work; some were attracted to Western Australia by the large gold discoveries. There was thus a shortage of young men and the high masculinity ratio, reflecting large immigration into Victoria during the period of prosperity before the crisis, fell significantly within the following ten years. This situation was later aggravated by the First World War when many young men died on the battlefields.

By 1933 the imbalance between numbers of males and females between the ages 17 and 34 had largely been corrected. The depression affected the economic and social life of the community and many marriages had to be postponed, and the marriage rate declined to an all time low of 5.66 in 1931. Only 10,182 couples were married in Victoria in that year, compared with an annual average of 12,955 between 1926 and 1930.

VICTORIA—MASCULINITY OF THE POPULATION  
IN CERTAIN AGE GROUPS (a)

Age group (years)	Census year				
	1891	1901	1911	1921	1933
17-19	97.74	96.64	100.58	102.32	100.83
20-24	102.86	87.78	95.17	91.99	100.97
25-29	114.25	86.05	93.98	90.23	103.75
30-34	120.12	96.82	92.14	93.39	101.93

(a) Number of males per 100 females.

The 1947 Census showed a surplus of females in most marriageable age groups but the decision of the Government to introduce large scale immigration of young men quickly resulted in a surplus of males. The continuous high masculinity ratio in the age groups of 15 to 34 years caused mainly by immigration created serious social problems for many men, especially for the young migrants. However, in recent years the Government has tried to adjust its migration policies and bring greater equality in the number of males and females.

VICTORIA—MASCULINITY OF THE POPULATION  
IN CERTAIN AGE GROUPS (a)

Age group (years)	Census year			
	1947	1954	1961	1966
17-19	101.36	105.71	105.13	104.21
20-24	98.04	108.47	106.81	102.55
25-29	97.47	108.93	108.48	105.95
30-34	97.11	105.66	110.07	107.07

(a) Number of males per 100 females.

The last forty years have seen trends towards earlier marriages and a greater overall propensity to marry. The proportions of married persons in the age group 45 to 54 years, which is a fairly close measure of the population who ultimately marry, has been steadily increasing and at the 1966 Census only 8.82 per cent of males and 6.76 per cent of females aged 45 to 54 years were shown as "never married". This compares with 18.56 per cent and 20.31 per cent for males and females, respectively, for the 1921 Census.

One of the important features characterising marriages in the recent period has been the sharp increase in the proportion of marriages involving minors. At the turn of the century, during the period 1900 to 1902, 1.98 per cent of bridegrooms and 15.53 per cent of brides were under 21 years of age. In the post-war years 1946 to 1948, these proportions increased to 5.13 per cent and 22.96 per cent, and in 1967, 12.56 per cent of all bridegrooms and 40.48 per cent of all brides were minors. The higher

marriage rate among minors can also be shown by relating the number of bridegrooms aged 18–20 and brides aged 16–20 to the number of single males and females in those age groups.

#### VICTORIA—MARRIAGES OF MINORS

Period	Bridegrooms		Brides	
	Marriage rate <sup>(a)</sup> of minors aged 18–20	All bridegrooms under 21 as percentage of total marriages	Marriage rate <sup>(a)</sup> of minors aged 16–20	All brides under 21 as percentage of total marriages
1900–1902	5.12	1.98	22.78	15.53
1946–1948	22.61	5.13	67.43	22.96
1960–1962	30.73	9.09	84.22	35.84
1965–1967	39.23	12.15	90.25	39.61

(a) Average annual number of marriages of males aged 18–20 and females aged 16–20 per 1,000 Census population of the same age and sex.

In spite of the difficulties experienced by some migrants in finding suitable marriage partners, the extent of post-war migration was such that immigrants contributed significantly to the number of marriages celebrated in Australia. Between 1946 and 1970 in 10.61 per cent of marriages both partners were born overseas, and 15.16 per cent of marriages were between an Australian born person and an overseas born person. Similar figures are not available for Victoria but using the same proportions, out of 568,120 marriages celebrated in Victoria during that period, in about 146,400 marriages at least one partner would have been born overseas.

#### DEATHS

In 1836 only three deaths were recorded among the small group of settlers in Victoria but by 1851 the annual number of deaths had increased to 1,165; by 1860 deaths registered in the Colony were 12,061. In these early years the death rate fluctuated widely from year to year, partly because of the small numbers involved and partly because of the outbreaks of infectious diseases which occasionally occurred in the Colony; in 1851 the crude death rate (deaths per 1,000 of mean population) stood at 13.42, and in 1860 it was 22.77. However, after 1860 the death rate showed a general decline; the adoption of public health measures, improvements in the availability of medical facilities to private persons, and advances in medical techniques all had their effect. Since 1902 the rate has exceeded 13 per thousand only once, in 1919. Although the proportion of elderly persons in the community had been increasing, the crude death rate continued to decline and was under 10 for the first time in 1922. It hovered around 10 for the next thirty years but in the last two decades has declined further and in 1971 was 8.7 per 1,000 of mean population.

The decline in the death rate has been most dramatic among infants and children in the earlier years of life. In 1870, 12 per cent of infants died within a year of birth; in 1970 less than 2 per cent failed to survive the first year of life.

Age-specific death rates for Victoria are given in the following table for the trienniums 1856–1858, 1910–1912, and 1965–1967:

## VICTORIA—AGE-SPECIFIC DEATH RATES (a)

Age	Period		
	1856-1858	1910-1912	1965-1967
Under 1 year (b)	139.79	73.38	17.23
1-4	26.58	6.71	0.82
5-9	3.75	2.33	0.36
10-14	2.91	1.75	0.32
15-24	7.83	2.94	0.99
25-34	10.51	4.53	1.15
35-44	15.22	6.80	2.26
45-54	20.39	11.23	6.20
55-64	32.81	22.03	15.64
65-74	54.25	53.62	40.41
75 and over	96.97	144.52	113.21
All ages	18.24	11.79	8.81

(a) Average annual number of deaths per 1,000 of population in each age group.

(b) Infant deaths per 1,000 live births registered.

Over the years age-specific death rates declined for most age groups, although the relative advantage at later years is less than might popularly be supposed. This can be demonstrated with data on life expectancy which, although relating to Australia, can serve as a useful indicator for Victoria. The expectation of life at birth for the period 1881-1890 was less than 50 years. Australian life tables calculated for the period 1960-1962 show that for males the expectation of life was 68 years and for females 74 years. In the period 1901-1910 a male of 50 years could expect to live 21 more years on the average compared with 23 more years in the period 1960-1962. A woman aged 50 years in the former period could expect to live an additional 24 years and in the latter period an additional 28 years.

## CAUSES OF DEATH

Deaths have been classified by cause in Victoria since 1853. Classifications used have followed closely those determined internationally. Initially the nosological table (a system for classifying deaths by cause) in use followed that used in the Office of the Registrar General of England. In 1853 the first International Statistical Congress had requested Dr William Farr of England and Dr Marc d'Espine of Geneva to prepare a uniform nomenclature of causes of death applicable to all countries, and from 1861, with retrospectivity to 1853, causes of death in Victoria were arranged in classes and orders according to their system. Following some revisions of this list in the intervening years, in 1893 the International Statistical Institute, the successor to the International Statistical Congress, adopted the International List of Causes of Death. The first International Conference for the Revision of the International Classification of Causes of Death was held in Paris in 1900. After successive decennial revisions the classification was broadened in 1948 to meet the needs for diagnostic data in morbidity statistics. Sweeping changes were made in the International List of Causes of Death to serve the dual purpose of classifying both morbidity and mortality data. In addition, the 1948 Conference approved the International Form of Medical Certificate of Cause of Death, which was

introduced into Victoria in 1952. The Conference also accepted the underlying cause of death as the main cause to be tabulated and endorsed the rules for its selection. The most recent major revision in the classification came with the Eighth Revision of the I.C.D. in 1965. Since the end of the Second World War the preparation of the decennial revisions of the International Classification of Diseases and the publication of the manuals has been done under the auspices of the World Health Organization, which also co-ordinates the work of the various national statistical bodies.

Changes in the classifications, of course, have reflected developments in medical knowledge and diagnosis, and the needs created by these developments. The particular types of classifications used in Victoria since 1853 are given below, with the time periods during which each classification was applied to deaths registered in the State :

Type of classification system used in Victoria	Location of detailed listing	Period when used in Victoria
Nosological Index used by the Registrar General	First Annual Report of Registrar General	1853-1860
Nosological Index compiled by H. H. Hayter (Based on system proposed by Dr Farr and Dr M. d'Espine at International Statistical Congress 1855-56)	<i>Victorian Year Book</i> 1877-1878	1861-1885
The Nomenclature of Diseases drawn up by a Joint Committee appointed by the Royal College of Physicians of London. First Revision 1885	<i>Victorian Year Book</i> 1886-1887	1886-1906
Bertillon Index of Diseases (International List of Causes of Death, First Revision 1900)	<i>Statistical Registers</i> 1907-1909	1907-1909
International List of Causes of Death, Second Revision 1909	} <i>Manual of the International List of Causes of Death</i> }	1910-1921
International Classification of Diseases and Causes of Death, Third Revision 1920		1922-1930
International Classification of Diseases and Causes of Death, Fourth Revision 1929		1931-1939
International Classification of Diseases and Causes of Death, Fifth Revision 1938		1940-1949
International Classification of Diseases and Causes of Death, Sixth Revision 1948	} <i>Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death</i> }	1950-1957
International Classification of Diseases and Causes of Death, Seventh Revision 1955		1958-1967
International Classification of Diseases and Causes of Death, Eighth Revision 1965		1968-



During the early years of settlement disease took a very heavy toll; even in the 1890s eleven out of every 100 born alive did not survive one year. Of these deaths, more than one quarter were from preventable diarrhoeal disease, and even in the early 1900s infant deaths from this cause were nearly nine in every 100. There has been a marked decline in the infant mortality rate from 118.97 per 1,000 births in 1863, when infant mortality was first recorded, to 14.5 in 1970, and an indication of this trend may be seen from the figures in certain intervening years: 1900, 95.39; 1920, 73.70; 1940, 39.45; and 1950, 20.09. The decline in the neo-natal mortality rate (deaths under one month of age) from 41.9 per 1,000 in 1867 to 10.4 in 1971 reflects the improving standards of ante-natal care, obstetrical care at birth, and paediatric care in the post-natal period. One of the greatest challenges is that of immaturity, the leading cause of death in neonates, particularly during the first week of life. However, the most significant factor has probably been the work of the infant welfare movement, the first centre of which was opened in 1919. It became a specialist branch of the Department of Health in 1926. There have also been basic social changes affecting standards of living and education.

Although improved standards of diagnosis and alterations in nomenclature have complicated direct comparison between statistics of earlier and more recent periods, the statistics nevertheless reflect the general trends in epidemic diseases. Gastro-intestinal illness was the greatest scourge between 1835 and 1887 and was significantly aggravated by the arrival of migrants following the discovery of gold in 1851. At one period over 3,000 left Melbourne each week for the fields, where muddied streams were used for washing gold as well as for drinking water and ablutions. By the end of the 1850s, when alluvial mining gave way to quartz mining, the mobile population began to settle, and control was essential to provide safe water supplies and to introduce some basic hygienic measures. The first Public Health Act was passed in 1855, and Dr William McCrea was appointed President of the Central Board of Health. As Chief Medical Officer, he had previously referred to the undrained, crowded, badly ventilated, and filthy state of Melbourne. Infectious diseases had been spreading, particularly among the young, and of the 23,906 born in 1863, 2,844 failed to complete the first year of life. In 1889 a Royal Commission was appointed to inquire into sanitary conditions, and its report was critical of low standards. An important result was the creation of the Melbourne and Metropolitan Board of Works to take over responsibility for the water supply, drainage, and sewerage, and in 1897 water borne sewerage and underground drainage were introduced in the metropolitan area.

#### *Gastro-intestinal diseases*

For the triennium 1860–1862, when the population of Victoria was about 540,000, the annual average deaths caused by the major intestinal infections were diarrhoea 694, dysentery 646, and typhoid fever 401. For the triennium 1900–1902, the averages were 298, 97, and 207, respectively. No deaths from typhoid fever were recorded in the triennium 1968–1970; there was an annual average of 56 deaths from diarrhoeal disease (including dysentery) over this period.

Typhoid fever was the most dreaded of the gastro-intestinal diseases because of the suffering caused and the high fatality rate, which was between 15 and 20 per cent, and it may be used as a model to illustrate the development in hygiene and sanitation. The decline in incidence after 1890 was most marked in the Melbourne metropolitan area, and although there was a resurgence in 1898, there has been a general downward trend since then, interrupted only by sporadic food-borne epidemics. Although no cases due to reticulated water have been reported, there were three epidemics in which milk was responsible. Milk from Jolimont was responsible for 43 cases in 1879; in 1931, 35 patients had the origin of their illness traced to a source in Chelsea; and 23 deaths were recorded among the 433 patients of the Moorabbin epidemic in 1943. Apart from the impact of public health measures, which include water supply, food control, sewage disposal, general sanitation, the isolation of infected persons, and the tracing of the source of infection in human carriers, typhoid as a fatal disease has been controlled since the advent of chloramphenicol. This broad spectrum antibiotic has reduced the case fatality rate to a negligible level in all except the most advanced cases.

This control has not been paralleled in certain other diarrhoeal diseases such as dysentery, where traditional public health measures are not so successful if personal transmission is involved. Fortunately mortality is low owing to the mild nature of most of these diseases, as well as to the use of modern drugs and supportive therapy.

In 1880 diarrhoea was second only to atrophy as the commonest cause of death in infants under one year of age, but during 1970 only twelve infants died in their first year of life from diarrhoeal disease out of a total of 1,060 infant deaths from all causes.

#### *Scarlet fever*

Scarlatina (scarlet fever), caused by the bacterium streptococcus, was considered in 1865 to be one of the most devastating of all diseases and during 1875 and 1876 a total of 3,225 persons died out of a population of approximately 800,000, the disease sometimes killing entire families. An early quarantine station in Victoria was established at Point Nepean in 1862 as an emergency measure to house victims of a scarlet fever epidemic which had developed on board the American ship *Ticonderoga*. This vessel arrived with 646 passengers, most of whom were Scots from the Shetland and Orkney Islands. One hundred passengers and crew died on board and another seventy-eight after landing.

There has been considerable scientific conjecture about the marked fluctuations in case fatality rates at that time. It was usually mild in character when first diagnosed in 1841, but in 1848 it assumed a malignant aspect, with severe and rapidly progressive symptoms, culminating in the deaths of large numbers of victims. The epidemics of 1875 and 1876 were the most serious communicable disease outbreaks to have affected children in Victoria, but at the beginning of the twentieth century a much less virulent form developed. This trend is reflected in a comparison of the mortality from 1871 to 1880, when there were 4,101 deaths, with 1901 to 1910, when 188 deaths occurred. Although scarlet fever remains a relatively common disease in the community, death is now rare, and between 1961 and 1970 only two deaths from scarlet fever and streptococcal infection were registered

in Victoria. The success in specific therapy resulted from the chemotherapeutic drugs, the sulphonamides, in the early 1940s, followed by penicillin a few years later.

#### *Measles*

Measles first appeared in Victoria during 1850, when it was introduced by passengers of the ship *Persian*. As the natural immune status of the community was low, a subsequent high attack rate during epidemics became manifest every 4 to 6 years. As with scarlet fever, death was all too frequent, particularly in 1875 when 1,541 persons, mostly children, died, a mortality rate of 194.9 deaths per 100,000 of the population. From 1871 to 1880, and 1891 to 1900, the loss was 2,080 and 1,523, respectively, and it was the leading cause of death in 1880 among children aged between 1 and 5 years. During the respite between the epidemic years, the deaths dropped sharply. The last of the crippling episodes occurred in 1898, when 671 deaths were recorded, a mortality rate of 56.8 per 100,000. The character of the disease changed after this period, however, and the death rate declined to less than 10 per 100,000, except in 1920 when 220 persons died, a rate of 14.5 per 100,000. There were only 45 deaths between 1961 and 1970 in a population of approximately three million, and because of the use of chemotherapeutic drugs since the early 1940s, most deaths have been caused by secondary bacterial invasion with subsequent pneumonia. Public health agencies now aim to eradicate the disease by mass vaccination of children.

#### *Tuberculosis*

Insanitary conditions on migrant ships as well as in the Colony encouraged the spread of pulmonary tuberculosis (phthisis). It was the leading cause of death, and the bovine type of tubercle bacillus was also rife through consumption of raw milk from infected dairy cattle. There were 230 deaths per 100,000 of the population from all forms of tuberculosis in 1854, but by 1871 the death rate had fallen to 146 per 100,000. This trend did not continue, however, and in 1887 the rate had risen to 172. From that time onwards there has been a continuous decline; the mortality rate in 1970 was 1.4 and the crippling non-pulmonary forms of the disease affecting bones have become a rarity.

The decline of tuberculosis mortality after 1887 is not completely understood but it was not peculiar to Australia and may have been the result of any number of factors, including a possible change in the virulence of the organism (this has been discounted by some authorities), or economic changes such as better housing, improved nutrition, better working conditions, and improvement in personal hygiene. The improvement in the first decade of this century was not spectacular, although the mortality rate per 100,000 did fall from 149 in 1901 to 103 in 1911. The impact was felt after 1948, when streptomycin was introduced, followed by P.A.S. and isoniazid. The average annual mortality rate for the years 1940 to 1942 was 44 per 100,000, and by 1950 to 1952 it was down to 17; by 1970 it was down to 1.4. Pulmonary tuberculosis has been the major cause of the tuberculosis mortality. Improved surgical measures, anaesthesia, and supportive therapy have played an important role as well as the chemotherapeutic and other life saving drugs. During the early years preventive

measures were not developed, and it is only since the 1920s that direct anti-tuberculosis activities have had a significant effect. These include early detection by mass X-ray surveys which became compulsory in 1963, the routine tuberculosis testing of school children, and the administration of B.C.G. vaccine to all children of 11 years and over who are negative reactors to the Mantoux skin test. The majority of active tuberculosis sufferers are eligible for the Commonwealth Tuberculosis Allowance ; this encourages patients to enter sanatoria without undue financial hardship, and as a public health measure helps to prevent infection by removing a potential reservoir of infecting organisms from the community. The pasteurisation of milk has been of value in preventing transmission of the bovine organisms to humans, and the Department of Agriculture is pursuing a test and slaughter scheme aimed at eradicating tuberculosis in dairy cattle. The diminution in the death rate from tuberculosis has been most remarkable in young persons ; until recently, females suffered a higher incidence of mortality than males. At present, among elderly sufferers, more males are affected.

### *Cancer*

While it is apparent that refinement in diagnostic techniques must be considered as an important factor when comparing cancer mortality rates for the last century or more, the fact remains that more persons per 100,000 of the population are dying from this disease.

An important aspect of this problem relates to the age distribution of the population. There is now a population with an increasing number of elderly persons (the so-called "ageing population"), who will be expected to experience those diseases which commonly appear after middle age, including cancer and heart disease. In 1861, 1.49 per cent of the population was aged 60 years and over, in 1911 the proportion was approximately 7 per cent, whereas in 1966 it had increased to 12.4 per cent. Although the expectation of life at birth was calculated for Victoria from 1879 to 1910 only, and for the whole of Australia from 1881 onwards, the two sets of figures for the period 1879 to 1910 are comparable for both sexes. The life expectancy at birth in 1879 for males was 49.2, and for females 52.3 years. In the 1960-1962 life tables, these figures had risen to 67.9 and 74.2, respectively. Cancer is now the second most common cause of death after heart disease, and the average annual mortality rates have been rising ; the figures for 1860-1862, 1910-1912, and 1965-1967 were 15, 88, and 139, respectively, per 100,000 of the population. In 1969, 59 per cent of those cases of cancer registered in Victoria with the Central Cancer Registry were in persons aged 60 years and over. The greatest contribution towards the increasing death rate in this disease is cancer of the lung in males, with a risk of a fatal termination in approximately 95 per cent of patients.

The great advances in radiotherapy and surgery, together with supportive therapy and life saving drugs, have reduced mortality from cancer of the internal organs over the last 50 years, although the change has not been as great as for infective diseases. At present, early diagnosis and treatment offer the best chances of ultimate cure or prolongation of life. In 1958, therefore, the Anti-Cancer Council of Victoria began an extensive education

programme to overcome fears, and to encourage those who notice one of the so-called early warning signs to seek medical advice.

As the outlook for patients suffering from lung cancer is so poor, preventive measures are imperative. Efforts have been made to reduce the recruitment rate to cigarette smoking among adolescents. In women in Victoria, if one excludes skin cancer, cancer of the breast is the most common, followed by cancer of the uterine cervix (neck of womb), and in 1965 the Council began a campaign to encourage women to seek routine examination by their own doctors to detect early cancers of the uterine cervix, even before symptoms have appeared. At the same time, women are encouraged to practise self examination in order to detect early cancer of the breast. In both instances, early detection greatly enhances the possibility of cure.

### *Diphtheria*

The first death from diphtheria was recorded in 1858, with 509 deaths in 1859 and 792 deaths in the following year. In 1890 the figure for diphtheria and croup rose to 1,031, which is the highest recorded number, and in 1897 the death rate from these diseases was 27.0 per 100,000 of the population. Various attempts to combat the disease were made. In 1872 a Royal Commission appointed to inquire into infant mortality rates could only advocate the burning of sulphur to produce fumes as a treatment. In 1894, however, a diphtheria anti-toxin was introduced, and a marked reduction in the death rate resulted. The incidence was still high, however, and even in 1921 notifications reached 9,450. Diphtheria immunisation was introduced to Melbourne in 1924, when a toxin-antitoxin was used as a prophylactic, and the demand for this treatment increased until 1928, when a contaminated batch of the material caused the deaths of twelve children in Queensland. Within a few years, however, this mixture was replaced by the formalinised toxoid, and, as a result, notifications of the disease had fallen to 1,746 by 1938. The number recorded fell below 100 in 1957 and has only once exceeded 100 since that date. Only four deaths occurred between 1961 and 1970.

### *Diseases of the circulatory system—heart disease*

The effects of such aspects as changes in diagnostic practice and age distribution of the population need to be taken into account in a refined consideration of changes in the incidence of heart disease. Nevertheless it can be shown that a hundred years ago recorded deaths from circulatory disease, including heart disease, represented less than 5 per cent of all deaths, and this has increased progressively until in recent years more than 40 per cent of deaths are being recorded specifically to arteriosclerotic and degenerative heart disease.

The classification of causes of death in use in Victoria in 1853 included diseases of the heart under "sporadic diseases of the circulatory system", which in 1853-54 accounted for 85 out of a total of 5,826 deaths, or 1.5 per cent of deaths from all causes in that twelve month period. In 1861 the classification recorded circulatory diseases under "pericarditis", "aneurysm", and "heart disease, etc." Applying this classification to deaths for the period from July 1853 to December 1885 gave 976, 1,869, and 14,794 deaths under each category, respectively. The total of 17,639 deaths

from circulatory diseases was 5 per cent of deaths from all causes during the thirty-two year period.

With a revised classification from 1886 to 1906 circulatory diseases totalled 31,896 (9 per cent of deaths from all causes) including endocarditis, valvular disease, 7,073, pericarditis, 2,008, hypertrophy of heart, 281, angina pectoris, 365, syncope, 3,647, and other specific circulatory diseases, 2,961; a residual item "other diseases of the circulatory system" numbered 15,561 and included heart ailments, atrophy, dilatation, dropsy, fatty degeneration, spasm, and palpitation, as well as heart disease not otherwise specified, all of these being mentioned in the alphabetical reference list.

The Bertillon Index of Diseases, later to be the International Classification of Diseases, was adopted in 1907. Heart diseases from 1907 to 1921 were recorded as pericarditis, 335, acute endocarditis, 1,830, angina pectoris, 518, and organic diseases of the heart, 25,294. Conditions included in this last category were atheroma of heart, blood clot of heart, cardiac thrombosis, chronic endocarditis, chronic myocarditis, and rheumatic heart disease. Diseases of the coronary arteries were assigned to "diseases of the arteries", 2,718 for the period, along with cerebral arteriosclerosis and general arteriosclerosis. Deaths from circulatory diseases in this period were 14 per cent of deaths from all causes.

From 1922 to 1930 heart diseases were recorded as 226 to pericarditis, 1,422 to infective endocarditis, 92 to other acute endocarditis, 105 to acute myocarditis, 1,159 to angina pectoris, and 17,836 to other diseases of the heart in a total of 24,619 deaths from diseases of the circulatory system. This was 17 per cent of deaths from all causes.

The classification introduced in 1931 provided, for the first time, a separate category for diseases of the coronary arteries. From 1931 to 1939, 115 deaths were recorded to pericarditis, 376 to acute infective endocarditis, 38 to other acute endocarditis, 4,414 to diseases of coronary arteries, and 5,101 to chronic endocarditis, valvular diseases. Diseases of the circulatory system totalled 44,916, being 27 per cent of deaths from all causes.

From 1940 to 1949 deaths from heart diseases were recorded as 130 to pericarditis, 235 to bacterial endocarditis, 32 to other acute endocarditis, 4,666 to chronic affections of the valves and endocardium, 36,381 to diseases of the myocardium, 17,874 to diseases of the coronary arteries and angina pectoris, and 3,588 to other diseases of the heart. Diseases of the circulatory system, 69,629, were 33 per cent of deaths from all causes.

The comparability of figures given above from one period to another should be viewed with caution because of possible effects of factors such as changes in the classification, changes in diagnostic patterns, and the effects of an older age structure of the population. For example, deaths from acute cardiac infarction which are often sudden, in the earlier years of this century could have been attributed to apoplexy, stroke, syncope, sudden death or other ill-defined causes, or senile debility in the case of the aged. In the 1930s myocarditis was frequently diagnosed, but many of these cases would now be recognised as ischaemic heart disease.

From 1950 to 1967, 356 deaths were recorded to rheumatic fever with heart involvement, 3,970 to chronic rheumatic heart disease, 129,952 to arteriosclerotic and degenerative heart disease, including coronary disease,

12,635 to other diseases of the heart, and 8,768 to hypertension with heart disease. Deaths from circulatory diseases were 180,076 or 40 per cent of deaths from all causes for the period. Deaths from arteriosclerotic and degenerative heart disease have been analysed in age groups for triennia about the Censuses of 1954, 1961, and 1966 and rates per 100,000 population in each age group are given below :

VICTORIA—DEATHS FROM ARTERIOSCLEROTIC  
AND DEGENERATIVE HEART DISEASE:  
RATES PER 100,000 POPULATION

Period	Age group			All ages
	15-34	35-64	65 and over	
	MALES			
1953-1955	6.31	284.97	2,632.65	294.02
1960-1962	5.39	330.72	2,718.40	307.27
1965-1967	4.41	364.82	3,001.83	333.31
	FEMALES			
1953-1955	1.76	96.53	1,754.56	207.38
1960-1962	1.71	96.08	1,662.56	201.71
1965-1967	1.47	106.49	1,827.84	222.86

The problem of heart disease, and for that matter other circulatory diseases, is not only to be measured in terms of mortality, which is not restricted to older age groups, but also having regard to permanent or temporary disablement and the combined effects of all these in welfare and in the economic sense. Considerable research is being undertaken into the identifiable risk factors such as stress, overweight, and smoking, as well as the needs and rehabilitation of the invalided, and resources are being brought to bear on this national problem by the National Heart Foundation, which provides assistance to both the public and the medical profession, as well as by government and private research.