

OFFICIAL YEAR BOOK
OF
WESTERN AUSTRALIA

No. 3

1962



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ARMORIAL BEARINGS
OF THE
CITY OF PERTH

A grant of armorial bearings for the City of Perth was made by the College of Heralds on the 2nd December, 1926. These were amended in 1949 by the inclusion, in the fourth quarter, of the shield of the City of Perth, Scotland.



CITY OF PERTH SEEN FROM KING'S PARK
Swan River and Narrows Bridge in foreground

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS
WESTERN AUSTRALIAN OFFICE

**OFFICIAL YEAR BOOK
OF
WESTERN AUSTRALIA
1962**

No. 3 (NEW SERIES)



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Deputy Commonwealth Statistician
and
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PERIODICALS SECTION,
DARWIN COMMUNITY
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PREFACE

This issue of the *Official Year Book of Western Australia* is the third of a new series. The old series, originally published for the year 1886 and discontinued in 1905, developed from the Blue Books of the Colonial Office, London, which contain the early statistical records of Western Australia. The Year Book is now produced by the Commonwealth Bureau of Census and Statistics with which the Government Statistician's Office was integrated in July, 1957, so becoming part of a combined statistical organization for the service of both State and Commonwealth Governments and the community generally.

The aim of the Year Book is to provide a general description of the State of Western Australia and its development, in terms of its geography, climate and geology, the plants and trees which grow on its surface, its animal life, and the activities and social patterns of its people in relation to this physical environment. Ample use has been made of statistical tables to supplement the descriptive text and to give a numerical account of what has been happening in the several fields of production, trade and commerce, population and social condition, the functions of government, and so on. A list of illustrations, in the form of plates, graphs and maps, and a synopsis of the contents are given in the opening pages.

The statistical tables in this issue relate in the main to periods ended the 30th June, or the 31st December, 1960, but much of the descriptive matter incorporates the effect of later Commonwealth and State legislation or administrative decisions, and some recent developments are dealt with in the *Appendix*. Statistics up to the 31st December, 1961 are given in the *Statistical Summary* following the main chapters. A wide range of current statistics is available in the periodical publications produced by this Office in printed or mimeographed form, and listed at the back of the Book, as well as in the various publications issued by the Commonwealth Statistician, Canberra.

My thanks are again expressed to the many Government officials and others who willingly collaborated in the preparation of letterpress or in the review of existing matter, to the Bank of New South Wales, the Perth City Council, the University of Western Australia Press, the Royal Society of Western Australia, the Western Australian Government Tourist Bureau, the Department of Agriculture and the Western Australian Government Railways Commission for the loan of blocks used in some of the illustrations, and to the Government Printer and his staff for their continuing interest in the work and for assistance and advice freely given at all times.

The authors of the scientific articles appearing in Chapter II are especially thanked for contributions of new material and for their ready co-operation in revising the earlier text.

The reader's attention is drawn to the information service and library facilities available at this Office. Business men, manufacturers, primary producers, students and the public generally are invited to make full use of these services.

Great care has been taken to ensure the accuracy of the information in the Year Book. It is possible nevertheless that it may contain some errors and the reader is requested to indicate any apparent inaccuracies and also to suggest any improvements which may be thought desirable.

R. J. LITTLE,
Deputy Commonwealth Statistician
and
Government Statistician

Commonwealth Bureau of Census and Statistics
Western Australian Office
PERTH, W.A.
15th October, 1962

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CHAPTER I - HISTORICAL REVIEW

DISCOVERIES AND HISTORY UP TO COLONIZATION IN 1829

The first European known to have visited the western shores of the Australian continent, until then the legendary *Terra Australis Incognita*, was Dirk Hartogs, an officer of the Dutch East India Company. In October, 1616, while outward bound from Holland to the East Indies in the vessel "Eendracht," he entered the bay which Dampier later visited and named Shark Bay (see map of *Western Australia preceding Index*). Hartogs landed on part of its western arm, since named in his honour Dirk Hartogs Island. In July, 1618, the Dutch vessel "Mauritius" touched near North West Cape; in 1619 Frederik de Houtman discovered the group of reefs and islands, now known as Houtman Abrolhos, lying some fifty miles off shore from the present port of Geraldton, and in 1622 the Dutch ship "Leeuwin" rounded the cape (now Cape Leeuwin) at the south-western extremity of the Australian continent. Early in 1627, Thyssen in the Dutch vessel "Gulden Zeepaard" made a close examination of the southern coastline for a distance of about a thousand miles eastward from Cape Leeuwin.

In 1629, the "Batavia" under the command of Francis Pelsart was wrecked on one of the Abrolhos islands while on a voyage from Holland to the Indies. The vessel was a total loss, but most of the passengers and crew reached shore. Pelsart, with eight men, made his way to Batavia in a ship's boat and obtained a frigate in which he returned to rescue the remaining castaways. In his absence some of the crew, led by the supercargo, Jerome Cornelis, had mutinied and murdered most of the passengers. Pelsart executed the ringleaders and marooned two lesser offenders on the nearby mainland.

In 1644, Abel Tasman, instructed by the Dutch East India Company, made a voyage of exploration in command of the yachts "Limmen," "Zeemeeuw" and "De Brak" in the course of which he examined the northern and north-western coasts as far south as Exmouth Gulf and probably landed at points now named Carnot Bay and Roebuck Bay. To the western part of the continent he gave the name "New Holland." In April, 1656, the Dutch ship "Vergulde Draeck," laden with merchandise and considerable treasure, was wrecked on a reef on the west coast about latitude 30° 40' S. with the loss of 118 lives. Leaving 68 survivors on the mainland, a crew of seven set out for Batavia in a ship's boat. On their arrival an expedition was dispatched in search of the wreck and the castaways. This expedition and others sent later did not succeed in finding them but did, however, result in improved charts of parts of the Western Australian coast.

The first recorded visit by an Englishman was that of William Dampier in the small vessel "Cygnets." In January, 1688, the crew, after having mutinied and seized the ship, beached her for overhauling at a place on the north-west coast now known as Cygnets Bay.

In December, 1696, Commander Willem de Vlaming in the Dutch ship "Geelvinck," searching for a vessel overdue on a voyage from Holland to the Indies, came to an island which he named "Rottenest" (now spelt "Rottnest") lying about ten miles from the mainland. In January, 1697, he and a party of armed men landed on the adjacent coast probably near the present Cottesloe and marching eastward a short distance came upon a river which he named the Swan River on account of the presence of many black swans. A few days later his ship and two accompanying vessels anchored close to the mouth of the river and Vlaming is said to have explored its course for some distance. He saw no natives though a primitive hut and other signs of habitation were found and some footprints were seen. Vlaming examined the coast northward as far as North West Cape. On the whole his report on the country was not favourable.

In 1699, Dampier was sent by William III in the "Roebuck" under an Admiralty Commission to make further explorations on the north-west coast. On the 1st August, 1699, he entered and named Shark Bay and then explored the coast as far north as Roebuck Bay. So disgusted was he with the barren and waterless country that he abandoned his mission. As a result of his adverse report, England appears to have lost interest in Australian exploration for many years.

Between 1705 and 1765 there were several visits by Dutch ships, two of which were wrecked on Houtman Abrolhos.

In March, 1772, a French ship "Le Gros Ventre" under the command of Captain de St. Alouarn anchored off Cape Leeuwin.

The next known visit was made by the British when, on the 26th September, 1791, Captain George Vancouver in H.M.S. "Discovery," attended by H.M.S. "Chatham" with Captain Broughton in command, reached the coast about 100 miles south-east of Cape Leeuwin, near Point Nuyts. Proceeding

eastward, the expedition entered a fine natural harbour which was named "King George III Sound," now King George Sound. Vancouver took formal possession, in the name of the King, of the land he saw between his landfall at Chatham Island and his point of departure from the coast near the present port of Esperance.

Another visit by the French followed, Admiral d'Entrecasteaux arriving near Chatham Island in December, 1792, at a point now named Point D'Entrecasteaux. His fleet, comprising the vessels "Recherche" and "Esperance," was in search of an expedition under La Perouse which had not been heard of since 1788 when it sailed from Botany Bay, New South Wales, on the eastern coast of the continent. The visit of the fleet under d'Entrecasteaux is commemorated in several place names along the southern coast.

In 1801-02, Captain Matthew Flinders under orders from the Admiralty made a detailed survey of the south coast in the sloop "Investigator." He charted the coast eastward from Cape Leeuwin, as far as Bass Strait. It was Flinders who suggested in 1814 that the continent be named Australia.

A scientific expedition, comprising the vessels "Geographe" commanded by Commodore Nicolas Baudin and "Naturaliste" by Captain Hamelin with Lieutenant Louis de Freycinet, was dispatched by the French Government from Le Havre in October, 1800. They reached the south-west coast in 1801. Becoming separated in a storm they made their way independently to Timor, the "Geographe" by way of Shark Bay and Cape Leveque, the "Naturaliste" calling at Rottnest and the Swan River, which was carefully explored to a point beyond the confluence of the Helena River. Leaving Timor in November, 1801, the two vessels sailed to Van Diemen's Land (now Tasmania). A small ship, the "Casuarina," was later chartered in Sydney and placed under de Freycinet's command. The "Geographe" and the "Casuarina" then proceeded to examine the southern coast of the continent and continued along the western coast, touching at points from King George Sound to what is now the West Kimberley area. A great number of well-known place names resulted from these voyages.

In 1818, de Freycinet, in command of the "Uranie," again visited the western and north-western coasts and made a geographical survey of Shark Bay.

From 1818 to 1822, Lieutenant Philip Parker King under instructions from the Admiralty made a survey of the whole of the coast between King George Sound and Cambridge Gulf.

In October, 1826, the French vessel "Astrolabe," under Captain D'Urville, visited King George Sound and spent almost a month there. In November of the same year, Governor Darling of New South Wales had dispatched Major Edmund Lockyer from Sydney with a detachment of soldiers and a party of convicts to found a settlement at King George Sound. The move was designed primarily to forestall the French who, it was feared, planned to annex the territory. A landing was made by Lockyer on the 25th December and the first settlement in what is now Western Australia was established.

In 1827, Captain Stirling sailed from Sydney in H.M.S. "Success" to examine the country in the vicinity of the Swan River, where a settlement was contemplated. His report was favourable and Governor Darling recommended the British Government to proceed at once with the venture.

On the 2nd May, 1829, Captain Charles H. Fremantle in H.M.S. "Challenger" arrived at the mouth of the Swan River and, hoisting the British flag on the south head, took formal possession in the name of His Majesty King George IV of "all that part of New Holland which is not included within the territory of New South Wales." Thus with this annexation, embracing an area extending to the 129°E. meridian, the whole of the Australian continent became British territory.

On the 1st June, 1829, Captain Stirling returned from England in the transport "Parmelia" in command of an expedition appointed to establish the Colony of Western Australia which for some time afterwards was generally known as the Swan River Settlement. He was joined a few days later by H.M.S. "Sulphur" with a detachment of the 63rd Regiment. At first the colonists camped on Garden Island but shortly afterwards established settlements at Fremantle and Perth.

CHRONOLOGICAL NOTES FROM 1829

1829—Landing at Swan River in May of Captain Fremantle from H.M.S. "Challenger," and formal possession taken of territory in the name of His Majesty King George IV. Arrival from Spithead in June of transport "Parmelia" having on board the newly-appointed Lieutenant-Governor, Captain James Stirling, and his family, together with intending settlers, numbering in all some 70 persons. "Parmelia" followed a few days later by H.M.S. "Sulphur" with detachment of troops. Proclamation of Colony on Garden Island on 18th June. Townsites of Perth, the capital of the Colony, and Fremantle, the port, laid out. Official ceremony on 12th August to mark the foundation of Perth. Arrival in

December of the "Gilmore" with Thomas Peel and settlers. In all, 18 merchant ships arrived during the year.

1830—Exploration of hinterland south and east of Swan River. Military station established at Port Leschenault, near present site of Bunbury. Townsite of Augusta laid out and colonists settled there. Town of Guildford surveyed; townsite of Kelmscott proclaimed. Sites of towns of York and Beverley explored by Ensign R. Dale. Arrival of Rev. J. B. Wittenoom, first Colonial Chaplain. Postmasters appointed at Perth and Fremantle. First school and first hotels opened.

1831—Inauguration of monthly boat service between Fremantle and Guildford. Settlement of York district and exploration of lower Avon valley. First overland journey from Perth to King George Sound. Administration of settlement at King George Sound transferred to authorities at Perth. Townsite of Albany laid out. Arrival of Captain Stirling's commission as Governor and Commander-in-Chief and publication in December of Order of the King in Council constituting first Legislative Council. Production of first printed newspaper, "The Fremantle Observer," replacing earlier manuscript news-sheet. Wheat harvested from a total area of 160 acres. Vineyard established at Hamilton Hill. First meeting of Agricultural Society. Completion of Round House Gaol on Arthur's Head at Fremantle.

1832—In February, first sitting of Executive Council. First meeting of Legislative Council of five members comprising the Governor, Captain Stirling, the Commandant, Captain F. C. Irwin, the Colonial Secretary, Peter Broun, the Surveyor-General, J. S. Roe, and the Advocate-General, G. F. Moore. Civil Court established. First sale of unoccupied Crown lands at auction, replacing earlier grants system. Further extension of settlement across Darling Range. In August, departure of Captain Stirling on visit to England.

1833—Journeys by Ensign Dale and Dr. Collie in vicinity of King George Sound. Examination of Vasse district by J. G. Bussell. Arrival of Sir Richard Spencer as Government Resident at Albany. First issue of "Perth Gazette." Rationing of food in the Colony; situation relieved by arrival of several ships later in year and bountiful harvest at end of year. Area under crop 600 acres. Erection of flour mills at Perth.

1834—Captain Sir James Stirling returned to Perth in August and first regulations for Civil Establishment proclaimed shortly afterwards. In October, an encounter near Pinjarra between a party, led by Sir James Stirling and Captain Ellis, and the natives of the Murray tribe resulted in the death of about 15 natives; Captain Ellis later died of a spear wound. Postal Department established. Agricultural Society held first agricultural show near Guildford. First export of wool, 7,585 lb., to England.

1835—Value of land and improvements estimated at nearly £250,000. Area of land under crop 1,800 acres. Livestock included 5,138 sheep and 646 cattle. Lack of interest in the Colony in London despite publication of Captain Irwin's "The State and Position of Western Australia." Estimates of receipts and expenditure for year laid before Legislative Council for the first time. Erection of Shenton's Mill at the Narrows on left bank of Swan River opposite Perth.

1836—First settlers took up residence in Bunbury district. Notable journeys east and north of Perth by J. S. Roe and G. F. Moore. Road between Perth and Albany surveyed by A. Hillman. Launching of first locally-built seagoing craft, the "Lady Stirling." First shipment of timber, "Western Australian mahogany" (jarrah), to England. First issue of "Government Gazette."

1837—Population 2,032; males 1,282, females 750. Sheep numbered over 10,000 and wheat production exceeded consumption. Bank of Western Australia commenced business. Perth Courthouse completed. Whaling operations begun in Cockburn Sound. Oil and whalebone valued at £3,000 exported.

1838—Captain George Grey explored country in vicinity of Prince Regent River while H.M.S. "Beagle" conducted coastal survey. Sir James Stirling left the Colony. First full plan of Perth issued by Surveyor-General. Rottneest Island first used as native prison.

1839—Grey's overland journey between Shark Bay and Perth. Government offered a reward of 2,560 acres of land for discovery of coal. Governor Hutt nominated four unofficial members to Legislative Council. Publication in London of Nathaniel Ogle's "The Colony of Western Australia" and in Perth of a vocabulary of the aboriginal language by George Grey.

1840—Construction of Perth causeway over Swan River begun. Departure of the "Shepherd" for London with cargo consisting wholly of colonial produce. Publication of "The Inquirer" newspaper. First full-time police constable appointed in Perth. First Master and Servant Act passed by Legislative Council.

1841—Population 2,760 ; males 1,706, females 1,054. Completion of coastal survey, begun in 1838, by Captains Wickham and Stokes in H.M.S. "Beagle." Edward John Eyre's journey overland from Fowler's Bay (South Australia) to Albany. Discovery by William Nairne Clark of hardwood forests between Albany and Point D'Entrecasteaux. Extension of mail services—weekly between Guildford and York and monthly between Guildford and Albany. Settlement established at Australind by the Western Australian Company following arrival of the "Parkfield" in March, this being the first substantial immigration since 1831. Absorption of Bank of Western Australia by Bank of Australasia, followed by the formation of a new locally-owned bank, the Western Australian Bank. Legislation providing for compulsory registration of births, deaths and marriages ; central registry office established at Perth.

1842—Number of sheep exceeded 60,000. Minimum price of Crown land raised to £1 per acre. Perth Town Trust constituted under Act of 1841. Opening of Wesleyan Church in Perth. Inauguration of scheme for immigration of boys from Parkhurst Prison, Isle of Wight. Net migration 673. Publication of first "Western Australian Almanack."

1843—Completion of Perth causeway. First bridge over Canning River opened. Pastoral industry adversely affected by fall in price of wool. News received of determination to wind up affairs of the Western Australian Company. Arrival in December of Very Rev. J. Brady to minister to the Roman Catholic community.

1844—Population 4,350 ; males 2,622, females 1,728. Sheep numbered 86,482 and cattle 5,376. Export of horses to India and of cattle to Mauritius. Sawmill and flour-mill, operated by steam, began production at Guildford. Regular exports of timber commenced. Lieutenant Helpman in the schooner "Champion" landed at the mouth of the Murchison River and reported good pastoral country. First execution of a European, for murder.

1845—First visit of a steam vessel, H.M.S. "Driver." First export of sandalwood. Departure of some settlers and closure of branch of Bank of Australasia. Petition by some settlers for introduction of convicts to relieve acute shortage of labour. First service held in Saint George's Church of England.

1846—Export of wool, 291,368 lb., more than double that of previous year. Formation of Western Australian Mining Company following reports of discovery of coal in Murray district. Discovery of coal at Irwin River by A. C., F. T. and C. Gregory. Launching at Fremantle of three vessels built of jarrah, the largest being of 260 tons cargo capacity. First Congregational Church opened in Perth. Foundation of New Norcia by the Benedictine missionaries Dom Serra and Dom Salvado.

1847—Membership of Legislative Council increased by appointment of the Collector of Revenue, H. C. Sutherland, as an official member. Appointment of General Board of Education and opening of Perth Boys' School and Perth Girls' School. First export of guano from Shark Bay. Birth of John Forrest at Bunbury.

1848—In October, first official census. Population 4,622 ; males 2,818, females 1,804. Livestock numbered 141,123 sheep, 10,919 cattle, 2,287 pigs and 2,095 horses. Area under crop more than 7,000 acres, including 3,317 acres of wheat. Discovery of lead by Gregory brothers in the Northampton district near Murchison River resulted in establishment of Geraldine Lead Mine. J. S. Roe's journey of 1,800 miles in the south-east as far as Russell Range ; reported discovery of coal at Fitzgerald River and of heavily-timbered areas. Twelve schools open with total enrolment of 400 scholars. Pastoral visit by Bishop Short from Adelaide.

1849—Following agitation by leading colonists for urgently-needed labour and public works, Order-in-Council published in October enabling British convicts to be transported to the Colony. Discovery of copper at Geraldine Mine. Publication of new regulations permitting the issue of pastoral leases.

1850—Arrival at Fremantle on 1st June of "Scindian" with first convicts, 75 in number, in the charge of Captain E. Y. W. Henderson, Comptroller-General of Convicts until 1863. The Australian Colonies Government Act precluded Western Australia from having "representative government" for the time being. Report by Lieutenant Helpman of discovery of pearls at Shark Bay. Survey of site of Geraldton.

1851—Programme of public works planned, to include roads, bridges and public buildings, using convict labour. Formation of Police Force. Swan River Mechanics' Institute founded.

1852—Construction of smelting furnace at Geraldine Mine. Establishment of coaling station at Albany and arrival of first mail steamer carrying mails between England and Australia. First export of colonial wine. Townsite of Dongara surveyed. Western Australian Turf Club established.

1853—Export of jarrah to Victoria. Ticket-of-leave depot established at Port Gregory, about 50 miles north of Geraldton, to aid mining industry.

1854—Second census of the Colony. Population 11,743 ; males 7,779, females 3,964. Livestock comprised 173,568 sheep, 20,436 cattle, 4,499 horses and 4,073 pigs. Area under crop approximated 14,000 acres, almost 6,000 acres being sown to wheat. Robert Austin's journey through the Murchison district ; Mount Magnet area described as having "every appearance of being one of the finest goldfields in the world." Erection at Quindalup, near Busselton, of first large timber mill. Issue of first postage stamps, introducing prepayment for mail delivery.

1855—Discovery of copper at Bowes River, about 25 miles north of Geraldton, leading to the development of the Northampton mineral field. Inauguration by steamer "Les Trois Amis" of first regular service by steamer on Swan River between Perth and Fremantle. First wing of Fremantle Gaol completed.

1856—Perth constituted a city and arrival of Archdeacon M. B. Hale as Bishop-Designate of Perth. Expedition, led by A. C. Gregory, from Victoria River (Northern Territory) along Sturt Creek as far as Gregory's Salt Sea, west of the Musgrave Range. Deficit in public accounts, causing Government to institute economies. Completion of new Perth Gaol and courthouse north of city.

1857—Reports of good pastoral country on Upper Murchison River following F. T. Gregory's exploration of the area. Negotiations completed for sale of large number of horses in India. Introduction of statutory control of "scab" in sheep. Regular river steamer service extended to reach Guildford.

1858—F. T. Gregory's exploration of the Gascoyne district and discovery of good pastoral lands. First meeting of Perth City Council. Elevation of Saint George's Church of England to Cathedral status with installation of Bishop Hale. Opening of Bishop Hale's School, the first secondary school in the Colony.

1859—Third census taken. Population 14,837 ; males 9,522, females 5,315. Livestock included 234,815 sheep, 30,990 cattle, 11,430 pigs and 8,386 horses. Area under crop 25,114 acres, of which wheat represented 13,610 acres. Reduction in price of Crown land from £1 to 10s. per acre. Further copper and lead mines opened up in Northampton district.

1860—A total of 5,500 convicts had arrived and many had been engaged on the construction of public buildings, bridges and roads, the remainder being employed privately. Great public interest in commercial photography, recently introduced in the Colony.

1861—Supreme Court established ; Mr. A. P. (later Sir Archibald) Burt appointed first Chief Justice. F. T. Gregory led an expedition in the North-West, in the course of which the Ashburton, Fortescue, De Grey and Oakover Rivers were discovered, the existence of good grazing lands reported and pearls found in the Nickol Bay area. Provision made for a volunteer defence force.

1862—Arrival of Dr. John Hampton, formerly Comptroller-General of Convicts in Tasmania, as sixth Governor of the Colony. Government offered a reward of £5,000 for discovery of payable goldfield within 150 miles of Perth. First regular export of pearl-shell. Severe floods in many parts of the Colony, causing much damage and the loss of several lives. Proclamation of special land regulations for the North and Eastern Districts. Foundation of Perth Benefit Building Investment and Loan Society. Money Order Office opened.

1863—First settlement in the North-West made by W. Padbury and J. Wellard in the De Grey district. Examination of Camden Harbour area near Collier Bay. H. M. Lefroy led an expedition to the Hampton Plains district east of the present site of Kalgoorlie. In January, E. H. Hargraves reported that the discovery of gold in the Colony was unlikely. Departure of last unit of British Regular Army. Governor Hampton took up residence in present Government House. Post Office Savings Bank opened at Perth.

1864—First shipment of wool from North-West pastoral areas. Formation of Camden Harbour Pastoral Association in Victoria and of Roebuck Bay Pastoral Association in Perth. Panter, Harding and Goldwyer killed by natives in the Roebuck Bay district. First of C. C. Hunt's expeditions, in this and the two following years, to the Hampton Plains district. City of Perth divided into three wards.

1865—Arrival at Camden Harbour of R. J. Sholl as Government Resident of the North District. Failure of Camden Harbour Pastoral Association and of the Denison Plains Pastoral Company to form permanent settlements. Captain E. A. Delisser's journey into the south-east corner of the Colony from South Australia and report of salt-bush country. Population of the Colony exceeded 20,000. Sheep numbered 445,000, cattle 45,000 and horses 16,000. Saint Mary's Roman Catholic Cathedral and Trinity Congregational Church opened in Perth.

1866—Town of Roebourne proclaimed and establishment there of headquarters of Government Resident and staff, transferred from Camden Harbour. Overland stock route from Geraldton to Nickol Bay opened by E. T. Hooley. Roebuck Bay Pastoral Association moved to Roebourne district. Pensioners' Barracks opened in Perth. Branch of National Bank of Australasia commenced business. Bridge over Swan River at Fremantle opened.

1867—Corner-stone of Perth Town Hall laid. Opening of new causeway over Swan River at Perth and of bridge over Helena River at Guildford. Legislative Council enlarged to comprise six officials and six colonists nominated by the Governor. Total area under pastoral leases in the North-West 5.8 million acres.

1868—On 10th January the last convicts sent to the Colony reached Fremantle on the "Hougoumont"; total arrivals since the beginning of transportation in 1850 numbered 9,668, all of whom were males. Increase in export of pearl-shell. Appearance of red rust in wheat crops in the Champion Bay district.

1869—Arrival of Sir Frederick Weld as seventh Governor of the Colony. Opening of first telegraph line, between Perth and Fremantle. John Forrest led an expedition, in search of Leichhardt's party, to a point east of Mount Margaret. Visit of H.R.H. the Duke of Edinburgh.

1870—Fourth official census taken. Population of Colony, 24,785 (15,375 males, 9,410 females) and of Perth, more than 5,000. Sheep numbered 654,054, cattle 47,263, horses 23,012 and pigs 16,120. Area under crop 50,263 acres, of which 25,963 acres sown to wheat. Inauguration of representative government; new Legislative Council comprised twelve elected members and six nominees. Severe drought affected both pastoral and agricultural districts. John and Alexander Forrest led an expedition from Perth to Adelaide (South Australia) by way of Kojonup, Esperance Bay and Eucla. Official opening of Perth Town Hall. Medical Board established for registration of medical practitioners. Government Printing Office opened. Opening of present Perth Wesley Church.

1871—First Loan Act passed authorizing, in addition to public works, a railway survey in the Champion Bay district and the purchase of the Perth-Fremantle telegraph line. Elementary Education Act vested control of education in a Central Board and in District Boards; annual government grants made to government and private schools. Municipalities of Perth, Fremantle, Guildford, Albany, Bunbury, Busselton, Geraldton and York proclaimed; Road Boards established. Opening by the Western Australian Timber Company of a private railway 12 miles in length near Busselton, using a steam locomotive.

1872—Cyclone in Nickol Bay area caused heavy stock losses and devastated the town of Roebourne. Flooding of the Avon and Swan Rivers caused extensive damage to property. Opening of telegraph line connecting Perth and Albany. Arrival of Lieutenant Archdeacon to conduct Admiralty surveys on the Western Australian coast.

1873—Major Warburton led a cross-country expedition from Alice Springs (Central Australia) to the De Grey River. Perth provided with street lighting, by means of oil lamps. Sheep numbered almost three-quarters of a million and cattle nearly 50,000.

1874—John and Alexander Forrest led a successful expedition from Geraldton to the overland telegraph line in Central Australia. Legislative Council increased to 21, of whom 14 were elected members. Work commenced on the Geraldton-Northampton railway. Export of timber, 4.1 million superficial feet valued at £24,192.

1875—Ernest Giles crossed the Colony from Port Augusta (South Australia) to Perth by way of Queen Victoria Springs. Work commenced on construction of overland telegraph line to Adelaide through Eucla. Introduction of Torrens system for land titles.

1876—Ernest Giles returned to South Australia by way of Rawlinson Ranges. Export of pearl-shell valued at £75,292. Six Fenian convicts escaped from Fremantle prison and were taken off by the American whaler "Catalpa." S.S. "Georgette" wrecked near Cape Leeuwin.

1877—Telegraph line between Perth and Eucla opened, thus establishing communication with Adelaide and London. First direct shipment of wool from the North-West to London. Visit of Baron Ferdinand von Mueller, the eminent botanist.

1878—Detailed survey of North-West pastoral districts completed. Bi-monthly steamship service inaugurated between Fremantle and Melbourne by James Lilly and Company. Branch of Union Bank opened in Perth.

1879—First government railway, 33 miles in length, opened between Geraldton and Northampton. Construction of Eastern Railway begun. Alexander Forrest explored the Kimberley district between Beagle Bay and the overland telegraph line, crossing the Fitzroy and Ord Rivers. Secret ballot intro-

duced for Legislative Council elections. Saint George's Hall opened in Perth for public entertainments. The "Western Australian Times" (originally the "Perth Gazette") became "The West Australian" newspaper.

1880—George Shenton elected first Mayor of Perth. Pastoralists took up areas in the Kimberley district. Cobb and Company's coaches introduced under government subsidy for inland mail and passenger services. First suit for divorce in the Colony.

1881—Fifth official census, the first taken simultaneously in all the Australian Colonies. Population 29,708; males 17,062, females 12,646. Livestock included 1,221,079 sheep, 64,603 cattle, 34,782 horses and 26,743 pigs. Area under crop 60,821 acres of which 29,352 acres under wheat. Opening of first section, 19 miles in length, of Eastern Railway connecting Fremantle, Perth and Guildford.

1882—Membership of Legislative Council raised to 24, including 16 elected members. First Presbyterian Church in the Colony opened in Perth. First issue of the "Daily News," the Colony's first daily newspaper. City of Perth Gas Company founded.

1883—Examination of Kimberley district by Surveyor-General, John Forrest, and Government Geologist, E. T. Hardman, who drew attention to the auriferous nature of the country. Proclamation of Broome, Derby and Carnarvon townships. B. C. Wood elected first Mayor of Fremantle.

1884—Opening of second section of Eastern Railway between Guildford and Chidlow's Well. Formation in London by Anthony Hordern of the Western Australian Land Company to construct and maintain a railway from Beverley to Albany on the land-grant principle. A branch of the Amalgamated Society of Carpenters and Joiners (England) formed at Fremantle. Population of the Colony, 32,958; males 18,623, females 14,335.

1885—First discovery of payable goldfield, in Kimberley district, by Hall and Slattery. Eastern Railway extended from Chidlow's Well to York. Port of Derby proclaimed.

1886—Kimberley Goldfield and port of Wyndham proclaimed. Further extension of Eastern Railway to Beverley and Northam. Imperial convict establishment disbanded. Agreement reached with an English syndicate to construct and maintain a railway from Midland Junction to Walkaway on the land-grant principle. Legislative Council increased to 26, of whom 17 were elected members. Establishment of Aborigines' Protection Board.

1887—Discovery of gold near Southern Cross. Completion of railway between Geraldton and Walkaway. Telephone exchange system inaugurated at Perth. Pearling fleet off Eighty Mile Beach struck by cyclone causing loss of many lives. First Perth Cup run.

1888—Rich deposits of alluvial gold found in Pilbara district. Discovery of tin at Greenbushes. Opening of railway between Clackline and Toodyay.

1889—Passage by Legislative Council of Constitution Bill in anticipation of responsible government. Departure for London of delegation comprising Governor Broome, S. H. Parker, Q.C. and Sir Thomas Cockburn-Campbell to present the Colony's case to the Imperial Government. Discovery of alluvial gold in the Ashburton district. Completion by the Western Australian Land Company of the Great Southern Railway between Beverley and Albany, the contract for the construction of which had been given to Millar Bros. of Melbourne. Oversea telegraph communication established by submarine cable from Broome to Banjoewangi, Java. First efforts to prove existence of commercial coal at Collie River. Agreement signed between Perth Municipality and City of Perth Water Works Company for construction of the Victoria Reservoir in the Darling Range to connect with a service reservoir on Mount Eliza at Perth. Victoria Public Library (now State Library) opened.

1890—Responsible government granted to the Colony of Western Australia. Constitution proclaimed in the Colony on 21st October. Election of members of newly-constituted Legislative Assembly took place in November and December; Governor nominated first members of the newly-constituted Legislative Council. Parliament officially opened on 30th December; John Forrest commissioned to form first Ministry. Railway opened between Albany and Millar Bros.' timber concession near Denmark. Discovery of gold in the Murchison district. Perth Chamber of Commerce established.

1891—Sixth official census taken. Population 49,782; males 29,807, females 19,975. Sheep numbered 2,563,866, cattle 134,997, horses 48,999 and pigs 32,267. Elder Expedition, led by Lindsay and Wells, crossed the Colony from Warrina (South Australia) through Southern Cross to the Murchison district. Western Australia represented at the first National Australasian Convention, held at Sydney. Appointment of C. Y. O'Connor as the Colony's first Engineer-in-Chief. Railway between Bunbury and Boyanup opened.

1892—Rich goldfield discovered at Coolgardie by Bayley and Ford. Commencement of Fremantle Harbour works. Sir Malcolm Fraser appointed first Agent-General for Western Australia in the United Kingdom. Electric Lighting Act passed authorizing local government authorities to grant licences or make contracts for the supply of electricity for lighting and other purposes.

1893—Discovery of gold at Kalgoorlie in June by Hannan and O'Shea and in the Norseman district. Opening of South-Western Railway linking Perth, Bunbury and Donnybrook. Opening of telegraph line to Wyndham. Coolgardie townsite declared. Legislative Council became an elected body. Central Board of Education abolished and government schools placed under Ministerial supervision.

1894—Establishment of Bureau (later Department) of Agriculture and of Mines Department. Completion of Midland Railway Company's line, 277 miles in length, from Midland Junction to Walkaway. Eastern Railway extended from Northam to Southern Cross and line opened between Narngulu and Mullewa. Telegraph line to Kalgoorlie completed. Reported incursion of rabbits from South Australia.

1895—Opening of Agricultural Bank. South-Western Railway extended to Busselton. Municipality of Kalgoorlie proclaimed. First issue of "Kalgoorlie Miner" newspaper. Engineer-in-Chief instructed to draw up plan to supply water to Eastern Goldfields. Annual grants to churches and to private schools terminated by the Ecclesiastical Grant Abolition Act and the Assisted Schools Abolition Act. Board of Perth Public Hospital appointed.

1896—Eastern Goldfields Railway reached Coolgardie and Kalgoorlie. Great Southern Railway and Perth Water Works purchased by Government. Proclamation of Collie Coal Mining District. Peak of immigration stimulated by gold discoveries, net gain by migration being over 35,000; total population of Colony, 137,796; males 91,586, females 46,210. Calvert Exploration Expedition led by Wells from Lake Way to Fitzroy River. Carnegie's journey from Coolgardie to Halls Creek. Perth Observatory established. First cinematograph film shown in Perth. Cape Leeuwin lighthouse completed. Parliament authorized a loan to finance construction of a pipeline to convey water from Mundaring, near Perth, to Kalgoorlie. The Political Labour Party, the first political party in the Colony, formed at meeting of Trades and Labour Council.

1897—Delegates representing Western Australia took part in Federal Conventions held in Adelaide and Sydney. Inauguration by Education Department of evening continuation classes. Newly-constructed harbour at Fremantle opened to shipping. Commencement of Bunbury Harbour works. Opening of Perth City Markets. Completion of first wing of new building to house the Western Australian Museum. First issue of "Sunday Times" newspaper. Carnegie expedition returned from Halls Creek. Church of Christ opened in Perth. First service in the Perth Synagogue. Establishment of Statistical Branch under direction of the Registrar-General.

1893—Australasian Federal Convention held in Melbourne. Extension of Northern Railway from Mullewa to Cue and of South-Western Railway to Collie and to Bridgetown. Work commenced on Goldfields Water Scheme. First butter factory established, at Busselton. Consolidating Land Act offered Crown land to settlers on liberal terms. Department of Agriculture succeeded the Bureau of Agriculture. Branch of the British Medical Association formed in Perth. First motor car in the Colony. Zoological Gardens opened at South Perth.

1899—Inauguration of tramway service by the Perth Electric Tramway Company. Railway opened between Kalgoorlie and Menzies. Discovery of tin in Pilbara district. Departure of first contingent of volunteers to serve with Imperial Forces in the Boer War. Fees abolished at government schools. Branch of Royal Mint opened in Perth. Chamber of Manufactures formed. Perth Baptist Church opened. Legislative Council enlarged to 30 members and Legislative Assembly to 50 members; women granted right to vote at parliamentary elections.

1900—Large majority in favour of Federation at referendum held on 31st July; For—44,800, Against—19,691. Perth Technical School opened. British mail-steamer contracts specified Fremantle in place of Albany as the first Australian port of call. Introduction of triennial Parliaments and payment of members. Industrial Conciliation and Arbitration Act passed; trade unions legalized. Government Refrigerating Works opened in Perth.

1901—Inauguration of Commonwealth of Australia on 1st January. Visit of T.R.H. the Duke and Duchess of Cornwall and York. Sir John Forrest entered Federal Parliament after completing 10 years in office as Premier of Western Australia. Labour Party won eight seats at the Legislative Assembly elections. Seventh census of Western Australia, the first taken simultaneously in all States on a uniform national basis. Population 184,124; males 112,875, females 71,249. Appointment of

members of first Court of Arbitration. Completion of submarine cable connecting Perth with South Africa. First meeting of the Chamber of Mines of Western Australia.

1902—Opening of railway from Northam to Goomalling. Work commenced on rabbit-proof fence to protect southern agricultural areas. Tramway service inaugurated by Kalgoorlie Electric Tramways Limited. Opening of Teachers' Training College. Establishment of Fremantle Harbour Trust. Death of C. Y. O'Connor, Engineer-in-Chief.

1903—Completion of Goldfields Water Scheme supplying water to Coolgardie and Kalgoorlie by a 346-mile pipeline from Mundaring Weir in the Darling Range near Perth. Peak year of gold production; 2,064,801 fine ounces. Extension of Eastern Goldfields Railway from Menzies to Leonora. Work begun on second rabbit-proof fence.

1904—First Labour Ministry, led by Henry Daglish. School of Mines opened at Kalgoorlie. An Endowment Act provided for the appointment of trustees to administer funds for the establishment of a University. Royal Commission appointed to consider the need to encourage immigration and the possibility of establishing a large-scale wheat-growing industry.

1905—First quarter million of population attained. Completion of No. 2 Rabbit-Proof Fence, 724 miles in length, from Point Ann on south coast through Cunderdin and Warra Warra to Gum Creek in East Murchison district. Transfer of Royal Agricultural Society's show to present site at Claremont. Tramway service inaugurated by Fremantle Municipal Tramways and Electric Lighting Board. Transfer of government railway workshops from Fremantle to Midland Junction completed.

1906—Government railway construction accelerated so as to penetrate the new wheat-growing areas; total mileage of railways open for traffic doubled in succeeding 10 years. Capital of Agricultural Bank greatly increased. Title of Post Office Savings Bank changed to "Government Savings Bank."

1907—Beginning of continuous export of wheat. A. W. Canning surveyed stock route from Wiluna in the East Murchison to Halls Creek in the Kimberley district. Completion of No. 1 Rabbit-Proof Fence, 1,139 miles long, from Starvation Harbour on the south coast through Burracoppin and Gum Creek to the north-west coast, near Condon, and of No. 3 Fence (160 miles) between Warra Warra and a point on the west coast a few miles south of the mouth of the Murchison River. State income taxation levied for the first time. Commonwealth Court of Conciliation and Arbitration declared first basic wage.

1908—Opening of Art Gallery extension to the Western Australian Museum.

1909—Great advance in wheat acreage; harvest reached 5.6 million bushels. Completion of survey of transcontinental railway route from Kalgoorlie across the Nullarbor Plain to Port Augusta (South Australia). Railways opened from Hopetoun to Ravensthorpe and from Coolgardie to Norseman. Commonwealth Government commenced to pay old-age pensions. Children's Hospital opened at Perth. Swan River Mechanics' Institute became the Perth Literary Institute.

1910—Continued decline in gold production; quantity won fell below 1.5 million fine ounces for the first time since 1900. Commonwealth Government made provision under the Surplus Revenue Act for payment to Western Australia of a special annual grant for a period of 10 years. Commonwealth Government commenced to pay invalid pensions. Appointment of Royal Commission to inquire into establishment of a University. First issue of Commonwealth bank notes. Manufacture of superphosphate fertilizers commenced. Formation of Western Australian Trotting Association.

1911—First federal census of the Commonwealth—Western Australia's population 282,114; males 161,565, females 120,549. In October the Labour Party led by John Scaddan obtained an overwhelming majority at the Legislative Assembly general elections. Widespread drought in new wheat-growing districts. Revival of lead mining at Northampton. Act of Parliament establishing University of Western Australia. Opening of Perth Modern School. Imperial penny postage inaugurated throughout British Empire.

1912—Disappearance of S.S. "Koombana" with all hands in cyclone off north-west coast. Completion of railway from Port Hedland to Marble Bar. Construction of transcontinental railway commenced. Commonwealth Government paid maternity allowances for the first time. Establishment of State Shipping Service, State Brickworks and State Ferries. Workers' Homes Act providing for government advances to workers for erection or purchase of homes.

1913—First students enrolled at University in temporary quarters at Perth. Branches of the Commonwealth Bank and Commonwealth Savings Bank opened. Establishment of State Saw Mills. Government assumed control of Perth tramway system after purchase from a private company. Marine wireless station opened at Applecross. Public Library transferred to new building adjacent to Museum. Criminal Code adopted by Parliament.

1914—Outbreak of European War, 4th August; embarkation of first Western Australian volunteers. Commonwealth Government made provision for payment of war pensions to members of the forces and their dependants. Widespread drought conditions resulted in failure of wheat crop; harvest declined from 13·3 million bushels in previous year to 2·6 million bushels. Legislation to establish an Industries Assistance Board to provide credit and seed wheat for farmers. Establishment of Narrogin Farm School. Strike in building trades. Formation of the Country Party. Opening in Perth of first free kindergarten.

1915—Western Australian volunteers took part in landing at Gallipoli, 25th April. Completion of rail link between Northam and Mullewa. Successful development of the Nabawa wheat strain, a leading strong wheat variety. Commonwealth income taxation imposed for the first time.

1916—Recovery of the wheat industry. Western Australia one of three States in favour of conscription at unsuccessful Commonwealth referendum held in October. Opening of King Edward Memorial Hospital for Women. Reduction of hotel trading hours to 9 a.m.—9 p.m.

1917—Opening of transcontinental railway, 1,051 miles in length, connecting Kalgoorlie with Port Augusta (South Australia), 454 miles being in Western Australia. Substantial increase in wool production from 33·1 million lb. to 40·3 million lb. In December, conscription proposals again rejected at Commonwealth referendum; Western Australia again favourable. Strike of waterside workers at Fremantle.

1918—War in Europe ended, 11th November. Plans made for the rehabilitation of returned soldiers. Forests Act provided for permanent dedication of State Forests and established a Forests Department with power to control cutting of timber and to undertake reforestation. Inauguration by Education Department of correspondence tuition for children in remote areas. Death of John Forrest shortly after elevation to the British peerage.

1919—Creation of Discharged Soldiers' Land Settlement Board. Serious outbreak of pneumonic influenza caused 540 deaths. Wyndham Meat Works commenced operations. Waterfront strike at Fremantle. First modern aeroplane flown in the State, by Norman Brearley. Motor cars numbered 3,000. Legislation passed to provide for control of road traffic and licensing of vehicles. James Mitchell appointed Premier.

1920—Commencement of large-scale assisted migration in association with further settlement of the wheat belt. In December, wool auctions held in Perth for the first time. State Civil Service strike, terminated by creation of Appeal Board. Commonwealth Taxation Department undertook collection on behalf of the State Government of its income tax and land tax. Visit of H.R.H. the Prince of Wales.

1921—Second Commonwealth census. Western Australian population 332,732; males 177,278, females 155,454. Further development of soldier settlement. Inauguration of Group Settlement Scheme in South-West to expand the dairying industry, in association with assisted immigration from the United Kingdom. Election to Legislative Assembly of Australia's first woman Member of Parliament, Mrs. Edith Cowan. Establishment by W.A. Airways Ltd. of first air mail service in Australia, between Geraldton and Derby.

1922—Empire Settlement Act of the Imperial Parliament inaugurated an immigration scheme financed jointly by British, Federal and State Governments. Formation of growers' voluntary wheat pool, following termination of State pool. Observation of solar eclipse by international party of astronomers at Wallal on north-west coast.

1923—Wheat harvest increased from 13·9 to 18·9 million bushels. Arrival during the year of 7,654 assisted immigrants. Present General Post Office in Forrest Place opened.

1924—Further increase in wheat harvest, to 23·9 million bushels. Continued decline in gold-mining activity; production less than one-half million ounces. Considerable progress in clearing of group settlement blocks. Assisted immigrants numbered 6,715, bringing the total during the five years 1920-1924 to 23,622. First radio broadcasting station 6WF (Western Farmers) opened at Perth. Interstate shipping strike. At Marble Bar, period of 160 consecutive days with maximum temperature of 100°F or higher ended 7th April. Labour Government assumed office under Philip Collier.

1925—Appointment by Commonwealth Government of Royal Commission to inquire into financial disabilities of Western Australia under federation. Compulsory voting introduced for federal elections. Industrial Arbitration Act provided for appointment of first permanent President of Court. Introduction of compulsory insurance of employees under Workers' Compensation Act. South-Western Railway extended to Flinders Bay. Disruption of shipping services caused by strike of waterside workers, Australian seamen and British seamen in Australian waters. Opening of woollen mill at Albany.

1926—Commonwealth Development and Migration Commission established. Main Roads Board constituted; road construction scheme, with Commonwealth financial assistance, commenced. Declaration of first State basic wage, adult weekly rate of £4 5s. for males and £2 5s. 11d. for females. State Government first undertook workers' compensation insurance business. Unusually heavy winter rains, resulting in flooding of parts of metropolitan area and partial destruction of railway bridge at North Fremantle. Opening of Muresk Agricultural College. Congress of the Australian and New Zealand Association for the Advancement of Science held in Perth for the first time. Introduction of the "Pater-son Plan," a voluntary scheme designed to stabilize the price of butter. Metropolitan Market Trust established.

1927—Wheat harvest 36.4 million bushels, the highest in the Commonwealth. Amalgamation of Western Australian Bank with Bank of New South Wales. Completion of rail link between Kalgoorlie and Esperance. Timber exports 157.4 million superficial feet, the greatest since 1913. Large increase in output of butter from factories in the South-West. Introduction of bulk handling of fuel oil at the Port of Fremantle. Visit of T.R.H. the Duke and Duchess of York.

1928—Peak of post-war immigration; net gain from migration 9,660. Constitution Alteration (State Debts) Referendum ratified the Financial Agreement between Commonwealth and States. Tractors on farms at end of year numbered 4,000.

1929—Celebration of Western Australia's centenary. City of Perth declared a Lord Mayoralty and Fremantle given city status. Wheat harvest, 39.1 million bushels, again the highest in Australia. Gold production amounted to only 377,176 fine ounces, the lowest level in a continuous decline since 1903. Inauguration of regular interstate air service, by W.A. Airways Ltd., between Perth and Adelaide (South Australia). End of large-scale railway construction in the wheat-growing areas. Last year of substantial intake of assisted immigrants since the War; in all, 43,693 had arrived in the ten-year period 1920-1929. First "talkie" films shown in Perth.

1930—Onset of world economic recession and marked fall in wheat and wool prices. Rapid growth in unemployment. Some improvement in gold-mining industry. Wheat harvest, 53.5 million bushels, the largest up to that time. Extension of northern air mail route to Wyndham. Establishment of interstate telephone trunk line between Perth and Adelaide. Defeat of Labour Government at elections in April; Nationalist-Country Party Government assumed office with Sir James Mitchell as Premier.

1931—Further deterioration in economic conditions. The Premiers' Plan proposed a reduction of adjustable government spending by 20 per cent. and interest rates by 22½ per cent.; proposals subsequently ratified by State Parliament. Depreciation of Australian currency; in terms of sterling, exchange rate fixed at £A125 = £100 stg. Substantial increase in price of gold. Wheat and wool prices at lowest level; average f.o.b. values for 1930-31 export year, wheat 2s. 3½d. per bushel, wool 8.04 pence per lb. Transfer of State Savings Bank to Commonwealth Bank. First quarterly adjustment made to State basic wage. Wiluna gold mines in production. Discovery at Larkinvile of Golden Eagle nugget (1,135 ounces), the largest found in Western Australia. Systematic drainage and irrigation scheme inaugurated in the Harvey and Waroona districts; relief work provided for the unemployed. Introduction of bulk handling of wheat.

1932—Continued increase in unemployment, 30 per cent. of trade union members being reported as unemployed; many families entirely dependent on government relief. A tax of 4½d. in the £ on all income imposed by a Financial Emergency Act. Extension of Northern Railway to Wiluna. Transfer of University to its permanent site at Crawley. Appointment of Commission to control private lotteries and to conduct State lotteries to benefit hospitals and charities. Metropolitan Whole Milk Act provided for establishment of a Board to regulate purchase and distribution of whole milk in the metropolitan area.

1933—Third Commonwealth census. Western Australian population 438,852; males 233,937, females 204,915. State basic wage at lowest level, £3 8s. for males in metropolitan area, since Arbitration Court's original declaration in 1926. Some reduction in unemployment although still at high level of 25 per cent. of trade union membership. Levy by Federal Government of a tax on flour at £4 5s. per ton to assist the wheat industry, depressed by consistently low market prices. Commencement of work on Canning Dam, to have ultimate capacity of over 20,550 million gallons, as source of water supply for metropolitan area. Official opening of Wellington Dam, on Collie River, with capacity of 8,000 million gallons, to serve the Collie River Irrigation District. South-Western Railway extended to Northcliffe. Establishment of banana plantations at Carnarvon. A compulsory referendum resulted in two-to-one majority in favour of the State's secession from the Commonwealth. Appointment of Commonwealth

Grants Commission to inquire into needs of States claiming financial assistance. Labour Government, under Philip Collier, took office in April following defeat of Nationalist-Country Party Government. Sir James Mitchell, formerly Premier, appointed Lieutenant-Governor to administer the State. Introduction of trolley-bus services in Perth and suburbs. Formation in Perth of first Australian Junior Chamber of Commerce.

1934—Wool production 90 million lb. ; rise in wool prices. Fall in butterfat prices and surviving group settlement dairy holdings in difficult circumstances. The voluntary "Paterson Plan" superseded by a compulsory price equalization scheme for stabilization of butter prices. Inauguration of air mail service between Australia and England. Racial riots in Kalgoorlie and Boulder. Township of Onslow devastated by cyclone. Visit of H.R.H. the Duke of Gloucester.

1935—State Civil Service salaries restored to pre-depression level. Continued decrease in unemployment, to 13.4 per cent. of trade union membership. Drought in pastoral areas and north-eastern agricultural district resulted in heavy losses of stock and crops. Rejection by the Imperial Parliament of State's secession petition. Establishment of flying doctor service in the North-West and Kimberley Divisions with bases at Port Hedland and Wyndham. Pearling fleet overwhelmed at Lacepede Islands by a cyclone, causing loss of 20 luggers and 142 lives.

1936—Drought conditions caused further heavy losses of stock in pastoral areas and reduced wheat harvest to 21.5 million bushels, the lowest for ten years. Increase in gold production ; many oversea mining companies floated to develop Western Australian low-grade gold-ore deposits. Commonwealth Government commenced to pay service pensions to certain former members of the armed services and their dependants. Flying time between Perth and Adelaide reduced to one day. Retirement of Philip Collier from the Premiership after a total of nine years in office served in two terms.

1937—Improved seasonal conditions resulted in greatly increased wheat harvest ; more attention given to mixed farming in wheat areas. Under stimulus of rising prices, gold production exceeded one million fine ounces for the first time since 1916. Flying doctor base established at Kalgoorlie.

1938—Substantial improvement in pastoral conditions ; increase in export of fat lamb carcasses. Federal embargo on oversea export of iron ore from Yampi Sound. State basic wage increased by 5s. 1d. to £4 per week for males in the metropolitan area, following presentation of special evidence at Arbitration Court's annual inquiry. Institute of Agriculture established at University as centre of agricultural and pastoral research. Legislation authorized the establishment of the State Government Insurance Office and validated its transactions since 1926.

1939—Outbreak of war in Europe, 3rd September ; recruiting begun for the second A.I.F. and the Empire Air Training Scheme. Acquisition by British Government of entire woolclip at guaranteed price of 13.4375 pence per lb. Gold production 1,214,238 fine ounces, the highest since 1915. National Register of Manpower and Wealth Census undertaken by Commonwealth Government. Legislation passed to amalgamate Financial Emergency Tax and income tax. Passage of other State Acts to control prices, rents and patriotic funds. Completion of new traffic bridge over Swan River at Fremantle. Cyclonic disturbance at Port Hedland ; severe storm damage at Kalgoorlie and interruption of gold-fields rail services.

1940—Severe drought over greater part of the State. Order issued under National Security Regulations for acquisition by Commonwealth Government of apple and pear crop and Board established for this purpose. First commercial flax crops. Sum of £115,000 allocated by Commonwealth Government from funds raised under the Wheat Industry Act of 1938, as first contribution under four-year plan for reconstruction of marginal areas. Liquid fuel rationed. Presentation of report of Royal Commission on the Pastoral Industry in the Leasehold Areas in Western Australia. Official opening of Canning Dam. Commencement of collection of income tax on wages and salaries at source. Civil Defence (Emergency Powers) Act passed empowering State Government to make regulations for protection of civilian population.

1941—Wheat growers licensed under wheat stabilization scheme for control of production. Port Hedland and Marble Bar struck by cyclone ; extensive damage to pastoral property. Torrential rains resulting in floods, with consequent losses of stock, in pastoral areas near De Grey River. Inauguration of Commonwealth scheme of child endowment, covering children under 16 years of age other than the first, or only, child of a family ; pay-roll tax on employers introduced. Samson Brook irrigation dam near Waroona (capacity 1,800 million gallons) opened. Plans announced for government survey of the Ord River area to examine irrigation possibilities. Work commenced on interstate road, the Eyre Highway, linking Norseman and Port Augusta (South Australia). Increase in industrial activity,

particularly in manufactures for war purposes—engineering, clothing and food processing. In December, Australia at war with Japan following Japanese attack on American naval base at Pearl Harbour, Hawaii.

1942—Area sown to wheat restricted under a Commonwealth wheat stabilization scheme; but area actually cropped, 1·75 million acres, significantly below maximum permissible area. Contraction of gold-mining industry included among measures taken by Commonwealth to secure release of manpower for essential services. Growing threat to Australia following Japanese invasion of Malaya and Netherlands East Indies; creation of special State Ministry of Civil Defence. Civilian registration of all persons aged 16 years and over. Munition factory at Welshpool commenced production. Rationing of clothing, tea and sugar. Introduction of daylight-saving scheme. Attacks by Japanese aircraft on Broome, Wyndham and Port Hedland. Floods in areas adjacent to Gascoyne River. Station properties in Port Hedland and Marble Bar district, and railway linking these towns, damaged by cyclone. Luggers wrecked with loss of life at Port Hedland. Introduction of Uniform Tax Scheme, the Commonwealth Government becoming sole taxing authority in income tax field, the State Treasuries being reimbursed by the Commonwealth. Widows' pensions paid for the first time. Establishment of State Public Trust Office under Public Trustee Act of 1941. Basic wage increased by 4s. 6d. to £4 14s. 11d. by the Premier, in exercise of powers conferred by National Security (Economic Organization) Regulations.

1943—Wool production, 105·2 million lb., the highest recorded up to that time. Severe decline in gold-mining industry; production, 546,475 fine ounces, 36 per cent. less than in previous year. First production of blue asbestos at Wittenoom Gorge in the West Pilbara district. Japanese air raid on Exmouth Gulf, the most southerly point of aerial attack. Western Australia exempted from Commonwealth scheme of daylight saving. Rationing of butter introduced. Enactment of State legislation to provide for raising of school-leaving age to 15 years. First payment by Commonwealth Government of funeral benefits for age and invalid pensioners. State legislation established a pensions fund for coal miners and their dependants. Workers' Homes Board empowered to provide houses for letting purposes and to advance money to householders for improvement of sub-standard dwellings.

1944—Drought conditions in pastoral areas and subnormal rainfall in agricultural and dairying districts. Wheat production, 15·9 million bushels, the lowest since 1922. Introduction of meat rationing. Inauguration of compulsory third party (motor vehicle) insurance. Introduction of "pay-as-you-earn" system of collection of income tax on incomes of individuals. Legislation passed establishing the Agricultural Bank as a trading bank, to be known as the Rural and Industries Bank. Defeat of Commonwealth referendum seeking extension of Commonwealth powers; Western Australia one of two States in favour. Strike of waterside workers against introduction of roster system.

1945—End of war in Europe, 9th May (VE Day) and in the Pacific, 15th August (VP Day); general demobilization of fighting forces begun. Ratification by State Parliament of Commonwealth-State agreements on war service land settlement and on housing. Plans to re-establish civilian building industry to overcome acute housing shortage. Legislation passed providing for State control of building permits and materials. Restrictions on use of electricity in metropolitan area as a result of coal shortage. State Electricity Commission established for purpose of extending and co-ordinating electricity supply. Occupation survey of population taken by Commonwealth Statistician. Introduction of Commonwealth scheme for payment of unemployment and sickness benefits. Development of Yampi Sound iron-ore deposits proceeding. Loss of lives, stock and property in cyclone on north-west coast. Flood damage at Carnarvon. In June, 23 consecutive days of rain at Perth resulting in a fall of 18·75 inches, the highest ever recorded there in any one month; total Perth rainfall for year, 52·67 inches, also a record. Death of Rt. Hon. John Curtin, Australian Prime Minister and M.H.R. for Fremantle, the first Western Australian Member to lead a Commonwealth Government.

1946—New industrial centre established at former munition factory at Welshpool and plans announced for manufacture of agricultural tractors. Re-establishment of gold-mining industry in process. Wheat acreage restrictions no longer operative; area about 30 per cent. greater than that of previous season. Perth wool auctions resumed, following termination of appraisal scheme. The Milk Act established the Milk Board of Western Australia with State-wide powers to regulate the production, sale and distribution of milk. Application by State Government for Commonwealth financial assistance in development of water supplies to agricultural areas and towns. Interruptions of electricity supply due to suspension of coal production at Collie caused by strike of railway workers. Resumption of pearling industry at Broome. Interim basic wage adjustment by Commonwealth Arbitration Court, increasing federal weekly basic wage rate in Western Australia by 7s. All States in favour at referendum

to authorize Commonwealth Government to legislate with respect to social services. Hospital benefits scheme introduced by Commonwealth Government.

1947—Fourth Commonwealth census. Western Australian population 502,480; males 258,076, females 244,404. Continued expansion in factory activity. Building operations increased, with more labour and materials available. Establishment of State Housing Commission replacing Workers' Homes Board. Arrival of first British migrants under the Free and Assisted Passage Agreement between the Commonwealth and United Kingdom Governments; first arrivals of displaced persons following Commonwealth Agreement with International Refugee Organization. Stimulation in mining generally; gold production, 703,886 fine ounces, the highest since 1942. World shortage of lead and high prices resulted in reopening of lead mines in Northampton area; a deposit inland from Derby also producing high-grade ore. Expansion in fishing industry; first oversea exports of crayfish tails. Interim increase of 5s. in State basic wage. Granting by Arbitration Court of 40-hour week in industry to operate from 1st January, 1948. Legislation included the Agricultural Areas, Great Southern Towns, and Goldfields Water Supply Act to approve and give effect to a scheme, the "Comprehensive Water Supply Scheme," for reticulating water to certain mixed-farming areas, for towns, stock and domestic purposes, to towns along the Great Southern Railway, and for increasing the supply to the Eastern Goldfields.

1948—Average f.o.b. value of wheat for 1947-48 export year, 17s. 6d. per bushel, the highest ever recorded. Federal aid to maintain production of "marginal" gold mines. Integrated wood-distillation and charcoal-iron industry in production at Wundowie in Darling Range near Perth; first output of pig-iron. Commonwealth Parliament passed the Western Australia Grant (Water Supply) Act approving payment to the State of an amount of £2.15 million, being half the estimated cost of the Comprehensive Water Supply Scheme. Completion of Stirling Irrigation Dam, on Harvey River, with capacity 12,000 million gallons. Serious outbreak of poliomyelitis; 311 cases reported. Inauguration of Commonwealth Rehabilitation Service providing treatment and vocational training of disabled persons. Abolition of rationing of meat and clothing. Redistribution of seats for Legislative Assembly. Publication of boundaries of three new Federal electorates—Curtin, Canning and Moore. Legislation included the Prices Control Act, a measure necessitated by the Commonwealth Government's vacating of the prices control field, and the Wheat Industry Stabilization Act authorizing operation in Western Australia of the Commonwealth Wheat Stabilization Plan.

1949—Whaling resumed after a lapse of over twenty years. Substantial increase in crayfish production; total catch exceeded 5 million lb., more than 80 per cent. greater than in previous year. Commencement of operations of Air Beef Pty. Ltd. at Glenroy Station in the Kimberley; beef carcasses transported by air to Wyndham for shipment overseas. In September, rise in gold price from £10 15s. 3d. to £15 9s. 10d. per fine ounce, following the British Government's devaluation of sterling. First agricultural tractors produced in the State. Rejection by Privy Council of Federal Government's appeal against the High Court's ruling that the Government's proposals for nationalization of banking were invalid. High Court declared invalid the Commonwealth Government's rationing of petrol; as a result the States invited to assume authority. The necessary enabling legislation, the Liquid Fuel (Emergency Provisions) Act, was the major measure brought before the State Parliament in a short session concluding early to allow members to contest seats at the federal election in December or to participate in the election campaign. Defeat of the Chifley Labour Government; Rt. Hon. R. G. Menzies became Prime Minister as leader of a Liberal-Country Party coalition. Western Australia's representation in enlarged Federal Parliament increased from five to eight in the House of Representatives and from six to ten in the Senate.

1950—Population increase 28,465 (net gain by migration 19,295 and by natural increase 9,170) the greatest since 1896, the peak year of the "gold rush" period. By an amendment to the Industrial Arbitration Act, the Court empowered in fixing the basic wage to have regard for economic capacity of industry as well as workers' "needs"; in exercise of this power, Court declared an increase of 20s. in the basic rate for males and 15s. for females. Abolition of rationing of petrol, tea and butter and lifting of ban on sale of fresh cream. Federal Government extended child endowment to include the first, or only, child of a family at the rate of 5s. per week. Introduction of pharmaceutical benefits scheme financed by the Commonwealth. Prohibition poll, the first since 1925, conducted under provisions of Licensing Act; proposals rejected by overwhelming majority. Legislation passed to increase membership of State Cabinet from eight to ten.

1951—Average f.o.b. value of wool for 1950-51 export year, 143.43 pence per lb., the highest ever recorded. First shipment of oats and barley in bulk successfully handled. Experimental injections of myxomatosis in rabbits conducted by Department of Agriculture. Shipment to New South Wales of

first load of iron ore mined at Cockatoo Island, Yampi Sound. Port Hedland-Marble Bar railway closed. Mining activity caused revival of goldfields town of Bullfinch. First section of new power house at South Fremantle began operating. South-West Power Scheme inaugurated with opening of new power station at Collie. Completion of raising of wall of Mundaring Weir to augment storage for northern section of Comprehensive Water Supply Scheme; capacity increased from 4,655 to 15,154 million gallons. Free Milk Scheme for school children commenced, with financial aid from Commonwealth Government. Total increase during the year of £1 19s. 2d. in State basic wage for males in metropolitan area, the largest rise during any year since inception in 1926. Female basic wage increased on 1st December to 65 per cent. of male rates. Act passed to establish a Library Board to foster the activities of free libraries and to improve library services.

1952—Crude birth rate, 25.66 per thousand of mean population, the highest since 1917. Negotiations completed for establishment at Kwinana, on the coast ten miles south of Fremantle, of oil-refining, steel-rolling, and cement-manufacturing projects with provisions for port facilities in Cockburn Sound and rail links with metropolitan system. Perth Airport raised to international status; inauguration of air communication between Perth and Johannesburg and between Perth and Singapore. New causeway over Swan River at Perth opened. Six months' strike of metal trades workers, claiming increased wage margins, resulted in widespread unemployment and suspension of metropolitan rail services for a period of three months and considerable reduction in country services. Removal of price control on clothing and textiles. Death of His Majesty King George VI and accession of Her Majesty Queen Elizabeth II.

1953—Discovery of oil at Exmouth Gulf drill-site announced in December. Encouraging results from rice-growing experiments at Fitzroy and Ord Rivers. Construction of oil refinery at Kwinana begun and work started on jetty to serve a steel-rolling mill in the same area. Introduction by Commonwealth of medical benefits to subsidize cost of treatment of members of approved medical insurance organizations and their dependants. Recontrol of prices of some items of essential clothing and soft goods in May; abolition of all prices control in December following Parliament's rejection of the Prices Control Act Amendment Continuance Bill. State control of building operations and building materials supply lapsed with the expiration of the Building Operations and Building Materials Control Act. State Entertainments Tax imposed in October following withdrawal of Commonwealth Government from this field.

1954—Fifth Commonwealth census. State population 639,771 persons (males 330,358, females 309,413) of whom 348,647 were enumerated in the metropolitan area. Reclamation work begun for the bridge-heads and road approaches for a bridge over the Swan River at the Narrows. Introduction of diesel-electric locomotives on State railways in May, supplementing diesel rail cars already operating. Coal output exceeded one million tons for the first time. Exploratory oil drilling continued in vicinity of Exmouth Gulf and commenced in Fitzroy section of Canning Basin. Further permits granted for exploration in areas in north and south of the State covering about 233,000 square miles. Serious outbreak of poliomyelitis; 436 cases reported. Opening at York of first public library established by the Library Board in association with local government authorities. Visit of Her Majesty Queen Elizabeth II and His Royal Highness the Duke of Edinburgh.

1955—Wheat harvest, 53 million bushels; record average yield of 18.4 bushels per acre. Encouraging reports on experimental crops of sugar-cane and rice at Kimberley Research Station. Opening in January of new harbour and large anchorage in Cockburn Sound to serve Kwinana industrial area. Official opening of Kwinana oil refinery in October after nine months in operation. Production of sawn timber from local logs for year ended 30th June, 225.8 million superficial feet, the highest ever recorded. Houses completed, 8,772, the greatest number recorded in any year; total completions since the war more than 50,000. An amendment to the Western Australia Grant (Water Supply) Act raised the Commonwealth Government's contribution towards the increased cost of the Comprehensive Water Supply Scheme from £2.15 million to £4 million. Appeal for funds launched 1st September with target of £400,000 to supplement State Government grant for establishment of a medical school within the University. Free library opened at Claremont, the first metropolitan library sponsored jointly by the Library Board and a local government authority. Western Australia's membership in the House of Representatives raised from eight to nine as a result of the population increase disclosed by the census of the previous year.

1956—Great decline in migration. Four new savings banks established, three by private trading banks and one by the Rural and Industries Bank. An area of four square miles at Brecknock Harbour, 130 miles north-east of Derby, leased by the State for three years to a company for growing culture

pearls. New industry established at Capel and Bunbury for extracting ilmenite and other heavy minerals from beach sands. Oil exploration extended to Dirk Hartogs Island. Employment in factories for year ended 30th June exceeded 50,000 for the first time. Extension of water conservation works for supplies to metropolitan area by operations at Serpentine River upstream from Falls; work on first stage, a pipehead dam, well advanced. Further epidemic of poliomyelitis, cases recorded during year numbering 401, of which 399 were reported in the six months to 30th June; immunization project, using Salk vaccine, commenced 2nd July. Concession fares granted to pensioners using government trains, trams, buses and ferries. Increased railway charges and closure of some branch lines recommended by Railways Commission to offset continued losses.

1957—Natural increase of population, 11,627, the highest ever recorded. Under the Commonwealth and State Housing Agreement Act of 1956, an amount of £600,000, the first annual allocation, made available during the year ended 30th June through building societies and the Rural and Industries Bank for private home building. Suspension for trial period of rail services on 800 miles of branch lines, in effort to reduce continued losses, with concurrent introduction of alternative transport by road. Work begun on bridge across Swan River at the Narrows and further progress made in associated river reclamation works. In September, wool auctions held at Albany for the first time. Small initial harvest of culture pearls from Brecknock Harbour, north-east of Derby. Gold production 896,681 fine ounces, valued at £14.5 million, the highest since 1941. First oversea export of steel products from rolling mill at Kwinana. Generation of electricity at Bunbury power station commenced in May. Completion of first stage of £9 million Serpentine Dam project; work begun on main reservoir. Continuation of work on Comprehensive Water Supply Scheme, pipelines reaching Pingelly in June and Wagin in December. Provision by Commonwealth, under the Western Australia Grant (Water Supply) Act, of £1 million additional financial aid for the Scheme. Spectacular decline in incidence of poliomyelitis, only three cases being recorded compared with an annual average of 164 in the nine-year period from 1948, when the first major epidemic occurred, to 1956 when Salk vaccine injections began. Following presentation in November of report of Committee on Australian Universities (the "Murray Committee"), announcement of grant by Commonwealth Government of £22 million to universities, to be spread over three years. Clinical teaching begun at University's School of Medicine. Acquisition by Perth City Council of the Perth Literary Institute; City Library established 1st July. Legislation included the Metropolitan (Perth) Passenger Transport Trust Act to establish a Trust to provide efficient metropolitan passenger transport facilities.

1958—Western Australia Grant (Northern Development) Act passed by Commonwealth Parliament, authorizing payment of £2.5 million, to be spread over five years, for development of the part of the State north of 20°S. latitude. Visit to Great Britain, Europe, the United States and Canada of a trade mission sponsored by the State Government and led by the Deputy Premier. Metropolitan (Perth) Passenger Transport Trust began passenger transport operations by assuming control of five private omnibus services. Last tram service in Perth on 19th July, with substitution of trolley-buses and omnibuses. Perth City Council's parking meters and off-street parking areas began operating in July. New traffic bridge over Canning River opened. Unprecedentedly high production of wheat, 57.7 million bushels; oats, 22.6 million bushels; barley, 5.4 million bushels; and wool, 166.5 million lb. Rice first produced in significant quantity at Camballin on Fitzroy River 65 miles south-east of Derby. State Government's application to the Commonwealth for a licence to export one million tons of iron ore to Japan rejected 13th May. In November, slight traces of oil found in tests at Meda No. 1 well, in the Fitzroy section of the Canning Basin, 40 miles from Derby. Announcement by a mining company of a scheme to prospect for bauxite over a large area in the Darling Range. Further progress on Comprehensive Water Supply Scheme; Koorda connected in December, Katanning in March and Brookton in December. New Chest Hospital at Hollywood officially opened in September. Only two cases of poliomyelitis recorded during year; campaign started in May for voluntary immunization injection of adults. State Grants (Universities) Act passed by Commonwealth Parliament to give effect to the financial recommendations of the Committee on Australian Universities. Following negotiations between employers' and employees' organizations, agreement registered by Court of Arbitration on 1st April providing for long service leave for employees at the rate of 13 weeks' leave with pay for every 20 years of continuous service and 6½ weeks for each subsequent 10 years; legislation later in year extended these benefits to employees not covered by the agreement. At federal elections held on 22nd November, Liberal-Country Party Government returned to office with a record majority of 32 seats in the House of Representatives and an



PERTH TOWN HALL AND RURAL AND INDUSTRIES BANK BUILDING IN BARRACK STREET
The Town Hall was opened in 1870 and the Rural and Industries Bank Building in 1961

immediate majority of two in the Senate and of four from 1st July, 1959. In July, rainfall of 1,673 points registered at Perth, compared with a norm of 679 points; Perth's wettest July on record. Visit in March of Her Majesty Queen Elizabeth the Queen Mother.

1959

Demography—Infant mortality rate, 20·16 per thousand live births, the lowest ever recorded. Population increase 11,495, the smallest since 1947. Population of Australia officially estimated to have reached 10 million in March.

Public Finance—State deficit for year ended 30th June, £1·7 million (expenditure £61·8 million, revenue £60·1 million). Budget for 1959–60 presented 22nd September; estimated deficit £1·5 million (expenditure £64·8 million, revenue £63·3 million). Federal budget contained provision for increases in age, invalid and widows' pensions, repatriation benefits and tuberculosis allowances; extension of pensions and maternity allowances to aborigines unless living under tribal conditions; charge of 5s. for each prescription under pharmaceutical benefits scheme; reduction of five per cent. in income tax payable by individuals and some increases in allowable deductions; further concessions to companies engaged in oil exploration; reduction of $\frac{1}{2}$ d. per gallon in customs duty on motor and aviation spirit; and increased postal and telephone charges. States Grants Act passed by Commonwealth Parliament repealing States Grants (Tax Reimbursement) Acts and substituting a system of payments to be known as Financial Assistance Grants. Legislation passed by Federal Parliament increasing to £5 million Commonwealth aid for development of the part of the State north of 20°S. latitude. In February, a Decimal Currency Committee of seven members appointed by Commonwealth Government to consider introduction of decimal currency system.

Private Finance—Personal income for year ended 30th June, £308·6 million (wages, salaries, etc. £183·1 million; income of farmers, unincorporated businesses, professions, etc., property income £99·2 million; cash social service benefits £26·3 million) or £437 per head of mean population. Savings bank deposits at 31st December, £75·3 million, more than ten per cent. higher than at end of 1958. Value of retail sales of goods, £230·8 million, an increase of more than five per cent. over previous year. Balances outstanding at 31st December on retail hire purchase agreements with finance businesses £23·6 million, compared with £12·5 million five years earlier. Passage by Commonwealth Parliament of a Reserve Bank Act, repealing the Commonwealth Bank Acts and reconstituting the central bank and the Rural Credits Department as the Reserve Bank of Australia, and a Commonwealth Banks Act establishing a Commonwealth Banking Corporation Board to administer the Trading Bank, the Savings Bank and a new Development Bank.

External Trade—Unfavourable balance on external trade for year ended 30th June, £19·7 million, more than double that for previous year. Decline of £2·9 million in value of oversea exports from £94·7 million to £91·8 million; interstate imports £3·7 million greater and exports £5·6 million less, resulting in increase of interstate deficit for the year from £57·3 million to £66·5 million. Decline in export prices of greasy wool and of wheat; average f.o.b. value of wool 50·01 pence compared with 71·20 pence per lb. in 1957–58, and of wheat 14s. 1d. per bushel, 1s. 3d. less than in 1957–58. Progressive easing of Commonwealth import restrictions during year, including relaxation of discrimination against the dollar area; from 1st December, Australia's import ceiling raised to £875 million per year.

Transport and Communication—A new Commonwealth Aid Roads Act passed by Federal Parliament prescribing revised formula for distribution of grant among States on the basis of one-third according to area, one-third according to population and one-third according to motor vehicle registrations, with additional provision for matching assistance in relation to State expenditure on roads. Amendment to Traffic Act providing for increased fees for motor vehicle licences and drivers' and riders' licences. Motor vehicles (including motor cycles) on register at 31st December numbered 206,060, more than double the number (95,454) ten years earlier. Completion by private interests of Perth's first multi-storey car parking station. Narrows Bridge and Kwinana Freeway, linking Perth with Canning Highway at Canning Bridge, opened to traffic 13th November. Metropolitan (Perth) Passenger Transport Trust assumed control of a sixth private omnibus service in February. Announcement of decision to restore rail services on a seasonal basis for transport of grain and superphosphate on two of the branch lines closed in 1957. New shipping berth completed at Fremantle Inner Harbour in March. Improved shipping schedule providing direct services and accelerated time-table between Fremantle and eastern Australian ports operative from November. Work begun early in year to extend trunk telephone system beyond Meekatharra and to improve telegraph service; Port Hedland, Marble Bar and Roebourne

to be linked with main telephone network. In October, radio-telephone service opened connecting Derby and Broome with Australian and oversea telephone systems. Increased postal and telephone charges operative from 1st October. Construction of commercial television company's transmitter at Bickley begun in January; first full-scale transmission 16th October. Erection in October of television transmitter tower for Australian Broadcasting Commission.

Rural Industry—Agricultural season opened in most cereal-growing areas with widespread moderate rains during last week in May. June rainfall was above average and, although falls in July, August and September were light, adequate finishing rains were recorded. Production of wheat, 58·7 million bushels, of barley, 7·0 million bushels, and of wool, 170·4 million lb., exceeded the high levels of the previous year. Potato crop, 56,000 tons, a record. Decline of more than 25 per cent. in apple production to 1·15 million bushels. Approval during year ended 30th June of applications for pastoral leases aggregating 10·6 million acres, the largest area approved in any post-war year. Announcement of State Government grant of £35,000, to be supplemented from other sources, for research into soil fertility and farm economics at Institute of Agriculture.

Fisheries—Increase in fish production for year ended 30th June; crayfish catch 17·5 million lb. live weight, equal to two-thirds of Australian total. Substantial fall in production of pearl-shell to 508 tons, the lowest since 1953. Agreement between Australian and Japanese Governments permitting Japanese pearling vessels to operate on northern Australian grounds but excluding Western Australian waters.

Mining—Search for oil continued over a wide area of the State; new Petroleum Search Subsidy Act passed by Federal Parliament extending the provisions of a similar Act of 1957 and authorizing payment of subsidies on approved stratigraphic drilling and geophysical and bore-hole surveys. Trial shipment of bauxite from deposits in Darling Range sent to Tasmania in November for metallurgical plant tests. Tenders called by State Government for export of iron ore; application for export licence again rejected by Federal Government.

Manufacturing—Number of factories in operation during year ended 30th June increased by 4·7 per cent. to 4,125 but little change in factory employment. Net production, £78·8 million, 4·6 per cent. higher than in previous year, industries showing appreciable rises being the construction, assembly and repair of motor vehicles, meat and fish preserving, and sawmilling. Production of sawn timber from local logs increased by more than five per cent. to 211·8 million superficial feet but general decrease in manufacture of other building materials. Continued decline in butter production but substantial rise in quantity of cheese made. Output of electricity from power station at Bunbury increased with completion in April of a second unit of 30,000 kilowatts capacity. New meat-processing works opened near Derby in May. Industries Advisory Committee established to foster development of secondary industry.

Water Supplies—Wyalkatchem and Dowerin connected to Comprehensive Water Supply Scheme in November; continuation of work on final stage of the modified scheme and announcement of plans to seek Commonwealth financial assistance for extension to full area of original scheme as first proposed in 1946. Installation at Mundaring Weir of steel crest gates four feet in height, to increase capacity from 15,154 to 16,966 million gallons, completed in April. Preliminary work begun on diversion weir on Ord River as first stage of irrigation scheme, an "approved project" under the Western Australia Grant (Northern Development) Act. Unusually severe restrictions on use of water in metropolitan area during last three months of year following exceptionally dry winter; general ban on use of sprinklers and fixed hoses 24 hours per day from 1st October.

Health—Psychiatric day hospital, the first in Australia, established at Graylands in March by Mental Health Services authority. Public Health Department laboratory opened at Albany, and more planned for other country centres. Cancer Council of Western Australia established in June. Construction of Institute of Radiotherapy begun on site at Hollywood adjacent to Perth Chest Hospital.

Education—First regular School of the Air in the State opened in September, broadcasting from Meekatharra base radio of Royal Flying Doctor Service; two-way radio communication provided during four twenty-minute teaching sessions each school day. Work begun in June on building of Saint Catherine's College, the University's first residential college for women students. Professor Gordon Stephenson appointed consultant architect to the University, with professorial status, to advise on comprehensive building programme. Gift of £20,000 made to University by Mrs. M. B. Raine to supplement grant of £154,000 made in 1957 for medical research. The 34th Congress of the Australian and New Zealand Association for the Advancement of Science, the third such meeting in Western Australia, held at University in August.

Prices, Wages and Employment—In September retail price of motor spirit reduced by $\frac{1}{2}$ d. per gallon. In June, Commonwealth basic wage for adult males in Perth increased from £13 ls. to £13 16s., the largest single rise since May, 1952. Margins increase of 28 per cent. awarded to metal trades' workers in November by Commonwealth Conciliation and Arbitration Commission and immediate applications made by other unions for similar increase. Average number of wage and salary earners in civilian employment (excluding those in rural industry and household domestic service) 187,800 compared with 185,300 during 1958. Small increase in number of persons receiving unemployment benefit, average number for year being 2,756 ; persons on benefit at end of year 2,538 compared with 2,501 at end of 1958.

Legislation and Administration—After six years in office, Labour government defeated at State general elections held 21st March ; Liberal and Country Party coalition government in office from 2nd April with Hon. David Brand as Premier.

Parliamentary session opened 30th June, closed 27th November. Legislation included the Entertainments Tax Act Amendment Act reducing the rate of tax on entertainments other than those given by live performers ; the Entertainments Tax Assessment Act Amendment Act abolishing the tax on "live" entertainments ; the Filled Milk Act prohibiting the manufacture and sale of "filled" milk ; the Foot and Mouth Disease Eradication Fund Act establishing a fund for payment of compensation to owners of livestock or property which might be destroyed as the result of a possible outbreak of foot and mouth disease ; the Hire-Purchase Act repealing the Act of 1958 but incorporating many of its main provisions and adding others ; the Interstate Maintenance Recovery Act providing for reciprocity with other Australian States and Territories and with New Zealand in relation to service of summonses for maintenance and enforcement of maintenance orders ; the Licensing Act Amendment Act authorizing the issue of liquor licences to approved restaurants and altering hotel trading hours in the south-west of the State from 9 a.m.-9 p.m. to 10 a.m.-10 p.m. ; the Metropolitan Region Improvement Tax Act imposing a tax of $\frac{1}{2}$ d. in the £ on unimproved value of land in the Metropolitan Planning Region ; the Metropolitan Region Town Planning Scheme Act constituting a Metropolitan Region Planning Authority ; the Museum Act and the Art Gallery Act, providing for administration of the Museum and the Art Gallery by separate Boards to replace the Board of Trustees which formerly controlled both institutions ; the State Hotels (Disposal) Act to permit the Government to sell or lease certain State Hotels ; the Tourist Act establishing a Tourist Development Authority to assist the development of tourist resorts and the tourist industry ; the Trade Associations Registration Act repealing the Monopolies and Restrictive Trade Practices Control Act and providing for the registration of trade associations and prohibiting the making of collusive tenders ; and the Traffic Act Amendment Act (No. 3) establishing a Central Road Trust Fund and prescribing increased fees for motor vehicle licences and drivers' and riders' licences. Among Bills introduced but not passed were the Constitution Acts Amendment Bill, seeking to increase the membership of the Legislative Assembly from 50 to 51, and the Electoral Districts and Provinces Adjustment Bill proposing to divide the State into four electoral regions and to raise the representation in the Assembly of the area to be known as the "Agricultural Region" to 23 instead of 22 ; the King's Park Aquatic Centre Bill, identical in purpose with the Bill of the same name introduced and rejected during the 1957 session, seeking to authorize the King's Park Board to lease to the City of Perth 20 acres of land for an aquatic centre ; the Natural Therapists Bill to provide for the training, qualification and registration of natural therapists ; the State Concerns (Prevention of Disposal) Bill designed to prevent the sale or lease of any State concern unless approved by Parliament ; and the Western Australian Industries Authority Bill to constitute an Authority to assist in attracting industry to the State and to encourage the expansion of existing industries.

Enactment by Commonwealth Parliament of the Matrimonial Causes Act providing a uniform divorce law to apply throughout Australia.

Appointment in June of Royal Commissioner to inquire into and report upon betting on horse racing ; report presented in December recommending, among other things, the abolition of licensed betting shops and the establishment of an off-course totalizator system. Conclusion in July of inquiry by Royal Commissioner appointed in March, 1957 to investigate the control, administration, operation and workings of State Government Railways. Appointment of first members of Swan River Conservation Board in August and of Tourist Development Authority in December.

Resignation in February of Sir John Dwyer, Chief Justice since 1946, and appointment of Senior Puisne Judge, Hon. A. A. (now Sir Albert) Wolff to succeed him ; Mr. G. B. D'Arcy, Q.C., Chief Parliamentary Draftsman, appointed Judge of Supreme Court.

Death in December of Sir Joseph Totterdell, a former Lord Mayor of Perth and M.L.A. for West Perth from 1950 to 1953, and of Mr. F. R. Welsh, a former member of the Legislative Assembly and of the Legislative Council.

Nedlands and South Perth Municipalities granted city status from 1st July.

Miscellaneous—Perth's rainfall for the year, 24.23 inches, little more than two-thirds of the normal 35.05 inches; only five drier years ever experienced since commencement of records. National Service Training Scheme suspended from 26th November. Oceanographic survey cruise of 5,000 miles in Indian Ocean made by naval frigate "Diamantina" as preliminary to a project to be undertaken jointly by several countries in 1961. Establishment by Bureau of Mineral Resources of geophysical observatory at Mundaring for recording of ionospheric, magnetic and seismic data. The National Trust of Australia (W.A.) incorporated in September for preservation of historic buildings and protection of areas of natural beauty or interest.

1960

Demography—Crude birth rate 23.41 per thousand of mean population, the lowest in any post-war year.

Public Finance—State deficit for year ended 30th June, £1.4 million (expenditure £65.8 million, revenue £64.4 million). Budget for 1960-61 presented 22nd September; estimated deficit £0.8 million (expenditure £69.8 million, revenue £69.0 million). Federal budget provided for discontinuance of the five per cent. rebate of tax on income of individuals and an increase of 6d. in the £ in tax payable on income of companies; further increases in rates of age, invalid, widows' and war and service pensions; liberalized means test for pensions substituting one composite figure for the independent means tests previously applied to income and to property; free medical treatment for service pensioners on account of disabilities not due to war service. Announcement in November of Federal Government action to arrest fall in Australia's overseas reserves and to control excess spending; measures included increased restraint on bank advances, higher bank interest rates, a rise in sales tax on motor vehicles (on cars and station wagons from 30 per cent. to 40 per cent., and on motor cycles and motor scooters from 16 2/3 per cent. to 25 per cent.) and compulsory investment in government securities by life insurance companies and superannuation funds. From 4th July, refund by State Treasury to motion picture exhibitors of entertainments tax paid on cinema admissions; maximum individual refund £20 per week. Presentation to Commonwealth Parliament in August of report of Decimal Currency Committee recommending adoption of decimal system.

Private Finance—Personal income for year ended 30th June, £332.5 million (wages, salaries, etc. £197.9 million; income of farmers, unincorporated businesses, property income, etc. £106.0 million; cash social service benefits £28.6 million) or £464 per head of mean population. Commonwealth Banking Corporation commenced operations 14th January as authority controlling affairs of Commonwealth Trading Bank, Commonwealth Savings Bank and Commonwealth Development Bank of Australia. Announcement in December of rise in savings bank interest rates to apply from 1st January, 1961; new rates of 3½ per cent. per annum on deposits up to £2,500 held by Rural and Industries Bank and 3¼ per cent. on those held by other banks. Balances outstanding at 31st December on retail hire purchase agreements with finance businesses £29.2 million, the highest ever recorded and more than 23 per cent. greater than at end of 1959. Value of retail sales £261.7 million, an increase of more than 13 per cent. over previous year.

External Trade—Value of overseas exports for year ended 30th June, £120.1 million, an increase of £28.3 million from previous year; favourable balance of £73.9 million in overseas trade. Continued deterioration in interstate trade position; deficit increased from £66.5 million to £84.4 million. Unfavourable balance of £10.5 million in total external trade, £9.2 million less than that for 1958-59. Substantial recovery in export price of greasy wool but further decline in wheat price; average f.o.b. value of wool 62.79 pence per lb. the highest since 1956-57, but that of wheat, 13s. 5½d. per bushel, the lowest since that year. Further relaxation of Commonwealth import restrictions announced in February; as a result, 90 per cent. of Australia's imports free from import licensing. South-East Asian Exports Committee established in March by Department of Industrial Development.

Transport and Communication—Two of the branch lines on which rail services were suspended in 1957 reopened for traffic 18th January on seasonal basis for carriage of grain and fertilizers. Cessation of services on 670 miles of railway authorized by Parliament under the Railways (Cue-Big Bell and other Railways) Discontinuance Act. From 1st July, Metropolitan (Perth) Passenger Transport Trust assumed control of trolley-bus, motor omnibus and ferry services formerly operated by Tramways and

Ferries Department, and from 1st September the omnibus service of the Fremantle Municipal Transport Board. Registrations of new motor vehicles 22,855, the highest ever recorded and more than 16 per cent. greater than in 1959. Visit in February of members of Select Committee appointed by the Senate to inquire into road safety; report presented in September. Work commenced in October on new passenger terminal building at Perth Airport. First stage of new overseas passenger terminal at Port of Fremantle officially opened 12th December. Completion in June of sealing of highway between Coolgardie and Esperance to assist development of Esperance Plains area. Australian Broadcasting Commission's television station, ABW (Channel 2), began transmission 7th May. Television viewers' licences at 31st December numbered 57,792 compared with 9,621 at end of previous year.

Rural Industry—Agricultural season opened in May with good general rains; falls in June and August below normal but above-average rains in July and September, followed by periods of fine weather, provided excellent growing conditions. Wheat harvest 63.9 million bushels and barley production 8.5 million bushels the highest ever recorded. Oats crop 21.8 million bushels, an increase of more than 2 million bushels over previous season. Record wool production of 191.3 million lb. New programme of wool sales providing for increased number of auctions; Perth sales discontinued and selling centre transferred to Fremantle. Increased Commonwealth financial assistance to Kimberley Research Station for expanded programme of research. Presentation to Commonwealth Parliament in November of report of Dairy Industry Committee of Enquiry.

Fisheries—Crayfish catch for year ended 30th June, 19.5 million lb., the highest yet recorded, an increase of nearly 12 per cent. on previous year and representing almost 70 per cent. of Australian total. Conclusion in March of survey of crayfish resources off the south coast, conducted by Department of Primary Industry at request of State Government; investigation showed that crayfish numbers insufficient to support commercial fishery. Two three-year licences granted for establishment of pearl culture farms at Malumbo Anchorage in King Sound and at Exmouth Gulf near Giralda Landing.

Mining—Work commenced on development of iron-ore deposits on Koolan Island in Yampi Sound; discovery and exploration of large deposits of lower grade at Scott River near Augusta. Announcement in December of Commonwealth Government decision to modify embargo on export of iron ore, in force since 1938, to permit export on a limited basis subject to certain controls. First commercial shipments of bauxite from deposits in Darling Range; trial consignments to Japan for plant tests in connexion with proposed establishment of alumina industry in Western Australia. Visit in May by French oil exploration experts; favourable reports made on Fitzroy and Carnarvon Basins. In November, Tariff Board recommendations in relation to pyrites and sulphuric acid included an extension of the bounty for five years with separate payments on pyrites and on sulphuric acid.

Manufacturing—Employment in factories for year ended 30th June, 49,651, the highest since 1955-56; net factory production £86.4 million, an increase of nearly 10 per cent. over 1958-59. Recovery in butter production and continued increase in quantity of cheese made. Output of pig iron 47,536 tons, almost double that of previous year. Sawn timber production from local logs 198.9 million superficial feet, the lowest since 1951-52. Third unit of 30,000 kilowatts capacity in production at Bunbury power station in May. Announcement in May by BP Refinery (Kwinana) Ltd. of decision to add a lubricating oil refinery to its plant at Kwinana. In November, negotiations announced between State Government and Broken Hill Proprietary Company Ltd. for establishment at Kwinana of an integrated iron and steel industry. Announcement in December of decision of British chemical firm to build a large titanium oxide pigment factory at Bunbury. Special section of Department of Industrial Development established in April to encourage decentralization of industry and to assist country local government authorities in attracting industries. Visit in October of British industrialists at invitation of State Government to report on prospects for future industrial expansion.

Water Supplies—Contract signed in November for construction of Ord River diversion dam; work begun early in year at Kununurra, the townsite for the project. Completion of raising of wall of Wellington Dam, increasing capacity from 8,000 million to 40,790 million gallons. Modified Comprehensive Water Supply Scheme nearing completion, all towns included in the scheme having been connected and reticulation to agricultural areas proceeding north of Cunderdin and south of Merredin; rejection by Commonwealth Government of State's request for financial assistance to extend the scheme to the boundary as originally proposed in 1946. Water restrictions in metropolitan area continued, but relaxation from 29th January of general ban on use of sprinklers and fixed hoses, which had applied 24 hours per day from 1st October, 1959; restrictions lifted from 29th March. Increase from 2s. to 2s. 3d. per thousand

gallons in charge for excess water supplied to domestic consumers in metropolitan area; committee appointed in June to consider possible changes in metropolitan water rates and charges.

Health—Committee appointed in March to study future needs of State's mental health services; report presented in November recommending, among other things, transfer of all children from Claremont Mental Hospital to a new child psychiatric hospital and removal of aged patients to other accommodation. Royal Flying Doctor Service scheme to fly doctors and dentists to conduct clinics in remote areas inaugurated in March. Following a conference of Health Ministers held at Sydney in January, State Government representatives appointed to special committee to examine all aspects of housing and care of the aged. First phase of National Heart Campaign in Western Australia begun at Perth in November.

Education—Official opening in June of Saint Catherine's College, the University's first residential college for women students. Public appeal for £70,000 to establish a Chair of Commerce at the University launched in September. Announcement in October of substantial increases in faculty service charges to be paid by University students from beginning of 1961 academic year. Bequest to University of estate of late Mrs. M. B. Raine, valued at £688,784. First report of the Australian Universities Commission presented to Commonwealth Parliament in November, reviewing university development and containing recommendations regarding future requirements. Announcement in September of revised system of scholarship awards for post-primary education.

Prices, Wages and Employment—A new retail price index, the Consumer Price Index, published by Commonwealth Statistician in August to replace the "C" Series Retail Price Index, originally compiled in 1921, and the Interim Retail Price Index, first issued in 1954 as a transitional index. Rise of 13s. 1d. in State basic wage for males in metropolitan area, the largest in any year since 1952. State basic wage for adult females increased from 65 per cent. to 75 per cent. of male rate from beginning of first pay-period commencing on or after 30th January. In April, Commonwealth Conciliation and Arbitration Commission rejected application by trade unions for increase in Commonwealth basic wage and restoration of automatic quarterly adjustments. Average number of wage and salary earners in civilian employment (excluding those in rural industry and household domestic service) 191,700, an increase of 4,000 over previous year. Average number of persons receiving unemployment benefit during year 1,996, a substantial decrease from previous year; persons on benefit at end of year 1,890 compared with 2,538 at end of 1959. Industrial disputes, principally in the stevedoring and coal-mining industries, involving the loss of 27,342 working days, the largest loss in any year since 1956. Amendment to Conciliation and Arbitration Act authorizing increase from three to four in number of Judges of Commonwealth Industrial Court.

Legislation and Administration—Parliamentary session opened 28th July, ended 25th November. Legislation included the Administration Act Amendment Act providing for the appointment of a Commissioner of Probate Duties to assume the probate assessment and related functions previously exercised by the Commissioner of Stamps; the Anzac Day Act permitting the sale of liquor and the holding of race meetings and sporting events after 1 p.m. on Anzac Day and establishing an Anzac Day Trust, to be financed from fees paid for occasional liquor licences and the proceeds of race meetings and sporting events, for the assistance of organizations operating for the benefit of ex-service personnel and their dependants; the Broken Hill Proprietary Company's Integrated Steel Works Agreement Act ratifying an agreement between the Government and the company for the establishment of an integrated iron and steel industry at Kwinana, subject to provision by the Government of a standard gauge railway between Southern Cross and Kwinana; the Chevron-Hilton Hotel Agreement Act ratifying an agreement between the Government and Chevron-Hilton Hotels Limited for the construction and establishment by the company of a hotel and tourist centre in Perth; the Church of England in Australia Constitution Act, complementary to similar legislation in other Australian Parliaments to give full autonomy to the Church of England in Australia and to ensure continuity of its identity as a branch of the Anglican Communion; the Coal Mine Workers (Pensions) Act Amendment Act extending the provisions of the Act to include certain workers and their dependants previously ineligible for benefits; the Country High School Hostels Authority Act constituting an Authority to establish and maintain hostels for students where transport to and from school is not provided by the Government; the Criminal Code Amendment Act increasing penalties for deprivation of liberty and for child stealing, and incorporating as an offence the publication, without the prior approval of the Commissioner of Police, of any report of a case of child stealing within seven days from the date of the crime; the Dairy Cattle Industry Compensation Act establishing a fund for compensation of owners of cattle slaughtered as a result of compulsory tests for disease; the Education Act Amendment Act changing the title of Director of

Education to Director-General of Education and establishing a Government School Teachers' Tribunal with jurisdiction to hear and determine appeals and disputes concerning salaries, promotions, suspensions, dismissals and other matters; the Esperance Lands Agreement Act ratifying an agreement between the Government and American Factors Associates Limited and Arcturus Investment and Development Limited for the acquisition and improvement of certain Crown land in the Esperance area; the Fisheries Act Amendment Act relating to penalties for traffic in undersize crayfish tails; the Health Act Amendment Act constituting a Maternal Mortality Committee for the private investigation of cases of maternal mortality in place of a magisterial or coronial inquiry as formerly; the Land Tax Assessment Act Amendment Act providing for a reduction of 10 per cent. in tax payable on improved land; the Local Government Act consolidating and amending the law relating to local government and repealing the Municipal Corporations Act and the Road Districts Act; the Metropolitan Region Town Planning Scheme Act Amendment Act making the principal Act a permanent Act by repealing the provision limiting its operation to the 30th June, 1962; the Metropolitan Water Supply, Sewerage, and Drainage Act Amendment Act substituting a new annual value of land for rating purposes and constituting an Appeal Board to which a ratepayer may appeal against any valuation of land owned or occupied by him; the Milk Act Amendment Act empowering the Milk Board to fix minimum standards of quality for milk and cream and to prevent their distribution if below the prescribed standard; the Northern Developments (Ord River) Pty. Ltd. Agreement Act ratifying an agreement between the Government and the company for the establishment of a pilot farm to investigate irrigation farming methods in the Ord River area; the Paper Mill Agreement Act ratifying an agreement between the Government and Australian Paper Manufacturers Limited for the establishment of a paper and paper board mill; the Railways (Cue-Big Bell and other Railways) Discontinuance Act authorizing the cessation of services on certain railways formerly operated by the Government; the Supreme Court Act Amendment Act authorizing the appointment of six Judges, in addition to the Chief Justice, instead of four as previously; the Totalisator Agency Board Betting Act constituting a Totalisator Agency Board to replace the Betting Control Board and providing for the introduction of an off-course totalisator agency system and the control of off-course betting; and the Workers' Compensation Act Amendment Act providing that in the case of disablement or death from silicosis, pneumoconiosis or miner's phthisis the benefits of the Act shall apply irrespective of the lapse of time since the worker affected was engaged in employment causing the disability, and that a standard form of insurance policy shall be adopted by all insurers. Among Bills introduced but not passed were the Death Penalty Abolition Bill seeking to abolish capital punishment; the Licensing Act Amendment Bills (Nos. 2 and 3) designed to extend to certain hotels now excluded the Sunday trading provisions of the Licensing Act; the Metropolitan Region Improvement Tax Act Amendment Bill to impose a permanent Metropolitan Region Improvement Tax; and the State Concerns (Prevention of Disposal) Bill to prevent the sale or lease of certain specified State Trading Concerns without parliamentary approval.

Appointment in February of honorary Royal Commission to inquire into the practice of natural therapy, and in November of Royal Commission to investigate allegations that Members of Parliament had been offered bribes to oppose the Totalisator Agency Board Betting Bill. Mr. John Hale, Q.C. appointed Acting Judge of the Supreme Court in March and Judge in October. Appointment of first members of Metropolitan Region Planning Authority in April, of Art Gallery Board and Museum Board in May, and of Country High School Hostels Authority in November.

From 4th January, hotel trading hours in south-west of State altered from 9 a.m.-9 p.m. to 10 a.m.-10 p.m.

In August, first women jurors empanelled under the Juries Act, 1957.

In November, Mangles' Kangaroo Paw (*Anigossanthos Manglesii*) officially declared to be State's floral emblem.

Death in January of Mr. P. R. Lawrence, M.L.A. for South Fremantle, in August of Mr. F. C. L. Smith, a former Minister for Railways and Justice, and in September of Professor R. G. Cameron, the University's first Professor of Education.

On 2nd February, Viscount Dunrossil sworn in as Governor-General of Australia.

Miscellaneous—Severe floods in February and cyclone in March caused considerable damage in Carnarvon area. In December, extensive bush fires in Chittering area with loss of stock and pastures. Radar weather-tracking system began operating in Perth in August. Work begun at Muchea in April on satellite-tracking station as part of United States project for manned space-flight. Completion of four-year mapping programme of 100,000 square miles in Kimberley. Survey begun by Bureau of Mineral Resources to map the Rawlinson area and thus complete mapping of south-eastern part of Canning

Basin. From 2nd February all aboriginals, other than the nomadic or primitive, eligible for age, invalid and widows' pensions and maternity allowances. From 1st March charge of 5s. payable, except in the case of pensioners, for each prescription written under pharmaceutical benefits scheme. Opening at Caversham in May of "Riverbank," a maximum security institution for delinquent boys. Appointment of honorary agents for Child Welfare Department arranged with country local government authorities to provide immediate relief in certain cases of financial hardship, to make inspections and to give advice. State Government contribution towards maintenance of migrant children in institutions reduced to 6s. per week for each child migrating after 1st September, instead of £1 3s. 3d. per week as formerly. Plans announced in September for establishment near Serpentine of new prison farm for rehabilitation of selected prisoners. Winning design for new Perth Town Hall chosen in September.

1961

A summary of the principal events of the year 1961 is given in the *Appendix*.

CHAPTER II—PHYSICAL FEATURES, CLIMATE, FLORA AND FAUNA

PART 1—PHYSICAL FEATURES AND GEOLOGY

Contributed by

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The development of any country depends on its natural resources and the industry of its people, and there can be few more important investigations for any country than those dealing with the productive capacity of its territory. Natural resources—be they power, mineral, or soil resources—are dependent entirely on the climate, physical features and geology. Looking at the pattern of development of Western Australia we see that for nearly seventy years after the foundation of the Swan River Colony in 1829 agricultural production barely kept pace with the requirements of the small population. The discovery of gold in the 1890's, however, led to a period of rapid expansion, and Western Australia became one of the major gold-producing areas of the world, and with this increase in mining production there was a corresponding expansion of the agricultural and pastoral industries. We are now experiencing an expansion of our secondary industries. In each of these phases of development we can, if we look closely, see the dominating influence of the geological environment.

The nature of the rocks underlying any region is one of the major factors controlling topography, soil, and mineral resources. The latter is self-evident. The soil, on which we are so dependent, was formed by the weathering of the underlying rocks and many of its characters are due to the parent rock material. In recent years much research has been carried out into trace element deficiencies in soils, with astounding results as far as land utilization is concerned. At first sight it would seem fantastic to think of the underlying rocks being in any way responsible for malnutrition of stock, but when it is demonstrated that the malnutrition is due to the lack of some minor element in the fodder which is due to its deficiency in the soil, a deficiency which, in its turn, is due to the absence or relative absence of such elements from the parent rocks from which the soil was derived, the significance of the geological environment becomes evident. Topography which is important in connection with land utilization, water conservation, power (hydro-electric) resources, and in affecting climate, soil erosion, coastal erosion, transport routes, harbours, and so on, is also dependent to a great extent on the nature and structure of the underlying rocks.

It is appropriate therefore that we should consider here the physical features and geology of Western Australia since they, together with the climate, are the primary controls of our soil, mineral, water and power resources, on which our existence and future development are entirely dependent.

PHYSICAL FEATURES

In the broadest way this State can be divided into two physical regions: (i) a tableland (the *Great Plateau*) in various stages of dissection occupying the whole of the interior of the State, (ii) a low-lying narrow strip (the *Coastal Plains*) running almost continuously along the coast from near Albany to Broome. A third physical region, the *Scarplands*, separating the Coastal Plains from the Great Plateau, may be distinguished. This, although only a narrow belt, is a significant one in the southern part of the State because of its importance in connection with the water conservation schemes on which the metropolitan area, the major goldmining field in the vicinity of Kalgoorlie, the intervening agricultural and pastoral districts, the irrigation areas on the coastal plains south of Perth, and more recently the wheat belt along the Great Southern Railway, are dependent.

The Great Plateau

The Great Plateau which occupies more than 90 per cent. of the area of the State varies considerably in elevation. In its highest parts (in the North-West) it attains a height of approximately 4,000 feet above sea-level. The greater part is, however, below the 2,000-ft. contour and its average elevation is of the order of 1,000 to 1,500 feet above sea-level. Although there is this considerable variation in level the changes are so gradual that the plateau character of the country is not obscured and for the most part it may be regarded as having a vast gently undulating surface. Occasional hills (monadnocks, which are remnants of a previous cycle of erosion) rise above the general surface of the plateau.

The Great Plateau may be conveniently subdivided into an area of exterior drainage (where there are definite rivers which flow to the sea), an area of interior drainage (where such water as flows passes into inland basins), and two areas of no surface drainage but which, if they had drainage, would belong to the exterior drainage system. The area of exterior drainage can be marked out by connecting the source of the streams which flow to the sea and if this is done it will be seen that the width of the exterior drainage belt varies considerably. Thus in the Kimberley and North-West Divisions some of the rivers are hundreds of miles long, but in the south-west part of the State many of them are comparatively short. The areas of no surface drainage are in the north North-West along the 80-Mile Beach from the mouth of the De Grey River to the north of Broome, and on the Nullarbor Plain in the south-eastern corner of the State. The remainder of the country forms the interior drainage area.

In the area of exterior drainage the dominant feature of the extreme south-west and the northern part of the plateau is a reticulate pattern of rather deeply-incised watercourses. In the southern part of the State these deeply-incised watercourses where they pass from the plateau to the coastal plains are of great significance (as has already been mentioned) in connection with water supply schemes. Elsewhere in the State the marginal portion of the Plateau is drained by rivers that flow to the sea only at times of exceptional rainfall and, speaking in the most general way, have courses at right angles to the coast.

The area of interior drainage is arid and practically riverless. Small creeks run from the higher parts of the country but they either disappear on the extensive flats or reach the shallow basins which are termed salt or "dry" lakes, the term "dry" being used since these so-called lakes are free from water except after fairly heavy or long-continued rain. These "lakes" are generally elongated, narrow, and often winding salt-encrusted flats arranged in long, more or less connected streams. After heavy rain they are covered with a thin layer of water and, after unusually heavy rain, water has been known to flow southwards from one to another of the "lakes" of a string, except towards the western margin of the plateau where the drainage is to the west. It is evident that these elongated "lakes" are the remnants of an old river system developed during a more humid period. The salt lakes are of some economic significance since, on the evaporation of the water, common salt and other substances such as gypsum are deposited on the floor of the lake. The gypsum, which crystallizes earlier than the common salt, is generally blown from the damp surface of the dried-up lake and deposited as dunes of "seed gypsum" on the leeward (eastern) side of the lake. These dunes are utilized, for example at Lake Seabrook north of Yellowdine, as a source of gypsum for plasters. Common salt, which separates later, forms a crust on the floor of the lake when it has been completely dried up and such salt deposits are exploited, for example at Lake Lefroy near Widgiemooltha. In a few of the Western Australian salt lakes significant deposits of aluminic clay have been discovered which have been worked as a source of potash.

Over a large portion of the interior drainage part of the Great Plateau there are extensive sand-plain soils overlying a hard laterite ("ironstone") layer, which is of the order of up to fifteen feet in thickness, below which lies an intensely weathered zone from which most of the nutrient elements so important for plant growth have been leached. These more recent geological formations will be discussed in the section of this Part dealing with geology, but we may note here the significance of this lateritic profile (sandy soils near the surface, "ironstone" a few feet below, and completely kaolinized rocks still deeper) so far as soil fertility is concerned. This lateritic profile is the result of long-continued weathering processes which have resulted in almost complete leaching of the valuable nutrients and as a result soils developed in any part of this profile are generally very poor in character. It is only where erosion has cut through the lateritic profile and still younger soils have been formed by weathering of the underlying rocks that the better soils are found. As has been mentioned, however, with recent studies of trace element deficiencies much can be done with these "light" soils by the addition of suitable nutrients.

The areas of no surface drainage include the Eucla Division and portions of the Eastern Division of the State. This area is occupied largely by horizontal or nearly horizontal limestones of the Nullarbor Plain and the drainage here is sub-surface in character through subterranean streams and caverns in the limestone. The Nullarbor Plain is an extensive monotonously level plain standing at a height of about 600 feet above sea-level. The Western Australian part of the Nullarbor Plain is bordered to the south by a narrow coastal plain but further east, at the head of the Great Australian Bight, in South Australia, this coastal plain is absent and the southern edge of the Plain is truncated by cliffs which rise almost sheer for 200 to 400 feet above sea-level.

The hills of the Great Plateau are of two kinds, ridged and table-topped. In the southern half of the State the ridged hills, a few of which rise as much as 1,500 feet above their surroundings, are generally elongated in a north-north-west direction, reflecting in their trend the structure of the underlying rocks. The table-topped hills are seldom more than 200 feet above the general level. They are capped with a subhorizontal layer of laterite ("ironstone") and bounded by low cliffs, in many places undercut, which are known in Western Australia as "breakaways." The table-topped hills are relicts of erosion of a former laterite-covered peneplain (the *Darling Peneplain*) which was uplifted in Pliocene times to form the Darling Plateau and has subsequently been subjected to erosion under semi-arid conditions. The ridged hills on the other hand are elongated monadnocks which, being cored by resistant rocks such as jasper bars, withstood erosion and so rise above the general level of the remnants of the laterite-covered Darling Plateau.

The Great Plateau slopes down very gradually to the south and west. The downward slope to the south is interrupted by a narrow broken chain of rugged hills, the Stirling and Mt. Barren Ranges which rise to heights of from 1,000 to 3,600 feet above sea-level. The western margin of the Plateau is, in the south, formed by the "Darling Range" which, being merely the dissected margin of the Plateau, is much better called the *Darling Scarp*. This Darling Scarp is clearly defined between latitudes $31^{\circ} 30' S.$ and $33^{\circ} 30' S.$, i.e., between Moora and Donnybrook, but it is difficult to recognize farther north or south. In the Kimberley Division the mountain ranges are the relicts of erosion between the deeply-incised rivers and in this region the highlands of the plateau terminate abruptly along a steep, deeply-indented coastline.

The Coastal Plains

Bordering the Great Plateau are the Coastal Plains which vary in width. The *Swan Coastal Plain* which extends from the neighbourhood of Perth to near Busselton averages about fifteen miles in width and is divisible into the following belts: a narrow band of moving sand dunes along the coast; a zone averaging three or four miles in width of sandy limestone which rises in places to heights of 100 to 200 feet above sea-level; a zone three or four miles wide of loose sand fixed by vegetation; and, abutting against the Scarp which forms the western margin of the Plateau, a zone of clayey soils of about the same width. A strip of low plain extends along the coast at intervals as far north as King Sound and coastal plains of some width occur near Port Hedland and Exmouth Gulf. A narrow plain fronts the cliffs of the Great Australian Bight for some distance and also occurs in other places along the south coast.

The coastline of Western Australia, some 4,350 miles in length, is broken by capes between Wyndham and Broome, between Port Hedland and Shark Bay, and between Cape Naturaliste and Israelite Bay. The intervening parts are comparatively featureless.

It has only been possible here to briefly outline the principal physical features of Western Australia and for a fuller description of the physiography of this State the reader should consult J. T. Jutson's "Physiography (Geomorphology) of Western Australia" (*Geol. Surv. West. Aust. Bull.* 95).

GEOLOGY

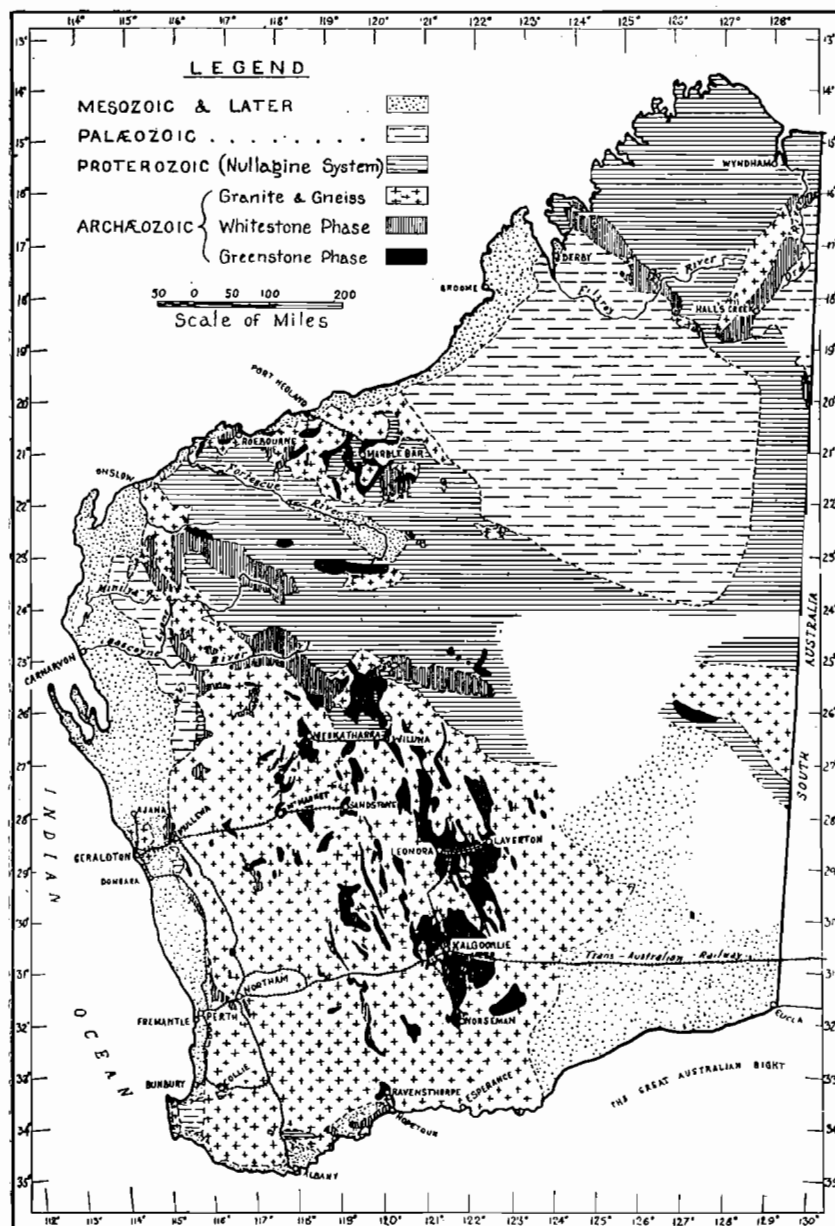
More than two-thirds of Western Australia is occupied by the ancient Australian Pre-Cambrian shield which is composed of a complex of igneous, metamorphic and sedimentary rocks formed more than 500 million years ago. Most of our mineral deposits of economic importance, except coal and water, occur in these Pre-Cambrian rocks. The remainder of the State is occupied by sedimentary basins in which Palaeozoic and later sediments are developed. It is in these younger sedimentary basins that artesian water, coal and oil are likely to occur. Finally there are the still younger superficial deposits—laterites, salt-lake deposits, and soils on which much of the economy of this country depends. It will be convenient therefore, in outlining the geology of the State, to consider it under the three main headings:—

- (a) The Pre-Cambrian basement.
- (b) The sedimentary basins.
- (c) The superficial deposits.

The distribution of the solid rocks (omitting superficial deposits) is shown in the accompanying map.

The Pre-Cambrian Basement

This includes the Archaean and Proterozoic rocks. The Archaean is a complex of crystalline igneous and metamorphic rocks, dominantly granites and gneisses with minor amounts of basic igneous and

**GEOLOGICAL MAP OF WESTERN AUSTRALIA**

(from Clarke, Prider and Teicheri, "Elements of Geology for Western Australian Students," by courtesy of University of Western Australia Press.)

schistose metasedimentary formations. In places, particularly in the North-West and Kimberley Divisions, this Archaean complex is overlain unconformably by sedimentary and volcanic rocks of Proterozoic age which do not exhibit the extensive metamorphism so characteristic of the older Archaean complex. Within the different areas occupied by the Pre-Cambrian rocks the same generalized sequence can be distinguished.

In the Kimberley the oldest rocks are metamorphosed igneous and sedimentary rocks intruded by granite and carrying in places auriferous ore deposits, and these are overlain by un-metamorphosed sediments with basic igneous intrusives. The Pre-Cambrian age of all these rocks is evidenced by the fact that in the East Kimberley they are overlain by sedimentary rocks containing fossils of Cambrian age. Indeed this is the only area in Western Australia where the Pre-Cambrian age of the rocks of this crystalline complex can definitely be proved. In the southern part of the State we find a similar sequence of crystalline schists with intrusive granites and by lithological correlation (which is not a very sound method) we assume that they are of Pre-Cambrian age although they cannot actually be traced through from the Kimberley. We do know that in the Carnarvon Basin these gneisses, schists and granites are older than the Devonian, which unconformably overlies them, and in the Perth Basin they are older than the Permian. During recent years the Pre-Cambrian age of these rocks has been confirmed by actual age determinations based on the decay of radioactive elements which occur in them. This work indicates that the granitic intrusions of the southern part of the State crystallized from a molten state some 2,700 million years ago.

The Pre-Cambrian sequence in the North-West Division appears to be the most complete that is present in Western Australia and, from oldest to youngest, is as follows:—

The *Warrawoona System*, which consists mainly of greenstones and green schists which were, prior to the intense folding and metamorphism to which they were subjected after deposition, basaltic lavas and tuffs with interbedded chemically deposited secondary rocks (ferruginous cherts) in the upper part of the sequence. The Warrawoona System is unconformably overlain by a System (the *Mosquito Creek System*) of sedimentary rocks which have also been intensely folded and metamorphosed to various types of platy-structured schists, slates and quartzites. Both the Warrawoona and Mosquito Creek Systems are invaded by granitic igneous rocks and both carry auriferous orebodies. A still younger System (the *Nullagine System*, of Proterozoic age) consisting of sedimentary rocks such as conglomerates, sandstones and shales, with interbedded basic igneous rocks, was deposited unconformably on the highly-folded, granite-intruded Mosquito Creek and Warrawoona Systems. The rocks of the Nullagine System have not suffered the intense folding that affected the older rocks and consequently are present as flat-dipping to horizontally bedded un-metamorphosed sediments. Such sediments cover very extensive areas in the North-West (see Geological Map of Western Australia on page 28) and they are similar in all respects to the flat-dipping Upper Proterozoic sediments which cover the plateau country of the North Kimberley. The final episode in the Pre-Cambrian history of the North-West was the intrusion of dolerite dykes and sills into all of the earlier rocks.

Coming to the southern half of the State we find a similar sequence to that in the North-West. In the part of the Pre-Cambrian shield extending south of latitude 26° S. the oldest rocks that are recognized are the greenstones of the various goldmining fields which occur in comparatively narrow belts elongated in a general N.N.W. direction (see Map, page 28). These greenstones, which are for the most part metamorphosed basaltic lavas, are overlain by metamorphosed sedimentary rocks (generally referred to as whitestones). This System of rocks is the *Kalgoorlie-Yilgarn System*. From the mining point of view it is the most important System in the State, since the auriferous ore deposits of the main mining fields are confined to it. It appears to be the equivalent of the Warrawoona System of the North-West. After the formation of the Kalgoorlie-Yilgarn rocks they were intensely compressed into tightly closed folds with N.N.W.-trending axes. During this period of intense earth-movement alkaline solutions permeated the older rocks, converting them into granitic gneisses which occupy the bulk of this southern half of Western Australia. Subsequently granite magma was intruded as in the North-West. This completes the Archaean sequence. The Proterozoic is represented by a narrow strip of slightly altered sedimentary rocks along the Darling Scarp and the rocks of the east-west Stirling and Mt. Barren Ranges along the south coast. As in the North-West all of these Pre-Cambrian rocks are intruded by dolerite dykes.

Putting together the information available throughout the State, we conclude that the oldest system of rocks found in Western Australia belongs to the older part of the Archaean Era. It is a great succession of rocks, generally much metamorphosed, which is called the Kalgoorlie-Yilgarn System in the southern part of the State and the Warrawoona System in the North-West region. In the early part

of Kalgoorlie-Yilgarn times there was much volcanic activity which took the form of eruptions of basic and intermediate lavas, tuffs, and breccias. These were penetrated, shortly after their extrusion, by intrusions from the same magma; similar events must be occurring now in the interior of great volcanic masses like Etna or Hawaii. In later Kalgoorlie-Yilgarn times, the dominant process was sedimentation, so that the earlier volcanic rocks, with the minor associated bands of sediment, became overlain by a great thickness of sandy and clayey sediments. These sediments must have been derived from some land mass composed of rocks of pre-Kalgoorlie-Yilgarn age but this, possibly the oldest of all rock assemblages, has apparently not yet been found in Australia or any other part of the World.

After the accumulation of the Kalgoorlie-Yilgarn System came a period of intense earth-movement during which the rocks were, in most places, closely folded and regionally metamorphosed. The folding was accompanied by widespread granitic intrusions, some of which consolidated into primary gneisses whereas others soaked into the Kalgoorlie-Yilgarn rocks, penetrating them along bedding planes, joints, and other fractures, and so forming hybrid granite-gneisses by granitization.

Where they were not affected by this First Granite Invasion, the volcanic rocks of the Kalgoorlie-Yilgarn System were regionally metamorphosed, in some places very strongly into dark-coloured schists, in others only very slightly. Similarly, the sedimentary rocks of the Kalgoorlie-Yilgarn System, where they have escaped the first granite invasion, *i.e.*, have not been granitized, are in some places but slightly regionally metamorphosed, in others they are converted into various types of schist and quartzite.

The Mosquito Creek System forms part of the older Pre-Cambrian in the North-West region. It consists mainly of metamorphosed sediments—slates and quartzites largely—and overlies the Warrawoona System unconformably, whereas the whitestone and greenstone phases of the Kalgoorlie-Yilgarn System appear to be conformable to one another. Therefore, there is nothing, it seems, in the southern part of the State to correspond to the Mosquito Creek System.

All the Archaean rocks described above were invaded by the "Younger" Granite, which, unlike the "Older" Granite, formed well-defined intrusions many of which are bosses, though smaller offshoots from the same magma, in the form of "porphyry dykes," occur at nearly every mining centre. These events occurred after the folding but before Proterozoic times. Any of the Archaean rocks in Western Australia may contain ore-bodies yielding gold and other minerals of economic value. It seems likely that these ore-deposits were formed at the time of the Second Granite Invasion which, from radioactive age determination studies, occurred about 2,700 million years ago. Important iron-ore deposits occur in the Archaean rocks at many localities, the best known being those at Cockatoo and Koolan Islands in Yampi Sound which have been exploited for many years. Other large iron-ore deposits are at Mt. Goldsworthy in the Pilbara, Talling Peak in the Yalgoo Goldfield, and Koolyanobbing, Bungalbin and many other localities in the North Yilgarn. These are all banded ironstone deposits which are interbedded with the basaltic lavas and sedimentary rocks of early Archaean age. In many places there are important manganese deposits associated with these banded iron formations.

Finally, in late Proterozoic (Nullagine times) we had the deposition, under shallow-water conditions, of sandstones, shales and conglomerates and another period of volcanic activity yielding basaltic lava flows. These rocks of the Nullagine System have not suffered the intense earth movements which affected the older rocks, and so are practically un-metamorphosed. Important blue asbestos deposits in these Upper Proterozoic rocks are exploited at Wittenoom Gorge in the Hamersley Range of the West Pilbara. The deposits occur in banded ironstone formations which may also contain potential iron-ore deposits. Although the rocks of the Nullagine System cover extensive areas in the northern parts of the State they have largely been stripped off the southern half by erosion. The final episode in the Pre-Cambrian history of this State was the widespread intrusion of dolerite dykes approximately 550 million years ago.

The Sedimentary Basins

There are five major sedimentary basins in Western Australia—the *Bonaparte Gulf Basin* in the north-east part of the Kimberley Division extending into the Northern Territory, the *Canning Basin* of the West Kimberley, the *Carnarvon Basin* of the North-West, the *Perth Basin* extending from lat. 29°S. to lat. 33°S. and the *Eucla Basin* occupied by the Nullarbor Plain. In addition to these major basins there are smaller basins such as that at Collie and scattered areas where sediments, which are dominantly lacustrine in nature, have been deposited. In these sedimentary areas we find sediments ranging from Lower Palaeozoic to Pleistocene in age. These sediments of Palaeozoic and later age are, as a rule, less disturbed than those of Pre-Cambrian times and many are abundantly fossiliferous. There-

fore, there is a sure means of correlating formations even in widely separated places, and so our knowledge of the history of these sedimentary areas is more detailed than in the much altered, highly folded, unfossiliferous Pre-Cambrian rocks of the basement.

Apart from the superficial deposits the economic significance of these basins is confined to their possibilities for the occurrence of artesian water, coal and oil. A prime requisite for the occurrence of artesian and sub-artesian water is the occurrence of interbedded strata of varying porosity and permeability. These conditions are met in a number of the sedimentary basins in Western Australia and the development of the pastoral industry in the arid or semi-arid parts of these basins has been largely dependent on the occurrence of artesian water. In the metropolitan area, artesian bores are an important source of water supplies. Coal deposits are also confined to areas of sedimentary rocks and occur in the Permian rocks of two of the minor basins, viz., the *Collie* and the *Irwin River Basins*. Up to the present the coal deposits of the lacustrine Permian beds of the Collie Basin constitute the only power source in Western Australia, since no oil of commercial significance has yet been proved and the gently undulating topography combined with low rainfall make the hydro-electric resources insignificant. So far as oil is concerned the first occurrence of flow oil in Australia was encountered in Rough Range bore No. 1, in the Carnarvon Basin, late in 1953. This discovery of flow oil has resulted in an increase in the rate of geological exploration of all the major sedimentary basins. The results of extensive geological mapping, geophysical surveys and exploratory drilling have to date been disappointing, but the fact that flow oil does occur indicates the presence of suitable source material and conditions for oil formation and preservation. The possibilities, therefore, of locating commercial oilfields in the Carnarvon, Canning and Perth Basins are by no means exhausted.

A detailed description of the sedimentary formations of different ages, from the Cambrian to the Recent, in the various sedimentary basins has been set down in "The Stratigraphy of Western Australia" (*Journal Geological Society of Australia*, volume 4, part 2, pp. 1-161, 1958). It is proposed here merely to indicate the main features of the various basins.

The *Bonaparte Gulf Basin*, in the East Kimberley, extends into the Northern Territory. As already mentioned, this is the only basin in Western Australia where rocks of proved Cambrian age are exposed. On Western Australian territory the Cambrian rocks extend as a narrow belt along the interstate border between lat. 16° 15' S. and lat. 18° 30' S., reaching westward from the border for 15 to 75 miles. The Cambrian consists of basalts at the base of the sequence, overlain by Middle Cambrian fossiliferous limestones, shales and sandstones. There is a small development of sandstones which are considered to be of Lower Ordovician age, following which there is a big time gap and the next youngest formations are sandstones and limestones of Upper Devonian and Lower Carboniferous age. Upper Carboniferous and Lower Permian formations are absent, the next marine transgression being in the Middle Permian when there was a thick sequence of conglomerates, sandstones, and limestones deposited. The only other sedimentary rocks in this basin are freshwater sediments (siltstones, marls and cherts containing freshwater fossils) of late Tertiary age.

The *Canning Basin* (formerly named the Desert Artesian Basin), in the West Kimberley, extends from the coast between Derby and the De Grey River in a south-easterly direction almost to the 128° meridian (see Map, page 28). The north-east or Fitzroy part of this basin contains sediments ranging in age from Ordovician to Triassic and in the larger Canning Desert portion, to the south of the Fitzroy River, the sediments range from Permian to Lower Cretaceous in age. Most of the Canning Desert section of the basin is unexplored but the Fitzroy section is comparatively well known. It was in this area that the early bores seeking oil were first drilled in Western Australia, following the discovery in 1919 of traces of oil in a water bore on Gogo Station.

The oldest Palaeozoic sediments in the Fitzroy portion of the basin are richly fossiliferous limestones of Ordovician age outcropping near Price's Creek. These are overlain by Devonian reef limestones, sandstones and conglomerates, followed by Carboniferous sandy limestones. These in turn are followed by a thick Permian sequence of sandstones (of marine glacial origin deposited from floating ice), fossiliferous calcareous shales and limestones, and in Upper Permian times fossiliferous ferruginous siltstones and sandstones. All of these formations dip gently in a general south-westerly direction towards the centre of the basin but these regional dips are interrupted by local folding. Shale and sandstone beds of Triassic age occur in the Fitzroy section of the basin. The youngest rocks in this area are igneous intrusions in the form of intrusive sheets, dykes, and volcanic necks which have been

found intruding all rocks of the sequence from the Pre-Cambrian granitic basement to the youngest sediments (Triassic) present. These igneous rocks, from direct geological evidence, are of post-Triassic age, and radioactive age determinations made in 1959 indicate that they were formed 180 million years ago (*i.e.*, in Jurassic times). This is one of the two areas in the whole of Western Australia where post-Cambrian igneous activity is known.

In the Canning Desert section of the basin the Palaeozoic rocks are not well exposed and the greater part of this portion of the basin (where not obscured by superficial unconsolidated sands) is occupied by Mesozoic sediments ranging in age from Lower Jurassic to Lower Cretaceous. There is no evidence in the entire basin of any marine transgression after Lower Cretaceous times.

The *Carnarvon Basin* (formerly called the North-West Artesian Basin) has been the most intensively studied of the major sedimentary basins in Western Australia. It extends along the west coast from Onslow near the mouth of the Ashburton River as far south as the mouth of the Murchison River (*see* Map, page 28), the maximum width of the basin being 125 miles at the latitude of Carnarvon. In this basin the eastern portion up to 50 miles wide is occupied by a thick sequence of marine Palaeozoic sedimentary rocks ranging in age from Middle Devonian to Upper Middle Permian, all of which have a regional westerly dip. The estimated maximum thicknesses of the Palaeozoic strata are :—

Permian	....	....	....	13,175 feet
Carboniferous	....	....	....	2,510 feet
Devonian	....	....	....	5,120 feet

This Palaeozoic sequence which consists of fossiliferous Devonian limestones and sandstones, Carboniferous limestones and Permian marine glacial beds, limestones, sandstones, and shales, is almost entirely marine in origin. In the Carnarvon Basin we have the only wholly marine Permian sequence in Australia, and without doubt *one of the thickest marine Permian sequences in the World.*

No rocks of Silurian age were known from the western half of the Australian continent until 1957 when a bore sunk by West Australian Petroleum Pty. Ltd. at Dirk Hartogs Island in Shark Bay encountered limestones of Silurian age underlain by sandstones which are now correlated with the reddish sandstones which outcrop in the lower reaches of the Murchison River.

To the west the Permian rocks are unconformably overlain by Cretaceous sandstones, shales, marls and limestones attaining a total thickness of 2,000 feet. It is the basal formation, the *Birdrong Sandstone*, of the Cretaceous sequence that is the oil sand encountered in Rough Range Bore No. 1. The Cretaceous rocks outcrop in a north-south belt averaging 50 miles wide between the Palaeozoic and Pre-Cambrian rocks on the east and the Tertiary limestones to the west. The only other Mesozoic formation exposed at the surface in this basin is a Jurassic sandstone 25 feet thick. However, a deep well (Cape Range No. 2) drilled in search of oil at Exmouth Gulf, after passing through the base of the Cretaceous at 3,707 feet, entered the Lower Jurassic which extended to the depth of 15,169 feet at which the bore was discontinued, thus proving a thickness of at least 11,462 feet of Lower Jurassic strata in this area. It is apparent that there is a marked thickening of the Mesozoic formations from east to west in this area. The westernmost belt of the Carnarvon Basin is occupied by Tertiary strata, mainly limestones, which are well exposed in the Rough and Cape Ranges of the Exmouth Gulf area. These limestones, which range from Lower Miocene to Pliocene in age, total 1,200 feet in thickness and are discontinuously overlain by Pleistocene and Recent beds approximately 450 feet thick. Marine Tertiary sediments which are so well developed along the western margin of the basin extend as a thin discontinuous formation unconformably over the Permian beds of the eastern part of the basin, indicating that in Upper Eocene times the sea transgressed practically the whole of the Carnarvon Basin.

The sedimentary rocks of the Carnarvon Basin were affected by earth movements at various times. Even the youngest of the Tertiary rocks have been thrown into gentle folds which are significant so far as the search for oil is concerned because, in addition to having suitable conditions for the formation and preservation of oil, suitable structures are necessary for its concentration into local areas (oil "pools"). So far as structure is concerned, the general picture of the Carnarvon Basin is the gentle regional westerly dip of the Palaeozoic sediments of the eastern half of the basin and the gentle dome and basin folding of the western half.

The *Perth Basin* (formerly called the Coastal Plain Artesian Basin) is a narrow elongated basin on the western border of Western Australia extending from Geraldton in the north to Cape Leeuwin in the south. At Geraldton it is 30 miles wide and is flanked both to the west and east by Pre-Cambrian crystalline rocks (mainly gneisses). The maximum width of the basin is approximately 50 miles at

Watheroo and it narrows again to the south being approximately 30 miles wide in the sunkland between Busselton and Augusta. At this southern end it is again flanked both to the east and west by Pre-Cambrian rocks. The surface of the basin is mostly covered by Recent sands but occasional outcrops of rocks as old as the Permian occur in places. Apart from the evidence provided by water bores up to 2,400 feet deep in the metropolitan area little is known regarding the thickness and age of the sediments in the basin. Gravity surveys indicate that there is a very considerable thickness of sediments, perhaps exceeding 30,000 feet, and it is probable that in this basin we have a complete succession from the Younger Proterozoic (*Cardup Group*), along the Darling Scarp, to the Recent sands. Other than the Proterozoic (or maybe early Palaeozoic rocks) of the Darling Scarp, the oldest sediments exposed are the gently folded Permian marine sediments of the *Eradu* and *Irwin River Basins* at the north end of the main basin. The Permian sediments of the Irwin River area have a total thickness of 4,000 feet and vary from marine glacial beds at the base (as in the Carnarvon and Canning Basins) through fossiliferous marine shales and limestones to lacustrine sandy sediments with coal seams in the upper part of the sequence. Marine and continental Jurassic limestones and sandstones occur east of Geraldton and Jurassic beds, overlain by Cretaceous chalks and greensands, occur near Gingin and Dandaragan. In the southern part of the Perth Basin the oldest rocks exposed (if we except the Permian of the separate minor *Collie Basin* which is situated well to the east of the Darling Scarp in a glacially-gouged trough) are the Cretaceous *Donnybrook Sandstones*.

In the vicinity of Perth, artesian bores to a maximum depth of 2,400 feet expose a sequence varying from Jurassic sandstone at depth, through Cretaceous and Eocene shales. The *King's Park Shale* of Eocene (older Tertiary) age is overlain by Pleistocene aeolian sandstones of the *Coastal Limestone Formation*, the base of which is approximately 100 feet below sea-level. There is therefore a big gap in the succession here between the Eocene and Pleistocene. The only evidence of igneous activity in the Basin is the Cretaceous basalt of the sunkland between Bunbury and Cape Gosselin on the south coast.

Very little is known about the structure of this basin. It is bounded to the east by a large fault or monoclinical fold and the small amount of evidence available seems to indicate that the main structural character is a gentle regional dip to the east.

The *Eucla Basin* occupying the Nullarbor Plain, in the south-eastern corner of the State is occupied at the surface by marine fossiliferous Middle Tertiary (Miocene) limestones which lie on sandstones and shales of probable Cretaceous age, which in turn overlie the Pre-Cambrian crystalline rocks. Little is known of the details of the stratigraphy and structure of the Eucla Basin since the beds are very flat-lying and have only been penetrated by water bores in a few places such as Madura near the coast and Loongana on the Trans-Continental Railway. The Madura bore is artesian but bores along the Trans-Continental Railway have only yielded sub-artesian water (*i.e.* the water will rise under pressure only part of the way to the surface). The oil prospects of this basin are poor because of the comparatively small thickness (2,000 feet) of the sediments and the absence of suitable folded structures to form oil traps.

The *Collie Coal Basin*—Of the minor basins and isolated occurrences of post-Cambrian sediments, Collie, since it is the only operating coalfield in Western Australia, is the only one which will be considered here. It is situated approximately 100 miles S.S.E. from Perth, and has an area of about 100 square miles. Actually it is made up of two basins separated by a subsurface granitic ridge. It is composed of sandstones and shales with interbedded coal seams and is surrounded by Pre-Cambrian rocks. The coal measures, of Permian age, are of the order of 2,000 feet in thickness of which approximately 130 feet is coal. The actual contact between the Permian coal measures and the Pre-Cambrian granitic basement has nowhere been seen at the surface but has been encountered in deep drill holes in various parts of the Basin. Such drill holes reveal that Permian mudstone containing granite pebbles lies on an ice-planed surface of the Pre-Cambrian granitic rocks. This suggests that the Collie Basin, formerly considered to be a block of the Permian downfaulted into the Pre-Cambrian basement, is actually a glacially-gouged trough formed by terrestrial glaciation in the Permian and since filled with Permian lacustrine sediments. Coal occurs at three horizons and the seams, which average six feet in thickness, persist over fairly long distances. From the associated plant fossils these coal measures appear to be comparable in age with those of the upper part of the Permian sequence at the Irwin River near the northern end of the Perth Basin.

The Superficial Deposits

Over a great part of the State fresh rock outcrops are comparatively sparse and are covered by highly weathered rocks, laterite, drift sand, soils, and, in the salt lake country, by thin evaporite deposits.

Laterite—In the southern half of the State the remnants of the Darling Plateau are covered by a thin layer up to 10 or 15 feet thick of a reddish brown rock composed of spherical pebbles tightly or loosely cemented together by a lighter-coloured earthy matrix. This material in its poorly consolidated state is popularly referred to as "ironstone gravel" and when strongly cemented as "ironstone." This rock, called laterite, although it covers large areas, is purely superficial and wells or bores sunk in it pass within a few feet into highly weathered country rock which may extend down for distances up to 100 feet before encountering fresh unweathered rock. This laterite crust and the underlying highly weathered country rock were developed just prior to the formation of the Darling Plateau when it was a gently undulating peneplain lying close to sea-level. Subsequently, probably in Pliocene times, this laterite-covered peneplain was uplifted to form the *Darling Plateau*. This uplift, judged by the elevation of the laterite-capped hills and the occurrence of fossiliferous marine Eocene sediments 900 feet above sea-level at Norseman, was of the order of one thousand feet. On the Great Plateau, remnants of this Darling Plateau are evidenced by the table-topped hills so characteristic of much of the Plateau country. The significance of the laterite profile and the soils developed from the laterite and associated weathered rocks has already been mentioned. Economically, the laterite is important for road-making materials and in a few places (such as Wundowie) as an iron ore. The main constituents of the laterite are the insoluble products of intense rock weathering—iron oxide, alumina and silica. In many places the alumina content is sufficiently high to call them bauxites. Bauxites are the main source of aluminium, and the bauxitic laterites of the Dwellingup area in the Darling Range near Perth are being exploited as aluminium ore.

In the far south-west of the State subsurface hard pan formations consisting of ferruginous sandstone are a potential source of low-grade iron ore.

Soils and drift sands—Western Australia, an area of 975,920 square miles extending from lat. 14°S. to lat. 35°S., although having little variety in its broad physical features, has very considerable variation in climates from the tropical areas of summer rainfall in the north through a central and inland province of low rainfall to the temperate areas of winter rainfall in the south. Moreover, throughout this enormous area there is very considerable variation in the nature of the country rocks. The nature of the soils developed is dependent on these two factors—climate and parent rock—so it will be apparent that there will be very considerable variation in the soils over this extensive area. L. J. H. Teakle has recognized the following major soil zones of Western Australia :—

- A. Grey, yellow and red podsolised, or leached, soils of the temperate sclerophyll forests.
- B. Red brown earths of the eucalyptus-acacia woodlands.
- C. Grey and brown calcareous, solonised soils of the low rainfall eucalyptus woodlands—("mallee" soil zone of Prescott).
- D. Red and brown acidic soils of the acacia semi-desert scrub—mulga, etc.
- E. Brown acidic soils of the spinifex semi-desert steppes of the north-west.
- F. Pinkish brown calcareous soils of the Nullarbor Plain desert shrub steppes.
- G. Pinkish brown calcareous soils of the acacia semi-desert scrub, mallee and salt bush-blue bush zone.
- H. Brown soils of the tropical woodlands, savannahs and grasslands.
- I. Red sands of the central desert sandhills—spinifex with desert acacias, desert gums and mallees (*Eucalyptus* spp.)

Each of these major soil zones may be subdivided into one or more soil regions and the reader is referred to a paper "A Regional Classification of the Soils of Western Australia" by L. J. H. Teakle (*Jour. Roy. Soc. West. Aust. XXIV*, pp. 123–195) for details concerning the soil characteristics of these various zones and regions.

There are considerable areas of Western Australia covered by drift sand which may be in the form of parallel red sand dunes or, in the southern part of the State, extensive sandy plains. The latter have been generally considered to be residual from the weathering of granite, but closer examination of grain shape indicates that the sands forming much of the sandplain country have been transported for great distances either by wind or water. The youngest of the drift sand deposits are the coastal sand dunes.

Coastal sand deposits are of considerable economic importance. At various places along the south and west coasts there are beach sand deposits in which there is a considerable natural concentration of heavy minerals such as zircon, monazite, rutile and ilmenite. Such deposits are at present being ex-

ploited at Capel and Bunbury for their ilmenite content, which is valuable because of its low chrome content. Meanwhile the other heavy minerals such as zircon and monazite are being stockpiled for future use.

Salt lake deposits—These together with the coastal sand dunes represent the youngest of the geological formations developed—indeed they are in course of formation at the present time. They are evaporite deposits resulting from the evaporation of lake waters in the areas of internal drainage. Soluble salts produced by rock weathering are leached out by rain and running water and transported by streams to these lakes. During the long dry summers most of these lakes dry up and the soluble salts are deposited, yielding accumulations of gypsum and common salt. In a few of these lakes hydrated potassium aluminium sulphate (alunite), which is a valuable source of potash for fertilizers, has been formed but its actual mode of formation has not yet been satisfactorily explained.

Conclusion

From the foregoing summary of the geology of Western Australia we see that, although nowhere do we find the complete geological succession, somewhere in the State there are deposits representative of every Period. The geological history of Western Australia begins with the basaltic igneous activity of the Early Archaean some 3,000 million years ago, followed by sedimentation, intense mountain building activity and associated granitization and granite intrusions leading to the formation of the major deposits of economically important minerals. In post-Archaeon times there is a record of sedimentation throughout all the main geological periods. Igneous activity ceased in the Lower Palaeozoic and only re-occurred during the late Mesozoic, yielding the basaltic lavas of the far South-West and the volcanic rocks of the West Kimberley. Geological processes are continuing and at the present day rocks and soils are still in the process of formation.

PART 2—CLIMATE AND METEOROLOGY

(Contributed by the Western Australian Divisional Office of the Bureau of Meteorology)

Western Australia is the largest State in the Commonwealth, extending from latitude 14°S. to 35°S. and from longitude 113°E. to 129°E. It stretches a distance of about 1,500 miles in a north-south direction and about 1,000 miles west-east. A little more than one-third of the State lies within the tropics, while the remainder extends southward to the temperate zone.

Because of its large size and its latitudinal position, Western Australia has entirely different climates in its northern and southern parts, while in the central regions there is a gradual change from the tropical climate of the north to the typical Mediterranean climate of the south.

Most of the State is a plateau between 1,000 and 2,000 feet above mean sea-level and there are no outstanding mountain ranges. Where the edge of the plateau forms the Darling Range along the southern part of the west coast, it exerts a marked influence on the rainfall, causing a rapid increase from the coastal plain to the higher land. Elsewhere the effect of topography is less marked and its main influence is seen in the general decrease of rainfall with increasing distance from the coast.

HISTORY OF METEOROLOGICAL SERVICES

Meteorological observations have been made at Perth since shortly after the first settlement in 1829. Original weather journals are available which contain entries from the 16th April, 1830.

Growth of the Service—When the Meteorological Branch was first established in 1876, the stated policy was the expansion of the observing network with the object of obtaining a complete picture of the climate of Western Australia. The first outstation in the Colony was established in 1879 at Rottnest Island and the first north of the Tropic of Capricorn in 1881 at Cossack on the north-west coast. Continued adherence to the original policy on networks resulted in there being, by 1895, fifteen stations supplying full reports and 129 recording rainfall only. Reports from Cocos Island were procured in 1901 as soon as the telegraph cable between Western Australia and South Africa had been laid. By the end of 1961 the reporting network had been expanded to include 89 locations at which temperature, rainfall and other records were maintained and some thirteen hundred where rainfall alone was observed.

Not only have additional stations been established but through the years new techniques in observing practice have been introduced, so that now there are also 12 stations at which the winds blowing in the upper atmosphere are measured several times daily and at six of these the observers make temperature and humidity soundings to above 50,000 feet.

Administrative Development—The first observations were made at Perth by the staff of the Survey Office. Some records were also kept at the Colonial Dispensary.

When established in 1876, the Meteorological Branch was under the direction of the Surveyor-General, Mr. (later Sir) Malcolm Fraser. The first appointment for purely meteorological work was that of Mr. M. A. C. Fraser (later Registrar-General), as Observer. The Postmaster-General, Mr. A. Helmich, assisted by procuring reports from country telegraph stations. On the 1st July, 1893 the Meteorological Branch ceased to be part of the Lands and Surveys Department and became a section of the Registry Branch of the Colonial Secretary's Department. When the Western Australian Government established an Astronomical Observatory at Perth in 1896, the meteorological duties were included in the functions of the Astronomer, Mr. W. E. Cooke.

On the 1st January, 1908 the Commonwealth Government assumed responsibility for the meteorological service in Western Australia. The first Commonwealth Meteorologist was Mr. H. A. Hunt. The first Divisional Meteorologist for Western Australia was Mr. E. B. Curlewis, a former member of the Observatory staff, and an office was maintained at 105 Saint George's Terrace until July, 1930, when the Divisional headquarters were transferred to the Observatory site.

Observation Sites at Perth—The precise location of the instruments during the first 55 years of observations is not known. The early records always refer to the site as being adjacent to the Survey Office. It appears certain that this was in the block bounded by Saint George's Terrace, Barrack Street, Hay Street and Pier Street, while the Colonial Dispensary seems to have been near Irwin Street. In August, 1885, the equipment was moved to the public gardens, now known as Stirling Gardens, on the south side of Saint George's Terrace, and observations were continued there until about 1924, when the

thermometers were moved to a location south of the Supreme Court building, where they remained until October, 1930. With the transfer of the meteorological functions to the control of the Government Astronomer, a set of instruments was installed in the Observatory grounds and recordings commenced on the 1st January, 1897.

Exposure of Instruments at Perth—The method of exposing the thermometers prior to 1877 is not reported anywhere in the early records. The meteorological report for that year states that the thermometers were exposed "in a revolving stand of Mr. Glaisher's pattern." This was essentially a white backboard, on which the thermometers hung, with a canopy to protect them. It could be revolved to ensure that no direct rays from the sun could strike the bulbs. When the instruments were removed to the Gardens in 1885, the thermometers were still exposed on the Glaisher stand, but this was erected in an octagonal, double-roofed, louvered shelter. A Stevenson screen was used in place of the Glaisher stand after the move to the location south of the Supreme Court. A Stevenson screen was installed at the Observatory site in 1897 and this type of thermometer shelter, now standard throughout Australia, is still in use.

Elements Measured at Perth—The journals between 1830 and 1875 contain entries of pressure, temperature, wind and weather only, but the Meteorological Report for 1876 shows that in that year the observations included dry and wet bulb maximum and minimum temperature readings, terrestrial and solar radiation, rainfall, evaporation and ozone measurements, and that wind observations, at 55 feet above mean sea-level at Arthur's Head, Fremantle, were also made. Earth temperature recordings at various depths were added in 1886 and since that time no variation in the elements recorded has been made except that ozone measurements have long been discontinued.

Elements Measured at Outstations—The more important outstations have been supplied with instruments to record pressure, temperature and humidity, wind and rainfall. At the lesser ones rainfall only is observed. Evaporation measurements were commenced at Coolgardie in 1898 and at Carnarvon, Wiluna, Cue and Laverton in 1904.

Continuity of Records—The change of exposure at Perth in 1885 and of site in 1897 resulted in definite breaks in the records which appeared as quite marked changes in the average values of the elements.

Until 1889, at the Public Gardens site and at some outstations, evaporation measurements were made with shallow dishes filled each day with water to a depth of two inches. At Coolgardie, a water-jacketed tank, sunk in the ground, was used. The records so obtained are not fully comparable with those resulting from the use of later tanks. Three series of earth temperature measurements have been made at Perth, using different equipment and at different depths. Probably changes of site and instrumentation have been made at outstations, resulting in similar breaks in the records, but they have not been noted.

Times of Observations—The early recordings were made twice daily, in the morning and in the afternoon. The hours selected were 8 a.m., 9 a.m. or 10 a.m. and 2 p.m., 3 p.m. or 4 p.m. The majority were taken at 10 a.m. and 4 p.m. After 1876 the readings were made at 9 a.m. only, until 1881, when the time was changed to 7 a.m.

Following a recommendation of the Intercolonial Meteorological Conference in 1881 the times of standard observations were fixed at 9 a.m. and 3 p.m. as from the 1st January, 1885. All Western Australian stations make observations at these times, but at Perth, since 1952, seven observations per day have been made at three-hourly intervals commencing at midnight, and at certain outstations, since 1941, up to seven observations per day have been made at one or more of the three-hourly intervals. In addition to the trained permanent personnel of the Meteorological Bureau, observers are recruited from postmasters, pastoralists, farmers and the staff at isolated mission stations.

Interchange of Observations—From the 1st January, 1880, the outstations began to telegraph their daily observations to Perth and, in the same year, the first intercolonial exchanges commenced with the daily transmission of Perth and Albany observations to Adelaide. An extensive interchange of station reports is now effected daily throughout Australia by teleprinter circuits leased from the Postmaster-General's Department.

Forecasts and Warnings—Daily forecasts for Perth and for country districts have been prepared and distributed for public information since the 1st January, 1898. The earliest warnings issued were in respect of cyclones and commenced in 1902.

PRESSURE SYSTEMS

Weather during the year is controlled largely by the movement of the anticyclonic belt (high pressure systems with anti-clockwise winds), which lies in an east-west direction across the continent for about six months of the year.

In winter this system moves northward, bringing clear skies with fine sunny days and easterly winds to the tropics. With this northward movement, westerly winds on the southern side of the anticyclones extend over the southern part of the State, bringing with them cool cloudy weather and rain. In mid-winter the northern fringe of the "Roaring Forties" extends to Western Australia and there are frequent westerly gales in the south coastal belt.

These westerly winds are maintained by a series of depressions (low pressure systems with clockwise winds), which move eastward well south of the Western Australian coast, and others which originate in the Indian Ocean and move south-eastward past Cape Leeuwin. The extent to which westerlies affect the State depends largely on the intensity and the position of these depressions.

Towards the end of winter the anticyclonic belt moves southward, and the westerlies are confined more to the lower south-west and the south coastal districts. By summer the anticyclonic belt has moved so far south that its centre is off the south coast and easterly winds prevail over most of the State.

During this summer period the midday sun is at a high elevation in the tropics and the continual heating leads to the development of a monsoonal depression over this region. Wind circulation round this system causes easterlies on its southern or inland side, but in the coastal districts north-east from Onslow, and in parts of the Kimberley, westerlies prevail. Winds in both the north and the south of the State are then in the opposite direction to those prevailing during the winter.

As the sun moves northward again the anticyclonic belt follows it. The monsoonal depression over the tropics dissipates and westerlies again gradually extend northward to the southern part of the State.

During the northern "Wet" season (from about December to March), occasional cyclones, known locally as "willy willys," bring strong winds and rain to the tropics. They originate generally in the Timor Sea or off the north-west coast and often move first in a south-westerly direction parallel to the coast and later in a south-easterly direction.

They frequently move inland between Broome and Onslow but occasionally travel further westward before curving to the south-east and moving inland over the west coast. Others fade out at sea without ever crossing the coast. Those that move inland usually commence to dissipate soon after crossing the coast, but occasionally they move right across the State, passing into the Southern Ocean and moving off towards Tasmania.

These storms are often extremely violent and have on occasions almost completely wrecked towns on the north-west coast, while a cyclone which struck a pearling fleet off the Eighty Mile Beach in 1887 caused the loss of 22 vessels and 140 lives.

However, despite the damage which they cause, the storms are of great benefit to the pastoral regions on account of the heavy and widespread rain which generally accompanies them. The heaviest fall ever recorded in one day in Western Australia, 29.41 inches, was received at Whim Creek from a cyclone in 1898.

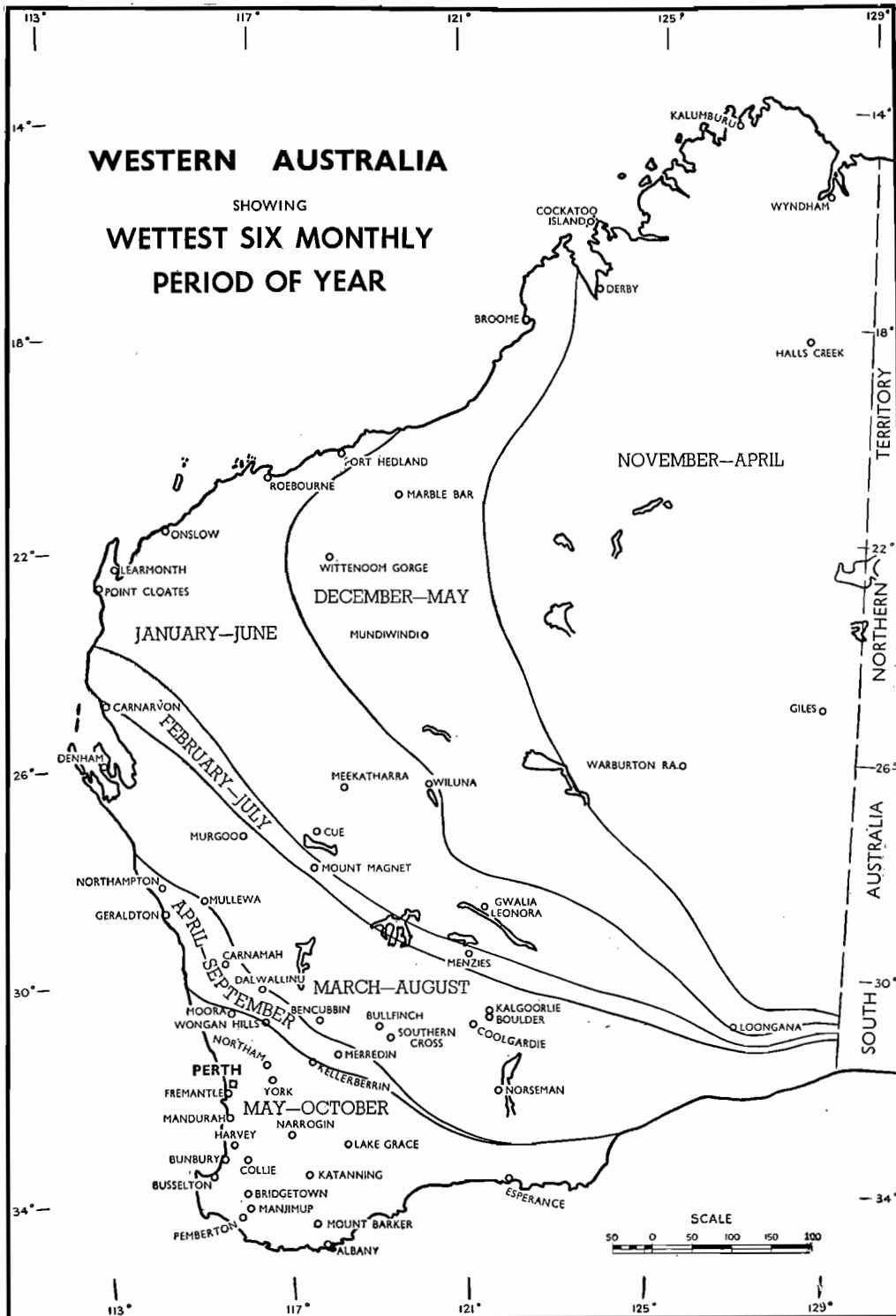
RAINFALL

The moist rain-bearing winds in this State are in general from a westerly direction. The easterlies, having come from the dry inland parts of Australia, usually bring fine weather and clear skies.

Because of this the highest rainfall occurs in the winter months in the south of the State, and in the summer months in the north. In between these areas there is a gradual change from one rainfall regime to the other.

From the map on page 39, which shows the wettest six-monthly period of the year, it can be seen that summer rains extend southward from the Kimberley to the transcontinental railway line, where there is a rapid change to the winter rainfall regime of the south coast. However, the difference between summer and winter totals decreases southward, and the southern part of this region is one of almost uniform rainfall.

Proceeding northward from the winter rainfall area of the south-west of the State, the wet period occurs earlier during the year. Across a belt Carnarvon-Menzies-Eucla, there is a more rapid change,



and this belt divides the winter rainfall area from that which receives most of its rain in the first six months of the year. Further north, the change is more gradual but continuous, and in the Kimberley most of the year's rainfall is received in the summer months, which in the southern parts of the State are the driest of the year.

The mean annual rainfall for the State is shown on the map preceding the index to the Year Book.

The following table shows the average rainfall and number of wet days, the highest and lowest monthly totals, and the highest daily fall for various centres.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS

(Stations are arranged from north to south in three groups: Coastal, Wheat Belt and Other Inland)

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL													
<i>Wyntham</i> (23 feet†)—													
Rainfall —Average (points)	763	632	467	81	24	17	16	3	9	44	190	418	2,664
Highest (points)	2,824	2,058	1,758	2,027	302	473	524	54	136	334	558	1,088	5,634
Lowest (points)	51	54	0	0	0	0	0	0	0	0	3	28	1,438
Highest one day (points)	1,212	590	1,250	1,732	247	445	338	42	136	225	335	383	1,732
Wet days—Average number	13	11	9	3	1	0	0	0	0	2	6	10	65
<i>Broome</i> (37 feet†)—													
Rainfall —Average (points)	648	568	393	115	61	96	20	11	5	3	56	325	2,301
Highest (points)	3,256	2,358	1,151	1,019	700	973	232	374	86	48	1,095	1,449	4,307
Lowest (points)	11	42	4	0	0	0	0	0	0	0	0	3	561
Highest one day (points)	1,400	1,191	1,062	714	346	563	216	147	82	28	553	680	1,400
Wet days—Average number	10	8	7	2	2	1	1	0	0	0	1	6	38
<i>Port Hedland</i> (25 feet†)—													
Rainfall —Average (points)	217	216	344	103	115	129	40	38	5	6	10	33	1,256
Highest (points)	1,969	1,432	1,716	728	873	696	384	584	99	129	336	1,023	4,013
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	125
Highest one day (points)	600	955	1,113	469	638	560	185	364	85	127	304	900	1,113
Wet days—Average number	4	4	4	1	2	2	1	1	0	0	0	1	20
<i>Onslow</i> (14 feet†)—													
Rainfall —Average (points)	96	106	169	98	162	157	76	44	4	2	4	15	933
Highest (points)	1,028	1,411	1,476	1,100	998	908	872	594	49	61	237	241	2,823
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	85
Highest one day (points)	932	1,079	1,229	617	937	436	355	251	27	29	117	198	1,229
Wet days—Average number	3	3	4	2	3	3	2	2	0	0	0	1	23
<i>Carnarvon</i> (15 feet†)—													
Rainfall —Average (points)	41	70	66	64	149	240	156	68	23	12	3	16	908
Highest (points)	614	719	520	647	800	865	570	365	91	198	75	483	2,536
Lowest (points)	0	0	0	0	0	5	6	0	0	0	0	0	272
Highest one day (points)	358	441	470	197	410	475	322	193	63	104	28	469	475
Wet days—Average number	2	2	2	2	5	6	6	5	2	2	0	1	35
<i>Geraldton</i> (13 feet†)—													
Rainfall —Average (points)	22	28	56	92	274	474	379	279	128	70	26	15	1,843
Highest (points)	379	517	666	457	1,292	1,292	958	952	412	335	157	230	3,365
Lowest (points)	0	0	0	0	0	121	70	33	0	0	0	0	1,136
Highest one day (points)	310	324	369	270	307	430	201	365	169	239	140	202	430
Wet days—Average number	2	2	3	4	10	13	14	13	9	6	3	1	80
<i>Perth—Observatory</i> (197 ft.†)—													
Rainfall —Average (points)	31	46	80	180	501	725	678	571	329	220	83	60	3,504
Highest (points)	217	655	571	585	1,213	1,875	1,228	1,253	784	787	278	317	5,267
Lowest (points)	0	0	0	0	98	216	242	46	34	15	0	0	2,000
Highest one day (points)	174	353	303	262	300	390	300	291	182	173	140	184	390
Wet days—Average number	3	3	4	7	14	17	18	18	14	12	7	4	121
<i>Pinjarra</i> (32 feet†)—													
Rainfall —Average (points)	34	41	82	187	542	760	729	619	389	253	89	59	3,784
Highest (points)	167	862	331	730	998	2,104	1,571	1,494	916	1,017	368	291	5,879
Lowest (points)	0	0	0	0	127	265	330	47	33	11	4	0	2,030
Highest one day (points)	145	443	197	560	337	367	400	350	189	211	159	160	443
Wet days—Average number	3	2	4	6	14	17	18	18	15	11	6	4	118
<i>Bunbury</i> (17 feet†)—													
Rainfall —Average (points)	39	49	95	172	513	710	676	516	350	231	93	53	3,497
Highest (points)	340	411	330	690	1,047	1,620	1,640	1,193	793	769	261	316	5,374
Lowest (points)	0	0	0	0	38	287	194	82	0	26	0	0	1,904
Highest one day (points)	222	388	258	240	317	472	372	263	227	154	205	104	472
Wet days—Average number	3	3	4	7	15	18	20	18	15	12	6	4	125

† Height above mean sea-level.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—continued

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL—continued													
<i>Pemberton</i> (565 feet)†—													
Rainfall—Average (points)	146	55	190	350	700	868	804	920	546	468	201	116	5,364
Highest (points)	579	347	519	761	1,101	1,489	1,563	1,572	860	764	577	379	6,897
Lowest (points)	24	5	11	42	141	497	571	416	139	97	74	19	4,338
Highest one day (points)	252	133	250	284	310	248	280	181	163	210	222	137	310
Wet days—Average number	8	5	10	13	18	21	22	21	18	15	11	10	172
<i>Mount Barker</i> (829 feet)†—													
Rainfall—Average (points)	90	87	149	209	342	387	418	372	334	289	143	109	2,929
Highest (points)	579	709	505	920	957	824	1,027	683	618	630	532	343	4,326
Lowest (points)	4	3	14	15	64	183	88	131	72	64	22	5	1,688
Highest one day (points)	412	284	192	548	270	236	285	259	175	214	251	165	548
Wet days—Average number	8	7	11	13	18	20	22	21	18	17	11	10	176
<i>Albany</i> (41 feet)†—													
Rainfall—Average (points)	100	87	161	275	502	547	559	532	410	325	146	118	3,762
Highest (points)	854	635	653	789	1,140	1,152	1,080	1,124	796	736	671	459	5,483
Lowest (points)	4	0	10	19	174	159	205	198	80	56	19	6	2,507
Highest one day (points)	345	226	353	226	408	285	240	443	312	184	307	323	443
Wet days—Average number	8	7	11	13	18	20	21	20	18	16	11	9	172
<i>Esperance</i> (14 feet)†—													
Rainfall—Average (points)	69	69	117	175	326	406	404	384	271	220	102	89	2,632
Highest (points)	524	471	491	691	705	1,076	945	727	564	574	453	320	3,625
Lowest (points)	0	0	0	8	80	109	122	75	42	52	1	0	1,724
Highest one day (points)	274	154	175	496	171	416	218	232	455	179	197	279	496
Wet days—Average number	5	4	7	9	15	15	16	15	13	12	7	6	124
WHEAT BELT													
<i>Carnamah</i> (879 feet)†—													
Rainfall—Average (points)	45	53	85	85	207	320	277	228	125	73	42	39	1,579
Highest (points)	404	405	539	409	551	910	742	757	332	262	357	222	3,078
Lowest (points)	0	0	0	0	6	83	53	51	2	0	0	0	917
Highest one day (points)	380	226	299	232	290	241	170	260	129	157	280	197	380
Wet days—Average number	2	1	3	4	9	11	13	11	7	5	2	2	70
<i>Dalwallinu</i> (1,099 feet)†—													
Rainfall—Average (points)	55	72	96	83	157	274	231	188	104	73	51	38	1,422
Highest (points)	267	409	361	353	403	705	570	555	270	142	394	176	2,161
Lowest (points)	0	0	0	0	3	88	69	31	7	5	0	0	471
Highest one day (points)	262	313	248	161	217	373	158	234	79	112	206	158	373
Wet days—Average number	2	1	3	4	8	11	12	10	7	6	3	2	69
<i>Norham</i> (490 feet)†—													
Rainfall—Average (points)	33	39	83	83	225	322	340	257	151	100	39	39	1,711
Highest (points)	212	747	744	304	555	916	871	669	506	395	162	259	2,798
Lowest (points)	0	0	0	0	4	40	77	26	10	0	0	0	830
Highest one day (points)	148	455	497	258	257	226	220	150	180	185	126	195	497
Wet days—Average number	2	2	3	5	11	14	16	14	10	8	4	3	92
<i>Merredin</i> (1,046 feet)†—													
Rainfall—Average (points)	40	46	93	95	155	202	212	156	105	88	45	63	1,300
Highest (points)	220	315	472	447	462	516	495	340	337	296	233	265	1,964
Lowest (points)	0	0	0	0	5	23	46	24	0	7	0	0	512
Highest one day (points)	118	260	325	235	194	160	181	132	176	105	144	191	325
Wet days—Average number	2	3	3	6	8	12	15	11	8	5	3	3	79
<i>Narrogin</i> (1,114 feet)†—													
Rainfall—Average (points)	38	55	91	111	265	343	369	292	209	140	54	48	2,015
Highest (points)	167	934	502	318	599	1,182	957	729	478	483	212	271	2,917
Lowest (points)	0	0	0	0	38	99	142	68	26	6	0	0	1,056
Highest one day (points)	167	454	450	168	269	280	320	165	144	139	81	196	454
Wet days—Average number	2	3	4	5	11	13	15	14	11	9	4	3	94
<i>Lake Grace</i> (946 feet)†—													
Rainfall—Average (points)	67	52	131	100	193	208	208	180	122	112	55	55	1,483
Highest (points)	401	843	487	236	456	587	504	411	303	307	386	189	2,348
Lowest (points)	0	0	0	2	8	67	50	36	10	0	0	0	837
Highest one day (points)	324	378	355	168	204	185	238	142	128	91	231	175	378
Wet days—Average number	2	2	3	6	9	15	16	13	10	6	4	4	90
<i>Katanning</i> (1,016 feet)†—													
Rainfall—Average (points)	43	51	105	118	246	297	306	248	187	153	64	64	1,882
Highest (points)	341	884	525	638	583	721	685	1,199	384	450	355	293	3,077
Lowest (points)	0	0	0	2	28	100	86	71	14	17	0	0	1,072
Highest one day (points)	253	495	271	417	233	276	182	117	127	198	165	216	495
Wet days—Average number	4	3	5	6	13	16	18	16	13	10	5	4	113

† Height above mean sea-level.

RAINFALL AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
OTHER INLAND													
<i>Halls Creek</i> (1,225 feet)†—													
Rainfall—Average (points)	554	433	292	69	37	26	25	9	16	52	137	316	1,966
Highest (points)	2,274	1,467	1,451	646	255	343	316	221	207	408	789	905	4,204
Lowest (points)	54	11	0	0	0	0	0	0	0	0	0	0	854
Highest one day (points)	650	510	685	578	241	143	129	205	123	142	198	264	685
Wet days—Average number	12	10	7	2	1	1	1	1	1	3	6	9	54
<i>Marble Bar</i> (595 feet)†—													
Rainfall—Average (points)	299	287	226	94	71	110	49	20	3	21	38	143	1,341
Highest (points)	1,219	924	1,530	947	588	625	527	135	95	458	242	957	2,920
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	297
Highest one day (points)	574	470	1,200	536	274	412	247	125	95	332	238	592	1,200
Wet days—Average number	7	6	5	2	2	2	1	1	0	0	1	4	31
<i>Mundivindi</i> (1,840 feet)†—													
Rainfall—Average (points)	183	162	235	79	77	78	25	30	16	48	44	125	1,102
Highest (points)	814	592	836	543	477	445	276	209	240	368	280	628	3,211
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	103
Highest one day (points)	274	278	688	223	219	159	168	152	135	210	227	450	688
Wet days—Average number	6	6	5	2	4	2	3	1	1	1	2	3	36
<i>Meekatharra</i> (1,676 feet)†—													
Rainfall—Average (points)	146	90	156	94	112	95	64	59	16	17	29	57	935
Highest (points)	841	526	608	542	514	615	200	304	143	101	371	411	2,034
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	191
Highest one day (points)	335	330	405	431	303	220	134	153	132	84	322	270	431
Wet days—Average number	4	3	5	3	4	4	4	3	1	1	2	2	36
<i>Kalgoorlie</i> (1,247 feet)†—													
Rainfall—Average (points)	63	68	114	86	111	110	85	95	44	71	55	67	969
Highest (points)	802	1,238	655	404	341	467	306	318	386	314	276	257	1,804
Lowest (points)	0	0	0	0	0	0	8	0	0	0	0	0	507
Highest one day (points)	379	700	279	282	315	225	147	137	174	246	254	199	700
Wet days—Average number	2	2	3	3	5	6	8	6	3	3	3	2	46
<i>Loongana</i> (603 feet)†—													
Rainfall—Average (points)	58	48	68	53	76	57	35	66	25	59	40	66	651
Highest (points)	553	409	228	334	366	611	137	186	165	247	159	340	1,503
Lowest (points)	0	0	0	0	0	0	0	0	0	0	0	0	232
Highest one day (points)	277	288	154	103	127	260	90	170	154	137	103	265	288
Wet days—Average number	2	2	2	2	3	3	3	2	2	2	3	2	28

†Height above mean sea-level.

EVAPORATION

Except in the lower south-west, evaporation from a free water surface exceeds the annual rainfall, and in a large proportion of the State it is more than ten times greater than the rainfall.

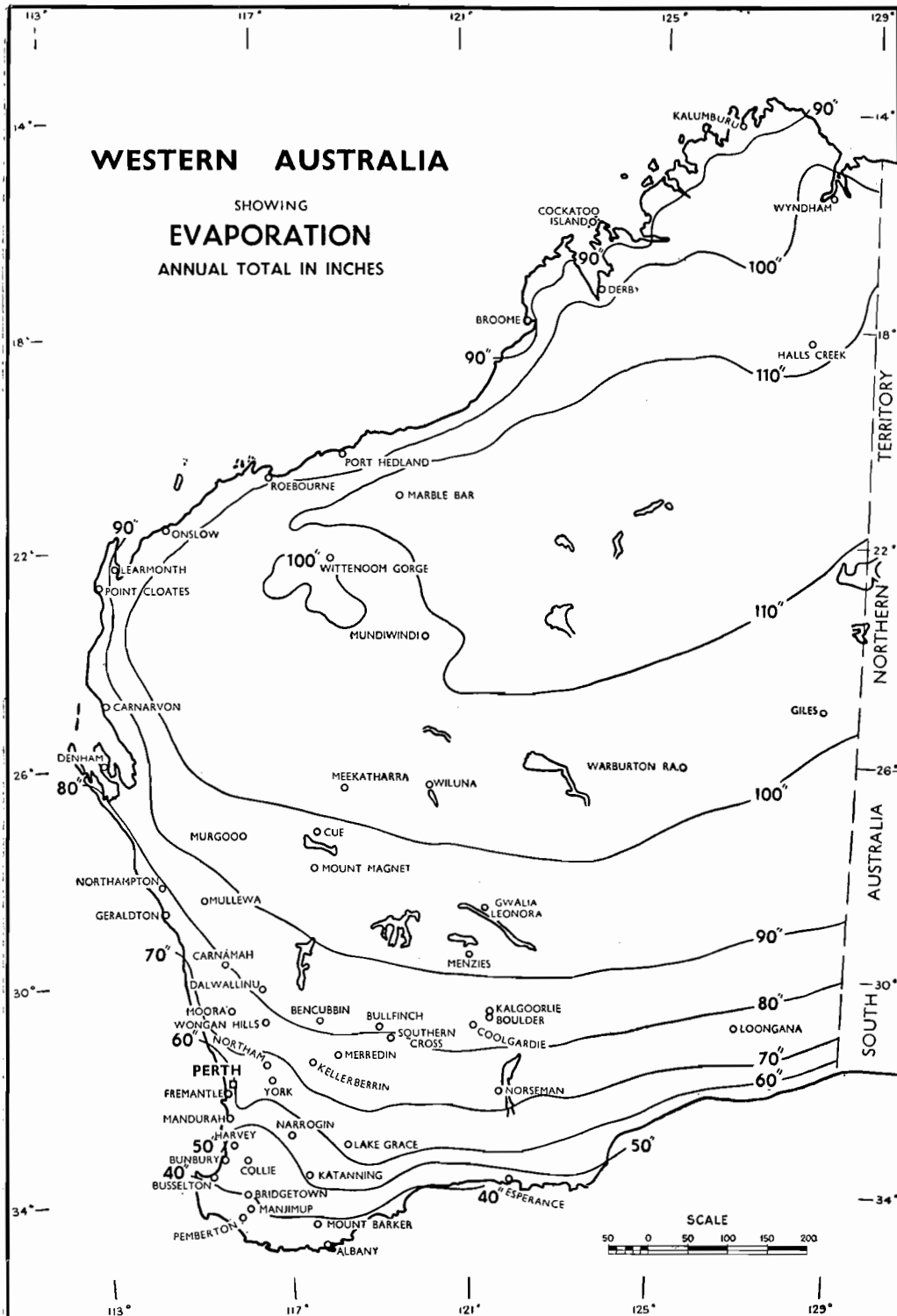
It is least in the winter months, amounting in July to less than 1 inch in the far south-west, and to about 8 inches in the northern tropics. In January, when evaporation is highest, it totals about 5 inches on the far south coast and reaches 14 inches in the East Gascoyne and North-Eastern Meteorological Districts. Further north, evaporation is reduced by the moister air over the tropics at this time of the year.

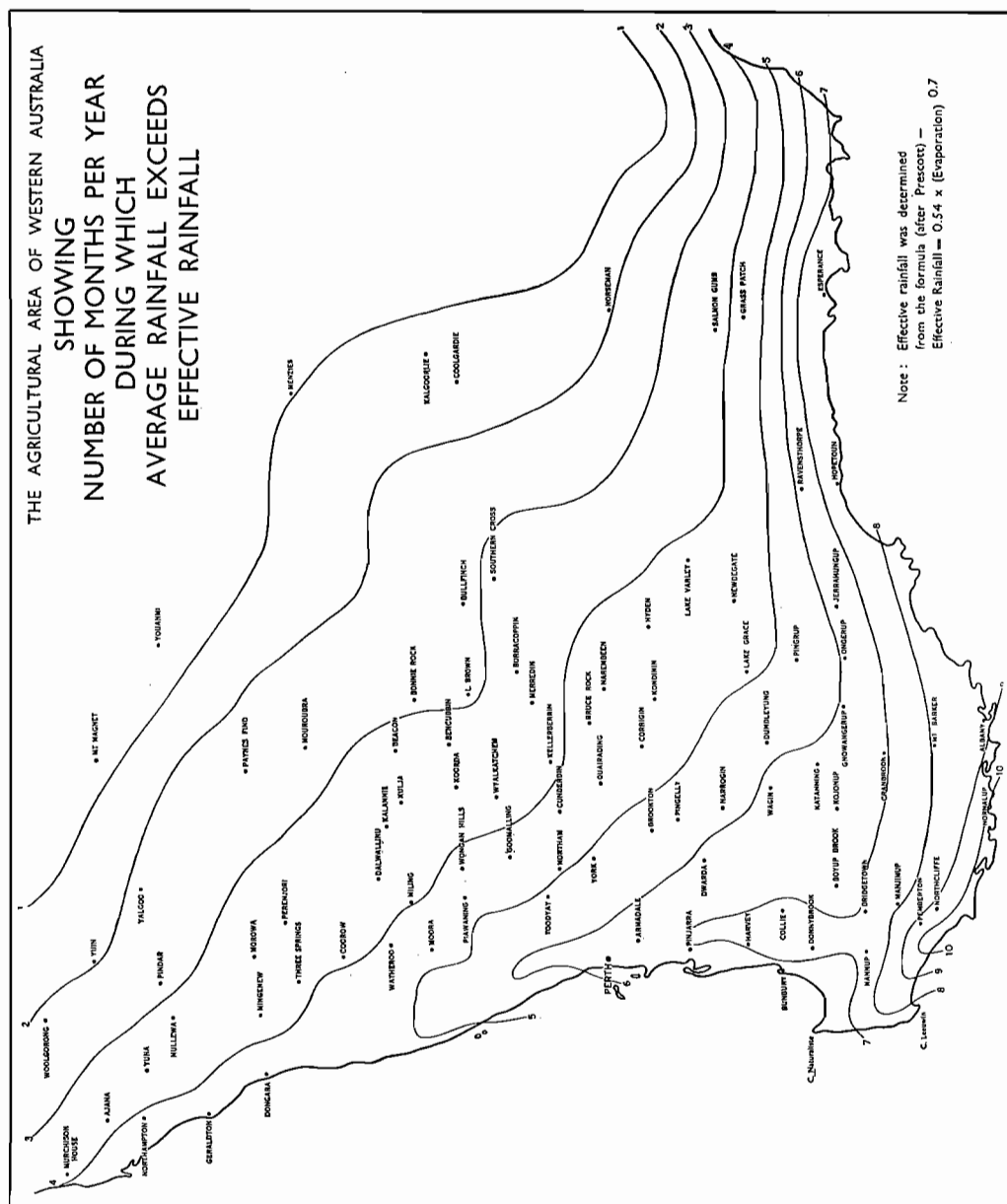
The map on page 43 shows total annual evaporation throughout the State.

GROWING SEASON

Less moisture is required to sustain plant life when evaporation is low than when it is high, and the minimum amount required can be related to evaporation from a free water surface.

That part of the year during which rainfall is greater than this minimum amount (the "effective rainfall"), may be taken as the *growing season*. The map on page 44 shows the length of this season in the agricultural area of the State. It is based on average monthly rainfall and effective rainfall, the latter being calculated from the formula $P = 0.54 \times E^{0.7}$ (after Prescott), where P is effective rainfall and E is evaporation (both in inches per month).





TEMPERATURE

The hottest month in Western Australia is November in the Kimberley, December a little further south and January near the Tropic of Capricorn. In the tropics temperatures generally rise from July, the coldest month, to November. In some places further rises occur, but in others the onset of the "Wet" prevents this further rise and there is a slight fall. As the rains cease at these latter places temperatures commence to rise again and there is another minor peak in March or April. After this there is a general fall until July.

South of the tropics the hottest month is January, except in coastal districts where February is hotter. The coldest month is again July.

The most consistently hot place in the State is Wyndham, where the mean maximum throughout the year is 93.1°F. and the mean minimum for the coldest month is 66.2°F. At Marble Bar the yearly mean maximum of 96.2°F. is higher, but mean minimum temperatures are consistently lower, falling to 52.5°F. in the coldest month. The mean maximum at this centre is the highest in Australia, exceeding 100°F. in the six months from October to March inclusive. There are often long spells of hot weather in this region and during one period, from the 31st October, 1923 to the 7th April, 1924, the maximum temperature at Marble Bar reached or exceeded 100°F. on 160 consecutive days.

Further south temperatures are lower, but even in the southern parts of the State there are occasional heat waves, and the highest temperature on record, 123.2°F., was recorded at Eucla on the south coast.

Near the coast the sea breeze generally brings relief from high temperatures. It blows nearly every afternoon in the hot months, and is known in Perth as the "Fremantle Doctor." Away from the influence of the sea, extremes are greater, day temperatures being higher and night temperatures lower than in the coastal districts. During the winter, temperatures have fallen below 30°F. in most of the inland part of the State south from the tropics. The lowest on record is 20.2°F. which occurred at Booylgoo Springs near Sandstone, and as far north as Mundiwindi, almost in the tropics, 22.4°F. has been recorded.

Frosts are at times widespread over the southern part of the State and occasionally extend into the tropics, but they are not particularly troublesome as they normally occur during that period of the year when crops are least susceptible to frost damage. They occur mainly in the months May to September inclusive and are most frequent in July and August.

The table on pages 46-48 shows, for each month of the year, the mean maximum, mean minimum, and extreme temperatures and the average number of days with registrations of 90°F. and over and of 100°F. and over. The average number of days with temperatures of 36°F. or below, which provides an indication of frost frequency, is also shown.

THUNDERSTORMS

Thunderstorms are most frequent along the Kimberley coast, where they occur during the "Wet" season but are practically unknown in the "Dry". In the remainder of the tropics they occur over roughly the same period, but the season is a little shorter and the storms less frequent.

In most of the State south from the tropics thunderstorms are most frequent in the summer months but in the south-west they are more uniformly distributed, and in many places in coastal districts they are most frequent in winter.

The winter storms are often accompanied by hail, which however is usually not heavy enough to cause any damage. Hail accompanying summer storms can be much heavier, and occasionally damages ripening crops in the wheat belt. Both winter and summer thunderstorms may be accompanied by tornadic squalls, but these are infrequent.

INTERSTATE COMPARISONS

In general, humidity and rainfall are lower in Western Australia than in corresponding places in eastern Australia. The first table on page 49 shows rainfall, mean humidity and temperature for groups of reporting stations at approximately the same latitude. The stations have been selected in such a way that, in each pair, one is on the west coast and the other on the east coast or, where a pair relates to inland stations, each station is situated at about the same distance from the coast. The group appearing last in the table has been included to provide a comparison between observations at Albany, the most southerly town in Western Australia, and those at places elsewhere in Australia at about the same latitude. The height above mean sea-level is also given for each station.

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS

(Stations are arranged from north to south in three groups: Coastal, Wheat Belt and Other Inland)

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
COASTAL													
Wyndham—													
Temperature :													
Mean max., °F.	95.9	95.5	95.3	94.7	90.1	85.8	85.0	88.5	93.5	96.9	98.5	97.6	93.1
Mean min., °F.	80.2	79.7	79.5	77.2	72.4	68.0	66.2	69.5	74.8	79.7	81.4	81.2	75.8
Highest max., °F.	113.5	111.0	108.0	106.0	103.0	97.5	96.0	102.0	106.0	111.0	111.9	112.0	113.5
Lowest min., °F.	67.0	62.0	65.0	63.0	52.0	50.0	48.0	47.0	60.1	65.0	62.0	65.0	47.0
Number of days 90° and over	29.2	25.6	29.1	26.3	26.2	11.7	13.4	24.1	29.5	30.6	29.3	29.0	304.0
Number of days 100° and over	17.3	12.3	15.6	7.2	0.7	0.0	0.0	0.4	4.3	16.8	21.9	18.3	114.8
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Broome—													
Temperature :													
Mean max., °F.	91.3	91.8	93.1	93.3	88.0	82.5	81.8	85.0	88.8	90.5	92.7	93.2	89.3
Mean min., °F.	79.2	79.1	77.7	71.6	64.8	59.5	57.0	60.0	65.1	72.1	76.7	79.4	70.2
Highest max., °F.	111.5	108.8	107.0	107.0	101.0	97.2	95.0	100.5	103.5	109.1	111.2	112.7	112.7
Lowest min., °F.	65.8	59.0	55.0	54.0	45.1	43.4	40.2	40.6	49.0	52.8	58.5	63.0	40.2
Number of days 90° and over	27.5	25.6	28.5	26.2	14.5	4.2	4.4	9.8	15.8	19.4	25.1	28.5	229.5
Number of days 100° and over	3.0	1.5	5.3	2.6	0.0	0.0	0.0	0.1	0.8	5.9	3.3	3.5	26.0
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Port Hedland—													
Temperature :													
Mean max., °F.	94.3	94.6	95.3	93.3	86.1	80.2	79.3	82.3	86.9	89.7	93.2	94.2	89.1
Mean min., °F.	79.4	79.1	77.6	71.2	63.7	57.9	55.6	58.4	62.5	68.1	73.5	77.5	68.7
Highest max., °F.	117.0	115.7	112.1	113.0	101.0	94.0	93.7	96.2	102.0	111.2	114.0	118.2	118.2
Lowest min., °F.	60.0	61.4	63.3	51.2	44.6	40.4	39.4	38.7	45.0	53.0	57.8	62.2	38.7
Number of days 90° and over	28.1	25.9	29.6	24.3	8.2	0.3	0.4	4.3	15.3	20.5	23.3	27.7	207.9
Number of days 100° and over	8.8	6.1	13.7	4.4	0.0	0.0	0.0	0.0	0.3	4.3	7.4	10.7	55.7
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Onslow—													
Temperature :													
Mean max., °F.	96.4	96.4	95.4	91.9	84.3	78.0	77.3	80.0	85.1	88.9	93.5	95.4	88.5
Mean min., °F.	74.2	74.7	73.5	67.1	60.3	54.5	51.5	53.5	56.8	61.0	66.3	70.5	63.7
Highest max., °F.	117.8	119.0	115.6	110.9	101.0	90.0	90.2	95.6	101.0	112.2	115.0	117.5	119.0
Lowest min., °F.	60.5	61.9	58.4	50.0	42.0	37.3	37.5	40.0	41.9	45.4	50.0	49.0	37.3
Number of days 90° and over	25.8	24.1	27.8	16.7	2.8	0.1	0.0	0.8	5.2	13.3	19.1	25.2	160.9
Number of days 100° and over	9.1	7.0	8.8	1.5	0.0	0.0	0.0	0.0	0.2	2.0	5.7	9.8	44.1
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Carnarvon—													
Temperature :													
Mean max., °F.	87.2	88.1	86.9	84.4	78.3	73.7	71.7	73.1	75.4	77.4	81.4	84.2	80.2
Mean min., °F.	72.1	72.4	71.6	66.8	58.8	54.0	51.6	53.4	57.2	61.1	65.8	69.2	62.7
Highest max., °F.	117.8	115.2	112.8	105.9	100.4	90.2	86.8	90.2	97.8	108.3	109.1	113.0	117.8
Lowest min., °F.	58.0	61.2	56.8	47.0	42.8	37.0	37.0	38.3	42.0	45.5	50.4	54.6	37.0
Number of days 90° and over	8.0	9.8	11.3	7.0	0.4	0.0	0.0	0.1	0.9	2.1	2.5	3.6	45.7
Number of days 100° and over	3.4	3.8	3.7	1.3	0.0	0.0	0.0	0.0	0.4	0.5	0.9	1.4	14.0
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Geraldton—													
Temperature :													
Mean max., °F.	84.5	85.2	83.6	80.5	74.2	69.7	67.7	68.8	71.4	73.6	78.5	82.0	76.6
Mean min., °F.	66.3	66.5	65.0	60.9	56.9	53.8	51.7	52.1	53.0	55.4	60.0	63.4	58.7
Highest max., °F.	117.9	115.5	110.8	108.0	94.7	83.8	81.9	88.9	96.5	104.6	108.8	113.0	117.9
Lowest min., °F.	48.0	51.0	47.0	41.8	38.6	33.5	33.4	35.3	37.9	37.9	42.0	45.8	33.4
Number of days 90° and over	8.2	9.8	9.8	3.9	1.1	0.0	0.0	0.0	0.1	1.3	4.9	5.0	44.1
Number of days 100° and over	3.4	3.5	2.1	0.3	0.0	0.0	0.0	0.0	0.0	0.1	0.9	1.8	12.1
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.4
Perth (Observatory)—													
Temperature :													
Mean max., °F.	84.6	85.3	81.8	76.3	69.0	64.4	62.9	64.0	66.7	69.6	75.9	81.2	73.5
Mean min., °F.	63.2	63.6	61.4	57.3	52.6	49.7	48.0	48.3	50.1	52.4	56.7	60.5	55.3
Highest max., °F.	110.7	112.2	106.4	99.7	90.4	81.7	76.4	82.0	90.9	95.3	104.6	107.9	112.2
Lowest min., °F.	48.6	47.7	45.8	39.3	34.3	34.0	34.2	35.4	36.7	40.0	42.0	47.5	34.2
Number of days 90° and over	8.8	8.2	5.5	1.2	0.0	0.0	0.0	0.0	0.0	0.3	2.2	5.6	31.8
Number of days 100° and over	1.6	1.8	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.8	5.0
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Bunbury—													
Temperature :													
Mean max., °F.	82.1	81.9	78.9	74.4	68.1	64.1	62.5	63.1	65.5	68.1	74.4	78.9	71.8
Mean min., °F.	59.1	59.1	57.1	53.6	50.8	48.6	47.1	47.4	48.8	50.4	54.0	56.8	52.7
Highest max., °F.	106.2	104.2	99.0	93.0	83.7	77.2	72.2	75.5	83.8	92.5	99.8	101.5	106.2
Lowest min., °F.	43.2	41.3	39.3	36.7	32.1	33.0	28.0	33.0	30.0	33.0	39.2	38.4	28.0
Number of days 90° and over	4.2	3.2	1.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.1	10.5
Number of days 100° and over	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Number of days 36° and under	0.0	0.0	0.0	0.0	0.1	0.4	0.3	0.2	0.3	0.3	0.0	0.0	1.6

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—continued

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
COASTAL—continued													
<i>Albany—</i>													
Temperature :													
Mean max., °F.	73.8	74.2	72.3	70.3	65.9	62.2	60.9	61.7	63.6	65.7	69.2	72.0	67.6
Mean min., °F.	58.5	58.8	57.5	54.5	50.7	47.8	46.3	46.6	48.3	50.0	53.6	56.5	52.4
Highest max., °F.	107.0	112.6	105.4	99.9	95.3	76.2	73.5	81.0	87.0	97.2	106.0	106.0	112.6
Lowest min., °F.	42.3	41.0	38.7	39.5	35.1	35.0	32.2	34.3	34.0	36.2	40.6	41.2	32.2
Number of days 90° and over	0.8	0.3	0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.9	4.0
Number of days 100° and over	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WHEAT BELT													
<i>Carnamah—</i>													
Temperature :													
Mean max., °F.	95.7	95.5	89.4	82.3	72.2	67.2	64.2	67.0	71.6	77.9	85.3	90.8	79.9
Mean min., °F.	63.5	63.7	60.5	56.0	49.7	47.3	44.7	44.6	45.5	49.4	54.6	59.2	53.2
Highest max., °F.	114.0	114.0	111.0	102.0	91.0	82.0	82.0	85.0	95.1	104.0	106.4	111.0	114.0
Lowest min., °F.	41.1	48.0	44.0	35.0	35.0	32.0	33.0	34.3	33.9	34.0	39.0	44.0	32.0
Number of days 90° and over	23.8	22.2	18.7	6.5	0.0	0.0	0.0	0.0	0.6	3.5	8.8	16.8	100.9
Number of days 100° and over	12.2	9.4	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	5.9	33.4
Number of days 36° and under	0.0	0.0	0.0	0.0	0.1	0.5	0.8	0.8	0.3	0.0	0.0	0.0	2.5
<i>Wongan Hills—</i>													
Temperature :													
Mean max., °F.	92.7	90.4	87.9	78.4	67.2	62.4	60.4	61.9	68.6	73.5	80.2	85.6	75.7
Mean min., °F.	63.1	62.9	61.1	55.5	48.5	45.2	41.8	41.7	45.6	47.9	52.0	57.1	51.9
Highest max., °F.	112.0	109.6	108.5	98.6	89.2	74.2	76.3	79.6	87.8	99.1	101.4	111.6	112.0
Lowest min., °F.	47.9	49.3	45.4	37.1	35.5	33.0	32.2	31.5	32.3	37.3	39.7	41.5	31.5
Number of days 90° and over	18.3	15.5	14.5	2.7	0.0	0.0	0.0	0.0	0.0	1.0	5.2	10.7	67.9
Number of days 100° and over	6.7	4.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.7	13.9
Number of days 36° and under	0.0	0.0	0.0	0.0	0.2	0.8	2.5	2.7	1.1	0.0	0.0	0.0	7.3
<i>Kellerberrin—</i>													
Temperature :													
Mean max., °F.	93.0	92.3	86.4	79.1	69.3	63.4	61.3	64.0	70.2	76.1	85.0	90.5	77.5
Mean min., °F.	61.6	61.4	58.8	52.2	46.5	43.6	41.5	41.9	43.8	47.8	54.5	58.8	51.0
Highest max., °F.	115.0	116.0	112.0	102.6	96.0	80.4	76.0	82.6	93.1	103.0	109.5	113.0	116.0
Lowest min., °F.	45.0	43.0	40.7	34.0	28.0	26.5	26.0	27.6	30.0	32.5	39.0	42.0	26.0
Number of days 90° and over	19.9	16.7	11.3	2.7	0.2	0.0	0.0	0.0	0.2	1.8	8.5	15.0	76.3
Number of days 100° and over	6.9	5.5	1.8	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.4	4.6	20.4
Number of days 36° and under	0.0	0.0	0.0	0.1	2.4	4.6	7.4	7.0	3.4	0.6	0.0	0.0	25.5
<i>Wandering—</i>													
Temperature :													
Mean max., °F.	88.3	87.6	82.0	74.9	65.9	60.5	59.2	60.5	64.9	69.6	78.9	84.9	73.1
Mean min., °F.	56.5	55.9	53.6	47.5	43.6	40.5	39.0	39.3	41.4	43.8	48.9	53.5	47.0
Highest max., °F.	111.5	110.8	107.5	97.0	87.0	77.0	71.8	79.0	86.0	98.5	103.5	109.0	111.5
Lowest min., °F.	38.0	37.0	30.9	28.0	26.0	25.0	24.0	25.0	27.0	28.0	30.5	35.0	24.0
Number of days 90° and over	15.2	12.0	9.3	1.3	0.0	0.0	0.0	0.0	0.0	0.4	2.3	7.4	47.9
Number of days 100° and over	3.7	2.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.3	8.0
Number of days 36° and under	0.0	0.0	0.0	1.3	7.9	9.8	9.9	9.5	9.4	5.3	1.0	0.3	54.4
<i>Katanning—</i>													
Temperature :													
Mean max., °F.	86.0	85.1	79.3	73.2	64.7	59.7	57.9	59.5	64.1	68.8	77.6	82.8	71.6
Mean min., °F.	56.3	56.5	54.7	50.4	46.5	43.6	41.9	42.0	43.7	45.7	50.2	53.8	48.8
Highest max., °F.	110.9	112.3	107.0	96.2	88.4	75.3	71.0	88.0	87.0	100.0	106.0	110.0	112.3
Lowest min., °F.	41.0	37.9	35.0	33.0	30.0	28.3	25.0	28.1	29.8	31.0	35.0	37.6	25.0
Number of days 90° and over	12.3	7.5	5.3	1.1	0.0	0.0	0.0	0.0	0.0	0.3	2.0	5.9	34.4
Number of days 100° and over	2.6	1.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	5.2
Number of days 36° and under	0.0	0.0	0.0	0.2	1.8	3.6	4.4	4.5	2.8	1.1	0.2	0.0	18.6
OTHER INLAND													
<i>Hall's Creek—</i>													
Temperature :													
Mean max., °F.	97.6	97.0	95.6	92.3	85.7	80.6	80.1	85.9	92.7	98.3	100.5	99.5	92.2
Mean min., °F.	75.4	74.2	71.2	63.0	56.0	50.5	47.6	52.1	59.0	69.5	74.2	75.5	64.0
Highest max., °F.	111.8	110.8	107.6	103.8	99.0	95.0	93.2	100.0	104.3	110.8	110.8	111.6	111.8
Lowest min., °F.	60.0	54.0	51.8	45.0	36.4	32.4	30.0	32.8	37.4	48.0	53.0	53.8	30.0
Number of days 90° and over	28.5	24.8	29.1	22.7	9.5	0.8	1.3	7.3	23.2	29.2	29.7	29.0	235.1
Number of days 100° and over	17.8	8.5	9.6	1.6	0.0	0.0	0.0	0.0	0.7	12.7	17.6	19.2	87.7
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.0	0.0	0.0	0.0	0.0	1.1
<i>Marble Bar—</i>													
Temperature :													
Mean max., °F.	106.2	105.5	102.9	97.0	88.0	80.9	80.6	85.8	93.8	100.1	105.9	107.5	96.2
Mean min., °F.	78.9	78.6	76.8	69.5	61.3	54.7	52.4	55.7	61.7	68.7	75.2	78.1	67.6
Highest max., °F.	120.5	119.0	116.0	113.0	103.0	93.0	95.0	99.0	108.7	113.9	117.0	119.0	120.5
Lowest min., °F.	66.0	57.0	59.6	52.0	42.0	34.0	36.0	39.0	42.0	50.0	58.0	63.0	34.0
Number of days 90° and over	30.3	26.5	28.8	26.0	10.1	0.5	0.8	7.3	22.6	26.3	30.0	30.5	239.7
Number of days 100° and over	27.9	22.1	18.9	8.8	0.2	0.0	0.0	0.0	2.0	12.6	24.2	28.7	145.4
Number of days 36° and under	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.8	0.0	0.0	0.0	0.0	1.0

TEMPERATURES AT REPRESENTATIVE CLIMATOLOGICAL STATIONS—*continued*

Reporting Station and Characteristic	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
OTHER INLAND—<i>continued</i>													
<i>Mundivindi—</i>													
Temperature :													
Mean max., °F.	100.5	98.7	94.0	86.7	77.7	70.4	70.0	74.6	83.2	89.4	96.2	99.8	86.8
Mean min., °F.	73.6	72.7	69.0	60.3	51.2	43.4	41.4	45.0	51.3	58.6	66.7	71.2	58.7
Highest max., °F.	112.2	112.0	108.2	105.0	97.6	85.7	87.0	99.2	99.0	105.2	110.0	112.0	112.2
Lowest min., °F.	57.0	55.0	49.0	39.0	28.9	24.0	22.4	25.5	29.0	37.9	46.0	53.0	22.4
Number of days 90° and over	29.3	25.3	25.4	11.6	0.6	0.0	0.0	0.4	5.6	15.9	25.3	29.1	168.5
Number of days 100° and over	20.3	15.7	10.2	0.2	0.0	0.0	0.0	0.0	0.0	1.3	9.8	19.9	77.4
Number of days 36° and under	0.0	0.0	0.0	0.0	0.6	5.6	7.3	3.7	0.2	0.0	0.0	0.0	17.4
<i>Meekatharra—</i>													
Temperature :													
Mean max., °F.	100.4	99.7	93.9	85.7	76.0	68.6	67.5	71.2	78.6	84.8	92.9	98.2	84.8
Mean min., °F.	73.1	73.1	69.4	61.0	52.5	46.3	44.0	46.5	51.0	56.9	64.7	70.0	59.0
Highest max., °F.	113.0	114.1	110.4	104.2	94.4	85.0	81.7	90.7	97.0	103.0	109.1	110.6	114.1
Lowest min., °F.	54.0	54.1	52.2	46.0	33.0	26.4	31.6	34.0	34.0	40.2	43.0	51.9	26.4
Number of days 90° and over	28.8	24.3	21.7	9.8	0.3	0.0	0.0	0.1	1.8	8.3	17.9	25.6	138.6
Number of days 100° and over	18.6	13.7	6.2	0.3	0.0	0.0	0.0	0.0	0.0	0.4	3.5	10.6	53.3
Number of days 36° and under	0.0	0.0	0.0	0.0	0.2	0.9	1.3	0.1	0.0	0.0	0.0	0.0	2.5
<i>Collie—</i>													
Temperature :													
Mean max., °F.	86.4	85.7	80.4	74.3	65.9	61.3	59.8	61.0	64.8	68.8	77.2	83.0	72.4
Mean min., °F.	55.6	54.9	52.5	47.1	42.9	40.4	39.1	39.8	42.5	45.3	49.7	53.1	46.9
Highest max., °F.	112.0	110.2	105.4	98.0	86.8	76.0	73.0	79.0	86.6	96.4	101.8	106.2	112.0
Lowest min., °F.	37.7	35.2	32.3	29.6	28.0	24.8	25.0	26.2	28.0	31.0	32.6	35.0	24.8
Number of days 90° and over	13.0	11.3	8.0	1.2	0.0	0.0	0.0	0.0	0.0	0.3	2.1	5.7	41.6
Number of days 100° and over	2.2	1.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.1	5.5
Number of days 36° and under	0.0	0.0	0.1	0.8	5.3	7.8	7.9	6.6	5.9	1.8	0.3	0.1	36.6
<i>Manjimup—</i>													
Temperature :													
Mean max., °F.	78.3	79.4	74.8	69.5	62.8	59.3	57.4	58.7	61.4	64.7	71.0	75.3	67.7
Mean min., °F.	53.7	54.0	53.0	50.5	46.5	44.5	42.5	43.0	43.7	46.2	49.3	51.8	48.2
Highest max., °F.	107.0	105.0	102.0	92.0	81.0	72.0	71.0	76.4	82.0	88.0	98.2	100.0	107.0
Lowest min., °F.	42.0	40.0	40.0	35.0	34.0	33.0	27.0	30.0	31.0	33.0	35.0	40.0	27.0
Number of days 90° and over	5.7	4.3	3.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.0	16.1
Number of days 100° and over	0.3	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7
Number of days 36° and under	0.0	0.0	0.0	0.1	0.5	1.3	2.3	3.2	2.1	0.1	0.0	0.0	9.6
<i>Kalgoorlie—</i>													
Temperature :													
Mean max., °F.	93.2	93.0	86.3	78.4	70.1	63.6	62.5	66.0	73.6	79.0	86.3	91.1	78.6
Mean min., °F.	64.2	64.4	61.3	55.2	48.9	44.6	42.9	43.9	48.2	52.7	58.3	62.3	53.9
Highest max., °F.	114.4	115.0	111.0	102.5	92.0	81.8	81.0	87.0	96.0	105.2	110.6	113.0	115.0
Lowest min., °F.	47.1	48.0	41.6	35.0	32.0	29.5	26.0	27.7	30.9	30.2	38.2	45.5	26.0
Number of days 90° and over	18.8	12.9	10.8	2.9	0.1	0.0	0.0	0.0	0.4	2.9	7.4	14.8	71.0
Number of days 100° and over	7.5	4.3	2.7	0.3	0.0	0.0	0.0	0.0	0.0	0.1	1.3	3.9	20.1
Number of days 36° and under	0.0	0.0	0.0	0.1	0.3	1.8	3.9	3.6	0.3	0.0	0.0	0.0	10.0
<i>Rawlinna—</i>													
Temperature :													
Mean max., °F.	90.0	89.8	84.4	78.0	71.2	65.3	64.2	67.3	74.4	79.0	84.4	88.8	78.1
Mean min., °F.	58.9	59.2	57.8	52.2	46.4	41.6	39.3	41.1	45.3	49.4	54.2	57.6	50.2
Highest max., °F.	118.0	115.5	112.0	104.0	95.0	84.0	85.0	93.0	102.7	107.0	112.2	114.3	118.0
Lowest min., °F.	42.0	41.0	42.9	37.0	32.0	29.2	27.8	27.2	31.6	33.2	36.4	41.2	27.2
Number of days 90° and over	14.8	10.8	10.3	2.8	0.5	0.0	0.0	0.0	1.7	3.6	7.9	13.3	65.7
Number of days 100° and over	6.8	3.5	3.2	0.2	0.0	0.0	0.0	0.0	0.1	0.8	2.5	5.7	22.8
Number of days 36° and under	0.0	0.0	0.0	0.0	1.2	3.5	5.3	4.4	0.8	0.2	0.0	0.0	15.4

SNOW

Snow has been known to fall as far north as Wongan Hills, but it is only in the southern districts that it occasionally lies on the ground. It is seen on the top of the Stirling Range for a short time nearly every winter, but elsewhere is very infrequent and of negligible importance.

METROPOLITAN CLIMATE

Perth has more sunshine and a greater number of clear days during the year than any other State capital city. It also has the wettest winter, the driest summer, and is the windiest of the capital cities. Details of its climate are shown in the second table on page 49.

INTERSTATE COMPARISONS—RAINFALL, HUMIDITY, TEMPERATURE

Reporting Station	Height above mean sea- level	Average Rainfall		Relative Humidity (a)		Average Daily Mean Temperature	
		May to October	November to April	May to October	November to April	May to October	November to April
	feet	Inches	Inches	%	%	°F.	°F.
Bunbury	17	29.96	5.01	77	70	57.0	67.5
Sydney, New South Wales	138	21.53	23.27	66	69	58.2	69.3
Perth	197	30.24	4.80	69	55	58.2	70.8
Newcastle, New South Wales	112	20.56	20.80	70	74	58.7	69.7
Kalgoorlie	1,247	5.16	4.53	58	48	58.0	74.5
Cobar, New South Wales	822	5.88	6.73	59	46	56.3	75.2
Geraldton	13	16.04	2.39	67	62	62.3	73.0
Brisbane, Queensland	137	12.01	28.08	66	69	63.3	74.7
Wiluna	1,700	3.21	6.59	50	35	60.4	80.9
Charleville, Queensland	965	6.19	11.78	55	46	61.1	79.5
Carnarvon	15	6.48	2.60	63	63	65.5	77.4
Bundaberg, Queensland	45	10.86	31.51	73	74	64.5	75.7
Mundawindi	1,840	2.74	8.28	39	30	63.0	82.4
Longreach, Queensland	612	3.92	11.62	50	50	65.7	82.3
Onslow	14	4.45	4.88	55	56	69.3	82.9
Mackay, Queensland	35	11.49	51.67	78	80	66.8	77.7
Port Hedland	25	3.33	9.23	50	59	72.6	85.3
Townsville, Queensland	73	5.49	37.57	66	73	71.7	80.3
Derby	53	1.67	23.78	51	65	76.9	86.5
Innisfail, Queensland	22	35.88	103.27	85	85	69.7	78.1
Wyndham	23	1.13	25.51	43	59	80.9	88.0
Cooktown, Queensland	17	8.08	59.79	76	78	75.1	81.1
Albany	41	28.75	8.87	76	73	55.8	64.3
Adelaide, South Australia	140	14.42	6.67	64	45	56.5	69.6
Swan Hill, Victoria	230	7.88	5.21	70	54	53.4	69.8
Canberra, Australian Capital Territory	1,837	11.85	11.45	72	61	47.5	64.0

(a) Saturation = 100%.

CLIMATOLOGICAL DATA—PERTH OBSERVATORY

(For other data relating to Temperature and Rainfall see preceding tables)

Month	Wind				Temperature		Relative Humidity (Saturation = 100%)		Sun- shine	Cloud. (Proportion of Sky Covered)	Evapora- tion		
	Prevailing Direction		Speed		Highest In Sun	Lowest Terrestrial	Mean	At 3 p.m.	Mean Daily Amount	Mean of readings at 9 a.m., 3 p.m. and 9 p.m.	Mean Amount		
	9 a.m.	3 p.m.	Average	High- est									
Number of years of observations	30 (a)		30 (a)	48	61	62	30 (a)		30 (a)	30 (a)	30 (a)		
January	E.	S.S.W.	m.p.h.	m.p.h.	°F.	Date	°F.	Date	%	%	hours	%	Inches
February	E.N.E.	S.S.W.	10.9	48	177.3	22/1914	39.5	20/1925	53	43	10.4	29	10.37
March	E.	S.S.W.	10.7	54	173.7	4/1934	39.8	1/1913	52	43	9.8	31	8.63
April	E.N.E.	S.S.W.	10.1	70	167.0	19/1918	36.7	8/1903	57	46	8.8	35	7.52
May	N.E.	S.S.W.	8.5	63	157.0	8/1916	31.0	20/1914	60	48	7.5	42	4.62
June	N.B.	W.S.W.	8.4	68	146.0	4/1925	25.3	11/1914	68	58	5.7	54	2.80
July	N.	N.W.	8.4	80	135.5	9/1914	25.9	27/1946	72	63	4.8	59	1.82
August	N.N.E.	W.	8.8	77	133.2	13/1915	25.1	30/1920	73	63	5.4	56	1.76
September	N.	W.N.W.	9.4	78	145.1	29/1921	26.7	24/1935	71	60	6.0	56	2.37
October	E.N.E.	S.S.W.	9.4	68	153.6	29/1916	27.2	(b)	64	57	7.2	49	3.44
November	S.E.	S.W.	10.0	65	157.5	31/1936	29.8	16/1931	64	54	8.1	48	5.38
December	E.	S.W.	10.7	63	167.0	30/1925	35.0	3/1947	57	47	9.6	39	7.65
Year—	E.	S.S.W.	11.0	64	168.8	11/1927	38.0	29/1957	54	46	10.4	32	9.69
Average...	E.	S.S.W.	9.7	80	177.3	22/1/14	25.1	30/7/20	62	52	7.8	44	...
Extremes	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	...	...	...	...	...	...	...	...	...	...	...	66.05

(a) Standard 30 years' normal (1911-1940).

(b) Recorded on 8th September, 1952 and 6th September, 1956.

CHAPTER II—continued

PART 3—THE VEGETATION OF WESTERN AUSTRALIA

(Contributed by C. A. Gardner, formerly Government Botanist)

The flora of Western Australia comprises some 6,800 species, excluding the Cryptogams (seaweeds, mosses, lichens and liverworts) for which figures are not available, although the seaweeds number over 400 species.

As a floral entity, one of the chief features of interest in the vegetation is the high degree of endemism, that is, of plants which are entirely restricted to the area. The percentage is remarkably high and is perhaps the highest in the world, or exceeded only by that of the Cape Province of South Africa. It is most highly developed in what we call the South-West Province, an area extending from Shark Bay in the north to Israelite Bay in the south. In this area the endemic plants number over seventy per cent. of the total within its boundaries. The South-West Province, which we may describe as the "cradle of the Australian flora", is perhaps the oldest portion of the continent or, shall we say, that part which has been for the longest period without inundation. As such it has enjoyed an immeasurably long period of isolation, separated on the one hand from South America and South Africa by a vast oceanic expanse and on the other hand from eastern Australia by what was formerly a water barrier but is now an arid tract of broad extent serving as a deterrent, if not as a complete barrier, to plant migration. It has thus undergone a very long period of separation from outside influences during which it has, unaffected by external contacts and consequent invasions, developed in accordance with a peaceful evolution and has become highly specialized in relation to its own peculiar environment. In speaking of this endemism it is important to remember that this peculiarity is not to be found expressed in the larger groups, such as families, but rather in the smaller groups, such as tribes, or sections of families, and in genera. In fact there is only one truly endemic family, that of the pitcher plant (*Cephalotus*). On the other hand, certain tribes, such as those including the grass trees, the kangaroo paws and their relatives the bugle and cotton flowers, the featherflowers and wax plants and their kind, to mention a few, are entirely or almost entirely Western Australian. Again, among other groups we find a particularly rich development in Western Australia, which suggests an origin in this part of the world. Some of them have migrated to the north as far as the Kimberley district, but with gaps in their continuity, while others are to be found in eastern Australia, examples being many of the pea-flowered family, and the sheoaks (*Casuarina*).

When we consider external relationships we are led as far afield as the American, African and Asian continents. In general we find a very close link with South (Andine or Antarctic) America in the Proteaceae, in the Trigger plant family (Stylidiaceae), the heaths (Epacridaceae) and a few smaller but not less important groups, while relationships with Africa are expressed principally in another group of the Proteaceae (nut-fruited), in the Restionaceae, the Sterculiaceae, and the Bombacaceae, especially in the genus *Adansonia*, to which the Baobab belongs. The Asian links are, as one would expect, most common in the north, where the flora takes on an aspect which is rich in Malayan forms, and many species are common to both countries. Looking further back in space of time, we find certain less well-defined links which, because of subsequent development in this country, are not so well marked. I would refer here to the Myrtle family (Myrtaceae) which is so abundantly developed here, but which I have little doubt in attributing to an Asian or Euro-Asian origin. This large family, so richly developed in Australia, is divided into three sections. Those with succulent fruits, such as *Eugenia*, are better represented abroad. Those with dry fruits, such as *Eucalyptus* and the tea trees, have reached a high degree of development in Australia, particularly in south-western Australia. In the featherflower and wax plant tribe (Chamaelaucieae) we have the completely Australian ultimate development of a tribe which has reached its peak in south-western Australia. Again in the genus *Acacia*, which is so widely spread over the warmer regions of the Earth, we have in Australia a development in which the adult foliage, normally pinnate (or feathery), is reduced to a simple leaf-stalk which has developed into a leaflike organ. Here again, the greatest diversity in such forms is found in south-western Australia.

In Western Australia the families represented by the largest numbers of species are the Myrtaceae (Tea tree, *Eucalyptus*, etc.), the Proteaceae (*Banksia*, etc.), with several endemic genera, the Papilionaceae (pea-flowered plants), the Mimosaceae (*Acacia*, etc.), the Goodeniaceae (*Leschenaultia* family) and the Compositae (daisy family). On the other hand, there are families which although not restricted to the territory have attained a high degree of development and in which by far the greatest number

of species occur here and thus may be regarded as essentially Australian. Such are the Trigger plants (Stylidiaceae), the fibre rushes (Restionaceae), the Myoporaceae or desert pride plants with some particularly showy species, and the Pittosporaceae, as well as certain sections or tribes of the Lily and Amaryllis families, especially the primitive grass trees and the Kangaroo paws and their relatives, those woolly members of the Verbena family which we call lambs' tails, and distinctive sections of the Proteaceae and Myrtaceae which have reached a high stage of development here.

Of species claiming special attention we have, in the first place, the Pitcher plant (*Cephalotus follicularis*), placed now by itself in its own family (Cephalotaceae) related to the house leeks, but with leaves simulating those of the Asian and tropical *Nepenthes*. This remarkable plant grows on the edges of swamps near the south coast. It has tufts of stalked modified leaves which resemble jugs with permanently open lids, external girders which with their hairs act as ladders for the ascent of small animals and insects, a remarkable palisade of incurved marginal spikes and an internal cornice, all of which form effective barriers against the escape of the victim. Inside there are glands which secrete a digestive fluid powerful enough to dissolve all but the most hardened parts of such insects as ants and beetles. The translucent lid, while serving as a skylight, also prevents rain from entering and diluting the lethal fluid. Then there are the bladderworts belonging to *Polypompholyx* and *Utricularia*, which have minute modified leaves below the soil level, which catch minute organisms that swim between the soil particles. These act in a similar manner, but have traps with inward opening lids which close when a visitor enters them. Plants which imprison insects on leaves covered with sticky gland-bearing hairs are the sundews of the genus *Drosera*, in which Western Australia is particularly rich. These plants may be dwarfs with a rosette of leaves on the ground, or they may climb to a height of over three feet. Some have large coloured blooms of delicate texture, but the common colour is white. *Rhizanthella* is the name given to a genus of the Orchid family with one species, *R. Gardneri*. This remarkable plant has its flowers clustered in a small head and surrounded by large petal-like bracts, somewhat resembling a daisy with long rays. It is leafless and lives entirely below the soil, there being no superficial evidence of the plant whatever until it blooms, when the rim of the large cup comes to the surface leaving the flowers below the soil level in the base of this cup or funnel. No mention of the more peculiar plants of Western Australia would be complete without reference to that remarkable tree which comes into bloom at the Christmas season, often so heavily laden with rich orange flowers that the foliage is obscured. It is known as the "Christmas tree" (*Nuytsia floribunda*), and belongs to the Mistletoe family (Loranthaceae). Among its peculiarities we may mention its habit of growth with branches turning outwards and downwards, its parasitism, its anomalous fruit and its wood structure. Like its relatives it is a parasite, feeding from other trees and shrubs, the roots of which it surrounds with a fleshy white ring, drawing the necessary nutriment from them. Unlike normal trees it possesses several rings of cambial tissue. It differs from all other members of the mistletoe family in its fruit which, instead of being a berry, is a dry three-winged fruit and the seeds possess six seed-leaves in place of the normal number of two. The plant seems to grow very rarely from seed under natural conditions but occurs in groups of individuals which are, at least when young, connected to older trees by means of underground stems or roots, some of very considerable length. The tree does not normally flower every year except to a very limited extent, but after a fire it blossoms profusely.

Is the tree pyrophilous? What part does fire play in the native flora? When we consider the wealth of hard-seeded legumes that appear after a fire; when we consider those large and woody-fruited trees that only shed their seeds after dying, or after fire; when we consider the immense age of some of the woody-stocked mallee Eucalypts most of which grow in thicket or scrubby country subject periodically to fires and which so readily respond to burning, a feature not exhibited by trees proper, and then realize that many of these also have tree forms in more open formations, we might well ask the questions.

SPECIAL FEATURES OF THE FLORA

The first European to observe Western Australian plants, William Dampier, remarked upon the prevalence of blue as a floral pigment. This observation may be generally true, for every shade of this colour is represented in the flora, varying from the intense ultramarine of *Dampiera* to the rich gentian blue of *Leschenaultia biloba*. It is found commonly in the family Goodeniaceae, in *Lobelia*, the Pittosporaceae, Boraginaceae and Iridaceae, but is entirely absent in some families, such as the Myrtaceae. Sometimes in one genus alone we get all the primary colours and, in this connexion, mention should be made of *Leschenaultia*, which has the following:—species of rich shades of blue, typified by the common blue *Leschenaultia biloba*; the intense shades of scarlet and crimson as typified by the prostrate

L. formosa, or that amazingly vivid blood-red Gilia-like species, *L. hirsuta*, confined to the Hill River ; yellow species such as the coastal *L. linarioides*, or that largest flowered of all *Leschenaultias*, *L. macrantha* which inhabits the districts between Mullewa and Pindar on the one hand, and Morawa on the other, and has blooms so compactly arranged that the whole plant resembles a yellow cushion. But, just as the blue forms tend to produce white forms in sandy soil, so do the yellow forms tend to produce reddish flowers in soils in which laterite occurs. Finally in the genus we have the intense orange-flowered *L. superba* from Mount Barren and the blue and green *L. acutiloba* from the moist places of the south coastal districts.

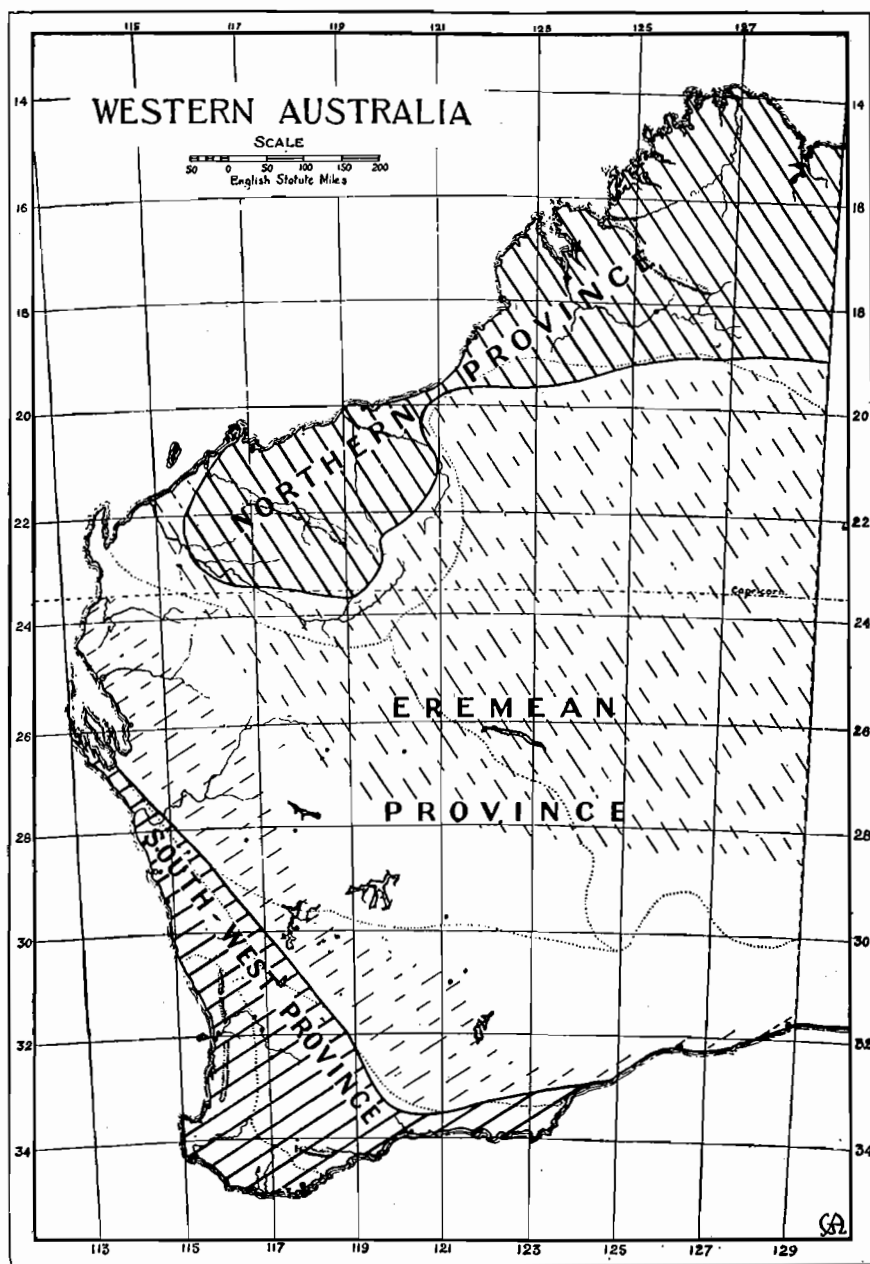
What is true of *Leschenaultia* is also true of many other genera, but nowhere do these colours occur as richly as in *Leschenaultia*, although in both Myrtaceae and Papilionaceae we have many charmingly coloured blossoms, in the former family mainly scarlet, orange and yellow, and in the latter, yellow, blue and violet.

While it is true to say that our flowers are notable for their colours, it is also true that they are in general small in size. Exceptions are members of the Hibiscus family (Bombacaceae), typified by *Hibiscus*, the northern Baobab, the tropical Cotton trees and a few others. Otherwise size is achieved by condensed inflorescences (clusters or spikes of flowers in close proximity) while in a number of species, especially in Myrtaceae, the coloured and attractive features are not the petals, but the stamens as, for example, in the tea trees and bottlebrushes. The daisy family (Compositae) is generally regarded as the most highly developed family of flowering plants amongst the Dicotyledons. In this family a characteristic is that a cluster of flowers is so arranged as to simulate a single flower. For example, the sunflower consists of numerous central bisexual florets and a number of petal-like female florets external to these. In the everlasting the "petals" are not florets but modified leaves, or "bracts." This type of inflorescence constitutes a marked floral economy, and we find in the Western Australian flora numerous examples of this exhibited by plants much lower in the scale than the daisy. What is more remarkable, these often conform to a general plan, sometimes so closely that plants of widely separated families are thus brought together. Examples are the Qualup Bell with its related species known as Banjine or Rice-flowers, belonging to the Daphne family ; the strange *Siegfreidia* of the Boxthorn family from Starvation Boat Harbour ; the handsome Mountain Bells of the Stirling Range and Mount Barren, together with the "Swamp daisy" of the south coast, all of the Myrtle family, and the Native roses (*Diplolaena*) of the Boronia family. These are all typical examples of "flowers" in which the coloured bracts (modified leaves) resemble petals, while the relatively inconspicuous flowers themselves are crowded into a central cluster more or less concealed by the bracts, and possess very small corollas or petals but often prominent stamens. This is, as I have said, a highly developed economy and illustrates but one feature of a much specialized flora. It reaches its climax, as one would expect, in the most highly specialized family, the Compositae, or daisy family. Here indeed, in addition to the aggregation of flowers into a single daisy-like flower-head, we find several small flower-heads closely compacted into larger composite heads with or without external petal-like rays or bracts. This type is almost entirely restricted to south-western Australia and illustrates once again a highly specialized flora in complete harmony with its environment.

There are many other peculiarities which are beyond the scope of this article, but mention may be made of a general design in plant architecture whereby the drying action of wind is reduced to a minimum. This is achieved by a reduction in leaf-form, the leaf being reduced to a slender or needle-like organ, or by the modification of stems to function as leaves or, typically in many Wattles (*Acacia* spp.) where true leaves are only found on seedlings in their early stages, by the adult foliage being reduced to a flattened leaf-stalk as in the Black Wattle and the Jam tree. These are all expressions of one important fact, namely, that everywhere in Western Australia, with the exception of the lower South-West (the karri forest and the southern portions of the jarrah forest), the vegetation has to endure about eight months of the year which are entirely, or almost entirely, without rain and it is this very fact that accounts for what people call the "spike" type of growth and leaf-rigidity. It is also probably the reason for the brilliance of blossoms, and it does account for the prevalence of shrubs and trees rather than herbaceous perennials. Moreover, it probably accounts for the poor development of natural grasses and complete absence of natural grasslands in south-western Australia.

VEGETATION PROVINCES

The vegetation of Western Australia conforms to three natural regions which are termed "provinces." They are governed by temperature and the amounts and incidence of the seasonal rainfall, and have been termed respectively, the *Northern*, the *Ereman* and the *South-West* Provinces.



VEGETATION PROVINCES OF WESTERN AUSTRALIA

(From *Jour. Roy. Soc. of West. Aust.*, vol. XXVIII page lxxxv,
by courtesy of Roy. Soc. of West. Aust.)

Climatic Characteristics

The *Northern Province* extends over the Kimberley Division to some few miles southwards from the Fitzroy River, thence contracting into a narrow coastal isthmus in the vicinity of the Eighty Mile Beach, and expanding southwards to include the De Grey River and the greater part of the Fortescue system. It is the area which, lying north of the Tropic of Capricorn, receives its rain entirely in the summer months, with a seasonal rainfall during the four wettest months ranging from about seven inches in its southern portions to over forty inches in parts of the Kimberley Division, and has an annual mean maximum temperature of 90° F. or over, although during the growing season temperatures may be even higher. The season from the commencement of April until the end of October is relatively rainless.

The *South-West Province* extends from the southern end of Shark Bay in the north to Israelite Bay in the south. On the west and southern sides it is bounded by the ocean, while its inland boundary passes close to Mullewa, Morawa, Koorda, Bencubbin, Burracoppin, Hyden, Ravensthorpe and Grasspatch. It is pre-eminently the winter rainfall province which receives its maximum rainfall from May to August inclusive and, with the exception of the southern portion, experiences a seasonal drought extending from November to March or April. The average maximum temperature is less than 80°F. with much lower temperatures during the growing season.

The *Ereman Province* lies between the Northern and the South-West Provinces, and occupies approximately two-thirds of the total area of the State of Western Australia. It is intermediate in character between the other two; its rainfall is received either from extensions of summer rainfall southwards (and this makes up the greater portion, especially such rainfall as is received from tropical hurricanes during the late summer months), or in the south from extensions of the winter systems, while rarely a general rainfall may occur throughout.

Vegetative Characteristics

The *Northern Province* is essentially the savannah-steppe Province in that an herbaceous ground-covering mainly composed of grasses occurs. This varies from the rich grasslands of Kimberley to the harsh spinifex "steppe" of the country southwards from the Fitzroy, broken only by the alluvial grassland plains of the De Grey and Fortescue districts, especially the Roebourne Plains. Scrubland as such is unknown, except to a very limited extent in the rough sandstone range country of north-west Kimberley. Forests as such do not occur and mulga too is absent. Floristically the Province is characterized by the part played by the "Indo-Melanesian Element" in its constitution. In places this element may predominate to the extent that amongst the trees *Eucalyptus* plays a secondary role, and deciduous trees are prominent. The grotesque Baobab is common, together with various soft-wooded trees, while the herbaceous growth is rich in members of the *Hibiscus* family and several others. With the exception of the river bank and swamp formations, most herbaceous growth is either dead or resting during the winter months.

The *South-West Province*, on the other hand, is characterized by a total absence of the Indo-Melanesian influence, and its flora bears a distinct southern or "Antarctic" impress. Trees and shrubs predominate with a marked diminution of grasses, and there is no true grassland. The herbaceous species are of winter growth, and the plants remain dormant during the dry summer months, especially the species of *Acacia* and *Casuarinaceae*. The *Proteaceae*, which assume a minor role in the North, here hold sway, as do the *Myrtaceae* and *Leguminosae*. The principal formations are forest woodland and scrub land, with extensive tracts of sand heath. Mulga and spinifex are absent and the various salt bushes either exist as inhabitants of the physiologically dry salt pans, or occur only marginally. There is a distinctive plant architecture among the woody plants in which the effect of the dry season is apparent.

The *Ereman Province* is again intermediate. Floristically it is characterized by the "Australian Element," recruited from northern and southern influences, and those hardy species which have arisen in response to an adverse environment. Notably there is an increase in the spacing of plants due to root competition between neighbours. The result is a series of "open formations"; Mulga bush, consisting of leafless species of *Acacia* with resinous or stiff leaf-like phyllodes; a predominance among the shrubs of species of *Acacia*, *Cassia* and the attractive species of *Eremophila*, notable for the size and colour of their blossoms. The Northern influence is expressed most strongly by the Spinifex (*Triodia*) which is the dominant tussocky grass of the lighter and stony soils, while the Mulga occupies the more closely-grained soils, the true mulga (*Acacia aneura*) being restricted to hard-pan soils. The Southern Element is most strongly asserted in the loose red sand and around granite rocks, the former carrying those sand-loving species for which the South-West is famous (even the Blackboy extends into the heart of the

Eremaea) while the species of the granite rocks owe their existence to an improvement in the water content of the soil in addition to the shelter and shade provided by declivities. In the northern portions of the Province we find, where watercourses provide permanent pools and moister conditions than elsewhere, an intrusion of the Northern Element, especially in the grasses and the herbaceous flora generally. Savannah and steppe occur in the north, Mulga and spinifex steppe occupy the middle areas, while in the south we have woodland formations, with some degree of heath development. The salt soils carry distinctive associations of salt-tolerant plants in which salt bushes are predominant, and this same formation occurs on the limestone soils of the Nullarbor Plain. Forests are absent.

VEGETATION FORMATIONS

PREDOMINANTLY WOODY FORMATIONS

Forest formations

The Karri forest

The karri forest occurs in the hilly country of the extreme South-West where the annual rainfall is in excess of 40 inches, but of greater importance is the fact that summer precipitations are not infrequent, even if light, and usually in excess of 12 inches. The forest occurs in certain light types of soil, mostly on the hillsides. The karri tree (*Eucalyptus diversicolor*) attains a height of nearly 300 feet. It has a clean smooth bark which in adult trees covers a trunk of over 150 feet in height and the branches are widely spreading and somewhat open, with leaves more horizontally placed than is the case with other southern *Eucalyptus* trees. The undergrowth is characterized by the possession of a storied series of smaller trees, shrubs and undershrubs. The understorey of trees is comprised mainly of the Karri Sheoak (*Casuarina decussata*), the "Bull Banksia" (*Banksia grandis*) together with Peppermint (*Agonis flexuosa*), Warren River Cedar (*Agonis juniperina*) and *Banksia verticillata*, known as "River Banksia." Among the taller shrubs the commonest are the Karri Wattle (*Acacia pentadenia*), Hazel (*Trymalium spathulatum*), *Chorilaena hirsuta*, the violet-flowered *Hovea elliptica*, *Crowea* and species of *Boronia*. Bracken is not uncommon. The undergrowth consists mainly of small shrubs and undershrubs, principally *Tremandra*, *Boronia* and *Dampiera*, while the wetter localities carry dense groves of willow (*Callistachys lanceolata*) or impenetrable masses of rushes and sedges of considerable size. Around the lower reaches of the Frankland River occur the two species of Tingle trees, the red tingle (*Eucalyptus Jacksonii*) and the yellow tingle (*Eucalyptus Guilfoylei*), both tall trees, the former with a comparatively stout-based trunk with a basal girth of up to 60 feet or more, but soon tapering to a much smaller girth. Within its climatic area the karri forest receives its soil requirements from granitoid and gneissic rocks. Marri (*Eucalyptus calophylla*) enters into the forest composition in the sandy soil, while the presence of lateritic soils gives rise to jarrah, which also occurs on the sandy low-lying plains of this area, sometimes associated with blackbutt (*Eucalyptus patens*) and *Eucalyptus Staeri*, all of them rough-barked trees. The only other *Eucalyptus* tree of the area is the bullich (*Eucalyptus megacarpa*) superficially not unlike the karri, but with dull leaves, and usually occurring in swampy places.

The Jarrah forest

Just as the karri forest stands as the most highly developed of the forest formations of the South-West Province, so does the jarrah forest stand by contrast as a dry forest, not so much because of its climatic environment, but rather because of the poor nature of the porous lateritic soil which supplies its requirements in this direction. At the same time it is climatically demarcated, its limitations conforming so exactly to the 30 inch winter isohyet as to be worthy of comment. In considering the forest area, however, it must always be remembered that laterite remains essentially its dominant requirement for, apart from the presence of these trees in certain sandy areas within its boundaries, jarrah (*Eucalyptus marginata*) is noticeably absent from the clay and granitic soils, especially those richer soils of the eroded valleys where wandoo (*Eucalyptus redunca* var. *elata*) becomes important. Jarrah also grows on the sandy coastal plain, sometimes attaining considerable size, but not in sufficient density to be termed a forest. Its actual northern limit, where it is reduced to a shrub, is on Mount Lesueur, near the Hill River. The trees and shrubs of the jarrah forest are all hard-leaved, or at least leathery in texture, but softer-leaved plants often occur under the shelter of the larger shrubs. Like the karri forest, the jarrah forest is largely poor in tree species apart from the jarrah itself, but Blackbutt (*Eucalyptus patens*) may be common on the banks of streams, and Marri (*Eucalyptus calophylla*) is almost always present where deep free sandy soils occur. The powder-barked wandoo (*Eucalyptus accedens*) and the true wandoo occur in clay soils, the former usually associated with stony outcrops. The canopy of the jarrah forest is

relatively light. The smaller species of the understorey are principally *Banksia grandis*, *Persoonia* spp., *Casuarina Fraseriana*, native pear (*Xylomelum occidentale*), *Hakea*, *Dryandra*, *Xanthorrhoea* (Blackboy) and the *Zamia* (*Macroramia Reidlei*), with numerous smaller shrubs which vary in species according to soil and locality.

The Wandoo forest

There are few stands of pure forest of the wandoo tree (*Eucalyptus redunca* var. *elata*), but under forest conditions it develops into a tree of over 100 feet in height and always requires more open spacing than the other forest trees, except perhaps the tuart. As previously indicated, the wandoo formation dovetails into the jarrah forest wherever a clay soil occurs, especially when overlying granite. The undergrowth differs little from that of the jarrah forest in its essentials, but *Casuarina Fraseriana* and *Persoonia*, for example, are never found here, and there are many more proteaceous plants. The wandoo tree becomes of importance to the east of the jarrah forest where, associated with the Jam tree (*Acacia acuminata*), and with a much reduced shrubby undergrowth, it forms a type of savannah woodland. In this area, too, is the mallet country where on the lateritic hillsides we find two species in association which are much valued for their bark. These are *Eucalyptus astringens* and *Eucalyptus Gardneri*, respectively the brown and blue mallets, which tend to form dense associations with an equally dense thicket-like undergrowth where light is admitted. This environment is also the home of many of the more toxic species of the genera *Gastrolobium* and *Oxylobium*. In this area also, but on low-lying country to the south of Wagin and Dumbleyung, *Eucalyptus occidentalis* occurs. This tree, the swamp yate or Moitch of the natives, shows a preference for low-lying land subject to winter inundation. Like the wandoo formation of the area it is poor in shrubby undergrowth, and has characteristically "cushion" shrubs.

The Tuart forest

The Tuart (*Eucalyptus gomphocephala*) extends southwards from near the Hill River to the Vasse district. It is naturally entirely restricted to the limestone formations of the coastal plain, and in the northern part of its range it occurs as a forest or woodland mixed with jarrah and marri, and with a shrubby undergrowth, but always with a number of herbaceous species which increase as the woody plants are removed. To the south it becomes a forest type in which there is little shrubby undergrowth, but a fairly rich development of understorey trees, principally the peppermint (*Agonis flexuosa*), and a number of other plants, notably *Banksia* spp., with an increase in the herbaceous species.

The Woodland formations

While each of the forest formations of the South-West Province possesses its dominant species so that the formation can be called by such trees, the woodland formations are not so distinctively uniform. It is true that a number of trees are associated with certain types of soil as, for example, the salmon gum and gimlet, which seem to be restricted to the heavy clay soils, just as the wandoo here thrives in grey or yellow clays derived from laterite, or the yorrel is restricted to the granitic and dioritic soils, but such is the intricate pattern in the mosaic of the general woodland picture that we cannot subdivide it and hence it is known as the sclerophyllous woodland. The principal trees are the salmon gum (*Eucalyptus salmonophloia*), the gimlet (*Eucalyptus salubris*), the red morrel (*Eucalyptus oleosa* var. *longicornis*) and the yorrel (*Eucalyptus gracilis*), the last two showing a preference for soils with limestone nodules, and incidentally soils that tend to become saline after the timber is removed. Other trees of more local distribution however come into the picture, according to district and soils, and the undergrowth also changes. In general, the floor of the sclerophyllous woodland is covered lightly with small shrubs in which *Acacia* and *Grevillea* are common, and shrubby *Eucalyptus* species, known as mallees, occupy smaller areas. These often give way to mallee thickets which in turn lead outwards to thicket associations of *Melaleuca* and ultimately to heath formations. In general, the woodland occupies the depressions or lower levels, the heath occupying the higher levels, and many are the types of gradation between the two.

Such is a very brief description of the sclerophyllous woodland of the South-West Province. The same formation extends into the Eremean Province, and the main differences there are not the tree constituents which remain, and which may even become enriched by the addition of many other tree *Eucalypti*, but rather the undergrowth, which undergoes a gradual change at the boundary between the two Provinces. Important changes are the substitution of species of *Eremophila* for the commoner

Proteaceae, and the presence of a number of plants which are generally regarded as being salt-tolerant, for example, salt bush (*Atriplex* spp.) and blue bush (*Kochia* spp.). The low-lying grey soils carry the salt-enduring vegetation, while the higher levels of the forest floor are relatively deficient in these, and it is principally in the latter that one notices the broom-like effect of the species of *Eremophila* which become more important as the eastern limits of the woodland are reached. Certain species common in the South-West Province persist throughout, while others like the wandoo become smaller and less numerous and still more restricted to the lateritic clays.

Shrub formations

Mallee and Thicket formations

Mallees are those species or forms of *Eucalyptus* which do not develop a single trunk or stem, but possess a large woody stock from which arise a number of stems. The stock may persist for a great number of years, sending up fresh stems from time to time, as, for example, after fires have burned the existing stems. It is a type of growth eminently suited to country which is periodically burned by bush fires. Sometimes the mallee associations assume a pure formation composed of a mixture of species. At other times the *Eucalyptus* species are intermixed with other shrubs, such as tea trees, and form thicket formations. These occur in many types of soils, but usually the formation is best developed on the alluvial soils, while the principal tea tree thickets attain their best development on low-lying sandy soils where water may lie in the winter months.

The inland species of *Acacia* in the main prefer the sandy or lateritic soils for thicket formation. There are, in fact, a number of associations of *Acacia* which form such thickets, among which the "wodjil" is perhaps the best known, principally on account of its shallow lateritic soil. These thickets are mainly developed in the drier marginal areas of the South-West Province and portions of the Ereman Province. Sometimes they are associated with "tamma" (*Casuarina campestris*), but in such cases there is usually an association with granite, and these in turn may lead into the Jam country (*Acacia acuminata*).

The Mulga bush

The Mulga bush is perhaps the largest of all the formations in Western Australia. It extends almost uninterruptedly from the western coast between Onslow and the Wooramel River eastwards into western New South Wales with a southerly bulge about as far as a line through Boolardy, Paynes Find, Mount Jackson and north of Menzies, maintaining its identity, even though few species extend throughout its entire range. The true mulga is *Acacia aneura*, but this is perhaps not the commonest species of the formation, and seems to be restricted to shallow soils. Many species of *Acacia* are included in the general term Mulga, and in addition two other types of *Acacia* have received common names, the "Minniritchie" type with reddish curled bark, and the green-foliaged, needle-leaved species collectively known as "Curara." All of them are of value to the pastoralist, either in their foliage or in their seeds and pods. The true mulgas have a greyish resinous foliage, a colour that dominates the entire formation. The shrubs are rather widely spaced, with smaller shrubs or tussocky grasses between, and a characteristic of the formation is the immediate response following adequate rains, when a rich herbaceous growth appears as if by magic, the plants completing their life cycle in a few weeks. Summer rains call forth a growth of annual grasses. The winter rains, on the other hand, promote a growth of herbage almost entirely deficient in grass, but rich in blue geranium (*Erodium cygnorum*), *Velleia rosea* and a wealth of everlasting. The formation lies entirely within the Ereman Province and occupies the greater part of it.

Sand Heaths

The sand heath formations occur almost anywhere in the South-West Province where free deep sand occurs, and often in gravelly-sandy country also. It varies from an association of dwarf heath-like shrubs to shrubs two or three feet in height, and frequently with a few dwarfed mallees or other larger shrubs. It is relatively poor in annual species. It exhibits such variations that any general attempt to describe it is impossible. The principal areas lie on the country near the coast at both ends of the South-West Province, where the low heath formations are many miles in extent as, for example, between Esperance and Israelite Bay, and between Northampton and the Murchison River. There is also a more or less definite belt of sand heath country to the east of the jarrah forest and extending from near Geraldton to, and far to the east of, the Stirling Range. The sand heath country probably contains more than half the total flora of Western Australia in the South-West Province alone. It extends into

the Ereman Province too, but is there less richly endowed, and may be seen as far inland as Anketell and Comet Vale. The flora of Western Australia exhibits its greatest diversity, its greatest numbers, and its most interesting and colourful endemic species in the sand heath formations, which are thus one of the best "gardens" of the State's famous wildflowers.

Riverain formations

In the Kimberley Division, which lies in the Northern Province, we find along the larger permanent streams a dense if often narrow forest or jungle formation of great diversity which owes its existence to the presence of water in the soil, and is thus more or less independent of rainfall. It is, in fact, a vestige of the tropical rain forest and is rich in species both woody and herbaceous. Apart from a few species of *Eucalyptus*, of which the River Gums (*Eucalyptus camaldulensis* and *Eucalyptus Houseana*) are the principal, the trees are large-leaved and soft-wooded, examples being the large fig trees, and the Leichhardt tree (*Nauclera coadunata*). Pandanus is a common feature, growing in impenetrable thickets, together with ferns, some of which climb to considerable heights. Epiphytic orchids also occur and there is a very rich development of herbaceous species. The formation is indeed particularly rich in species entirely restricted to this type of country. The swamplands of the Northern Province are not as a rule extensive and are of somewhat open character. Few trees are characteristic, perhaps the commonest being *Banksia dentata* and the swamp oak (*Grevillea chrysodendron*) closely related to, but more attractive than, the silky oak of Queensland. The formations of the swamps are poor in grasses but very rich in sedges, bladderworts and sundews.

The Mangrove formations

Although mangroves are found as far south as the Leschenault Inlet at Bunbury, and again on the estuary of the Gascoyne River, no real formations are to be found to the south of the Fortescue River estuary, which is the southern limit of the white, black and red mangroves. These occur on muddy flats between the high and low tidal levels. Extensive formations, sometimes miles in extent and composed of trees attaining a height of forty or more feet, are to be found in the lower reaches of the Prince Regent River. They have much in common with the mangrove formations of the Indo-Malayan region, and all the species here have been originally derived from this region.

SAVANNAH FORMATIONS AND STEPPE

These are formations in which grasses assume great importance, or become entirely dominant. With the exception of the Jam and York Gum country of the South-West (associated with the granitic soils to the east of the forest region and extending from the Murchison River to the Stirling Range and as far east as Merredin), the savannah formations are restricted to the Northern Province and the northern parts of the Ereman Province. Their physiognomy changes from place to place, and varies from the savannah woodlands of Kimberley to the Spinifex ("steppe") country of the Ereman Province. The true savannah formations are essentially connected with tropical or warm temperate regions in which summer rains occur alternating with dry cool (winter) weather. Hence we find their richest development in Western Australia in the Northern Province, or that portion of it which receives a seasonal rainfall in excess of thirty inches. It is thus seen in its best development in the Fitzroy and Ord regions of Kimberley and on the Hann Plateau to the north. Here three principal types may be discussed, the first being the alluvial formations, characterized by coolabah (*Eucalyptus microtheca*), where the grasses are in the main species of *Sorghum* and golden-beard grasses (*Cymbopogon*) with occasional areas of spinifex (*Triodia*) on the red or brown clay soil. Where friable dark-coloured soils occur we find entirely treeless areas carrying other grasses, especially the Flinders and Mitchell grasses. Spinifex favours the sandy and stony country, associated with bloodwoods or with Micum (*Eucalyptus brevifolia*) or other sand-loving trees. The second type of savannah formation is that found on the basalt country, of which extensive areas occur on the Hann Plateau. These are characterized by the predominance of the Grey Box tree (*Eucalyptus tectifica*) and certain cabbage gums, while the grass is largely Kangaroo grass (*Themeda*). The third type is again determined by the nature of the soil, and is found on the sandstone and quartzite areas. This type differs from the other two in the richer development of deciduous trees including the Baobab, and in the much richer development of annual grasses, of which the principal are species of *Sorghum*, some of which attain a height of fifteen feet. In this type the higher sandstone country is largely dominated by species of "spinifex" (*Triodia*).

There exists, on the country of the lower De Grey River and in the Roebourne district, another type of open savannah country in which the trees are not deciduous and in which *Acacia* takes a prominent

part. The principal grass is the small tussocky *Eragrostis*, but here again, especially in the stony country of the Hamersley Range, the spinifex dominates the landscape.

Southwards from the Fitzroy River and eastwards from the Fortescue is a large area of steppe country almost entirely covered with the harsh prickly tussocks of the spinifex, with but few scattered shrubs, which becomes more open in pattern until further inland the desert is encountered. Comparatively few persons have entered the desert region and we know very little concerning it, except that completely denuded areas are rare but its vegetation is small and coarse as befitting plants which live in a hostile environment.

SPECIES OF ECONOMIC VALUE

With so large a flora, it is surprising that so little is known concerning the species of economic value. Comparatively few have been exploited. In the first place we have the rich timber areas of the South-West Province providing, besides jarrah and karri, a number of valuable hardwoods and some cabinet woods. The possibilities of utilizing *Casuarina* for paper making have yet to be explored, but there may be a field for development of an industry here, especially with the faster growing species. The early settlers used the bark of certain species of *Acacia* for tanning, and also the kino of the Marri tree (*Eucalyptus calophylla*), but these passed out of use when the Brown Mallet was found to possess a very desirable bark rich in tannins. The manna wattle (*Acacia microbotrya*) yields a gum which has all the properties of gum arabic, but does not yield heavily and the tears are frequently discoloured by the tannins of the bark. Notwithstanding this, the gum is valuable and, by using improved methods of collecting, a purer gum could be harvested. One of the best barks for tannin content and quality is the Micum tree (*Eucalyptus brevifolia*) which is found on the Hamersley Range, and again in East Kimberley, extending from the upper reaches of the Margaret River almost to Wyndham, the principal cattle port of Western Australia. Tanning materials are also extracted on a commercial scale from the timber of the Wandoo tree. The mangrove species also offer opportunities in this connexion.

The principal cabinet woods are found in the Kimberley district, especially the ebony (*Maba humilis*), the Leichhardt tree, and the Red Ash, to mention a few, but these are likely to be developed only when the country is settled. The same applies to the Kimberley Cypress pine (*Callitris intratropica*), which is perhaps our most termite-resistant timber, this quality being doubtless due to the presence of sandarac in the timber. Large trees exist, but suffer from the effects of fire and sometimes entire areas of this species are thus destroyed. It is, however, a timber of exceptional qualities, especially in a district where termite-resistant qualities are very important.

Among the drug plants, special mention should be made of Eucalyptus oil. No industry exists here today, despite the fact that we possess a variety, *Eucalyptus oleosa* var. *plenissima*, which gives the highest yield of any species known. But here again, there remains the difficulty of securing adequate areas of a valued species discovered only after large areas had been destroyed in farming operations.

In the Northern Province is a strychnine tree (*Strychnos lucida*) which may have a value in the production of either strychnine or brucine. The small shrub, *Grewia polygama*, also found in the North, has singular virtues as a remedy for dysentery and inquiries concerning supplies have been received from abroad. The Pituri (*Duboisia Hopwoodii*) contains nicotine in very appreciable quantities, and should prove of value for the production of insecticides. There remains a field of investigation in this connexion with the various fish poisons of the north, especially the species of *Tephrosia*. The toxic principle of the many species of *Gastrolobium* and *Oxylobium* remains as yet unknown, and there are certain plants containing alkaloids remaining either uninvestigated or only partially investigated.

Sandalwood oil is obtained from two species, *Santalum spicatum* and *Santalum lanceolatum*. The collection of sandalwood was formerly a profitable industry but the more accessible regions have largely been depleted.

These are a few aspects of the economic value of the Western Australian flora. In the future fresh materials will doubtless be brought to light, but the true value of this rich and highly diversified flora means much more than this. One has to consider its importance in maintaining the balance between soil formation and soil destruction, either from salinity or denudation with its consequent erosion. It is important that the flora be reserved in certain areas, not in small reserves but in large tracts where it will suffer less from the activities of man and the animals he has introduced, so that in the future, however remote, such areas can be used as a measure of the radical changes which always result when the activities of man disturb or alter the face of the earth.

PART 4 — THE FAUNA OF WESTERN AUSTRALIA

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ZOOGEOGRAPHY

Terrestrial Vertebrates

An analysis of most of the Western Australian groups of vertebrate animals shows that they can be referred to one or other of the three great faunal assemblages which zoogeographers recognize in Australia, namely the Bassian, Eyrean and Torresian faunas. Most members of these faunas are characteristic, respectively, of the following regions, the South-West (Bassian), the arid and semi-arid interior and North-West (Eyrean) and the Kimberley Division (Torresian). Several elements of these faunas occur as "foreigners" in neighbouring regions, such as Torresian species which are found in the otherwise Eyrean Pilbara district of the North-West, and Eyrean species which occur in the Bassian South-West. Otherwise, the regions, as indicated above, have tolerably distinctive faunas.

The sharpest faunal break is between the Torresian fauna of the Kimberley Division and the Eyrean fauna of the Pilbara. The Kimberley is the headquarters in Western Australia of the Fruit Bats (*Pteropus*), various marsupials such as the Little Northern Native Cat (*Satanellus hallucatus*), the Little Rock Wallaby (*Peradornas concinna*), the Jungle or River Wallaby (*Protemnodon agilis*), and among the birds the Scrub-Fowl (*Megapodius freycinet*), the Fruit Pigeons (Ptilinopinae), Lorikeets (*Trichoglossus* and *Psittaculodes*), White Cockatoo (*Kakatoe galerita*) and most of the grass-finches. Among the reptiles there is also a certain distinctness of fauna in the three regions, with overlaps in several species.

The Torresian species which penetrate further south include the Northern Native Cat (to the Fortescue River), the Brolga (normally only to Onslow), White-breasted Wood-swallow (to Shark Bay), and the Brown Honeyeater (right through to the South-West).

The boundary between the majority of the Eyrean species and the bulk of the Bassian species is less well-defined as there is a good deal of overlapping. Possibly the line which separates the woodland eucalypts and the mulga, the so-called "mulga-eucalypt line", is the extreme limit of most Bassian species, though many do not range inland beyond a line connecting Geraldton, Moora, Northam and the Stirling Range. The mulga-eucalypt line separates, to quote an example, the main distributions of the Grey Kangaroo (Bassian) and the Red Kangaroo (Eyrean). This line is also the northern limit of such well-known Bassian species as the Red Wattle-bird. It is also the northern boundary of many Eyrean species which are restricted to the south; such as the Rufous Tree-creeper, Purple-crowned Lorikeet, Smoker Parrot and the Squeaker.

The South-West of the State has representatives of many well-known Bassian species also found in south-eastern Australia. These include among birds, the Brush Bronzewing, White-tailed Black Cockatoo, Western Rosella, Scarlet Robin, Yellow Robin, Southern Emu-Wren, White-naped Honeyeater, Western Spinebill, New Holland Honeyeater and Red-eared Firetail. Among mammals there are the Pigmy Possum, the Wambenger, the Grey Kangaroo, the Tammar Wallaby, the Brush Possum and various dunnarts (marsupial mice, *Sminthopsis*). Among frogs there are various *Crinia* and *Heleioporus* *inornatus* and *australicus*; and fishes such as *Galaxias* and *Nannoperca*. However, there has been an extensive intermingling of Eyrean and Bassian elements in the South-West on a scale not paralleled in south-eastern Australia. In the South-West we have a blend of faunas in the sclerophyll forests (which are essentially Bassian in character) and such Eyrean birds as the Purple-crowned Lorikeet, the Rufous Tree-creeper, the Western Warbler, the Banded Blue-wren and the Red-tipped Diamond-bird occur in them.

Coastal Marine Fauna ⁽¹⁾

The long Western Australian coastline (4,350 miles) extends from tropical to warm temperate waters, from Cape Londonderry at 14°S with a mean water temperature of 81°F to Albany at 35°S with a mean water temperature of 63°F. As is to be expected, the marine fauna is very different at the extremes.

(1) Written in collaboration with Dr. E. P. Hodgkin and Mrs. L. Marsh.

Two principal elements in this fauna have been recognized; a northern tropical and a southern temperate fauna. The northern fauna is found right around northern Australia and many of the animals have a much wider distribution through the tropical Indian and west Pacific Oceans. For example the Serpent's Head Cowrie (*Ravitrona caputserpentis*) and the sea urchin *Echinometra mathaei* are found from the east coast of Africa through the Pacific islands; both are abundant as far south as Rottneest Island. The southern fauna extends along the southern coastlines of Western and South Australia, with some species being common also on the New South Wales coast, though absent from Victoria. The boundary between these faunas has been drawn at different points along the west coast, according to the specialities of particular authors. However, there is in fact a broad area of overlap between North West Cape and Cape Leeuwin. Some southern species, such as the periwinkle *Melaraphe unifasciata*, are common as far north as Shark Bay and even to North West Cape. On the other hand some northern species are common on the rocky shores between Cape Naturaliste and Cape Leeuwin, for example the cowrie mentioned above, and may even extend east to Albany or Hopetoun. There are extensive colonies of the coral *Turbinaria* in Geographe Bay and smaller colonies of *Pocillopora* on Rottneest Island. *Turbinaria* occurs also in the Recherche Archipelago.

In addition to these northern and southern faunal elements there is a considerable number of endemic species, found only in the south-western part of the State. Both among the molluscs and less well-known animals such as the sea squirts there are many species which have not been found outside this region. Two examples are the Slate Pencil Urchin (*Phyllacanthus magnificus*) and the cone shell *Dyrapsis dorreensis*.

The islands of this part of the coast are of particular interest. At the Aboorhos Islands there are extensive coral reefs and other northern marine animals are much more numerous than on the adjacent mainland coast. At Rottneest also there are a dozen or more reef-building corals, although most species occur only as scattered colonies so far south, and again there are more northern species than along the adjacent mainland.

Fauna of Inland Waters (2)

The inland waters are of many types and possess very varied faunas. The permanent hill streams of the South-West all have a diverse insect fauna. In addition there are several species of freshwater crayfish and freshwater mussels in slower-running parts—Marron (*Cherax tenuimanus*) occur in permanent streams of deep water; Jilgie (*C. quinquecarinatus*) in shallow permanent water; Koonac (*C. preissi*) make burrows in the mud of swamps. A species of a closely related group, the so-called "land-crabs" (*Engaeus*), has been recently discovered in the swamps of the South-West. Most rivers stagnate and may become saline in summer; they are reduced to chains of large or small pools to which the fauna is restricted. The small transparent prawn *Palaemonetes* is often abundant in these pools. Shallow permanent lakes and swamps near the coast also have a fairly varied insect fauna, among which certain species of dragonflies are particularly abundant; at times there are enormous numbers of *Daphnia* and related small crustaceans.

Except in the South-West and the extreme north (Kimberley) permanent fresh water is confined to man-made dams and large, widely scattered, spring-fed pools in river beds. The latter, often of striking beauty, are oases to which are confined species dependent on permanent water. These and the dams also serve as reservoirs from which many temporary pools that appear after heavy rain are restocked with their restricted insect fauna, mainly dragonflies, beetles, and waterbugs. The pools also often have vast numbers of small, quick-growing, phyllopod crustaceans such as *Apus* which lay eggs resistant to dessication and high temperatures. The smaller pools provide breeding places for mosquitoes, especially species of *Aedes*, and these may appear in immense numbers within a week of a heavy downpour.

Much inland water south of the mulga-eucalypt line is saline, both in temporary pools and semi-permanent lakes. Heavy rain freshens these waters and then, with increasing salinity consequent upon evaporation, the fauna changes. In the early stages there may be an abundance of the pool-living insects and small crustaceans. Few insect species however survive more saline conditions and the crustaceans too become limited to a few species which may be present in great abundance until the water dries out.

The fishes of the inland waters are described in a subsequent section.

(2) Written in collaboration with Dr. E. P. Hodgkin.

THE COMPOSITION OF THE FAUNA

The fauna of Western Australia includes representatives of all major phyla of the Animal Kingdom and individuals range in size from the Blue Whales (*Balaenoptera musculus*), the largest mammals that have ever lived, to minute single-celled protozoa which cannot be seen without a microscope. No estimate can be made of the number of species, and probably the number of species of insects alone outnumbered all the rest by a comfortable margin. Here we have not attempted to describe all phyla. The vertebrates are given fairly full treatment because they are obvious and familiar animals to most of us. The insects (mostly those of economic importance) are dealt with in Part 5 of this Chapter, and the remaining phyla are treated in a few paragraphs which confine themselves to groups of interest.

THE VERTEBRATE FAUNA

Birds

The bird fauna of Western Australia consists of a selection of the species occurring in eastern Australia, with only a very minor development of endemic forms. All of these latter, except one (the Western Australian King Parrot, *Purpureicephalus spurius*), have a close and obvious affinity to other Australian forms. The quantitative relationship of the Western Australian bird fauna to that of Australia as a whole is indicated in the following table, which has been prepared on an ecological basis.

	Number of Breeding Species (a)		Number of Non-breeding Visiting Migratory Species (a)	
	Western Australia	Australia	Western Australia	Australia
Land birds	279	427	7	8
Inland water birds	66	69	28	34
Sea birds	26	39	32	47
Total	371	535	67	89

(a) Numbers of species are based on a large-species concept and geographical representatives of a species group are not separately enumerated. Thus the numbers given are rather less than would be the case if all morphological species were admitted.

Representatives of most of the families and genera of Australian birds occur in this State. Notable absentees include the Cassowary (*Casuarus casuarus*), Brush Turkey (*Alectura lathami*), several of the fruit-pigeons, the Crimson Rosella (*Platycercus elegans*), Lyre-bird (*Menura novae-hollandiae*), several honeyeaters including the Regent (*Zanthomiza phrygia*), Apostle-bird (*Struthidea cinerea*), Cat-birds (*Ailuroedus*), Satin Bower-bird (*Ptilonorhynchus violaceus*) and Rifle-birds (*Ptiloris*).

Space is insufficient to detail all the forms occurring in Western Australia. Mention may be made of some distinctive species and groups which are common and widely distributed.

The Emu (*Dromaius novae-hollandiae*) is still numerous all over the State and is occasionally encountered in the Darling Range near Perth. Australia's only breeding species of penguin, the Fairy Penguin (*Eudyptula minor*) nests on islands off the southern and south-western coasts as far north as Carnac near Fremantle. The Mallee-fowl or Gnow (*Leipoa ocellata*) is still plentiful and, after a period of decline during which its disappearance was feared, it is now increasing in abundance. All of the widespread species of Australian quails occur but owing probably to the scarcity of natural grasses in the south are not individually very numerous. Among the pigeons two species have shown notable recoveries in population strength. After a long period of scarcity the Common Bronzewing (*Phaps chalcoptera*) began a cycle of increase about 1936 and is still very abundant. The rare Flock Pigeon (*Histriophaps histrionica*) of the more arid country of the North-West and the far North has declined all over Australia and had not been recorded in this State since 1927 until 1958 when considerable flocks were observed in the Hamersley Range and the Fortescue River country. It has also reappeared in parts of the Kimberley Division.

A very distinctive member of the rail family is the Black-tailed Native Hen or Gallinule (*Tribonyx ventralis*). It is a creature of the drier country but is subject to violent fluctuations in numbers, when it is liable to invade the South-West in great strength. A famous occasion was in May, 1833 when it overran the settlers' fields and gardens around Perth and did considerable damage to the crops. Similar irruptions took place in 1853, 1886, 1897 and 1919. Later invasions, such as that in 1952, have been on a

much more modest scale. Of the three Australian grebes the most plentiful is the Hoary-headed Grebe (*Podiceps poliocephalus*) which assembles in the winter in big flocks on the southern estuaries, including that of the Swan River.

In the petrel group there are four breeding species in local waters. The most numerous is one of the mutton-birds, the Wedge-tailed Shearwater (*Puffinus pacificus*) which nests on most islands between Carnac in the south and Sable Island, in the Dampier Archipelago, in the north. A second mutton-bird, the Fleshly-footed Shearwater (*P. carneipes*) nests between Cape Leeuwin and the Archipelago of the Recherche; it is a migratory species and in the winter months migrates to the north-western sector of the Indian Ocean. The White-faced Storm-petrel (*Pelagodroma marina*), a diminutive form rarely observed at sea, nests often in vast aggregations on islands off the south coast and as far north as the Abrolhos. All of these species nest in the spring and summer months. The remaining two breed in the winter. The Great-winged Petrel (*Pterodroma macroptera*) shares the nesting islands off the south coast with the Fleshly-footed Shearwater in a sort of "Box and Cox" relationship. The black and white Little Shearwater (*Puffinus assimilis*) has a wider nesting range, from the Recherche to as far north as the Abrolhos; in former times it nested at Parrakeet Island off Rottneest Island. In the winter months some 22 species of southern-breeding petrels visit local seas. They vary in size from the little Wilson Storm-petrel (*Oceanites oceanicus*), barely larger than a swallow, to the great Wandering Albatross (*Diomedea exulans*). The Wilson Storm-petrel "winters" all along the Western Australian coast to the tropics and is a familiar sight around fishing boats in Shark Bay. The most common of the albatrosses is the Yellow-nosed Albatross (*Diomedea chlororhynchos*) and may be seen as far north as Point Cloates. The most familiar of these visitors is the dusky Giant Petrel (*Macronectes giganteus*). Ringing experiments have demonstrated that the birds seen here are first-year individuals making circumpolar flights round the Southern Hemisphere; marked birds found in the South-West had been ringed a few months previously in their nests at Heard Island, Macquarie Island, and islands in the South Orkneys in the South Atlantic.

All of the five species of Australian cormorants or shags occur locally. Despite complaints of their depredations on commercially important fish, investigations have cleared the birds of blame, though one species, the Black Cormorant (*Phalacrocorax carbo*), specifically identical with the Cormorant of Europe, does occasionally include edible fish in its diet. One marine species, the Pied Cormorant (*P. varius*), which enters the Swan River estuary and Peel Inlet, is mainly responsible for the guano deposits on the coastal islands. Deposits at Shark Bay were commercially exploited in the last century and at one stage, in 1850, a detachment of troops was stationed at The Quoin Bluff, Dirk Hartogs Island, to ensure the collection of royalties. Pelicans in Western Australia, unlike those in eastern Australia, breed only on coastal islands and not on inland waters. The nearest breeding place to Perth, and presumably the origin of most of the Swan River Pelicans, is Pelican Island, Shark Bay.

Fourteen species of terns are recorded for the southern parts of the State and two more for the Kimberley Division. Two of the sixteen are migrants from the Northern Hemisphere and ringed individuals of the European Common Tern (*Sterna hirundo*) and the Arctic Tern (*S. macrura*), marked respectively in Sweden and Soviet Russia (near Archangel), have been recovered near Fremantle. These birds must have reached our coast via the Cape of Good Hope. The Silver Gull (*Larus novae-hollandiae*) is noteworthy for having two breeding seasons in the southern part of the State. On the islands at Safety Bay, for example, one part of the gull population lays eggs in the autumn and the other in the spring.

The numerous Order of wading or shore-birds (sandpipers, dotterels, and plovers) includes a few locally-breeding species but the majority are migrants from the Northern Hemisphere, where they breed in the tundra zone of northern Asia. Though they frequent ocean beaches and estuaries, as well as swamps and lakes, they are listed in the category of "inland water birds" in the table on page 62. Some 25 species of these birds, commonly called "snipe" (though the true Snipe of eastern Australia, *Gallinago hardwickii*, does not occur in this State) migrate to Western Australia. In addition there are 16 species of this Order which breed in Australia. One of them, the Red-capped Dotterel (*Charadrius alexandrinus*), is virtually identical with the rare Kentish Plover of England. Here it is very common and nests at Pelican Point on the Swan River. Another local breeder is the remarkable Banded Stilt or Rottneest Snipe (*Cladorhynchus leucocephalus*), which is an attractive inhabitant of the salt-lakes of Rottneest Island. However, it nests only on the inland salt-lakes. The nesting habits remained long unknown until colonies were discovered at Lake Grace and Lake King in 1930.

The Australian Bustard ("Wild Turkey", *Eupodotis australis*) is a magnificent bird which has been largely exterminated by shooters over much of south-eastern Australia and in the developed South-

West of this State. It is not uncommon in sparsely-settled areas and individuals occasionally appear on the open coastal country quite near Perth.

The Brolga (*Grus rubicunda*) is a northern bird normally found as far south as Onslow, but some individuals may wander into the outer parts of the South-West as occurred in 1952. In the heron family a new bird has been added to the State list—the Cattle Egret (*Bubulcus ibis*), which appears to have colonized northern Australia from Indonesia and has now spread over much of eastern and Western Australia.

There are 18 species of swans and ducks occurring in the State, one of the most remarkable, perhaps, being the Cape Barren Goose, which is now restricted to the islands of the Recherche Archipelago. Recent leg-ringing experiments have shown that the common and widespread Grey Teal (*Anas gibberifrons*) wanders indiscriminately all over Australia, its movements being influenced by availability of surface waters.

The State is also well provided with hawks and eagles, 24 species being found within its limits. Most are harmless economically and the few that do take chickens and lambs are not serious depredators, though there is controversy on the role of the Wedge-tailed Eagle (*Aquila audax*) which is, however, classified as vermin for the destruction of which a bonus is payable under the provisions of the Agriculture Protection Board Act.

There are not as many species of the parrot group in Western Australia as there are in eastern Australia but one species, the Western Australian King Parrot or Red-capped Parrot (*Purpureicephalus spurius*), is restricted to the South-West and has no near relatives elsewhere. The Twentyeight Parrot is a form of the Port Lincoln Parrot (*Barnardius zonarius*) and is common almost everywhere, being regularly present in King's Park, a natural reserve adjacent to the City of Perth.

The Kookaburra (*Dacelo gigas*), so common in the South-West forests, is not a Western Australian native, but was introduced from eastern Australia by the Acclimatisation Board at some time prior to 1897. A similar species, however, the Blue-winged Kookaburra (*D. leachii*) occurs in the north, as far south as the Wooramel River. The Rainbow-bird (*Merops ornatus*) in the south is a strict migrant, arriving regularly in the first week of October. Local birds migrate to the north of the State, the wintering area being from the Gascoyne River northwards, but some individuals cross the Timor Sea to the Indonesian islands. There are eleven cuckoo species in our area, the commonest being the Pallid Cuckoo (*Cuculus pallidus*) whose plaintive insistent note is heard soon after the winter rains set in.

In the great group of passerines, or song-birds, (Order Passeriformes) the most celebrated is the Noisy Scrub-bird (*Atrichornis clamosus*), a primitive almost-flightless bird which until recently was believed to be the only Australian bird which had become extinct since white settlement. The last specimen was collected by the ornithologist A. J. Campbell at Torbay in 1889, but late in 1961 a surviving population was discovered at Two People Bay east of Albany. Space is insufficient to deal in any detail with other members of this large Order. Throughout the State there are 172 species, of which 95 occur in the southern, settled parts and at least 33 are found in King's Park. A distinctive robin, the White-breasted Robin (*Eopsaltria georgiana*), occurs in the South-West. It is a relative of the yellow robins and is found in the dense coastal and forest thickets from Geraldton southwards and east to Albany and the Porongorups. The Western Warbler (*Gerygone fusca*) is a sweet-voiced songster which may be heard in the street trees of Perth, the only Australian capital city in which it lives; in the other States the bird is an inland species. Another distinction of the Perth metropolitan area is that four species of blue-wren, a greater number of species than in the environs of any other capital city, have been noted there. One species, the Red-winged Wren (*Malurus elegans*), which used to live near the city, disappeared when Herdsman Lake was drained. The remaining species are the Splendid Wren (*Malurus splendens*), occasionally still seen in the University grounds; the Blue-and-white Wren (*Malurus leuconotus*) in the coastal dune thickets, and the Causeway and Pelican Point samphire flats; and the Variegated Wren (*Malurus lamberti*) in the dune thickets. Honeyeaters are numerous, the largest, the Red Wattle-bird (*Anthochaera carunculata*), being a familiar bird in metropolitan streets and gardens. Most of the grass-finches are restricted to the Kimberley Division, where ten species are found. However, one of them, the widespread Zebra Finch (*Taeniopygia castanotis*), nests as near to Perth as Northam and York. Two bower-birds occur in the State. The Great Bower-bird (*Chlamydera nuchalis*) is confined to the Kimberley Division, but the Spotted Bower-bird (*C. maculata*) is found in the North-West and ranges south to the East Murchison country and Malcolm in the Eastern Goldfields.

WESTERN AUSTRALIAN WILDFLOWERS

- 1 BLUE LESCHENAUTIA
(*Leschenaultia biloba*)
- 2 EVERLASTINGS
(*Helipterum splendidum*)
- 3 RED FLOWERING GUM
(*Eucalyptus ficifolia*)
- 4 KANGAROO PAW
(*Anigosanthos manglesii*)
- 5 CHRISTMAS TREE
(*Nuytsia floribunda*)



1



2



3



4



5



BLUE LESCHENAUTIA

Leschenaultia biloba

from Blackall and Grieve, "How to Know Western Australian Wildflowers"

(Block by courtesy of University of Western Australia Press)

Leschenaultia biloba is native to south-western Australia. It occurs widely on the gravelly hills of the Darling Range but the finest specimens are to be found on the yellow loamy soil, overlaid by gravel, to the east of Northam. It ranges in colour from pale azure to deep ultramarine. The genus comprises nineteen species, sixteen of which are native to Western Australia. It is named after Leschenault, a botanical collector who took part in the expedition of the "Geographe" and the "Naturaliste" in 1801.

In contrast with all other Australian States there are very few species of exotic birds established in Western Australia. (The same is true of the Northern Territory.) In the towns of the South-West two turtledoves are plentiful, the Indian (*Streptopelia chinensis*) and the Senegal (*S. senegalensis*). The Goldfinch (*Carduelis carduelis*), an escapee from aviaries, breeds freely in the Perth metropolitan area and around Albany. The Indian or Ceylon Crow (*Corvus splendens*) repeatedly arrives at Fremantle on ships from the Orient but the vigilance of officers of the Department of Agriculture and port officials has led to the successful eradication of the unwanted immigrants. The House Sparrow (*Passer domesticus*) has been similarly kept at bay at Fremantle. This species did, however, make a temporary colonization, from South Australia, in the vicinity of Eucla and Mundrabilla in 1917-18 but it failed to make any headway and disappeared from that sector.

Mammals

Unlike the birds, mammals are not nearly such conspicuous members of the Western Australian fauna. This is because most of the species are small and secretive and appear only at night. However, there are exceptions to this and, as any traveller in inland and northern parts of the State can attest, kangaroos can often be seen in large numbers during daylight hours.

Most species of mammals can, like the birds, be distinguished as belonging to one or other of the three main faunal groups which occur in the State. For example, in the kangaroo family, the Western Grey Kangaroo (*Macropus ocydromus*), the Tammar Wallaby (*Protemnodon eugenii*), the Quokka (*Selomix brachyurus*), and the Brush Wallaby (*Protemnodon irma*) are found only in the South-West or on certain isolated islands off the coast. These species may be said to be Bassian and, of these, the Grey Kangaroo is very closely related to the South Australian form and the Tammar to the Flinders Island Wallaby and the now extinct St. Peter's Island Wallaby of South Australia. The Brush Wallaby is related to the extinct Tolache Wallaby (*Protemnodon greyi*) of South Australia. The most familiar kangaroo of the dry country of the Eyrean fauna is the Red Kangaroo or Marloo (*Macropus rufus*), while in the Torresian fauna which occurs in the summer-rainfall country of the Kimberley Division we find such species as the Jungle or River Wallaby (*Protemnodon agilis*), the Little Rock Wallaby (*Peradornas concinna*) and the Organ-grinder Wallaby (*Onychogale unguifer*). In addition to these species, which sort out in this convenient way, there are other species of this family which are widely distributed and in fact occur as members of all three faunal assemblages. The most familiar members of the family which do this are the Euro or Biggada (*Macropus robustus*) and the Rock Wallaby (*Petrogale lateralis*) which may be found anywhere from the Kimberley to the South-West and inland to the South Australian border in the vicinity of the Warburton and Rawlinson Ranges.

So far, only the kangaroos have been mentioned but, in fact, representatives of all three major divisions of the mammals (i.e. monotremes, marsupials and placentals) occur in the State.

The egg-laying monotremes are represented by the Echidna (*Tachyglossus aculeata*), sometimes called Spiny Anteater or Porcupine. This curious and completely inoffensive animal is not uncommon in the country around Perth and it even appears on occasions in densely-settled suburban areas. In drier districts, its diggings, made in its search for insects, are familiar around rocky hills and breakaways.

Marsupials, or pouched mammals, occur in great variety in Western Australia. The kangaroos and wallabies, already mentioned, are the herbivorous members of the group. These animals are the Australian evolutionary equivalent of the antelopes, deer, and horses of the other continents and there is often an extraordinary similarity in structure between members of the kangaroo family and these other herbivores. These similarities are particularly noticeable in such details as the physiology and shape of the stomach and other organs of digestion. The reproductive systems of marsupials have also long been of great interest to biologists. For example, in animals studied in the Zoology Department of the University of Western Australia it has been shown that the gestation period is shorter than the normal female cycle. In the Quokka and some other wallabies the adults mate again immediately after the birth of the "joey". The embryo which is the product of this second mating does not develop immediately but is held in a dormant state in the female system. However, if the first young joey is lost from the pouch, this dormant embryo immediately begins to develop and a second joey is produced after a minimum period of time.

In Western Australia the kangaroos and wallabies are all terrestrial (there are no tree kangaroos), and even their arboreal relatives, the Phalangers, are few in number as compared with other parts of Australia. The Brush Possums (*Trichosurus*), the Pigmy Possums (*Cercaetus* and *Eudromicia*) and the

Ring-tails (*Pseudochirus*) have Western Australian representatives, but the Koalas (*Phascolarctos*)⁽³⁾ and the striped Possums (*Dactylopsila*) are absent, and of the four species of flying possums of eastern Australia only one (*Petaurus breviceps*) occurs in Western Australia and that only in the Kimberley Division. Although the species of possums in Western Australia are few in number, there are some unique forms which are of great interest. One of these is the rare Scaly-tailed Possum (*Wyulda*) of the Kimberley; unlike other Australian possums this animal has a hairless scaly tail and only three specimens of it are known. There is also the curious and rarely-seen Honey Possum (*Tarsipes*) of the South-West. Wombats are known to have occurred in Western Australia around the turn of the century but have not been reported since that time.

Although the large carnivorous marsupials no longer live in the State, the smaller representatives of this group are still fairly common. There are two separate species of native-cats, a southern species (*Dasyurus geoffroyi*) and a northern one (*Satanellus hallucatus*) as well as many species of smaller carnivorous and insectivorous forms. Two of these are also of great interest; one, the little kangaroo-like *Antechinomys* lives in association with jumping mice in the sandhills of the interior, and the other, the Dibbler (*Parantechinus apicalis*), which is probably the rarest of them all, is commonly found as a fossil in the caves of Jurien Bay, but no specimen of it has been collected in the living state for many years and the species is not even in the collections of the Western Australian Museum.

The remaining group of marsupials is that commonly called the bandicoot family. One of these, the Pig-footed Bandicoot (*Chaeropus ecaudatus*) is probably the State's rarest mammal. Two specimens of it were collected by John Gilbert in 1841 some miles to the north-east of Northam. The species has not been seen in Western Australia since. On the other hand another species of bandicoot, the Quenda, or Short-nosed Bandicoot (*Isodon obesulus*), is one of the commonest of marsupials. Its scratchings are common in country gardens and the little animal is often run over and found dead on roads. It lives largely on insects, and being nocturnal it is seldom seen but it is nevertheless very common in many areas in the South-West.

The third main group of mammals is that of the higher mammals, or placentals. Animals of this group occur in Western Australia in addition to the marsupials and the monotremes. Many of these are true native mammals and have been in Western Australia for many millions of years. Among the native mammals are the native-rodents (all of which belong to the mouse family), a number of species of bats, of seals, of whales (which include the commercially important Humpback, *Megaptera nodosa*, upon which is based an extensive Western Australian fishery) and the Dugong (*Halimura australis*). The Dingo (*Canis familiaris dingo*) has probably not been in Australia for as long as the other native mammals and may well have entered Australia with the first of the Australoid people who were ancestral to our present aborigines. The Dingo is a major pastoral problem in some parts of the State.

As well as native placental mammals, there are a large number of introduced species which also occur in the wild in Western Australia. Some of these species also constitute agricultural and pastoral problems and they have become so well entrenched in the environment that there is no doubt that any discussion of the mammalian fauna of the State must take them into account. Mention may be made of some. Red Deer (*Cervus elephus*) occur spasmodically in the South-West around Pinjarra, Waroona and Harvey. Camels (*Camelus dromedarius*) occur and have been declared vermin around Laverton, Nullagine, Port Hedland and Halls Creek; their distribution is through the Eastern Goldfields up through the Pilbara and into the Kimberley. Donkeys (*Equus asinus*) have a distribution very much like that of the camel and they are also distributed generally through the Kimberley. Wild goats (*Capra hircus*) occur mainly on the lower Murchison and in the North-West and have also been reported from Fitzroy Crossing. Foxes (*Vulpes vulpes*) are also widespread and it is suspected that much of the decline in numbers of native mammals is due to their activity. Foxes do not occur commonly north of the De Grey River but have been reported spasmodically from the Kimberley Division. Rabbits (*Oryctolagus cuniculus*) are widespread in Western Australia, but they are by no means the menace that they used to be, due largely to the persecution which they have suffered by programmes of intensive rabbit extermination.

Reptiles

In Western Australia the reptiles are represented by three major zoological groups or Orders. These are the Chelonia (the turtles and the tortoises), Crocodilia (the crocodiles) and the Squamata (snakes and lizards).

⁽³⁾ Although the Koala, as well as several other Bassian species now confined to Tasmania (e.g. *Thylacinus*, the Tasmanian Wolf, and *Sarcophilus*, the Tasmanian Devil) no longer occur here, their fossil remains are known from Western Australia. See various papers by Glauert in the *Records of the Western Australian Museum* and in the *Western Australian Naturalist*, Vol. 1, pp. 101-104 (1948).

The freshwater tortoises of Western Australia, like those of the rest of the continent, belong to the ancient group of side-necked tortoises. In most other parts of the world tortoises retract their heads straight backwards bending their necks in a vertical S-shaped curve. Australian tortoises, and certain others from South America, bend their necks sideways; this is believed to be an ancient character. Although the species of Western Australian tortoises are few they are of great interest and their distributions are far from well understood. This is especially true of the species inhabiting the Kimberley. Freshwater tortoises do not seem to fall into simple faunal zone classifications. The common species of the South-West, *Chelodina oblonga*, also occurs in the Kimberley but not in between. The common species of eastern and central Australia, *Emydura macquarii*, occurs in the Kimberley Division in a slightly more globose form which has been called *Emydura australis*. It is not yet known whether *E. australis* is a distinct species. The river systems from the Irwin, in the Northern Agricultural Division to the De Grey in the northern Pilbara, have their own tortoise (*Chelodina steindachneri*), while a highly specialized short-necked tortoise (*Pseudemydura umbrina*) is apparently confined to a few square miles of winter swamps between Upper Swan and Bullsbrook to the north of Perth. Because of its vulnerability to extinction this last species is rigidly protected.

Marine chelonians also occur in large numbers around the coasts. The Green Turtle (*Chelonia mydas*), the species which is used for soup making, comes ashore to lay its eggs on the northern beaches. Attempts are made from time to time to exploit this species commercially, but no permanent industry has been successfully established.

There are two species of crocodiles in Western Australia. One is the relatively harmless fish-eating Fresh-water Crocodile (*Crocodilus johnstoni*) and the other the dangerous Salt-water, or Estuarine Crocodile (*C. porosus*). The former is protected by law, while the latter forms the basis of a lucrative trade in hides. Both species are confined to northern parts of the State.

Snakes and lizards are common and widespread throughout the State, and in numbers of obvious individuals they are probably surpassed among the vertebrates only by the birds. In the South-West, Bobtailed Lizards (*Trachysaurus rugosus*) can often be seen crossing the roads at most times of the year, while the walker among coastal sand dunes on warm days cannot avoid noticing innumerable small dragon-lizards which move away from in front of him. In the southern part of the State the largest lizard which is at all common is the Goanna (*Varanus gouldii*). These are frequently between three and four feet in length. In northern areas the Bungarra (*Varanus giganteus*) exceeds it in size. A few species are confined to the South-West and of these the most interesting are Mueller's Snake (*Rhinophlocephalus bicolor*), the Little Brown Snake (*Elapognathus minor*), the Black Striped Snake (*Vermicella calonota*) and the Slender Snake Lizard (*Pletholax gracilis*) which is also one of our rarest species of lizard. An Eyrean species which never ceases to surprise the visitor is the terrible-looking Mountain Devil (*Moloch horridus*). This lizard is actually one of the most gentle and harmless of animals and lives exclusively on ants.

The snake fauna of the State is diverse and, like that of other parts of Australia, contains many venomous species, the best known being the Western Tiger Snake (*Notechis scutatus occidentalis*), the Dugite (*Demansia affinis*), the Gwardar (*D. nuchalis*), the Death Adders (*Acanthophis antarcticus* and *A. pyrrhus*) and the Mulga Snake (*Pseudechis australis*).

The snakes and lizards are well described in Glauert's *Handbook of the Snakes of Western Australia* and *Handbook of the Lizards of Western Australia* (see bibliography at the end of this Part).

Because of the great distance of the Kimberley Division from centres of scientific research, insufficient is known of its snakes and lizards. As in the case of some of the smaller mammals, some endemic species of lizards have been described, but until much more scientific collecting and research has been done it will not be possible to evaluate such apparently-unique species. Some Kimberley species of lizard, e.g. the Frilled or Dragon Lizard (*Chlamydosaurus kingi*), are commonly illustrated in journals because of their bizarre appearance and are familiar to the public.

Amphibia⁽⁴⁾

Unlike the other continents Australia has no newts or salamanders (Urodela) or worm-like gymno-phonans (Apoda). However, frogs (Anura) are abundant.

The frogs of Western Australia fall into the same grouping (Bassian, Eyrean and Torresian) which was mentioned in the sections on birds and mammals. However, they lack the diversity of genera

⁽⁴⁾ Written in collaboration with Dr. A. R. Main.

and species shown by other groups and only ten genera with about thirty species are known from south of the Tropic of Capricorn. Of these, two genera, *Metacrinia* and *Myobatrachus*, each with one species, are restricted to the South-West. Most of the other kinds of frogs are distinct from, but related to, species found elsewhere in Australia.

Since most of Western Australia is exceedingly dry it is of interest to note that frogs are common in these arid regions. Those species of *Heleioporus* which occupy marginal-desert habitats overcome drought conditions by burrowing into the damp sub-soil. However, the arid-country species of *Neobatrachus* frequent clay soil where deep burrows are impossible and water can be lost. These species show no special capacity to endure greater water loss than *Heleioporus* species, but they do display an exceptional capacity for rapid replacement of water when water is present, as for example after thunderstorms. The water-holding frog, *Cyclorana platycephalus*, is found in inland and northern parts of the State. All "desert" species retain an aquatic larval life, but this is much shorter than that of species in the well-watered parts of the State. The only species lacking aquatic larval development occur in the wetter South-West; these are *Myobatrachus gouldii*, *Metacrinia nicholli* and *Crinia rosea*. *Myobatrachus gouldii* is the only species which exhibits any strong dietary preference and eats only termites (Isoptera).

Freshwater Fishes

The truly freshwater fish fauna of the southern part of the State is, by eastern Australian standards, an impoverished one and the species, with the exception of the freshwater catfish ("cobbler"), are diminutive in size. Most of the species are representatives of eastern Australian genera, such as the Pygmy Perch (*Nannoperca vittata*), Mountain Trout (*Galaxias truttaceus*), Black-striped Minnow (*G. pusillus*), and the Native Minnow (*G. occidentalis*). Others are more distinctive, with no near relatives in eastern Australia, such as the Nightfish (*Bostockia porosa*), the King River Perchlet (*Nannatherina balstoni*) and the newly-described scaled galaxiid (*Lepidogalaxias salamondroides*). There are several gobies (*Glossogobius suppositus* and *Lizagobius olorum*) and Hardyheads (including *Atherinosoma edelensis*, *A. rockinghamensis*, *A. elongata* and *Craterocephalus cuneiceps*). A lamprey (*Geotria australis*) ascends the rivers to breed and has been recorded north to the Swan River system, but is more abundant in the streams emptying on the south coast. An eel (*Anguilla australis*) has been recorded from the South-West but it is not known whether it is native to the area or has been introduced.

The north-western rivers have a richer fish fauna. The most widespread is the Spangled Perch (*Therapon unicolor*), a useful food fish which occurs in all rivers south to the Greenough. A large catfish, reaching 5 lb. in weight, occurs in the systems south to the Fortescue. The Rainbow Fish (*Melanotaenia nigrans*), popular with aquarists, occurs in the river systems of the Pilbara area. The remarkable Blind Gudgeon (*Milyeringa veritas*) occurs in wells and subterranean channels in the North West Cape area. The Kimberley Division has an even larger series of freshwater fishes. These include a catfish (*Neosilurus brevadorsalis*), various Bony Bream (*Pluvialosa*), various perch-like fishes (*Therapon*, *Acanthopercia*), Gudgeons (*Carrassioys*) and two freshwater saw-fishes (*Pristis clavata* and *Pristiopsis leichhardtii*). There is also a freshwater eel (*Anguilla bicolor*) in these northern waters.

Marine Fishes ⁽⁵⁾

The marine fish fauna of Western Australia is probably richer in species than that of any other Australian State. This is because the fish of the northern part of the State's very long coastline belong to the rich tropical Indo-Pacific fauna while its southern fauna is a temperate one which includes many elements peculiar to Australian waters. The most up-to-date list of the species of Western Australian fish, published in 1948, enumerates 740 species, but since that time collecting has revealed about a hundred more. Even so, this figure is still far short of the total number which, it is suspected, will eventually be found to be in the neighbourhood of two thousand.

From this it can be seen that there is much to be learnt about the fish of Western Australia. However, at present it seems that most of the fish fauna from the tropical part of the State are widely distributed, and species often range throughout the whole of the tropical Indian and Pacific Oceans, while the species which are found along the south coast usually occur also in the waters of South Australia, Victoria, Tasmania and southern New South Wales.

(⁵) Written in collaboration with Dr. G. F. Mees.

Between Cape Leeuwin and Shark Bay both northern and southern elements are found, the tropical element dominating as far south as Houtman Abrolhos. In addition, this region contains a number of species which have not been found elsewhere; some of these are the coral fish (*Chaetodon assarius*), the sweep (*Neotypus obliquus*), and the reef blenny (*Dipulus caecus*), to name but a few of the more remarkable. Later, we may find that some of these have wider ranges but the fact that they are common here and have not yet been found elsewhere suggests that their apparently endemic nature is a reality.

Further information about the commercial fishes in Western Australian waters is given in the Fisheries section of Chapter VIII, Part 1—*Primary Production*.

THE INVERTEBRATE FAUNA

The invertebrate fauna of Western Australia is large and varied, as one would expect in a third of a continent which extends from temperate to tropical zones and includes both coastal and desert areas. Rather than spread our descriptions too thinly over this enormous field we have restricted ourselves to a brief summary of the position in relation to a few selected groups in which work is being actively carried out.

Several invertebrate species are commercially exploited here, the most important being the marine crayfish (*Panulirus longipes*) which supports an extensive export fishery. Others commercially important include several species of octopus and squid, the Blue Swimming Crab ("Blue Manna", *Portunus pelagicus*) and several species of prawns. Pearl-shell is fairly extensively fished along the north-west coast.

A summary of the terrestrial and freshwater invertebrate fauna and their ecology is given in Main's *Guide for Naturalists* (1954).

Echinodermata ⁽⁶⁾

The echinoderms of Western Australia have been shown by Clark (1946) to be derived from the Indo-Malayan fauna. Most species of northern Australia are widely distributed in the Indian Ocean and Malayan archipelago, while as one passes southwards these decrease in proportion to the endemic species until on the south-western coast nearly nine-tenths of the echinoderms are endemic to the region.

All five groups of echinoderms, feather stars (Crinoidea), sea stars (Asteroidea), brittle stars (Ophuroidea), sea urchins (Echinoidea), and sea cucumbers (Holothuroidea) are well represented. Eighty-five species of sea star and fifty-five species of sea urchins are recorded from Western Australia including the continental shelf. The other groups have smaller numbers of species.

On the rocky and sandy shores of the South-West about twenty species of sea stars are common in shallow water. One of the most abundant is *Coscinasterias calamaria* which is widely distributed in the Southern Hemisphere. Sea urchins are represented by about twelve common species; on rocky shores the most abundant of these is *Heliocidaris erythrogramma* which has a southern Australian distribution.

In Cockburn Sound, between Garden Island and the mainland south of Fremantle, an abundant but specialized echinoderm fauna exists. This consists mainly of the small sea urchin (*Temnopleurus michaelsoni*), the biscuit urchin (*Peronella lesueurii*), the heart urchin (*Echinocardium cordatum*) and the sea star (*Stellaster inspinosus*). On the south coast, King George Sound has long been known as a rich collecting ground for echinoderms, but the fauna of other bays and inlets is much less well-known.

Little is known of the echinoderm fauna of the northern coasts, and almost all that we do know comes from the publications of H. L. Clark (see bibliography at the end of this Part) who collected extensively in the Broome area and made smaller collections in other places. Near Broome, a wide variety of echinoderms was collected in his dredges and along the shore.

Mollusca ⁽⁶⁾

The molluscan fauna of the Western Australian coastline has not been recently catalogued, but from the area within 35 miles of Fremantle 270 species of bivalves (Pelecypoda), and univalves (Gastropoda) are recorded. The smaller groups, chitons (Amphineura), octopus and cuttlefish (Cephalopoda) and tusk shells (Scaphopoda), are also represented.

(⁶) Written in collaboration with Dr. E. P. Hodgkin and Mrs. L. Marsh.

Molluscs dominate the intertidal rocks of the west coast, especially chitons, periwinkles, and limpets; the limpets range from the very large *Patellanax laticostata* to the small *Notoacmea onychitis*. On the north-western coast, rock oysters (*Crassostrea tuberculata*) and barnacles take the place of limpets intertidally. The oysters are fished commercially for food on a small scale in places where extensive beds are uncovered at low tide.

Bivalves occur mainly on sandy and muddy bottoms such as those of Cockburn Sound and King George Sound, and along the north-western coast. They are less plentiful on the unstable sandy shores of the open western coast. The pearl-shell fishery of north-west Australia is based on several species, mainly the Black-lipped Pearl-shell (*Pinctada margaritifera*) and the Silver-lip (*P. mazima*). The Shark Bay Pearl-shell (*P. carchariarium*) is abundant in Shark Bay and has been fished there commercially.

Many species of cowrie shells occur on the rocky shores of the north-west coast while a few species such as *Zoila friendii* and *Austrocyprea reevei* are confined to the south-western corner of the State.

Coelenterata ⁽⁷⁾

This group includes the corals (Anthozoa), the hydroids (Hydrozoa) and jellyfish (Scyphozoa).

Reef-building corals occur on the north-western coast in abundance and form reefs as far south as the Abrolhos Islands (29°S), and Port Gregory (28°S) on the mainland. Further south, reef-building corals are few in number and occur as small reefs and as scattered colonies on islands off the coast, but not on the coast itself. The staghorn coral *Acropora* is plentiful around the Abrolhos Islands and at Port Gregory but it has not been found further south except in Pleistocene fossil beds on Rottnest Island. Two or three species of corals extend east of Albany, and one, *Plesiastrea urvillei*, occurs right along the south coast of Australia.

Soft-corals are abundant on the muddy reefs of much of the north-west coast but few species occur on the west coast. The brightly-coloured fan coral *Mopsella* is common on rocky reefs of the west and south coasts.

Jellyfish of a few species, such as the white *Aurelia aurita* and the brown *Phyllorhiza punctata*, are common in the Swan River in summer. *Carybdea*, the small sea-wasp, occurs on the open coast.

Crustacea ⁽⁸⁾

The most important commercial species of crustacean in Western Australian marine waters is the "Cray" commonly referred to as *Panulirus longipes*. It occurs from North West Cape in the north to Hamelin Bay in the south. In the tropics five additional species of *Panulirus* occur; these are collectively referred to as "Green Crays" (*Panulirus versicolor*, *P. ornatus*, *P. homarus*, *P. penicillatus* and *P. polyphagus*). On the southern coast occurs *Jasus lalandii*, which is the commercial species of crayfish in south-eastern Australia but it is not of economic importance in this State.

The Swan River Prawn or School Prawn (*Metapenaeus dalli*) occurs on the west coast of this State and extends into Indonesian waters. In Exmouth Gulf and in Shark Bay two species of tropical prawns are caught commercially. These are the Tiger Prawn (*Penaeus esculentus*) and the Banana Prawn (*Penaeus merguensis*). The Western King Prawn of the south is *P. latisulcatus*.

The Blue Swimming Crab (*Portunus pelagicus*), at times plentiful in the estuaries of the Swan River and at Mandurah, is one of the common commercial crabs of Australia.

Two common species of crab are the Rock Crab (*Leptograpsus variegatus*) and the Ghost Crab (*Ocypode pygoides*). The Rock Crab scrambles among rocks and jetty piles of the west and south coasts, whereas the Ghost Crab digs near-vertical burrows at the edge of the beach and is endemic to the west coast.

Of the many other species of non-commercial crustaceans some groups have been recently monographed by scientific workers. These are the swimming crabs, mantis shrimps and pebble crabs.

Crustacea are also common in inland waters (see *Fauna of Inland Waters* earlier in this Part).

Spiders ⁽⁹⁾

Like most other invertebrate groups, the spiders are represented by a large number of genera and species and it is not possible at this stage to give an accurate picture of the relationships of the Western Australian fauna to the rest of Australia. Early work on the Western Australian spiders was restricted

(7) Written in collaboration with Dr. E. P. Hodgkin and Mrs. L. Marsh.

(8) Written in collaboration with Dr. R. W. George.

(9) Written in collaboration with Dr. B. Y. Main.

to the description and naming of species. Research now is centred on investigations of the biology of various species and the special adaptations of endemic forms to the particular conditions of the Western Australian environment. The most interesting of the spiders, when viewed from this aspect, are the burrowing groups, including primarily the Mygalomorphae ("trapdoor" spiders) and the Lycosidae (Wolf spiders). Some of these forms show special adaptations to semi-arid environments, to reduced food supply, and to flash-flooding, such adaptations being paralleled in many taxonomically unrelated genera. It is also of interest that some families, which in other parts of the world and in the wet forests of Australia are primarily web weavers and litter dwellers, are burrowers in the arid parts of Western Australia (and also in other dry parts of Australia). Such forms are essentially nocturnal and escape the unfavourable conditions of the day by remaining in their burrows and some species seal their burrows during the summer period.

Insects

The more important insect species occurring in Western Australia (particularly those of economic significance) are dealt with in Part 5 of this Chapter.

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PART 5—ENTOMOLOGY IN WESTERN AUSTRALIA

WITH PARTICULAR REFERENCE TO AGRICULTURE

(Contributed by C. F. H. Jenkins, M.A., Government Entomologist)

The entomological field in Western Australia is so vast and the number of active workers on the subject so few that much still remains to be learned about the insects found in this State. A wide range of environmental conditions exists, from the tropical north to the temperate south, and the geographical isolation of the State has allowed the development of numerous endemic forms. As may be expected, the insect fauna of the Kimberley Division shows closer affinities with that of North Queensland than with the lower half of the State. The central desert, which reaches the coast to the south along the Great Australian Bight and to the north along the Eighty Mile Beach, forms an effective barrier discernible in the distribution of flora, mammals, insects and birds.

Owing to the limitations of space no attempt has been made to cover all the various insect orders which occur in the State, but the economic importance of various groups and their influence on major agricultural industries have been outlined, and some of the more outstanding forms of general interest have been mentioned.

CLASS INSECTA (Insects)

Order Collembola (Springtails)

The Springtails include the Lucerne Flea (*Sminthurus viridis*) which was introduced into this State from eastern Australia in about 1910. It has spread to almost all the clover-growing areas in the South-West and is a very serious pasture pest. Partial control is exercised by a predatory mite, *Biscirus lapidarius*.

Order Orthoptera (Grasshoppers, Locusts, Cockroaches, Mantids, etc.)

The grasshoppers and locusts are represented by a large number of different species. The most important pest form is the Small Plague Grasshopper (*Austroicetes cruciata*). The normal habitat of this species lies roughly between the 10 in. and the 15 in. isohyets. For breeding it favours hard bare soil and as extensive areas once utilized for wheat growing have now reverted to grazing, these uncultivated tracts periodically give rise to serious grasshopper swarms, which menace the adjacent wheat lands. The Australian Plague Locust (*Chortoicetes terminifera*) so troublesome in other States occurs in Western Australia but not as a plague species. In the Kimberley the Yellow-winged Locust (*Gastrimargus musicus*), the Migratory Locust (*Locusta migratoria*) and the Spur-throated Locust (*Austracris guttulosa*) assume plague proportions, but in the southern agricultural districts they occur in the solitary phase only. The Praying Mantids (*Mantidae*) are represented by many different species. Their well-developed fore-limbs are admirably adapted for catching prey and, like their foliage-feeding relatives the Phasmids or leaf insects (*Phasmatidae*), their colouring harmonizes remarkably with the sticks and leaves on which they rest.

Order Isoptera (Termites)

The so-called White Ant is a serious pest in all parts of the State. Earth-dwelling types occur mainly, and among the most important species may be cited the large *Mastotermes darwiniensis* of the north and the widely distributed *Coptotermes acinaciformis*. The large mounds of the grass-eating *Nasutitermes triodiae* are characteristic of certain landscapes in the pastoral areas. Heavy annual losses are caused by termite damage and the use of such chemicals as Dieldrin, Aldrin, Chlordane and Creosote is recommended for the protection of timber structures.

Order Anoplura (Lice)

Indigenous species occur on birds and native mammals, and various introduced forms infest domestic poultry, horses, cattle and sheep.

Order Thysanura (Thrips)

This order is represented locally by a large number of native species as well as several introduced forms. The most serious native species is *Thrips imaginis* which may swarm in apple blossoms and seriously affect the crop setting.

Thrips tabaci, often called the Tobacco or Onion Thrips, is a carrier for the plant disease Spotted Wilt. Severe damage to tomato plants may result from this virus.

Order Hemiptera (Bugs, Aphis, Scale Insects)

This group contains a large number of pest species, many of them introduced. A serious vegetable pest is the Green Bug (*Nezara viridula*) which is partially controlled by an introduced wasp parasite, *Microphanurus basalis*. The native Rutherglen Bug (*Nysius vinitor*) may at times swarm on vegetables and fruit trees, but seems less serious in this State than on the other side of the continent. The Crusader bug (*Mictis profana*), so named because of the light-coloured St. Andrew's cross on the back of the adult, feeds normally on Acacias and other native plants, but it frequently invades cultivated areas and it may be troublesome to young citrus.

One native aphid (*Anomalaphis comperei*) has been recorded. The only two districts from which it has so far been collected are Albany and Karriale where it has been found infesting native peppermint (*Agonis flexuosa*). A point of interest about these occurrences is that the aphid were associated with a heavy Argentine Ant infestation in the area. Since the removal of the Ants, following Dieldrin spraying, no further aphid have been discovered.

Numerous introduced species occur as pests on vegetables, garden plants and fruit trees, e.g., *Myzus persicae* (peaches, potatoes, etc.), *Toxoptera aurantii* (citrus), *Brevicoryne brassicae* (cabbages, cauliflower, etc.), *Eriosoma lanigerum* (Woolly Aphis of apples). A recent record which may prove of some importance is *Aphis craccivora*. This insect carries a virus disease of subterranean clover known as "stunt."

Of the native coccids the gall-forming members of the genus *Apiomorpha* are among the most remarkable. The woody galls in which the female insects pass their days vary from small structures a fraction of an inch across to woody knobs the size of an apple. From an economic point of view, however, the various introduced scale insects demand most attention. Included in the list of pest species are the following:—

San Jose Scale (*Quadraspidiotus perniciosus*), which is a serious pest of apples.

Citrus Red Scale (*Aonidiella aurantii*), found mainly on citrus but with a wide host range.

Olive Scale (*Saissetia oleae*), found attacking citrus, stone fruits and garden shrubs.

White Wax Scale (*Ceroplastes destructor*), which is mainly a pest of citrus but which attacks many cultivated shrubs.

Soft Brown Scale (*Coccus hesperidum*), which has a wide host range but is of greatest importance on citrus.

Order Coleoptera (Beetles)

This order is the dominant one among existing insects and is represented in Western Australia by many and varied forms. The carnivorous ground beetles or Carabidae are widely distributed, one of the best-known species being the bright green Stink Beetle (*Calosoma schayeri*).

The Tiger Beetles (Cicindelidae) are of interest not only because of the metallic colouration seen in many forms but because of their association with the inland salt-lakes. The larvae are subterranean and may be collected by digging on the lake margins.

The Ladybirds (Coccinellidae) comprise a group of considerable economic importance and in addition to native species the State contains a number specially introduced to combat various scale insects and aphides. Among the best known of the introduced species are *Cryptolaemus montrouzieri* and *Leis conformis*. The Larvae of *Cryptolaemus* are covered with a whitish material which makes the insect superficially resemble the Mealy Bugs upon which it feeds. *Leis conformis* in conjunction with the wasp parasite *Aphelinus mali* plays an important role in combating the Woolly Aphis of apple trees. Destructive leaf-eating Ladybirds belonging to the genus *Epilachna* were until recently found only in the northern parts of the State where they attack vegetables, especially pumpkins and melons. In 1956, specimens of *Epilachna* were collected in Perth. Since then they have become established in several suburban areas, but how the introduction occurred is not known.

The Jewel Beetles (Buprestidae) contain some of the most colourful beetles to be found anywhere in the world. Western Australia is particularly rich in species and at times the beetles may be found in large numbers on flowering mallee and sand plain flora. One of the commonest is the metallic green *Stigmodera gratiosa*, and one of the largest is *Julodimorpha bakewelli*, measuring almost three inches in length. Although the beetle larvae are wood borers, closely resembling the "bardee" in appearance and habits, they are of little economic importance.

The Cockchafer or Scarabs (Scarabaeidae) are represented by a great diversity of forms. Several species may swarm on to flowering fruit trees and roses in the early summer and are popularly known as Spring Beetles. The bronze-coloured *Colymbomorpha lineata* is a common pest of apple trees during the blooming period and the Saddle-backed Beetle (*Phyllotocus ustulatus*) sometimes visits citrus blossoms in large numbers. An introduced species commonly known as the Black Beetle (*Heteronychus sanctaehelenae*) has gained a firm footing in the State and is a troublesome pest of lawns and turf. It is also growing in importance as a pest of vegetables in some areas. A native species *Colpochilodes* sp. has recently caused damage to cereal crops and clover pastures and is apparently increasing in certain clover districts in the southern portions of the State.

The Longicorn Beetles (Cerambycidae) are a group of wood-boring insects represented by a number of different species. They are often blamed for the death of forest eucalypts, although investigations have shown that heavy beetle infestations are usually secondary and that healthy trees are seldom seriously affected by the beetles. The larval stage of this group is the so-called "bardee", one time prized by the aborigines as food. They are not a pest of structural timber as they do not attack seasoned material.

The Leaf Beetles (Chrysomelidae) may superficially resemble Ladybirds in general appearance as some of them are rounded and quite brightly coloured. Two species have been introduced into the State for the purpose of combating St. John's Wort, a troublesome weed spreading in some districts. *Chrysomela gemellata* and *C. hyperici* were originally introduced into Australia from the South of France and liberated in Victoria with very satisfactory results. The local colonies were obtained from the latter source and have become established in several districts. In some situations a reduction in St. John's Wort can be attributed definitely to beetle activity, but in many areas the picture is obscure due to the extensive use of chemical sprays.

A common pest species in eastern Australia is the Pumpkin Beetle, *Aulacophora hilaris*. This beetle is found in the north of the State but does not extend into the cooler latitudes.

The Weevils (Curculionidae) are a very specialized group characterized by the presence of a rostrum or "snout" which bears the mouth and antennae. The genus *Baryopodus* (*Leptops*) contains a number of large greyish weevils, many of which breed in association with Acacias. One of the best known members of the family is *Catasarcus rufipes* which feeds on eucalypt foliage and may disfigure young street trees. The almost world-wide Rice Weevil (*Calandra oryzae*) is our principal pest of stored grain, but the Granary Weevil (*C. granaria*) also occurs.

Order Hymenoptera (Bees, Wasps, Ants)

The Saw Flies (Tenthredinidae) are represented locally by a number of native forms. The larvae of the genus *Perga* may often be seen in caterpillar-like clusters amongst the foliage of eucalypts. An introduced Saw Fly (*Caliroa limacina*) is a common pest on pear and plum trees. The smaller parasitic wasps (Ichneumonids and Chalcids and their allies) are well represented and play an important role in combating many insect pests. Some attack caterpillars, some aphids and scale insects and others insect eggs, so that without their aid the problem of pest control would be even more difficult than at present.

The ant fauna (*Formicidae*) of the State is extremely varied. One of the best-known native species is the Meat Ant or Mound Ant (*Iridomyrmex detectus*) which often nests on gravel paths and road-sides. Among the most remarkable of the local ants may be listed *Camponotus inflatus*, the Honey-pot Ant of the interior, and *Myrmecia regularis* of the karri forest area which has the frog *Metacrinia nichollsi* as a tolerated guest in its nest. The Honey-pot Ant derives its name from the fact that certain individuals in the nest store honey until their abdomens become inflated to the size of grapes. This honey is then regurgitated to other ants as required. These ants were once prized by the natives as a food delicacy.

Two important introduced ant pests are the Argentine Ant (*Iridomyrmex humilis*) and the Singapore Ant (*Monomorium destructor*). The Argentine Ant was once widespread in the metropolitan area, Albany and Bunbury, with several other country outbreaks. The insect has been reduced in recent years, however, as a result of a large-scale control campaign. A five-year control scheme against the Ant, with provision for an annual expenditure of £105,000 per annum was inaugurated in 1954. The scheme involved the spraying with Dieldrin of all known infested areas, which were originally estimated to cover approximately 25,000 acres. During the course of the campaign further outbreaks were discovered, giving an estimated total of 45,000 acres and, in consequence, a year's extension of the campaign was authorized by Parliament. As a result of this a total of over 44,000 acres have been sprayed and the Ant menace has been removed from the city and suburbs and most country districts. However, an area of almost impenetrable swamp country north of Perth still harbours the Ants. To prevent spread from this area

and to deal with any survivals or later introductions a "continuance scheme", financed from Consolidated Revenue, has been approved.

The Social Wasps (*Vespidae*) were, until recently, known only from the northern portion of the State. About 10 years ago, however, colonies of *Polistes variabilis* were located in various parts of the suburban area and they have now extended to some of the orcharding districts in the Darling Range. How the introduction occurred is not known.

The Burrowing Wasps, including the Sand Wasps (*Psammocharidae*), the Flower Wasps (*Thynnidae*), the Hairy Flower Wasps (*Scoliidae*) and Solitary Ants (*Mutillidae*) are well represented. The latter are, of course, not true ants but the wingless females bear a superficial resemblance to ants which is further accentuated by their ability to inflict a painful sting. The Flower Wasps are particularly numerous and winged males carrying wingless females are common around flowering plants in the early summer. Of the "Solitary Ants" the black and white *Ephutomorpha cribricollis* is the best known. Most of the wasps mentioned are beneficial, for they store caterpillars and other insects in mud nests and underground burrows to serve as food for the wasp grubs.

The majority of native bees are solitary forms although some, like the Colletidae, often choose a common site for nest burrowing and hundreds of tunnels may be located close to one another.

The Leaf-cutting Bees (*Megachilidae*) often attract notice from their habit of cutting circular pieces from rose leaves and other foliage for use in nest construction.

The only native social bees belong to the genus *Trigona* which does not occur in the southern portions of the State.

Order Neuroptera (Lacewings)

This order contains a number of useful insects, for many of the Neuropterous larvae feed upon scale insects and other pests. The family Myrmeleontidae has a number of large, rather Dragonfly-like species, the larval stages of which build conical sand pits and are commonly known as Ant Lions. Amongst the most remarkable of the local Lacewings are two members of the family Nemopteridae in which the hind wings are greatly modified. In the genus *Croce* they are long and thread-like and in the Spoon-winged Lacewing (*Chasmoptera hutti*) they are spoon-shaped or paddle-shaped.

Order Diptera (Flies)

This group contains a vast number of species, many of which are of major economic importance.

The Mosquitoes are well represented, the commonest species being the Domestic Mosquito (*Culex fatigans*) and the Yellow-fever Mosquito (*Aedes aegypti*). The latter species is the carrier for Dengue fever in the northern portion of the State. The Anophelines are represented by the widely distributed *Anopheles annulipes* and several much rarer forms. *A. annulipes*, together with *Aedes alboannulatus*, have played an important part in the spread of the rabbit virus *Myxomatosis*.

Of the introduced flies, those causing most trouble are the Australian Sheep Blowfly (*Lucilia cuprina*) and the Mediterranean Fruit Fly (*Ceratitis capitata*). The Buffalo Fly (*Siphona exigua*) is a serious stock pest in the Kimberley Division of the State, but so far has not become established in the cattle areas of the south. It is believed to have originally reached Australia on buffaloes introduced from Asia.

The common House Fly (*Musca domestica*) is widespread as is also the native Bush Fly (*Musca sorbens*). Despite its common occurrence and extremely wide range, the natural breeding habits of the latter fly are not known.

Modern insecticides such as DDT, Dieldrin and the various organic phosphates gave outstanding control of various fly pests for several years. The widespread development of resistance in both housefly and blowfly populations has greatly complicated the matter, however, and drawn attention to the importance of preventive measures, such as sanitation in the case of houseflies, and the Mules operation and crutching in the case of the sheep blowfly.

The March flies (*Tabanidae*) are well represented but, although their blood-sucking habits render them annoying, both to livestock and humans, they are not a serious pest.

Of the many useful flies may be mentioned the Blowfly-like Tachinids which parasitize caterpillars, grasshoppers and other pests and the Bee Flies (*Bombyliidae*) which parasitize the eggs of other insects. The maggots of the Bombylid Fly (*Cyrtomorpha flaviscutellaris*) are commonly found in the egg pods of the Small Plague Grasshopper (*Austroicetes cruciata*).

Order Siphonaptera (Fleas)

A number of introduced as well as native fleas occur in this State. *Echidnophaga myrmecobii*, found originally on native mammals, is a very common parasite of rabbits in the drier parts of the State. The Fowl Stickfast Flea (*E. gallinacea*) closely resembles the former species but is mainly a pest of poultry and domestic animals. The Rat Flea (*Xenopsylla cheopis*), the Human Flea (*Pulex irritans*) and the Cat and Dog Fleas (*Ctenocephalides felis* and *C. canis*) are among the most important introduced species.

Order Lepidoptera (Moths, Butterflies, etc.)

The primitive Swift Moths (Hepialidae) are represented locally by a number of very beautiful forms. The larvae are wood borers but do not occur in sufficient numbers to constitute a serious forestry pest. Several large and striking members of the genus *Charagia* occur in the lower South-West.

A small native moth belonging to the family Crambidae and commonly known as the Webworm Moth (*Talis pedionoma*) is a serious pest of cereal crops (excepting oats) and grass pastures. It is controlled by planting on clean fallow, but the recent trend towards ley farming has greatly favoured the pest.

A family of considerable interest to the orchardist is the Eucosmidae, for to this group belong the Codling Moth (*Cydia pomonella*) and the Oriental Fruit Moth (*C. molesta*). Outbreaks of Codling Moth have occurred on a number of occasions, but drastic eradication measures have so far prevented this major apple pest from becoming permanently established and have given Western Australia the distinction of being the only large apple-producing country where the moth is not a major problem.

One of the best represented families is the Noctuidae (Cutworms) which contains several important pests. Included under this heading are the Climbing Cutworm (*Heliothis punctigera*), the Common Cutworm (*Agrotis munda*) and the Army Worm (*Persectania ewingii*). One of the most remarkable members of the group is the Whistling Moth (*Hecatesia fenestrata*). The male of this species is active just at sunset and makes a loud clicking noise during its fast circling flight. The Orange Piercing Moth (*Othreis materna*) also belongs to this group and causes heavy losses in citrus fruit grown around pastoral homesteads in the Kimberley and the North-West. In almost all cases where moths and butterflies are regarded as pests it is only the caterpillar stage which is destructive. The Orange Piercing Moth, however, has a rasp-like proboscis capable of piercing orange and citrus skins and then sucking up the juice. Fortunately the creatures do not normally range to the citrus areas of the South-West.

Other common moth pests are the Cabbage Moth (*Plutella maculipennis*), the Potato Moth (*Gnori-moschema operculella*) and the Apple Looper (*Chloroclystis laticostata*).

The beautiful *Carthaea saturnioides* with its large eye spots on the wings superficially resembles the Emperor Moths. Its range is restricted to south-west Australia and the creature is much prized by collectors.

The butterfly fauna of the State lacks many large and showy forms. Some of the northern species such as *Hypolimnas bolina nerina* are quite colourful but the State has nothing to compare with the conspicuous and beautiful species found in the tropics of eastern Australia.

The Blues (Lycaenidae) are well represented and the association of many larvae with ant nests renders the group a particularly interesting one.

The Skippers (Hesperiidae) are relatively drab-coloured butterflies with strong powers of flight. Over 20 species are recorded from the State and some forms are endemic to the South-West.

Only one butterfly is of economic importance and that is the introduced Small Cabbage White (*Pieris rapae*) which reached this State in 1943. It attacks cabbages, cauliflowers and related plants as well as one or two other strong-tasting herbs such as watercress. The butterfly belongs to the whites, or Pieridae, which group contains a number of native species. Several members of this family, including the introduced Cabbage White, display extraordinary powers of flight and the native Caper White (*Anaphaeis java*) has been observed to carry out mass migrations of remarkable proportions on the eastern side of the continent.

CLASS ARACHNIDA (Spiders, Mites, Ticks, etc.)

Creatures grouped under the above heading are, of course, not true insects and will be dealt with only very briefly. Several forms are of considerable economic importance, as for example the Cattle Tick (*Boophilus microplus*) and the Fowl Tick (*Argas persicus*). The Cattle Tick is confined to the Kimberley Division and its range corresponds roughly with that of the Buffalo Fly. The Ornate Kangaroo Tick (*Amblyomma triguttatum*) is a common species. It is occasionally collected as an accidental parasite on domestic animals and man.

The most serious mite pest is the Red-legged Earth Mite (*Halotydeus destructor*) which is very destructive to young legumes and other seedlings. It may be particularly troublesome on subterranean clover pastures.

The spiders constitute a large group, most of which are useful on account of their insectivorous habits. The only local spider known to be really dangerous is the Red-backed Spider (*Latrodectus hasseltii*). This species, whose bite may even prove fatal, is easily recognized by the conspicuous red streak down the centre of the abdomen.

Scorpions of various kinds are widely distributed over the State and the larger ones may be able to inflict a painful sting. There are few, if any, records however of serious results following a scorpion "bite" and, generally speaking, the group is of little local importance.

FURTHER SOURCES OF INFORMATION

The difficulties confronting anyone trying to review in a few pages the entomological fauna of such a large State as Western Australia will be better appreciated if it is remembered that in the *Western Australian Year-Book* for 1898-99 the late A. M. Lea expressed the opinion that there were about 30,000 species of insects indigenous to this State. Many additions have been made in the last fifty years and one is faced with the problem of deciding which creatures warrant special mention and which must be excluded for lack of space. The general reader interested in consulting other short reviews of the local insect fauna is referred to A. M. Lea's article in the 1898-99 Year Book under the title of "The Insects of Western Australia"; in the Year Book for 1900-01 the late H. M. Giles wrote "A Glimpse of Western Australian Entomology."

Two short summaries have also appeared in conjunction with science conferences in this State. The Handbook and Review published for the 1926 meeting of the Australasian Association for the Advancement of Science contained an article by L. J. Newman and the Handbook for the 1947 meeting of the Australian and New Zealand Association for the Advancement of Science printed a short summary of the local insects by L. Glauert.

Readers interested in more technical summaries are referred to Professor G. E. Nicholl's "The Composition and Biographical Relation of the Fauna of Western Australia" (*A.N.Z.A.A.S.*, Vol. XXI, 1933, p. 93), the relevant volumes of *Die Fauna Sudwest-Australiens* by Michaelsen and Hartmeyer, 1907-1930, and the report of the Swedish expedition under Dr. E. Mjöberg.

More detailed information relating to the forms of economic importance will be found in the publications of the Western Australian Department of Agriculture.

Books covering the general aspects of Australian Entomology include:—

- BARRETT, C. and BURNS, A. N. (1951)—*Butterflies of Australia and New Guinea*. N. H. Seward Pty. Ltd., Melbourne. 187 pp.
- McKEOWN, K. C. (1945)—*Australian Insects*. An Introductory Handbook. Published by R.Z.S. of N.S.W., Sydney. 303 pp.
- TILLYARD, R. J. (1926)—*The Insects of Australia and New Zealand*. Angus and Robertson Ltd., Sydney. 560 pp.
- WATERHOUSE, G. A. (1932)—*What Butterfly is That*. A Guide to the Butterflies of Australia. Angus and Robertson Ltd., Sydney. 291 pp.

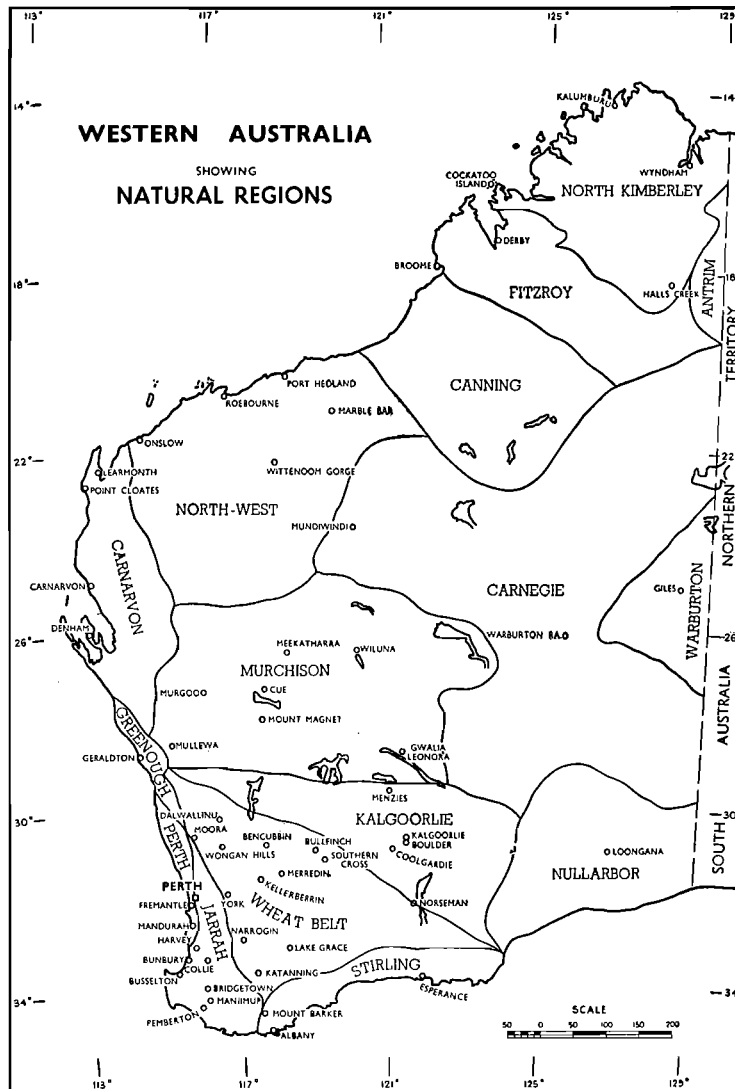
PART 6 — NATURAL REGIONS

Contributed by

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The physical features, geology, climate, flora and fauna of Western Australia have been outlined earlier in this Chapter and the subdivision of the State into "natural regions" may now be considered. A Natural Region is one clearly marked off from neighbouring regions by topographical, geological, climatic, or biological conditions, or by combinations of these, so that, as far as Man's activities are concerned, they have different economic possibilities. The subdivision of Western Australia into Natural Regions (see map below) has been described by E. de C. Clarke (*Jour. Roy. Soc. West. Aust.*, vol. XII, pp. 117-132) and a summary of the characteristics of these different Natural Regions (reprinted by courtesy of the University of Western Australia Press from Clarke, Prider, and Teichert: *Elements of Geology for Western Australian Students*) is given in the accompanying table.



NATURAL REGIONS OF WESTERN AUSTRALIA
(after E. de C. Clarke, *Jour. Roy. Soc. of West. Aust.*, vol. XXII)

CHARACTERISTICS OF THE NATURAL REGIONS OF WESTERN AUSTRALIA

NATURAL REGION	TOPOGRAPHY	GEOLOGY	RAINFALL	WATER SUPPLY †	VEGETATION, ETC.
ANTIDMI (geographic)	Tableland	Cambrian sediments and lavas	Summer, monsoonal 20 in. to 40 in.	Catchments, wells and artesian	Grassland and savannah
NORTH KIMBERLEY (geographic)	Dissected stony tableland	Younger Pre-Cambrian	Summer, monsoonal 30 in. or more	Streams, springs, catchments	Luxuriant in valleys, sparse on tableland
FITZROY (chief river)	Very wide valleys and low hills	Palaeozoic (largely Permian)	Summer, monsoonal 20 in. to 30 in.	Catchments and artesian	Grassland and savannah
CANNING (A. W. Canning, surveyor and explorer)	Sand ridges and table-top hills	Palaeozoic and Mesozoic	Summer, 15 in. or less	Springs, pools, artesian water ? (undeveloped)	"Spinifex" (species of <i>Triodia</i>) and desert shrubs
CARNEGIE (David Carnegie, explorer)	Sand ridges and table-top hills	? Tertiary (sandy) and ? Younger Pre-Cambrian	Variable and unreliable, probably about 5 in.	Catchments	"Spinifex" and desert shrubs
WARBURTON (Warburton Range)	Hills (some over 3,000 feet) separated by sandy country	Older Pre-Cambrian	Variable and unreliable; perhaps about 5 in. Probably better than Carnegie Region owing to high hills	Catchments, some springs	"Mulga" (species of <i>Acacia</i>) and "Spinifex"
NORTH-WEST (common usage)	Rugged hills; rivers in well-defined valleys	Younger and Older Pre-Cambrian. Many economic minerals	Variable, unreliable, 15 in. or less	Wells, catchments, pools	"Spinifex," few shrubs and trees
MURCHISON (common usage)	Ridge hills and breakaways. Rivers in shallow beds. Salt "lakes"	Older Pre-Cambrian. Economic minerals especially gold	Summer or winter, unreliable, 10 in. or less	Wells (potable groundwater)	"Mulga." Eucalypts scarce except along rivers

KALGOORLIE (chief town)	...	Less hilly than Murchison. Salt "lakes." No defined water-courses except salt lake system	Like Murchison Region	Mainly winter. Unreliable. 10 in. or less	Catchments. Ground water too salt for use	Eucalypt forest, especially Salmon Gum (<i>E. salmonophloia</i>), Gimlet (<i>E. salubris</i>) and Red Morrel (<i>E. longicornis</i>)
WHEAT BELT (common usage)	...	Same as Kalgoorlie Region	Older Pre-Cambrian, but few "greenstones"	Winter, reliable, 10 in. to 20 in.	Similar to Kalgoorlie Region, but ground water potable in many places; therefore wells frequent	Eucalypt forest — Salmon Gum, Gimlet, and Morrel
JARRAH (chief timber)	...	More dissected than Wheat Belt Region, especially near Darling Scarp	Like Wheat Belt Region but there is an extensive cuirass of laterite	Winter, reliable, 25 in. to 40 in.	Streams and springs	Forest of Jarrah (<i>E. marginata</i>), Wandoo (<i>E. retundata</i>), Karri (<i>E. diversicolor</i>) and Marri (<i>E. calophylla</i>)
CARNARVON (chief town)	...	Elevated plain with table-top hills	Palaeozoic, Mesozoic, Tertiary and later	Summer or winter; very unreliable; about 10 in.	Artesian in many places. Catchments, pools	Sparse scrub in north, denser in south
GREENOUGH (river)	...	Sandstone tableland	Mesozoic and older	Winter, 15 in. to 20 in.	Springs, wells and catchments	Scrub
PERTH (chief town)	...	Coastal plain	Mesozoic and later	Winter, reliable; 20 in. to 35 in.	Springs, wells, artesian	Scrub, swamp and forest
STIRLING (prominent range)	...	Undulating tableland with abrupt ranges	Siliceous Tertiary sediments with inliers of younger and older Pre-Cambrian	Winter, 15 in. or less	Catchments, stream water generally too salt for use	Heath and swamp
NULLARBOR (geographic)	...	Tableland, no hills	Calcareous Tertiary sediments	Winter, 10 in. or less	Catchments. Sub-artesian	Poor grassland

† "Wells" refers to those that draw on ground water, but are not artesian. "Catchments" refers to water collected on the surface—naturally in gnamma holes, artificially by conserving the run-off. "Pools" refers to pools in watercourses and includes rock holes.

CHAPTER III—CONSTITUTION AND GOVERNMENT

Western Australia is one of the six federated sovereign States which, together with the Northern Territory and the Australian Capital Territory, constitute the Commonwealth of Australia. Thus, in addition to having its own Parliament and executive government, it is represented in the federal legislature. As well as government at the Federal and State levels, there is a third system, that of local government, which functions through City Councils, Town Councils and Shire Councils.

OUTLINE OF CONSTITUTIONAL DEVELOPMENT

A Legislative Council was established in Western Australia shortly after its foundation as a Crown Colony and sat for the first time in February, 1832. The Council was non-elective and consisted of the Governor and four senior officials. In 1839, membership was increased to nine when the Governor nominated four unofficial members. Additional appointments were made from time to time until the dissolution of the nominee Legislative Council in 1870 with the inauguration of representative government as provided for in the Australian Colonies Government Act of 1850. This Act, which enabled the establishment of representative governments in other Australian Colonies, withheld the privilege from Western Australia until such time as the Colony should be able to defray all costs of government from its own revenues, and it was not until 1870 that it was felt that Western Australia was able to satisfy this condition. The new Legislative Council, elections for which took place in October of that year, consisted of twelve elected members, three nominees and three officials. The number of members of the Council was increased in 1874 to 21, of whom 14 were elected, in 1882 to 24, of whom 16 were elected and in 1886 to 26, comprising 17 elected members, five nominees and four officials.

Following the passage by the Legislative Council of a Constitution Act in 1889 and subsequent representations made in London by delegates sent from the Colony, responsible government was granted to Western Australia by an Imperial Act assented to on the 15th August, 1890. Provision was made for the establishment of a Parliament of two Houses, to be known as the "Legislative Council" and the "Legislative Assembly," to replace the old Council. Proclamation of responsible government was made in Perth on the 21st October, 1890 and election of the thirty members of the Legislative Assembly took place in November and December. The fifteen members of the Legislative Council were nominated by the Governor, as provided in the Constitution Act, and the Parliament was officially opened on the 30th December, 1890. The Constitution Act of 1889, while prescribing a Council which was originally nominative, contained a provision that, after the expiration of six years or on the population of the Colony reaching 60,000, the Council should become fully elective. The required population was attained in 1893 and an amendment to the Act in that year enabled the election of 21 members to the Legislative Council, and at the same time increased the Legislative Assembly to 33 members. By an amendment of 1899, membership of the Legislative Council was raised to 30 and of the Legislative Assembly to 50 and no change in these numbers has since been made.

On the 1st January, 1901, Western Australia and the five other Australian Colonies were federated under the name of the "Commonwealth of Australia," authority for the union having been given by the Commonwealth of Australia Constitution Act which was passed by the British Parliament in 1900. By a provision of the Constitution Act the constituent parts of the Commonwealth previously designated "Colonies" became known as "States." Under the Constitution, powers are divided between the Parliaments of the Commonwealth and of the States by conferring power in respect of specific subjects on the Commonwealth either exclusively or jointly with the States, leaving the remaining powers to the States.

Procedure in both Commonwealth and State Parliaments is based on British practice. The legislatures consist of the Sovereign, represented by the Governor-General of Australia or the Governor of the State, and the elected members. In the field of executive government the British "Cabinet" system has also been adopted. The members of the Cabinets must hold seats in the legislature as elected members. The Cabinet is responsible to the Parliament and continues in office only while holding the confidence of the Parliament. All Cabinet Ministers are members of the Executive Council, the supreme group of advisers to the Crown, and the Cabinet thus provides the executive government of the Commonwealth or the State. The Executive Council is presided over by the Governor-General of Australia or the Governor of the State and at its meetings, which are formal and official in character, the decisions

of the Cabinet are given legal form, appointments are made, resignations accepted, proclamations issued and regulations approved.

VICE-REGAL REPRESENTATION

The Governor-General of Australia

Under the Commonwealth Constitution, ultimate executive power is vested in the Crown and is exercised by the Governor-General as the direct representative of the Sovereign. Appointment to the office is made by the Crown after consultation with the Prime Minister of the Commonwealth. The present Governor-General is His Excellency the Right Honourable Viscount De L'Isle, V.C., P.C., G.C.M.G., K.St.J., who was sworn in on the 3rd August, 1961. During the absence from Australia of the Governor-General it is usual for the senior among the State Governors to be appointed Administrator.

The Governor of Western Australia

The Governor of Western Australia is the personal representative of the Sovereign in the State and exercises the powers of the Crown in State matters. He is the titular head of the Government and performs the official and ceremonial functions attaching to the Crown. The Governor of Western Australia is His Excellency Lieutenant-General Sir Charles Henry Gairdner, K.C.M.G., K.C.V.O., K.B.E., C.B. In the event of the Governor's absence from Western Australia the Lieutenant-Governor of the State is appointed Administrator. The present Lieutenant-Governor is the Honourable Sir John Patrick Dwyer, K.C.M.G. If there is no Lieutenant-Governor it is customary for the Chief Justice to be appointed Administrator.

The last Governor of Western Australia as a Colony was Lieutenant-Colonel Sir Gerard Smith, K.C.M.G., whose term of office expired on the 29th June, 1900 and the first Governor of the State was Captain Sir Arthur Lawley, K.C.M.G., who was sworn in on the 1st May, 1901. The names and dates of assumption of office of Governors, Lieutenant-Governors and Administrators from that time are shown in the following list. The Honourable Sir John Dwyer, K.C.M.G., was commissioned as Lieutenant-Governor on the 8th April, 1952 and since that date has performed the functions of Administrator of the State during absences of the Governor.

GOVERNORS, LIEUTENANT-GOVERNORS AND ADMINISTRATORS FROM 1901 (a)

Name and Office	Date of Assumption of Office
Captain Sir Arthur Lawley, K.C.M.G., Governor	1901—1st May
Sir Edward Stone, Administrator	1902—14th August
Admiral Sir Frederick Bedford, G.C.B., Governor	1903—24th March
Sir Edward Stone, Administrator	1909—23rd April
Sir Gerald Strickland, K.C.M.G., Governor	1909—31st May
Sir Edward Stone, Administrator	1913—4th March
Major-General Sir Harry Barron, K.C.M.G., C.V.O., Governor	1913—17th March
Sir Edward Stone, K.C.M.G., Administrator	1917—27th February
Rt. Hon. Sir William Ellison-Macartney, P.C., K.C.M.G., Governor	1917—9th April
Sir Francis Newdigate-Newdegate, K.C.M.G., Governor	1920—9th April
Sir Robert McMillan, Administrator	1924—17th June
Colonel Sir William Campion, K.C.M.G., D.S.O., Governor	1924—28th October
Sir Robert McMillan, K.C.M.G., Lieutenant-Governor and Administrator	1929—7th January
Colonel Sir William Campion, K.C.M.G., D.S.O., Governor	1929—7th May
Sir John Northmore, K.C.M.G., Administrator	1931—9th June
Sir John Northmore, K.C.M.G., Lieutenant-Governor and Administrator	1932—30th June
Hon. Sir James Mitchell, K.C.M.G., Lieutenant-Governor	1933—11th July
Hon. Sir James Mitchell, G.C.M.G., Governor	1948—5th October
Hon. Sir John Dwyer, K.C.M.G., Administrator	1951—1st July
Hon. Albert Asher Wolff, Administrator	1951—7th August
Hon. Sir John Dwyer, K.C.M.G., Administrator	1951—28th August
Lieutenant-General Sir Charles Gairdner, K.C.M.G., K.C.V.O., K.B.E., C.B., Governor	1951—6th November

(a) The names of the successive holders of these offices from the foundation of the Colony are shown on page 65 of the *Official Year Book of Western Australia*, 1957, No. 1—*New Series*.

THE FEDERAL PARLIAMENT

The legislative power of the Commonwealth is vested in a Federal Parliament which consists of Her Majesty the Queen (represented by the Governor-General), a Senate and a House of Representatives. Subject to the Constitution, the Commonwealth Parliament is empowered to make laws concerning, among other things, defence, external affairs, customs and excise, trade and commerce with other countries and among the States, taxation, borrowing of money on public credit, currency and coinage, banking, insurance, navigation, fisheries, quarantine, posts and telegraphs, census and statistics, immigration, naturalization and aliens, copyrights and trade marks, bankruptcy, marriage, divorce and matrimonial causes, social services, and conciliation and arbitration for the prevention and settlement of industrial disputes extending beyond the limits of any one State. The Constitution provides that, when a law of a State is inconsistent with a law of the Commonwealth, the Commonwealth law shall prevail and the State law shall, to the extent of the inconsistency, be invalid.

The qualifications necessary for membership of the Commonwealth Parliament and for voting at federal elections are described in the *Official Year Book of the Commonwealth of Australia*.

The payment of allowances to Senators and Members of the House of Representatives is provided for in the Constitution and a superannuation scheme is established under the provisions of the Parliamentary Retiring Allowances Act of 1948.

The Senate

The Senate consisted originally of 36 members, six Senators being returned from each State. The Parliament is authorized by the Constitution to increase or decrease the number of members. The growth of the population since Federation having been such as to warrant a considerable enlargement of the Parliament, a Representation Act was passed in 1948 to provide for increased membership by raising from six to ten the number of Senators from each State. At the same time the preferential system of counting of votes in elections for the Senate was altered by the Commonwealth Electoral Act to one of proportional representation, a summarized description of which is given in the *Official Year Book of the Commonwealth of Australia*, No. 38, pages 82-83.

Members are elected on the basis of adult suffrage by the people of the State which they represent and enrolment of qualified electors and voting at elections are compulsory. The term of office of a Senator is normally six years. One-half of the members retire at the end of every third year and are eligible for re-election.

Federal parliamentary elections were held on the 22nd November, 1958. The Western Australian membership of the Senate before the election and at the 31st December, 1960 is shown in the following table.

WESTERN AUSTRALIAN MEMBERS OF THE SENATE (a)

Before Election of 22nd November, 1958			At 31st December, 1960 (a)		
Name	Political Party	Due Date of Retirement	Name	Political Party	Due Date of Retirement
		30th June :			30th June :
Cooke, J. A.	A.L.P.	1959	Branson, G. H.	Lib.	1965
Drake-Brockman, T.C.			Cant, H. G. J.	A.L.P.	1965
D.F.C.	C.P.	(b)	Cooke, J. A.	A.L.P.	1965
Fraser, Hon. J. M.	A.L.P.	1959	Drake-Brockman, T.C.		
Harris, J.	A.L.P.	1959	D.F.C.	C.P.	1965
Scott, M. F.	Lib.	1959	Scott, M. F.	Lib.	1965
Paltridge, Hon. S. D.	Lib.	1962	Paltridge, Hon. S. D.	Lib.	1962
Robertson, Agnes R.	C.P.	1962	Robertson, Agnes R.	C.P.	1962
Tangney, Dorothy M.	A.L.P.	1962	Tangney, Dorothy M.	A.L.P.	1962
Vincent, V. S.	Lib.	1962	Vincent, V. S.	Lib.	1962
Willesee, D. R.	A.L.P.	1962	Willesee, D. R.	A.L.P.	1962

A.L.P. = Australian Labor Party. C.P. = Country Party. Lib. = Liberal Party.

(a) See *Appendix*. (b) Date of retirement, 21st November, 1958; filling vacancy caused by death of Senator the Hon. H. S. Seward on 23rd July, 1958 until date of the election.

The House of Representatives

State membership of the House of Representatives is on a population basis with the proviso that each State shall have at least five members. The Constitution provides further that the number of members of the House of Representatives shall be, as nearly as practicable, double the number of Senators. With the enlargement of the Senate from 36 to 60 members, the membership of the House of Representatives was increased, from the date of the 1949 elections, from 74 to 121, not including a member for the Australian Capital Territory, which achieved representation for the first time at this election, and a member for the Northern Territory, which had been represented since 1922. Western Australia's population growth had been such as to necessitate an increase in representation from five to eight, and this number was raised to nine in 1955 as a result of a redistribution following the Census of the 30th June, 1954. At the same time, the total number of members of the House of Representatives was increased to 122, excluding the two members for the Territories.^(a)

Members are elected for the duration of the Parliament, which is limited to three years, by the people of the electorate which they represent. Enrolment of qualified persons and voting, which is on the preferential system, are compulsory.

The following table shows the Western Australian membership of the House of Representatives before the election of the 22nd November, 1958 and at the 31st December, 1960.

WESTERN AUSTRALIAN MEMBERS OF THE HOUSE OF REPRESENTATIVES (a)

Electorate	Before Election of 22nd November, 1958		At 31st December, 1960 (a)	
	Name	Political Party	Name	Political Party
Canning	Hamilton, L. W.	C.P.	Hamilton, L. W.	C.P.
Curtin	Hasluck, Hon. P. M. C.	Lib.	Hasluck, Hon. P. M. C.	Lib.
Forrest	Freeth, G.	Lib.	Freeth, Hon. G.	Lib.
Fremantle	Beazley, K. E.	A.L.P.	Beazley, K. E.	A.L.P.
Kalgoorlie	Johnson, Hon. H. V.	A.L.P.	Browne, P. G.	Lib.
Moore	Leslie, H. A.	C.P.	Halbert, H. V.	Lib.
Perth	Chaney, F. C.	Lib.	Chaney, F. C.	Lib.
Stirling	Webb, C. H.	A.L.P.	Cash, E. D.	Lib.
Swan	Cleaver, R.	Lib.	Cleaver, R.	Lib.

A.L.P. = Australian Labor Party. C.P. = Country Party. Lib. = Liberal Party.

THE STATE PARLIAMENT

The Crown, represented by the Governor, and the Parliament, comprising a Legislative Council and a Legislative Assembly, constitute the legislature of Western Australia.

Executive government is based, as in the case of the Commonwealth and in other States, on the system which evolved in Great Britain in the eighteenth century and which is generally known as the "Cabinet" system. The Cabinet consists of Ministers of the Crown chosen for the Ministry from members of Parliament belonging to the political party, or coalition of parties, which is in the majority in the Legislative Assembly. The Constitution requires that at least one of the Ministers be selected from members of the Legislative Council. In Western Australia, as in the other Australian States, the office of principal Minister is designated "Premier."

Since 1890, when responsible government was granted to Western Australia, there have been 23 separate Ministries as shown in the following table. No organized political party existed in the Colony until the formation of a Labour party in the 1890's. A Labour Ministry assumed office in 1904. As no previous Ministry had a specific party designation, the table has been annotated accordingly.

(a) See *Appendix*.

MINISTRIES FROM 1890

Name of Premier	Political Party	Date of Assumption of Office	Duration		
			Years	Months	Days
Forrest	(a)	1890—29th December	10	1	17
Throssell		1901—15th February	—	3	12
Leake		—27th May	—	5	25
Morgans		—21st November	—	1	2
Leake		—23rd December	—	6	8
James	Labour	1902—1st July	2	1	9
Daglish		1904—10th August	1	—	15
Rason		1905—25th August	—	8	12
Moore		1906—7th May	4	4	9
Wilson		1910—16th September	1	—	21
Scaddan		1911—7th October	4	9	20
Wilson		1916—27th July	—	11	1
Lefroy		1917—28th June	1	9	20
Colebatch		1919—17th April	—	1	—
Mitchell		—17th May	4	10	30
Collier		1924—16th April	6	—	8
Mitchell		1930—24th April	3	—	—
Collier		1933—24th April	3	3	27
Willcock		1936—20th August	8	11	11
Wise		1945—31st July	1	8	1
McLarty	L.C.L. and C.P. (coalition)	1947—1st April	5	10	22
Hawke		1953—23rd February	6	1	10
Brand		1959—2nd April	In office at 31st December, 1960 (b)		

C.P. = Country Party. L.C.L. = Liberal and Country League. Nat. = Nationalist.

(a) No specific party designation. (b) See *Appendix*.

The Ministry in office at the 31st December, 1960 was constituted on the 2nd April, 1959 and the names of its members and the portfolios held by them are shown in the following list.

THE MINISTRY AT 31ST DECEMBER, 1960 (a)

Name of Minister	Title of Office
Hon. David Brand, M.L.A.	Premier, Treasurer and Minister for Tourists
Hon. Arthur Frederick Watts, C.M.G., M.L.A.	Deputy Premier, Minister for Education and Electricity, and Attorney-General
Hon. Charles Walter Michael Court, O.B.E., M.L.A.	Minister for Industrial Development, Railways and the North-West
Hon. Crawford David Nalder, M.L.A.	Minister for Agriculture
Hon. Gerald Percy Wild, M.B.E., M.L.A.	Minister for Works and Water Supplies
Hon. Arthur Frederick Griffith, M.L.C.	Minister for Mines and Housing, and Leader of the Government in the Legislative Council
Hon. William Stewart Bovell, M.L.A.	Minister for Lands, Forests and Immigration
Hon. Charles Collier Perkins, M.L.A.	Minister for Transport, Police, Labour and Native Welfare
Hon. Ross Hutchinson, D.F.C, M.L.A.	Chief Secretary and Minister for Health and Fisheries
Hon. Leslie Arthur Logan, M.L.C.	Minister for Local Government, Town Planning and Child Welfare

(a) See *Appendix*.

The right to vote at parliamentary elections was extended to women by the Constitution Acts Amendment Act of 1899 and membership of either House was provided for by the Parliament (Qualification of Women) Act, 1920. The first woman member of any Australian Parliament was Mrs. Edith Dircksey Cowan, O.B.E., who was elected to the Legislative Assembly in March, 1921 as member for West Perth. Mrs. A. F. G. (later Dame Florence) Cardell-Oliver, M.L.A. for Subiaco, became the first woman Cabinet Minister in Australia when she joined the McLarty Ministry in 1947.

Payment of members was introduced in 1900 by a Payment of Members Act and a superannuation fund is established under the Parliamentary Superannuation Act of 1948, which came into operation on the 1st January, 1949.

The Legislative Council

The Legislative Council consists of 30 members, each of the ten Electoral Provinces into which the State is divided being represented by three members. Election is for a term of six years and one-third of the members retire every two years.

The qualifications for a candidate for election to the Legislative Council are that he or she shall be at least 30 years of age and free from legal incapacity, shall have resided in Western Australia for a minimum of two years, be a natural-born British subject or have been naturalized for five years and resident in the State during that period. A member of the Legislative Assembly, a Judge of the Supreme Court, a minister of religion, an undischarged bankrupt or a debtor against whose estate there is a subsisting order in bankruptcy may not be elected to the Legislative Council.

To qualify as an elector a person must be at least 21 years of age and not subject to any legal incapacity, be a natural-born or naturalized British subject resident in Western Australia for six months, and possess certain property qualifications relating to freehold, leasehold or householder occupancy.

Preferential voting applies to Council elections and voting is not compulsory.

The following table shows the membership of the Legislative Council at the 31st December, 1960.

MEMBERS OF THE LEGISLATIVE COUNCIL AT 31ST DECEMBER, 1960

Name	Electoral Province	Political Party
DUE TO RETIRE IN 1962 (a)		
Cunningham, Hon. J. M. A.	South-East	L.C.L.
Davies, Hon. E. M.	West	A.L.P.
Diver, Hon. L. C.	Central	C.P.
Heenan, Hon. E. M.	North-East	A.L.P.
Jeffery, Hon. G. E.	Suburban	A.L.P.
Jones, Hon. A. R.	Midland	C.P.
MacKinnon, Hon. G. C.	South-West	L.C.L.
Strickland, Hon. H. C.	North	A.L.P.
Thomson, Hon. J. M.	South	C.P.
Watson, Hon. H. K.	Metropolitan	L.C.L.
DUE TO RETIRE IN 1964		
Abbey, Hon. C. R.	Central	L.C.L.
Bennetts, Hon. G.	South-East	A.L.P.
Griffith, Hon. A. F.	Suburban	L.C.L.
Hall, Hon. W. R.	North-East	A.L.P.
Hislop, Hon. J. G., M.B., Ch.B., F.R.C.P., F.R.A.C.P.	Metropolitan	L.C.L.
Lavery, Hon. F. R. H.	West	A.L.P.
Loton, Hon. A. L.	South	C.P.
Murray, Hon. J.	South-West	L.C.L.
Simpson, Hon. C. H.	Midland	C.P.
Wise, Hon. F. J. S.	North	A.L.P.
DUE TO RETIRE IN 1966		
Baxter, Hon. N. E.	Central	C.P.
Garrigan, Hon. J. J.	South-East	A.L.P.
Hutchison, Hon. Ruby F.	Suburban	A.L.P.
Logan, Hon. L. A.	Midland	C.P.
Mattiske, Hon. R. C.	Metropolitan	L.C.L.
Teahan, Hon. J. D.	North-East	A.L.P.
Thompson, Hon. R.	West	A.L.P.
Thompson, Hon. S. T. J.	South	C.P.
Willesee, Hon. W. F.	North	A.L.P.
Willmott, Hon. F. D.	South-West	L.C.L.
SUMMARY		
Australian Labor Party (A.L.P.)	13	
Country Party (C.P.)	8	
Liberal and Country League (L.C.L.)	9	
TOTAL	30	

(a) See *Appendix*.

The Legislative Assembly

MEMBERS OF THE LEGISLATIVE ASSEMBLY (a)

Electoral District	Before Election of 21st March, 1959		At 31st December, 1960 (a)	
	Name	Political Party	Name	Political Party
Albany	Hall, J.	A.L.P.	Hall, J.	A.L.P.
Avon Valley	Mann, J. I.	L.C.L.	Mann, J. I.	L.C.L.
Beeloo	Jamieson, C. J.	A.L.P.	Jamieson, C. J.	A.L.P.
Blackwood	Hearman, J. M.	L.C.L.	Hearman, Hon. J. M.	L.C.L.
Boulder	Moir, A. M.	A.L.P.	Moir, A. M.	A.L.P.
Bunbury	Roberts, G. F.	L.C.L.	Roberts, G. F.	L.C.L.
Canning	Gaffey, W. J.	A.L.P.	O'Neil, D. H.	L.C.L.
Claremont....	Crommelin, H. W.	L.C.L.	Crommelin, H. W.	L.C.L.
Collie	May, H.	A.L.P.	May, H.	A.L.P.
Cottesloe	Hutchinson, R., D.F.C.	L.C.L.	Hutchinson, Hon. R., D.F.C.	L.C.L.
Dale	Wild, G. P., M.B.E.	L.C.L.	Wild, Hon. G. P., M.B.E.	L.C.L.
Darling Range	Owen, R. C., B.Sc. (Agric.)	C.P.	Owen, R. C., B.Sc. (Agric.)	C.P.
East Perth	Graham, Hon. H. E.	A.L.P.	Graham, Hon. H. E.	A.L.P.
Eyre	Nulsen, Hon. E.	A.L.P.	Nulsen, Hon. E.	A.L.P.
Fremantle	Sleeman, Hon. J. B.	A.L.P.	Fletcher, H. A.	A.L.P.
Gascoyne	Norton, D.	A.L.P.	Norton, D.	A.L.P.
Geraldton	Sewell, W. H.	A.L.P.	Sewell, W. H.	A.L.P.
Greenough	Brand, Hon. D.	L.C.L.	Brand, Hon. D.	L.C.L.
Guildford-Midland	Brady, Hon. J. J.	A.L.P.	Brady, J. J.	A.L.P.
Harvey	Manning, I. W.	L.C.L.	Manning, I. W.	L.C.L.
Kalgoorlie	Evans, T. D.	A.L.P.	Evans, T. D.	A.L.P.
Katanning	Nalder, C. D.	C.P.	Nalder, Hon. C. D.	C.P.
Kimberley	Rhatigan, J. J.	A.L.P.	Rhatigan, J. J.	A.L.P.
Leederville	Johnson, S. E. I.	A.L.P.	Henn, G. G., M.R.C.S., L.R.C.P.	L.C.L.
Maylands	Toms, J. M.	A.L.P.	Toms, J. M.	A.L.P.
Melville	Tonkin, Hon. J. T.	A.L.P.	Tonkin, Hon. J. T.	A.L.P.
Merredin-Yilgarn....	Kelly, Hon. L. F.	A.L.P.	Kelly, Hon. L. F.	A.L.P.
Middle Swan	Hegney, Hon. J.	A.L.P.	Hegney, J.	A.L.P.
Moore	Lewis, E. H. M.	C.P.	Lewis, E. H. M.	C.P.
Mount Hawthorn....	Hegney, Hon. W., A.A.S.A.	A.L.P.	Hegney, Hon. W., A.A.S.A.	A.L.P.
Mount Lawley	Oldfield, E. P.	Ind. Lib.	Oldfield, E. P.	A.L.P.
Mount Marshall	Cornell, G. M.	C.P.	Cornell, G. M.	C.P.
Murchison	O'Brien, E. M.	A.L.P.	Burt, R. P. S.	L.C.L.
Murray	McLarty, Hon. Sir Ross, K.B.E., M.M.	L.C.L.	McLarty, Hon. Sir Ross, K.B.E., M.M.	L.C.L.
Narrogin	Manning, W. A., A.A.S.A., A.C.I.S.	C.P.	Manning, W. A., A.A.S.A., A.C.I.S.	C.P.
Nedlands	Court, C. W. M., O.B.E.	L.C.L.	Court, Hon. C. W. M., O.B.E.	L.C.L.
Northam	Hawke, Hon. A. R. G.	A.L.P.	Hawke, Hon. A. R. G.	A.L.P.
North Perth	Lapham, S. E., A.A.S.A.	A.L.P.	O'Connor, R. J.	L.C.L.
Pilbara	Bickerton, A. W.	A.L.P.	Bickerton, A. W.	A.L.P.
Roe	Perkins, C. C.	C.P.	Perkins, Hon. C. C.	C.P.
South Fremantle....	Lawrence, P. R.	A.L.P.	Curran, H.	A.L.P.
South Perth	Grayden, W. L.	Ind. Lib.	Grayden, W. L.	L.C.L.
Stirling	Watts, Hon. A. F., C.M.G.	C.P.	Watts, Hon. A. F., C.M.G.	C.P.
Subiaco	Potter, P. G. C.	A.L.P.	Guthrie, H. N.	L.C.L.
Toodyay	Thorn, Hon. L.	C.P.	Craig, J. F.	C.P.
Vasse	Bovell, W. S.	L.C.L.	Bovell, Hon. W. S.	L.C.L.
Victoria Park	Andrew, H. D.	A.L.P.	Andrew, H. D.	A.L.P.
Warren	Rowberry, J. N.	A.L.P.	Rowberry, J. N.	A.L.P.
Wembley Beaches	Marshall, F.	A.L.P.	Nimmo, L. C.	L.C.L.
West Perth	Heal, S.	A.L.P.	Heal, S.	A.L.P.
SUMMARY	Australian Labor Party (A.L.P.)	29	Australian Labor Party (A.L.P.)	24
	Country Party (C.P.)	8	Country Party (C.P.)	8
	Independent Liberal (Ind. Lib.)	2	Independent Liberal (Ind. Lib.) ....	...
	Liberal and Country League (L.C.L.)	11	Liberal and Country League (L.C.L.)	18
	TOTAL	50	TOTAL	50

(a) See Appendix.

There are 50 members of the Legislative Assembly, each member representing one of the 50 Electoral Districts into which the State is divided for the purpose. Members are elected for the duration of the Parliament, normally three years.

A candidate for election must have resided in Western Australia for twelve months, be at least 21 years of age and free from legal incapacity, be a natural-born British subject or have been naturalized for five years and have resided in the State for two years. A candidate must not be a member of the Legislative Council, a Judge of the Supreme Court, a minister of religion, an undischarged bankrupt or a debtor against whose estate there is a subsisting order in bankruptcy.

For enrolment as an elector, a person must be at least 21 years of age, a natural-born or naturalized British subject free from legal incapacity, must have resided in Western Australia for six months continuously and in the Electoral District for which he claims enrolment for a continuous period of three months immediately preceding the date of his claim.

Voting at elections for the Legislative Assembly is on the preferential system and was made compulsory by an amendment to the Electoral Act in 1936, the first elections at which this provision applied being those held on the 18th March, 1939.

The table on page 88 shows the membership of the Legislative Assembly before the general elections of the 21st March, 1959 and at the 31st December, 1960. See also *Appendix*.

LEGISLATION DURING 1959 AND 1960

The Federal Parliament

A selection from the legislative enactments of the Commonwealth Parliament in 1959 is given in summarized form on pages 79-92 of the *Official Year Book of the Commonwealth of Australia*, No. 47—1961. The legislation of 1960 is treated similarly on pages 79-82 of the succeeding issue, No. 48—1962.

The State Parliament

During the first session of the twenty-third Parliament, which lasted from the 30th June to the 27th November, 1959, the Western Australian legislature enacted 83 Statutes and, in addition, dealt with 17 Bills which were introduced but not passed. In the second session, between the 28th July and the 25th November, 1960, the Parliament passed 84 Acts and discarded 14 Bills.

The full text of the legislation enacted is contained in the volumes of *The Acts of the Parliament of Western Australia*, to which reference should be made if complete details are required. To provide a brief review of some of the more important Statutes of 1959 and 1960, a short summary of the main provisions is given in this section. Supply, Appropriation and Loan Acts are excluded from this summary, as well as continuance measures except as they relate to the renewal of certain important agreements between the Commonwealth and the State.

Acts Passed during 1959

Administration Act Amendment Act—Exempts from duty gifts made at any time prior to three years before the death of the donor. Provides that operation shall be retrospective to the 1st July, 1956 and that refunds of duty shall be paid in the case of assessments made and satisfied between that date and the date of assent.

Art Gallery Act—Repeals the Museum and Art Gallery of Western Australia Act, 1911-1955. Establishes a Western Australian Art Gallery Board of five members, including a chairman and vice-chairman, appointed by the Governor to undertake the care and control of the Art Gallery. Authorizes the Board to appoint a Director of the Art Gallery. Provides for the establishment of a fund to enable the Board to carry out the purposes of the Act. Prescribes penalties for the unlawful damage, mutilation, destruction or removal of works of art.

Betting Control Act Amendment Act—Provides for the distribution among horse racing and trotting clubs of part of the revenue from the tax imposed by the Betting Investment Tax Act, 1959.

Betting Investment Tax Act—Imposes a betting investment tax on bets made by bookmakers in registered premises at the rate of 3d. for each bet of £1 or less and 6d. for each bet of more than £1.

Bookmakers Betting Tax Act Amendment Act—Increases the rate of tax payable on off-course turnover of bookmakers by substituting for the uniform 2 per cent. previously levied a sliding scale ranging from 2½ per cent. to a maximum of 4½ per cent.

Child Welfare Act Amendment Act—Removes from Children's Courts the power to send to an industrial school any child found guilty of an offence punishable by imprisonment. Substitutes a provision empowering the Court to commit the child to the care of the Child Welfare Department for treatment,

discipline and training. Enables the Department, with the approval of the Minister, to release on parole a child so committed. Provides that, where a child has been convicted of an offence not punishable by imprisonment, the Court may, instead of imposing a fine, order the parent to give security for the good behaviour of the child or accept an undertaking that a near relative shall punish the child "in such reasonable or moderate manner as the Court may approve".

Entertainments Tax Act Amendment Act—Reduces the rate of tax on entertainments other than those given by live performers.

Entertainments Tax Assessment Act Amendment Act—Abolishes the tax on specified entertainments where "all the performers whose words or actions constitute the entertainment are present and performing".

Filled Milk Act—Defines, in part, as "filled milk" any "liquid or powder containing the non fat solids of milk with which is incorporated or to which is added any fat other than butter fat". Prohibits, and prescribes penalties for, the manufacture or packing of filled milk, and the sale of such products except in the course of interstate trade or commerce. Confers on inspectors under the Act powers of entry and search of premises and seizure of filled milk. Enables the Minister to exempt any product from the provisions of the Act on the recommendation of an Advisory Committee of five members appointed by the Minister.

Foot and Mouth Disease Eradication Fund Act—Establishes a Trust Fund to be applied, in the event of an outbreak of foot and mouth disease, to the compensation of owners of livestock or property which may be destroyed in order to eradicate or prevent the spread of the disease. Provides that regulations may be made for the seizure and destruction of any infected animal or property and for the application of other measures deemed expedient to control the disease.

Hire-Purchase Act—Repeals the Hire-Purchase Agreements Act, 1931-1937 and the Hire-Purchase Act, 1958, but saves the operation of the Hire-Purchase Agreements Act in relation to agreements entered into before the commencement of the Hire-Purchase Act, 1959. Provides protection for the hirer by such means as prescribing a written agreement to incorporate details of the cash price and of charges included in the total amount to be paid for the goods, by entitling the hirer to complete the purchase at any time, by conferring the right of recovery of certain moneys in cases where the owner retakes possession of the goods and by requiring the owner to redeliver the goods to the hirer upon certain conditions having been satisfied. Describes transactions constituting an offence and prescribes penalties.

Interstate Maintenance Recovery Act—Repeals the Interstate Destitute Persons Relief Act, 1912-1931. Provides for reciprocity between Western Australia and other States in the service of summonses for maintenance and the enforcement of maintenance orders. For the purposes of the Act, the term "State" means "a State of the Commonwealth of Australia and includes the Dominion of New Zealand, the Australian Capital Territory, a Territory of the Commonwealth of Australia, and a Territory governed, administered or controlled, whether solely or jointly by the Commonwealth of Australia under a mandate or a trusteeship".

Licensing Act Amendment Act—Alters from 9 a.m.-9 p.m. to 10 a.m.-10 p.m. liquor trading hours in the south-west part of the State. Authorizes the issue of restaurant licences permitting the sale of liquor with meals between the hours of 6 p.m. and midnight. Enables the Licensing Court to issue a provisional certificate for a new publican's general licence in any area where it considers, after the hearing of evidence, that there are insufficient premises to meet public requirements, any certificate so issued to be offered for sale by public tender. Empowers the Court to order the renovation or rebuilding of the whole or any part of premises which are the subject of a publican's general licence, the provision of adequate garage and parking space and the supply of hot and cold running water in bedrooms or bathrooms. Repeals Part V of the principal Act dealing with the reduction of licences.

Metropolitan Region Improvement Tax Act—Provides that the Metropolitan Region Improvement Tax, payable under the Metropolitan Region Town Planning Scheme Act, 1959 shall be levied, for a period of three years ending on the 30th June, 1962, at the annual rate of $\frac{1}{4}$ d. in the £ on the unimproved value of land chargeable with the tax.

Metropolitan Region Town Planning Scheme Act—Constitutes a Metropolitan Region Planning Authority of eleven members, including a chairman who must be a person who has had wide experience and has shown capacity in town planning, development of land and local government matters. Requires the Authority to formulate and promulgate a Metropolitan Region Scheme for the whole or part of the

Metropolitan Region and to keep the Scheme under review. Provides that the Scheme when formulated shall be submitted for the preliminary approval of the Minister, after which the Scheme shall be displayed for public inspection and a statement of its purpose published in the *Government Gazette* and in three metropolitan newspapers; that the Authority shall then consider objections to the Scheme and, after making any modifications which it thinks fit, submit the Scheme to the Minister for presentation to the Governor for his consideration; and that, if the Governor approves the Scheme, it shall be submitted to the Parliament and, if not disallowed, shall have the force of law. Establishes District Planning Committees, to be appointed by metropolitan local governing bodies to assist and advise the Authority. Requires that local town planning schemes be made consistent with the Metropolitan Region Scheme. For the purpose of carrying out and giving effect to the Scheme, creates a Metropolitan Region Improvement Fund for the receipt of collections of a Metropolitan Region Improvement Tax on land within the Region and of other moneys. Provides that the duration of the Act shall be limited to a period ending on the 30th June, 1962.

Museum Act—Establishes a Western Australian Museum Board of five members, including a chairman and vice-chairman, appointed by the Governor to undertake the care and control of the Museum. Authorizes the Board to appoint a Director of the Museum. Provides for the establishment of a fund to enable the Board to carry out the purposes of the Act. Prescribes penalties for the unlawful damage, mutilation, destruction or removal of exhibits.

Stamp Act Amendment Act—Increases the rate of duty payable on hire purchase agreements.

Stamp Act Amendment Act (No. 2)—Increases the duty payable on betting tickets to 1½d. for a bet of £1 or less and to 3d. for a bet of more than £1.

State Hotels (Disposal) Act—Authorizes the Governor to sell or lease certain State Hotels. Provides that during the first nine months of operation of the Act any hotel shall be sold or leased only to a "community company", being a company formed by residents of the district to acquire and operate the hotel for the benefit of the district, profits to be used to provide public amenities. Requires that the proceeds of a sale or moneys received by way of rental shall, after provision for appropriate charges, be paid to the Tourist Fund established under the Tourist Act, 1959.

Tourist Act—Constitutes the Western Australian Tourist Development Authority consisting of eight members, including a chairman in the person of the Minister or his nominee. Places the State Government Tourist Bureau under the control and direction of the Authority and creates the office of Director of Tourist Development. Provides that the functions of the Authority shall be to make recommendations to the Minister concerning the publicising and development of the tourist industry, the improvement of tourist facilities and the promotion and co-ordination of activities of persons and organizations interested in the development of the tourist industry. Establishes a Tourist Fund for the payment of moneys by way of loan or grant to public authorities, or other organizations, for tourist development.

Trade Associations Registration Act—Repeals the Monopolies and Restrictive Trade Practices Control Act, 1956–1958. Creates the office of Registrar of Trade Associations to prepare, compile and maintain a register of trade associations and trade agreements. Defines "trade association" as "a body of persons, whether incorporated or not, which is formed for the purpose of furthering the several trade interests of its members, or of persons represented by its members", but excludes partnerships. Requires the registration of agreements such as those between wholesalers or retailers or contractors, or any combination of persons engaged in the selling of goods or the performance of services, to sell goods or perform services only at prices or on terms agreed upon between the parties. Specifies certain Acts designed to secure the orderly marketing of primary products, to which its provisions do not apply. Enables complaint to the Registrar by a member of an association, or other person bound by its rules, that the association is enforcing or attempting to enforce compliance with a trade practice which is not in accordance with the rules. Prohibits collusive tendering and confers on the Registrar the powers of a Royal Commission in the investigation of such offences. Prescribes penalties for infringement of the provisions of the Act.

Traffic Act Amendment Act (No. 3)—Provides for increases in fees payable for certain licences required under the Traffic Act. Establishes a Central Road Trust Fund. (The main provisions relating to the transactions of the Central Road Trust Fund account are summarized under the heading "Finance for Roads" in the section *Roads and Road Traffic* in Chapter IX, Part 2.)

Traffic Act Amendment Act (No. 4)—Provides that a person whose driver's licence has been suspended on conviction for an offence or a person disqualified from obtaining a licence may apply to a Court for an order removing the suspension or disqualification. Empowers the Court to make an order after having considered, among other things, the nature of the offence, the circumstances of the case and the degree of hardship and inconvenience involved. Requires the Commissioner of Police at the direction of the Court to issue an extraordinary licence subject to such limitations and conditions as the Court may impose, including conditions relating to locality, times, and the class of vehicle that may be driven.

Acts Passed during 1960

Administration Act Amendment Act—Provides for the appointment of a Commissioner of Probate Duties to assume the probate assessment and related functions previously exercised by the Commissioner of Stamps.

Anzac Day Act—Repeals the Anzac Day Act, 1923. Permits the sale of liquor and the holding of race meetings and sporting events after 1 p.m. on Anzac Day. Establishes an Anzac Day Trust Fund to be financed from fees paid for occasional liquor licences; the net proceeds from race meetings; and sixty per cent. of the net proceeds derived from sporting events. Constitutes an Anzac Day Trust of four trustees, including a chairman, appointed by the Governor to distribute moneys held in the Fund for the erection of homes for aged ex-service personnel, for the welfare of widows and children of deceased ex-servicemen, and for the assistance of organizations operating for the benefit of ex-service personnel and their dependants. Describes offences and provides penalties for breaches of the Act. Amends by schedule the appropriate sections of the Licensing Act.

Betting Control Act Amendment Act—Repeals the provision in the principal Act limiting its operation to a period ending on the 31st December, 1960. Substitutes for the Betting Control Board as constituted under the Act the Totalisator Agency Board established by the Totalisator Agency Board Betting Act, 1960 and incorporates certain other amendments consequent on the passage of that Act.

Betting Investment Tax Act Amendment Act—Extends the operation of the Act to include bets made through or with the Totalisator Agency Board in accordance with the provisions of the Totalisator Agency Board Betting Act, 1960.

Broken Hill Proprietary Company's Integrated Steel Works Agreement Act—Ratifies an agreement between the State Government and the Broken Hill Proprietary Company Limited relating to the establishment of an integrated iron and steel works in Western Australia. Makes the operation of the agreement contingent upon the passage of legislation by the State and Commonwealth Parliaments to provide for the financing, construction and completion before the 31st December, 1968 of a standard gauge railway between Kalgoorlie and the works site at Kwinana. Requires the Company to complete before the 31st December, 1968 a blast furnace having a minimum annual production capacity of 450,000 tons of pig iron and, within ten years thereafter, to provide steel-making facilities and a new rolling mill capable of producing not less than 330,000 tons of finished products per annum; to construct wharf facilities at the works site; to undertake, in collaboration with the State Government, the dredging of channels in Cockburn Sound; and to spend on all of these works before the 31st December, 1978 a total of not less than £40 million. Provides that the State Government shall grant to the Company a mineral lease in the Yilgarn area at an annual rental of £2,500 and subject to payment of royalties at a basic rate of 1s. 6d. per ton on high-grade iron ore and 6d. per ton on low-grade ore; construct before the end of 1968, and thereafter operate and maintain, a standard gauge railway between the site of the lease and the works site; make available an adequate number of locomotives and wagons for the transport of ore at specified freight rates payable by the Company; provide electric power, roads, water and housing, as required either in the leased area or adjacent to the works site; and survey and lay out one or more townsites in the leased area. Amends the agreement ratified by the Broken Hill Proprietary Steel Industry Agreement Act, 1952 by substituting new provisions relating to harbour charges payable by the Company. Expressly prohibits the oversea export of iron ore by the Company without the consent of the Government.

Chevron-Hilton Hotel Agreement Act—Ratifies an agreement between the State Government and Chevron-Hilton Hotels Limited relating to the construction by the Company in Saint George's Terrace, Perth of a hotel and tourist centre containing not less than 200 bedrooms, with provision for an airline terminal, at a cost of £2 million, including land. Fixes at £224,160 the price to be paid by the Company for the land, payment to be made by way of a deposit of £22,500 and two equal annual instalments of £100,830. Requires that construction shall be completed not later than two months before the official opening of the British Empire and Commonwealth Games to be held at Perth late in 1962.

Coal Mine Workers (Pensions) Act Amendment Act—Liberalizes the conditions relating to the payment of pensions to coal mine workers and their dependants. Where an incapacitated worker has, since the date of the incapacitating injury, been engaged in employment other than as a mine worker, restricts ineligibility for pension to cases where such employment has been full-time. Subject to payment by a worker of contributions for a period of not less than five years in all, extends pension benefits to the widow in the event of his death before attaining the age of 60 years, in cases where the widow was previously non-pensionable by reason of the fact that the worker was over the age of 35 years when first employed or when re-employed in the industry. Authorizes payment of benefits to a worker who became re-employed in the industry when over the age of 35 years, providing he has been employed in the industry for not less than 25 years in all, has paid contributions for a continuous period of 15 years immediately prior to his attaining the age of 60 years, and has not at any time after leaving the industry received a refund of contributions.

Country High School Hostels Authority Act—Constitutes an Authority of six members, or in certain circumstances up to nine members, appointed by the Governor to provide hostel accommodation for students of high schools or primary schools where transport to and from school is not provided, and to supervise and maintain hostels. Permits the Authority to erect, alter, sell or purchase hostel buildings subject to the approval of the Minister, and to lease hostels or grant licences for the provision of hostel accommodation. Empowers the Authority, with the approval of the Treasurer, to borrow money required in carrying out its powers and functions.

Criminal Code Amendment Act—Increases penalties for deprivation of liberty and for child-stealing. Inserts as an offence and provides penalties for the publication, without the prior approval of the Commissioner of Police, of any report of a case of child-stealing before the expiration of seven days from the date of the crime or before the child is returned to the parent or guardian, whichever first occurs.

Dairy Cattle Industry Compensation Act—Orders the compulsory inspection and testing of dairy cattle for disease and authorizes the destruction of cattle found to be diseased. For payment of compensation to owners of cattle so destroyed, establishes the Dairy Cattle Industry (Butter Fat) Compensation Fund. Provides for the levy of a butter fat stamp duty and for payment to the Fund of moneys collected from this source. Requires the Treasurer to contribute to the Fund a sum equal to the amount of stamp duty received. Exempts from the provisions of the Act an owner of dairy cattle who holds a dairyman's licence under the Milk Act, 1946.

Education Act Amendment Act—Alters the title of Director of Education to Director-General of Education. Extends the financial assistance available to non-government schools by providing subsidies for the purchase of books for school libraries and of pianos. Amends certain provisions relating to Parents and Citizens' Associations and restates the objects of such bodies. Establishes a Government School Teachers' Tribunal of three members appointed by the Governor, to replace the former appeals system. Provides that the Tribunal shall comprise a chairman, one nominee member and one elected member, and requires that the chairman shall be a legal practitioner of not less than seven years' practice and standing. Confers on the Tribunal jurisdiction to hear and determine appeals and disputes concerning salaries and allowances, promotions, suspensions, dismissals and other matters.

Esperance Lands Agreement Act—Ratifies an agreement between the State Government and American Factors Associates, Limited and Arcturus Investment & Development, Ltd acting on behalf of a partnership to be registered as the Esperance Land & Development Company. Assigns to the Company the rights and interests of an agreement relating to the development of rural lands in the Esperance district made in 1956 between the State Government and Esperance Plains (Australia) Pty Ltd, by whose default the agreement lapsed. Requires the Company to select and apply for a minimum area of 350,000 acres and to spend not less than £500,000 on the purchase and development of the land by the 31st December, 1963. Enables further selection up to a maximum area aggregating 1.45 million acres in all, and subject to expenditure of not less than a total of £2.5 million, by the 31st December, 1974. Protects the Company by providing that if, because of unseasonable conditions or for economic or other reasons, the rate of development envisaged by the agreement does not appear justified the Company may request an extension of time for the fulfilment of its obligations.

Fisheries Act Amendment Act—Makes express provision for the framing of regulations relating to the minimum length and minimum weight of crayfish tails which any person may lawfully "sell, give, consign, or have in his possession", and inserts penalties for offences. Increases penalties for

handling or dealing in other prescribed species of fish where the length of the fish is less than the minimum allowed under the Act. Requires that there shall be attached to every commercial consignment of fish a label showing the name and address of the consignor.

Health Act Amendment Act—Constitutes a Maternal Mortality Committee of five members appointed by the Minister, three of the persons so appointed being permanent members and the remaining two being selected from among six provisional members. Provides that of the three permanent members one shall be the Professor of Obstetrics of the University of Western Australia, who shall be chairman, one shall be a specialist obstetrician, and one a medical practitioner nominated by the Commissioner of Public Health, and that the six provisional members shall comprise four general medical practitioners and two midwifery nurses. Authorizes the Minister to appoint an investigator, who shall be a specialist obstetrician. Requires that the death of a woman as the result of pregnancy or childbirth shall be reported by the medical practitioner or nurse in attendance to the Commissioner of Public Health, instead of to a magistrate as formerly, and that the Commissioner shall then direct the investigator to inquire into the circumstances of the death and present a full report of his investigation to the chairman of the Committee. Provides that the Committee on considering the report shall determine whether the death might have been avoided, and enables it to add to its determination "such constructive comments as the Committee deems advisable for the future assistance and guidance of medical practitioners and nurses". Prescribes measures to ensure that all information disclosed in the course of an inquiry or contained in a report relating to any death investigated shall remain confidential and shall not be admissible "in any court or before any tribunal, board or person in any action, cause or inquiry of any kind whatsoever".

Land Tax Assessment Act Amendment Act—Reduces by 10 per cent. the amount of tax payable on improved land for the year of assessment ending on the 30th June, 1961 and succeeding years. Redefines the term "improved land". Exempts companies resident outside Australia from the 50 per cent. surcharge payable by other taxpayers absent from Australia.

Local Government Act—Consolidates and amends the law relating to local government. Repeals the Municipal Corporations Act, 1906, the Road Districts Act, 1919, and a number of other, less important, Acts. (A summary of the main provisions of the Local Government Act, 1960 is given in the final section of this Chapter dealing with *The Local Government System*.)

Marketing of Eggs Act Amendment Act—Enables the Western Australian Egg Marketing Board to make premium payments to producers for eggs sold to the Board having characteristics or qualities which, in the opinion of the Board, will assist in or improve the marketing of eggs both on markets within and outside the State.

Married Persons (Summary Relief) Act—Repeals the Married Women's Protection Act, 1922 and amending Acts of 1926 and 1954. Establishes a Married Persons' Relief Court constituted by a Stipendiary Magistrate and one Justice of the Peace or, in specified circumstances, by a Stipendiary Magistrate alone. Cites as grounds for relief desertion by the defendant; cruelty to the complainant or a child of the family; neglect to provide or contribute towards reasonable maintenance for the spouse or a child; habitual drunkenness or excessive use of drugs; adultery and other marital offences. Empowers the Court to make orders providing for separation, payment of maintenance, legal custody of a child, and access to a child. Expressly provides that the Act does not affect the operation of the Child Welfare Act, 1947.

Metropolitan Region Town Planning Scheme Act Amendment Act—Repeals the provision limiting the duration of the principal Act to a period ending on the 30th June, 1962.

Metropolitan Water Supply, Sewerage, and Drainage Act Amendment Act—Establishes an Appeal Board of three members appointed by the Governor to consider appeals made by a ratepayer against any valuation for rating purposes of land owned or occupied by him. Provides that the Board shall comprise a chairman nominated by the Minister, an officer of the Metropolitan Water Supply, Sewerage, and Drainage Department, and a ratepayer. In determining annual value of land for rating purposes prescribes a deduction of £40 per cent. for all outgoings instead of, as formerly, the amount of all rates and taxes together with an allowance of £20 per cent. for repairs, insurance and other outgoings. Enables the Minister to levy on land used for residential purposes a water rate less than that applying to other land.

Milk Act Amendment Act—Empowers the Milk Board of Western Australia to fix minimum standards of quality for milk and cream and to prevent their distribution if below the prescribed standard. Authorizes the Board to classify the several types of licences issued under the Act into such classes as it thinks fit and to prescribe fees varying according to its classification.

Native Welfare Act Amendment Act—Amends the interpretation of the word "native" to exclude all quadroons and all those of less than quadroon blood instead of, as formerly, limiting the exclusion to specified classes of such persons. (For the purposes of the Act, "quadroon" means "a person who is descended from the full blood original inhabitants of Australia or their full blood descendants but who is only one-fourth of the original full blood".) Authorizes the appointment of a Deputy Commissioner of Native Welfare.

Northern Developments (Ord River) Pty. Ltd. Agreement Act—Ratifies an agreement between the State Government and Northern Developments (Ord River) Pty. Ltd. for the establishment of a pilot farm on a minimum area of 2,000 acres of Crown land adjacent to the site of the Ord River Diversion Dam. Requires the Company to ascertain by practical tests the capabilities of the area in irrigation farming and the best methods of farming to be adopted, with particular regard to the growing of rice, cotton, safflower, linseed and other agricultural crops and pastures. Commits the State Government to make available to the Company during a three-year period a total sum of £100,000; to construct and maintain main water supply channels; to provide a constant supply of water; and to give technical advice through the Kimberley Research Station and the Department of Agriculture. Allows the Company an option to purchase the land and improvements within a period of five years from the date of the agreement.

Paper Mill Agreement Act—Ratifies an agreement between the State Government and Australian Paper Manufacturers Limited relating to the establishment and operation of a mill to produce paper and paper board. Requires the Company to construct and bring into production before the end of 1966 a mill at Spearwood capable of an initial output of 15,000 tons of paper and paper board per year, the mill to cost not less than £2.5 million, including the cost of the mill site, and to be so constructed as to allow for later expansion. Provides that the State Government shall advance moneys up to an amount of £2.5 million by way of loan to the Company at an interest rate of 5 per cent. per annum, the principal to be repaid by equal annual instalments over a period of 15 years commencing from the 31st December, 1980. Requires the State Government to make available water, electric power, improved roads and, if later required, a standard gauge rail connexion to the mill site.

Railways (Cue-Big Bell and other Railways) Discontinuance Act—Authorizes the cessation of services on certain railways formerly operated by the Government.

Stamp Act Amendment Act (No. 2)—Levies duty as required by the Dairy Cattle Industry Compensation Act, 1960 at the rate of 2d. in the £ on sales of butter fat.

Supreme Court Act Amendment Act—Increases from four to six the number of Judges, in addition to the Chief Justice, who may be appointed to comprise the Supreme Court of Western Australia.

Totalisator Agency Board Betting Act—Constitutes a Totalisator Agency Board of seven members appointed by the Governor to authorize, regulate and control off-course betting on totalizators through the Board and betting with the Board. Provides that the Board shall comprise a chairman nominated by the Minister, three members of the Western Australian Turf Club appointed on the nomination of the Club, and three members of the Western Australian Trotting Association appointed on the nomination of the Association. Limits the application of the Act to areas declared by proclamation to be totalizator agency regions. Enables the Board to establish offices and agencies in any region so declared. In any declared region, revokes the registration of premises and cancels licences under the Betting Control Act, 1954 formerly entitling the holder to carry on business as a bookmaker in such premises, and declares illegal the business of bookmaking unless carried on by the holder of a licence entitling him to operate on a racecourse and prohibits betting with a bookmaker other than one so licensed. Directs the Commissioner of Stamps to pay to the Board the amount of the additional duty provided for under the Totalisator Duty Act Amendment Act, 1960. Authorizes the Board to borrow moneys as approved by the Treasurer and provides that operating expenses shall, until such time as the Board is able to meet them in full from its own funds, be financed from an unsecured interest-free loan of £50,000 by the Turf Club and the Trotting Association and from the Board's own borrowings. Requires that the balance of the Board's funds remaining after provision for all outgoings shall be paid from time to time in specified proportions to the Club and the Association. Describes offences and provides penalties.

Totalisator Agency Board Betting Tax Act—Imposes a tax at the rate of 5 per cent. on money paid in respect of bets made through or with the Board established under the Totalisator Agency Board Betting Act.

Totalisator Duty Act Amendment Act—Increases totalisator commission from 13½ per cent. to 15 per cent. of the gross takings. Imposes an additional duty, payable to the Commissioner of Stamps, at the rate of 1½ per cent. on the gross takings of totalisators.

Workers' Compensation Act Amendment Act—Entitles a worker or his dependants to compensation in the event of disablement or death from silicosis, pneumoconiosis or miner's phthisis where the disease was due to the nature of any employment in which the worker was engaged at any time previous to disablement or death. Enables the prescription of a standard form of insurance policy and requires that, having been so prescribed, the form shall be adopted in effecting or renewing any policy under the Act.

THE JUDICATURE

Commonwealth Courts

Under the provisions of section 71 of the Commonwealth Constitution the judicial power of the Commonwealth is vested in a Federal Supreme Court called the High Court of Australia and in such other courts as the Parliament creates or invests with federal jurisdiction.

The High Court of Australia is the principal Commonwealth Court and has both original and appellate jurisdiction. The Court is constituted by the Judiciary Act 1903-1960 and consists of a Chief Justice and six other Justices. The Principal Registry is at Melbourne, Victoria and there is a District Registry in each of the other State capital cities, where sittings of the Court are held from time to time as required. A Full Court may consist of any two or more Justices sitting together, but the Act specifies cases where a Full Court shall be comprised of not less than three Justices and, in some circumstances, a greater number. The High Court is the ultimate court of appeal in Australian jurisdiction except where leave is given for an appeal to the Privy Council in London.

The Commonwealth Industrial Court was established by an amendment of 1956 to the Conciliation and Arbitration Act which gives the Court power to deal with judicial matters, as distinct from the functions of conciliation and arbitration performed by the Commonwealth Conciliation and Arbitration Commission. The Commonwealth Industrial Court, as originally constituted, comprised a Chief Judge and two other Judges. An amending Act of 1960 authorized the appointment of an additional Judge. Membership of the Bench was increased in June, 1960 to four Judges including the Chief Judge. The Conciliation and Arbitration Act provides that, except in certain specified circumstances, the jurisdiction of the Court shall be exercised by not less than two Judges. Although, in general, decisions of the Industrial Court are final, appeal may be made to the High Court, subject to a grant of leave by the High Court.

The Federal Court of Bankruptcy is constituted under the Bankruptcy Act 1924-1960 which provides that the Court shall consist of a Judge or two Judges. The Act also extends jurisdiction in bankruptcy to certain Courts of the States, and in Western Australia it is exercised by the Supreme Court of the State.

State Courts of Western Australia

The Supreme Court of Western Australia, as constituted under the Supreme Court Act, 1935-1960, consists of a Chief Justice and such other Judges, not exceeding six in number, as may from time to time be appointed. The jurisdiction of the Court is exercised by a single Judge unless it is provided that an action must be brought before a Full Court. Any two or more Judges together comprise a Full Court except at a sitting as a court of criminal appeal, when there must be an uneven number of Judges. In addition to appeals in criminal cases, matters within the jurisdiction of the Full Court include applications for a new trial or to set aside a judgment, cases referred by a Judge for the consideration of the Full Court and special cases where all parties agree that a hearing should be before the Full Court. The Act provides for sittings of the Court as a circuit court in proclaimed districts and enables the appointment of days in each year for hearings in these districts. Appeal from a judgment of the Supreme Court of Western Australia lies to the High Court of Australia, subject to the provisions of the Judiciary Act 1903-1960 (Commonwealth).

At the 31st December, 1960 the composition of the Supreme Court was as shown below. ⁽¹⁾

Chief Justice

The Honourable Sir Albert Wolff, K.C.M.G.

Senior Puisne Judge

The Honourable L. W. Jackson

Puisne Judges

The Honourable J. E. Virtue

The Honourable R. V. Neville

The Honourable G. B. D'Arcy

The Honourable John Hale

⁽¹⁾ See Appendix.



KANGAROO PAW
Anigosanthos manglesii D. Don

By a proclamation published in the *Government Gazette* of the 18th November, 1960, *Anigosanthos manglesii* was declared to be Western Australia's floral emblem.
A description of the plant, its habit and distribution is given overleaf.

Mangles' Kangaroo Paw was first collected in the Swan River Colony in the early years of its settlement, and was described by D. Don in 1836.

It is a low sub-shrub, with leaves 1-2 feet in length, sometimes more, rather broad and tapering to an acute apex.

The flowering stem may reach 3-4 feet in height and bears a number of large flowers at its summit. Occasionally it may fork. The stem is clothed with woolly hairs of a deep red or purple colour, while the hairs on the flowers are of a metallic green with the exception of the swollen base where they are of the same red or purple as the stem. Occasionally the base of the flower may be yellowish in colour.

Mangles' Kangaroo Paw occurs naturally from the Murchison River in the north to the vicinity of Busselton in the south, and eastwards to Lake Muir, occurring on sandy soil. In the Darling Range it is common on lateritic soils while in a small form it extends eastwards as far as Merredin. The species is common in King's Park, Perth, and in the surrounding bushland.

Flowering usually commences in August and extends through to early October, although in some years and in some localities it may commence before August and extend into late October.

The Court of Arbitration is constituted by the Industrial Arbitration Act, 1912-1952 and consists of three members, one of whom is President of the Court. The President must be a person qualified to be appointed a Judge of the Supreme Court. At the 31st December, 1960 the President of the Court was the Honourable R. V. Neville. Of the remaining members, one is appointed on the recommendation of industrial unions of employers and the other on the recommendation of industrial unions of workers.

Reference to the powers and functions of the Court of Arbitration is made in Chapter V, Part 6 and an account of its work in the field of wage fixation is given in Chapter X, Part 2.

STATE REPRESENTATION OVERSEAS AND IN OTHER STATES

Western Australia has been represented in the United Kingdom by an Agent-General since 1892, the first appointment to the post being that of Sir Malcolm Fraser. An Office is maintained at Savoy House, 115 Strand, London, W.C.2. Its functions include the purchase of government stores and equipment, service to Western Australian commercial and business interests and the provision of various types of assistance to visitors from Western Australia. The Agent-General for Western Australia is the Honourable E. K. Hoar, who was appointed to the office in 1957.

Branches of the Tourist Bureau have been established in New South Wales at 22 Martin Place, Sydney, in Victoria at 10 Royal Arcade, Melbourne, C.1, and in South Australia at 62A King William Street, Adelaide.

THE LOCAL GOVERNMENT SYSTEM

The function of local government in Western Australia is performed by a number of Councils exercising powers conferred by the Parliament of the State. Each of these authorities consists of members elected by a local community and is responsible for the provision of many of the services necessary for the organization and welfare of the community which it represents.

As early as 1838 an Act providing a measure of local government was passed and under its provisions the management and control of the town of Perth was vested in a body of trustees. The first elected Town Trust was constituted at Perth in 1842 under an Act of 1841 for the "Improvement of Towns in Western Australia". The Trust was dissolved in 1858 and replaced by a City Council, the town of Perth having been constituted a city when it became the seat of a Bishop in 1856.

Legislation was enacted in 1871 establishing Municipalities and Road Boards throughout the Colony. The existing Statute regulating the operations of the local authorities is the Local Government Act of 1960, which is administered through a Department of Local Government by the Minister for Local Government. This Act consolidates the law relating to local government in Western Australia, and by its provisions the Municipal Corporations Act, the Road Districts Act and a number of other, less important, Acts were repealed. The legislation came into operation on the 1st July, 1961 and from that date new designations were applied to many local government districts, bodies and offices. Former Municipalities, other than cities, became known as "Towns" and Road Districts were renamed "Shires". Municipalities which already had city status remained "Cities". The executive body in each local government district became a "Council", City Councils and Town Councils being presided over by a Mayor, and Shire Councils by a President. The chief non-elective executive office of a City or a Town is that of "Town Clerk" and of a Shire, that of "Shire Clerk".

With the commencement of the Local Government Act on the 1st July, 1961 there were 5 City Councils, 14 Town Councils and 126 Shire Councils in Western Australia.

Local Government Districts

At the date of commencement of the Local Government Act, the only unincorporated area in Western Australia was King's Park, a public reserve of almost one thousand acres in Perth, all other land being incorporated within the district of a City, Town or Shire.

On presentation of a petition signed by a prescribed minimum number of ratepayers, the number varying with the subject matter, the Governor may by Order constitute any part of the State as a Town; constitute any unincorporated area as a Shire; constitute as a new Shire any part of an existing Shire; divide a Shire into two or more Shires; sever portion of a district and annex the portion to an adjoining district, or constitute the portion as a new Town or Shire; annex to a district any adjacent unincorporated areas; divide a district into wards; or abolish a district and dissolve the local governing authority.

The Act establishes a Local Government Boundaries Commission of three members, one being an officer of the Department of Local Government, who is Chairman of the Commission. The other members

must be persons having experience in local government and nominated by associations of local government authorities. The Minister may refer to the Commission any question concerning the constitution or alteration of the constitution of local government districts. Every case where authorities are unable to agree on a matter of amalgamation or severance of territory must be referred to the Commission.

On the petition of the local authority concerned, the Governor may by Order declare to be a City any district which satisfies certain specified requirements. These requirements are that, during the three years immediately preceding the declaration, it shall have maintained a population of not less than 30,000 persons if situated in the metropolitan area as declared for the purposes of the Act, or not less than 20,000 persons if situated outside that area; and have maintained a gross revenue of £100,000 for each of the three years. In addition the district must be clearly distinguishable as a centre of population having a distinct civic centre with adequate halls and cultural facilities, and must have sufficient residential, commercial and industrial centres to justify its declaration as a separate city. The five Cities in Western Australia are all situated in the Metropolitan Statistical Division and each of them had been granted city status before the requirements imposed by the present legislation became operative. The Cities are Perth (proclaimed in 1856), Fremantle (1929), Subiaco (1952), Nedlands (1959) and South Perth (1959).

The boundaries of local government districts as they existed at the 31st December, 1960 are delineated on the map of the State at the back of the Year Book and the names and designations as at that date are listed on the pages immediately preceding the map. A list of districts as at the 1st July, 1961, when the Local Government Act came into operation, is also given in the *Appendix*.

Constitution and Electoral Provisions

The provisions of the Local Government Act relating to the composition of a City Council or a Town Council require that, in addition to the Mayor, there shall be, where the population is less than 1,000, six councillors; where the population is between 1,000 and 5,000, nine councillors; and if the population exceeds 5,000, twelve councillors if the district is not divided into wards but, where the district is divided into wards, three councillors for each ward. It is provided that a Shire Council shall consist of not less than five nor more than thirteen members, including the President.

Two methods of election to the office of Mayor or of President are prescribed. In the case of a City or Town, election is usually by a poll of the electors enrolled for the district. The President of a Shire is usually elected by the councillors from among their own number. It is provided, however, that a City or Town may adopt the system of election of the Mayor by the councillors, and that a Shire may conduct a poll of its electors for election to the office of President. The question of the adoption of the alternative system must, in all cases, be determined by submission to a poll of the electors, after delivery to the Mayor or the President of a resolution of a majority of the councillors or a petition signed by one-tenth of the electors, or by fifty electors, whichever is the greater.

The Act creates the office of Deputy Mayor, in the case of a City or a Town, and of Deputy President in the case of a Shire, and requires that the Council shall elect one of the councillors to the office.

Provision is made for local government elections to be held on the fourth Saturday in May of each year. Membership of a Council is elective in all cases, the qualified electors being adult natural-born or naturalized British subjects who own or occupy ratable land in the district. The preferential system of voting is used and representation is generally on the basis of wards into which the district may be divided. Plural voting applies, an elector being entitled, in accordance with the ratable value of the property owned or occupied by him, to a number of votes which may not, however, exceed four in elections for Mayor or President, or two in elections for councillor. Subject to disqualification on certain specified grounds, all adult persons who are natural-born or naturalized British subjects owning or occupying ratable land within the district are eligible for election to the Council of the district, whether as Mayor, President or councillor.

The term of office of a Mayor or a President is two years if elected by the electors of the district, or one year if elected by the Council. Councillors are elected for a term of three years, some of their number, varying with the total membership of the Council, retiring each year. On the expiration of their term of office, all members, including the Mayor and the President, are eligible for re-election if not subject to any of the disqualifications contained in the Act.

It is provided that, if in a particular district there should at any time be no Council or not sufficient councillors to form a quorum, a Commissioner may be appointed to exercise all the powers of the local authority.

Functions of Local Authorities

The functions and powers of local authorities are extremely diverse in character. They are prescribed in detail in the Local Government Act, 1960 and some of the more important of them are referred to in later Chapters of the Year Book. For example, reference to local government activity in the fields of road construction and maintenance will be found in Chapter VI Part 1 and Chapter IX Part 2, the provision of parks, gardens and recreation grounds in Chapter VII Part 1, libraries in Chapter V Part 2, public transport facilities in Chapter IX Part 2, water supplies in Chapter VII Part 2, town planning and building control in Chapter V Part 4, and the licensing of vehicles and road traffic control in Chapter IX Part 2. Among the many other powers of local authorities are those relating to hospitals and nursing services, kindergartens, hostels for school children, community centres, dental clinics, infant and maternal health centres, day nurseries, jetties, swimming baths, swimming pools, sanitation and disposal of refuse, fire prevention, eradication of noxious weeds and vermin, electricity generation, aerodromes, abattoirs, quarries, pounds and cemeteries. Under the provisions of the Health Act local authorities are responsible, as Local Boards of Health, for certain aspects of health administration.

The operations of any local government authority may be subject to investigation by a person appointed by the Governor or the Minister and having, for the purposes of the inquiry, the powers of a Royal Commission.

Financial Provisions

Financial powers of local authorities, although derived mainly from the Local Government Act, are also provided by other statutes, including the Health Act, the Water Boards Act, the Vermin Act, the Fire Brigades Act, the Cemeteries Act, the Library Board of Western Australia Act, the Argentine Ant Act and the Noxious Weeds Act. Revenue from vehicle licence fees payable under the provisions of the Traffic Act is another important item in local government finance.

Before the commencement of the Local Government Act on the 1st July, 1961, a number of rates, in addition to those authorized by local government legislation, were imposed as separate levies. These included health, sanitary and sewerage rates, water rates and vermin rates, as well as rates relating to fire brigades, cemeteries, libraries and the control of Argentine ants and noxious weeds. Under the provisions of the Local Government Act, the local authorities may include these separate levies in the general rate provided for in the Act.

The general rate for any year is determined, subject to certain statutory limits, by dividing the anticipated total financial requirement for that year by the total value of ratable property in the district. In assessing this value, every local authority must adopt valuations made by the Taxation Department, by the water supply authority for the district, or by a qualified valuer (or valuers) appointed by the Council. The Act provides for the constitution of Valuation Appeal Courts, to which appeals may be made on matters concerning valuations of property and liability for rates as assessed by the Council.

Valuations may be on the basis of either "unimproved capital value" or "annual value". The unimproved value generally represents the price which the rated land might be expected to realize if sold on the open market and, as the term implies, excludes any improvements. The annual value is an estimate of the annual rental value of the property including improvements, but with a prescribed deduction to cover rates, repairs, insurance and other related expenditure. Generally, City Councils and Town Councils are required to assess the general rate on the basis of annual value, and Shire Councils on unimproved value. It is provided, however, that any Council may, under certain specified conditions, adopt the alternative basis. Except in special circumstances, a City Council or a Town Council may only levy a rate which is uniform throughout its district, but a Shire Council may apply differential rates varying with the amount of money, including loan moneys, to be spent for the benefit of particular wards or areas of the Shire.

Local authorities are authorized to raise loans for works and undertakings and for the liquidation of existing loan debts. Borrowing by means of a special bank overdraft is permissible, with the consent of the Minister, for the installation of sewerage connexions or septic tanks and, with the approval of the Governor, for other works or undertakings. Money may also be borrowed by the sale of debentures, repayment being either by the system of reducible principal or by means of a sinking fund. Payments

to debenture holders are made at prescribed intervals. Under the system of reducible principal, the local authority undertakes to pay both principal and interest by fixed instalments. Where redemption is by means of a sinking fund, the local authority is required to establish and maintain the necessary fund at the State Treasury. Interest on the loan is normally paid half-yearly and the full amount of the loan is repaid at maturity.

The extent of loan raisings for works and undertakings is controlled by a provision which, except with the specific approval of the Governor, imposes a limit on the borrowings of an authority. This limit is determined by deducting the net total debt on existing loans from a sum equal to ten times the amount obtained by subtracting from the average of the ordinary revenue of the authority during the preceding two years the average, for the same period, of its annual expenditure on the servicing of loans. The legislation allows that balances standing to the credit of sinking funds for loan repayment, as well as amounts actually repaid, may be deemed to be repayments for the purpose of calculating net total debt. In the case of borrowings to liquidate existing loans, it is provided that the money raised shall not exceed the outstanding balance of the loan.

Before a loan may be raised by the issue of debentures, approval of the borrowing must be obtained from the State Treasury and the local authority must then publish in a newspaper and in the *Government Gazette* a notification of its intention to borrow money, including a statement of the amount of the proposed loan, its purpose and other relevant matters. Except in the case of a loan to liquidate an existing loan debt, the ratepayers of the district may demand that the proposition be submitted to a poll and the Council may proceed with the raising of the loan only if the result of the poll is favourable.

Certain of the works and undertakings for which loan moneys may be used are specified in the Local Government Act. They include the construction of streets, roads and bridges, sewers, drains and water-works; the erection or purchase of electric lighting plant, gas works and stone quarries; the provision of hostels for school children, libraries and other recreational facilities; the construction of civic and other buildings; and the purchase of land, materials and equipment. Where a particular work or undertaking is not specified in the Act the Governor may approve of it as a project for which money may be borrowed.

The financial transactions of local government authorities are subject to annual audit either by an auditor (or auditors) appointed by the Council or by a government inspector appointed by the Minister. To qualify for the office of auditor, a person must be a member of a specified institute or society of accountants and be registered as an auditor under the Companies Act. Appointment is for a term not exceeding two years, at the end of which time the holder of the office is eligible for reappointment.

The financial year for all Councils ends on the 30th June.

Details of the revenue and expenditure of local authorities during the five-year period ending with the financial year 1959-60 are given in the section *Local Government Finance* in Chapter VI, Part 1.

CHAPTER IV—POPULATION AND VITAL STATISTICS

NOTE—Reference is made in the final section of Part 1 of this Chapter to the full-blood aboriginal population of Western Australia. In accordance with Australia-wide practice, all population and vital statistics dealt with elsewhere in this Chapter exclude particulars of full-blood aboriginals.

PART 1—POPULATION

The State of Western Australia, although comprising almost one-third of the total area of Australia, contains little more than seven per cent. of the population.

At the end of 1829, the year of establishment of the Colony, there were 1,003 persons in Western Australia. Progress in the early years was slow, and in 1849 the population was still less than 5,000. Transportation of convicts, begun in the following year, resulted in some acceleration, but it was not until the discovery of gold in the Kimberley in 1885 and the rich finds at Coolgardie in 1892 and at Kalgoorlie in 1893 that any marked increase took place. This development was so rapid that, in the last decade of the century, the population was almost quadrupled, from 48,502 at the end of 1890 to 179,967 in 1900. The rate of growth in those years has never been approached in the present century, as will be seen from the table below, but the average annual rate of increase of Western Australia's population from the beginning of the century to the end of 1960, 2·36 per cent., has been higher than that of any other State and of the Commonwealth as a whole, 1·71 per cent.

The table shows the population at ten-yearly intervals from 1830, the numerical and percentage increase during each decade and the corresponding average annual rate. The population at the end of each of the ten years from 1951 to 1960 is also shown, together with the increase in each year and during the ten-year period ended 31st December, 1960.

ESTIMATED POPULATION†—1830-1960

At 31st December :	Males	Females	Persons	Increase		
				Number	Per cent.	Average Annual Rate (per cent.)
1830	877	295	1,172	....	....	....
1840	1,434	877	2,311	1,139	97·18	7·03
1850	3,576	2,310	5,886	3,575	154·69	9·80
1860	9,529	5,698	15,227	9,341	158·70	9·97
1870	15,474	9,610	25,084	9,857	64·73	5·12
1880	13,559	12,460	29,019	3,935	15·69	1·47
1890	28,854	19,648	48,502	19,483	67·14	5·27
1900	110,088	69,879	179,967	131,465	271·05	14·01
1910	157,971	118,861	276,832	96,865	53·82	4·40
1920	176,895	154,428	331,323	54,491	19·68	1·81
1930	232,868	198,742	431,610	100,287	30·27	2·68
1940	248,734	225,342	474,076	42,466	9·84	0·94
1950	294,758	277,891	572,649	98,573	20·79	1·91
1960	372,665	358,368	731,033	158,384	27·66	2·47
1951	304,454	285,885	590,339	17,690	3·09	....
1952	316,700	296,235	612,935	22,596	3·83	....
1953	326,372	305,371	631,743	18,808	3·07	....
1954	334,342	314,365	648,707	16,964	2·69	....
1955	343,838	324,771	668,609	19,902	3·07	....
1956	350,333	330,935	681,268	12,659	1·89	....
1957	356,195	339,039	695,234	13,966	2·05	....
1958	361,441	345,755	707,196	11,962	1·72	....
1959	366,253	352,438	718,691	11,495	1·63	....
1960	372,665	358,368	731,033	12,342	1·72	....
Ten years ended 31st December, 1960				158,384	27·66	2·47

† See letterpress *Estimates of Population* on page 107. Figures shown for 1954 and later have been revised in accordance with the results of the 1961 Census.

CENSUSES

The first systematic census of the Colony was taken on the 10th October, 1848. Since then, there have been 12 enumerations, the latest at the 30th June, 1961.

The population disclosed at each census, its relation to the Australian total, and the masculinity are shown in the next table.

POPULATION AT EACH CENSUS DATE—WESTERN AUSTRALIA AND AUSTRALIA
1848-1961 (a)

Date of Census	Western Australia			Australia	Western Australia	
	Males	Females	Persons	Persons	Proportion of Australia (per cent.)	Masculinity (b)
1848—10th October	2,818	1,804	4,622	326,445	1.42	156.2
1854—30th September	7,779	3,964	11,743	671,436	1.75	196.2
1859—31st December	9,522	5,315	14,837	1,097,305	1.35	179.2
1870—31st March	15,375	9,410	24,785	1,606,057	1.54	163.4
1881—3rd April	17,062	12,046	29,708	2,250,194	1.32	134.9
1891—5th April	29,807	19,975	49,782	3,177,823	1.57	149.2
1901—31st March	112,875	71,240	184,124	3,773,801	4.88	158.4
1911—3rd April	161,565	120,540	282,114	4,455,005	6.33	134.0
1921—4th April	177,278	155,454	332,732	5,435,734	6.12	114.0
1933—30th June	233,937	204,915	438,852	6,629,839	6.62	114.2
1947—30th June	258,076	244,404	502,480	7,579,358	6.63	105.6
1954—30th June	330,358	309,413	639,771	8,986,530	7.12	106.8
1961—30th June (a)	375,452	361,177	736,629	10,508,189	7.01	104.0

(a) Figures shown for 30th June, 1961 are subject to possible minor revision on completion of Census tabulations.

(b) Number of males to each 100 females.

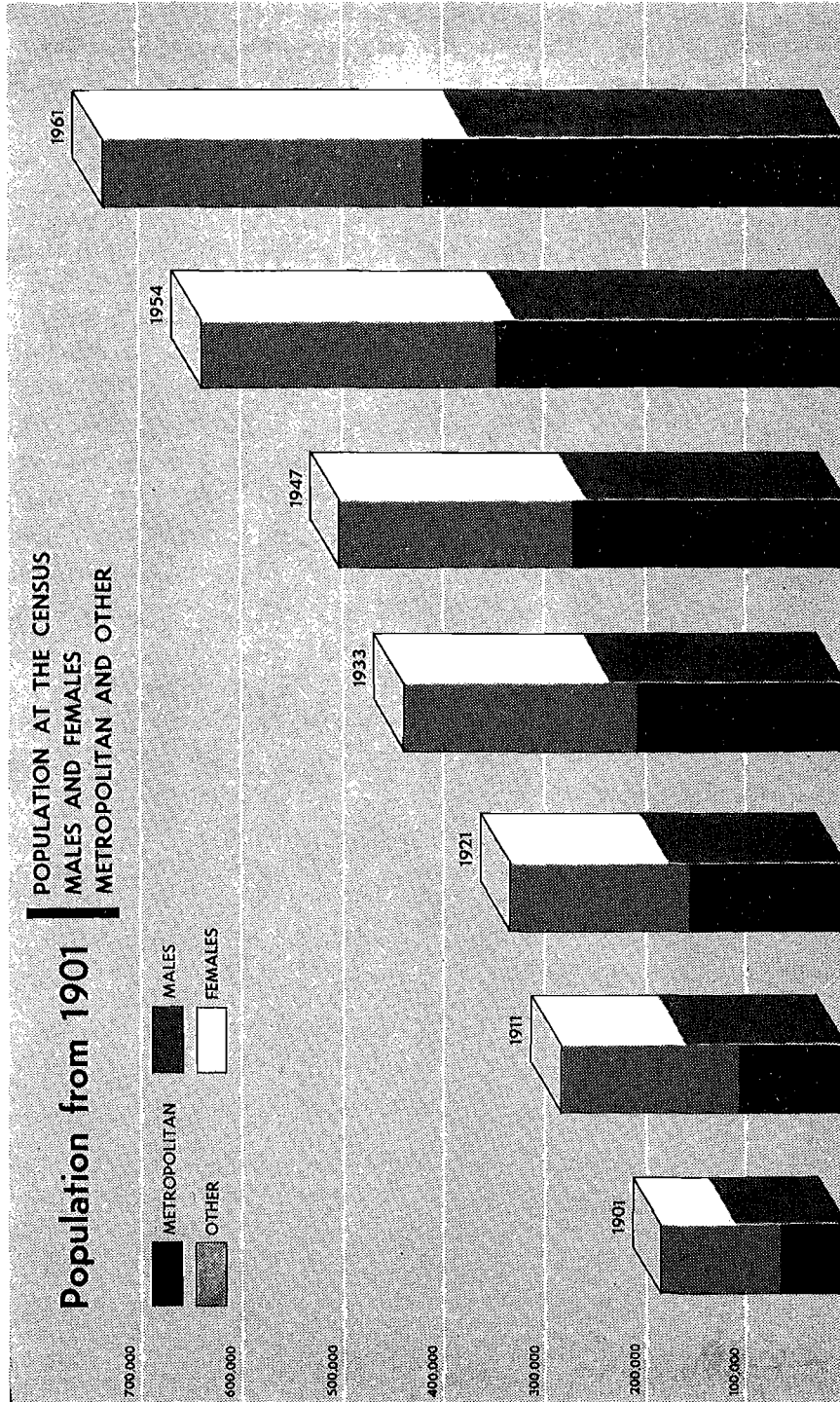
The Census of 1881 was the first taken simultaneously in all the Australian Colonies. For the dates shown in the years 1848, 1854 and 1870, the Australian population totals have been estimated from other sources. However, it is thought that the figures showing the proportion which Western Australian population bore to the Australian total at those dates are not seriously affected on that account.

Masculinity—The sharp rise in masculinity between the Census of 1848 and the three succeeding enumerations was doubtless a result of the transportation of convicts which began in 1850 and continued until 1868. During this period a total of 9,668 convicts, all of whom were males, were brought to the Colony. The high levels of masculinity disclosed by the Censuses of 1891 and 1901 may be attributed to the influx of a predominantly male population following the gold discoveries of 1885 and later years.

The masculinity of Western Australian population has continued to be high. At the 30th June, 1961, it stood at 104.0 and was higher than in any other State except Queensland (104.1) and was significantly higher than the Commonwealth figure of 102.2.

Age Composition—The following table shows a division of the population into the proportions of those aged under 15 years, from 15 to 64 years, and 65 years and over at each census from 1881. These divisions have been chosen as being broadly representative of the child population, persons of working age, and those beyond normal working age. The proportions of minors in the population are also shown.

Of particular significance are the decrease between 1921 and 1947 in the proportion of children in the population, due mainly to the fall in the birth rate during the late 1920's and the 1930's, and the high level shown by the 1961 figure, resulting from the improvement in the birth rate and the introduction of large numbers of migrant children during the post-war period. The decline, to 60.0 per cent., in the proportion of those of working age is another important feature.



PERCENTAGE OF POPULATION IN CERTAIN AGE GROUPS—CENSUSES, 1881-1961

Census Year (a)	Under 15 years	15 years and under 65	65 years and over	Under 21 years	21 years and over
MALES					
1881	33.7	63.0	3.3	44.3	55.7
1891	29.0	67.3	3.7	38.5	61.5
1901	23.8	74.2	2.0	31.8	68.2
1911	27.5	70.1	2.4	36.6	63.4
1921	30.7	65.8	3.5	40.9	59.1
1933	26.2	67.8	6.0	36.7	63.3
1947	26.7	65.4	7.9	35.9	64.1
1954	30.1	63.2	6.7	38.3	61.7
1961	32.7	60.8	6.5	41.9	58.1
FEMALES					
1881	44.8	53.7	1.5	59.3	40.7
1891	42.0	56.1	1.9	54.7	45.3
1901	37.1	61.4	1.5	47.1	52.9
1911	36.0	61.7	2.3	46.8	53.2
1921	34.1	62.9	3.0	45.4	54.6
1933	28.8	65.9	5.3	40.3	59.7
1947	27.3	64.4	8.3	37.0	63.0
1954	30.8	61.1	8.1	39.2	60.8
1961	32.4	59.2	8.4	41.5	58.5
PERSONS					
1881	38.4	59.1	2.5	50.7	49.3
1891	34.2	62.8	3.0	45.0	55.0
1901	28.9	69.3	1.8	37.7	62.3
1911	31.1	66.5	2.4	40.9	59.1
1921	32.3	64.5	3.2	43.0	57.0
1933	27.4	66.9	5.7	38.4	61.6
1947	27.0	64.9	8.1	36.5	63.5
1954	30.4	62.2	7.4	38.8	61.2
1961	32.5	60.0	7.5	41.7	58.3

(a) For Census dates, see table on page 102.

AGE DISTRIBUTION OF THE POPULATION—CENSUS, 30th JUNE, 1961

Age Last Birthday (years)	Number			Proportion of Total (per cent.)		
	Males	Females	Persons	Males	Females	Persons
0-4	41,965	39,951	81,916	11.18	11.06	11.12
5-9	41,225	39,527	80,752	10.98	10.94	10.96
10-14	39,421	37,620	77,041	10.50	10.42	10.46
15-19	29,609	28,130	57,739	7.89	7.79	7.84
20-24	24,567	23,312	47,879	6.54	6.45	6.50
25-29	22,602	21,628	44,230	6.04	5.99	6.02
30-34	25,749	23,899	49,648	6.86	6.62	6.74
35-39	26,236	24,397	50,633	6.99	6.75	6.87
40-44	21,974	21,691	43,665	5.85	6.01	5.93
45-49	23,098	22,177	45,275	6.15	6.14	6.14
50-54	21,341	19,034	40,375	5.68	5.27	5.48
55-59	18,884	15,950	34,834	5.03	4.42	4.73
60-64	14,099	13,356	27,455	3.76	3.70	3.73
65-69	9,445	10,796	20,241	2.51	2.99	2.75
70-74	7,194	8,548	15,742	1.92	2.37	2.14
75-79	4,381	5,684	10,065	1.17	1.57	1.37
80-84	2,401	3,409	5,810	0.64	0.94	0.79
85-89	913	1,561	2,474	0.24	0.43	0.33
90-94	227	424	651	0.06	0.12	0.09
95-99	30	77	107	0.01	0.02	0.01
100 and over	1	6	7	0.00	0.00	0.00
Total	375,452	361,177	736,629	100.00	100.00	100.00
0-4	41,965	39,951	81,916	11.18	11.06	11.12
5-14	80,646	77,147	157,793	21.48	21.36	21.42
15-20	34,726	32,889	67,615	9.25	9.11	9.18
Under 21	157,337	149,987	307,324	41.91	41.53	41.72
21-44	116,101	110,168	226,269	30.92	30.50	30.72
45-64	77,422	70,517	147,939	20.62	19.52	20.08
65 and over	24,592	30,505	55,097	6.55	8.45	7.48
Total	375,452	361,177	736,629	100.00	100.00	100.00

Birthplace—The following table gives a summary of population classified according to birthplace as shown by the 1961 Census. More than three-quarters (77·67 per cent.) of the population at the 30th June, 1961 gave Australia as their birthplace. A total of 657,451 persons, almost nine-tenths of the population, were found to have been born in Australia, New Zealand, the United Kingdom or the Republic of Ireland. Of the 66,424 persons born in continental Europe, more than one-half were born in Italy (25,251 persons) or the Netherlands (11,167 persons).

BIRTHPLACE OF THE POPULATION—CENSUS, 30th JUNE, 1961

Birthplace	Number			Proportion of Total (per cent.)		
	Males	Females	Persons	Males	Females	Persons
Australia	284,775	287,395	572,170	75·85	79·57	77·67
New Zealand	963	948	1,911	0·26	0·26	0·26
Europe—						
United Kingdom and Republic of						
Ireland	44,456	38,914	83,370	11·84	10·77	11·32
Italy	14,934	10,317	25,251	3·98	2·86	3·43
Netherlands	6,156	5,011	11,167	1·64	1·89	1·52
Germany	2,715	2,867	5,582	0·72	0·79	0·76
Poland	2,795	1,916	4,711	0·74	0·53	0·64
Greece	2,260	1,827	4,087	0·60	0·51	0·55
Malta	342	194	536	0·09	0·05	0·07
Other	8,960	6,130	15,090	2·39	1·70	2·05
Total—Europe	82,618	67,176	149,794	22·00	18·60	20·34
Other Birthplaces	7,096	5,658	12,754	1·89	1·57	1·73
Grand Total	375,452	361,177	736,629	100·00	100·00	100·00

Nationality—The population at the 1961 Census is classified in the next table according to nationality. Over 95 per cent. of the population (702,759 persons) were of British nationality. Of the 164,459 persons born outside Australia, 130,589 (79·41 per cent.) were of British nationality, 13,905 (8·45 per cent.) of Italian nationality, and 7,368 (4·48 per cent.) of Dutch nationality.

NATIONALITY OF THE POPULATION—CENSUS, 30th JUNE, 1961

Nationality	Number			Proportion of Total (per cent.)		
	Males	Females	Persons	Males	Females	Persons
British (a)—						
Born in Australia	284,775	287,395	572,170	75·85	79·57	77·67
Born outside Australia	71,704	58,885	130,589	19·10	16·31	17·73
Total—British	356,479	346,280	702,759	94·95	95·88	95·40
Foreign—						
Italian	7,631	6,274	13,905	2·03	1·74	1·89
Dutch	3,916	3,452	7,368	1·04	0·96	1·00
Yugoslav	1,267	906	2,173	0·34	0·25	0·29
German	1,021	876	1,897	0·27	0·24	0·26
Greek	905	977	1,882	0·24	0·27	0·26
Polish	1,030	744	1,774	0·28	0·20	0·24
Latvian, Lithuanian and Estonian	305	211	516	0·08	0·06	0·07
Ukrainian	176	120	296	0·05	0·03	0·04
Hungarian	121	108	229	0·03	0·03	0·03
Other (including Stateless)	2,601	1,229	3,830	0·69	0·34	0·52
Total—Foreign	18,973	14,897	33,870	5·05	4·12	4·60
Grand Total	375,452	361,177	736,629	100·00	100·00	100·00

(a) All persons of individual citizenship status who by virtue of the Nationality and Citizenship Act 1948 are deemed to be British subjects. For the purposes of this table Irish nationality is included with British.

Religion—At the 1961 Census, as in the three previous enumerations, it was stated on the schedule that there was no legal obligation to reply to the question on religion. The proportion of non-reply in the total population was 10·43 per cent., 76,796 persons refraining from answering the question. Non-reply occurred more frequently among the males than among the females, 11·13 per cent. of males failing to answer compared with 9·69 per cent. of females.

The following table shows the numbers of adherents of the principal religions and sects, as disclosed by the Census, together with their proportional relationship to total population and to the total number of replies.

RELIGION OF THE POPULATION—CENSUS, 30th JUNE, 1961

Religion	Number			Proportion (per cent.) of:—	
	Males	Females	Persons	Total Population	Total Replies
Christian—					
Church of England	146,798	143,065	289,863	39.35	43.93
Catholic, Roman (a)	56,520	49,533	106,053	14.40	16.07
Catholic (a)	36,116	38,015	74,131	10.06	11.23
Methodist	37,455	39,010	76,465	10.38	11.59
Presbyterian	20,403	20,170	40,573	5.51	6.15
Churches of Christ	4,757	5,504	10,261	1.39	1.56
Greek Orthodox	4,955	4,102	9,057	1.23	1.37
Baptist	4,311	4,650	8,961	1.22	1.36
Congregational	3,826	4,200	8,026	1.09	1.22
Salvation Army	2,174	2,371	4,545	0.62	0.69
Lutheran	2,261	2,199	4,460	0.60	0.68
Seventh Day Adventist	1,691	2,099	3,790	0.51	0.57
Brethren	425	431	856	0.12	0.13
Protestant (undefined)	2,675	2,559	5,234	0.71	0.79
Other (including Christian undefined)	4,084	4,672	8,756	1.19	1.33
Total—Christian	328,451	322,580	651,031	88.38	98.67
Non-Christian—					
Hebrew	1,404	1,378	2,782	0.38	0.42
Other	649	187	836	0.11	0.13
Total—Non-Christian	2,053	1,565	3,618	0.49	0.55
Indefinite	1,106	922	2,028	0.27	0.30
No Religion	2,061	1,105	3,156	0.43	0.48
Total Replies	333,661	326,172	659,833	89.57	100.00
No Reply	41,791	35,005	76,796	10.43	....
Grand Total	375,452	361,177	736,629	100.00	....

(a) So described in individual census schedules.

Conjugal Condition—The following table shows the numbers of persons of each conjugal condition recorded at the 1961 Census, together with the proportions which these numbers bore to the total population and to the population aged 15 years and over.

CONJUGAL CONDITION OF THE POPULATION—CENSUS, 30th JUNE, 1961

Conjugal Condition	Population of All Ages			Population aged 15 years and over		
	Males	Females	Persons	Males	Females	Persons
NUMBER						
Never Married	197,553	165,971	363,524	74,942	48,873	123,815
Married	162,838	160,456	323,294	162,838	160,456	323,294
Married but Permanently Separated	4,629	5,201	9,830	4,629	5,201	9,830
Widowed	7,137	26,320	33,457	7,137	26,320	33,457
Divorced	3,295	3,229	6,524	3,295	3,229	6,524
Total	375,452	361,177	736,629	252,841	244,079	496,920
PROPORTION OF TOTAL (PER CENT.)						
Never Married	52.62	45.95	49.35	29.64	20.03	24.92
Married	43.37	44.43	43.89	64.41	65.74	65.06
Married but Permanently Separated	1.23	1.44	1.33	1.83	2.13	1.98
Widowed	1.90	7.29	4.54	2.82	10.78	6.73
Divorced	0.88	0.89	0.89	1.30	1.32	1.31
Total	100.00	100.00	100.00	100.00	100.00	100.00

Industry—Classifications of the population according to industry at the 1954 Census will be found in Chapter X—*Employment, Wages and Prices* and some particulars from the 1961 Census are given in the *Appendix*.

Occupational Status—An analysis of the work force according to occupational status at each Census from 1901 to 1954 appears in Chapter X—*Employment, Wages and Prices*, and similar data from the 1961 Census are shown in the *Appendix*.

Dwellings—Certain particulars of dwellings at the Censuses of 1954 and 1961 are presented in Chapter V—*Social Condition*.

ESTIMATES OF POPULATION

Estimates as at Specific Dates

For dates other than those of the periodic census of population, it is necessary to rely upon estimates based on statistics of births and deaths and of recorded movements of population interstate and overseas. The estimates are made by adding to the census figures the subsequent *natural increase* (the excess of births over deaths) and recorded *net migration* (the excess of arrivals over departures). The sum of the elements *natural increase* and *net migration* is referred to as *total increase*.

Estimates of the population of Australia and of each of the States and Territories are prepared by the Commonwealth Statistician as at 31st March, 30th June, 30th September and 31st December in each year. Because the available records of interstate movement are incomplete, these intercensal estimates as they apply to States and Territories are approximate and are revised when the results of the next succeeding census become known.

For this reason, all State population statistics for dates or periods subsequent to the 30th June, 1961, when the last census was taken, are to be regarded as subject to revision after the next census.

ESTIMATED POPULATION (a)

Year	At 30th June			At 31st December		
	Males	Females	Persons	Males	Females	Persons
1951	298,714	281,629	580,343	304,454	285,885	590,339
1952	309,749	290,109	599,858	316,700	296,235	612,935
1953	320,352	300,195	620,547	326,372	305,371	631,743
1954	(b) 330,358	(b) 309,413	(b) 639,771	334,342	314,365	648,707
1955	338,075	319,040	657,115	343,838	324,771	668,609
1956	346,762	327,767	674,529	350,333	330,935	681,268
1957	352,424	335,181	687,605	356,195	339,039	695,234
1958	357,425	342,140	699,565	361,441	345,755	707,196
1959	363,019	349,051	712,070	366,253	352,438	718,691
1960	367,685	354,395	722,080	372,665	358,368	731,033

(a) Revised in accordance with results of 1961 Census. (b) Census figures.

Estimates of Mean Population

It is often useful to relate a given characteristic to population in order to express it in *per capita* terms or as "per head of population." In some cases it is appropriate to relate a characteristic to the population as at a specified date as, for example, savings bank balances per head of population at the 30th June, or motor vehicles per head of population at the 31st December.

Where events, as for instance births or deaths, are taking place continuously throughout a period, it is obviously not appropriate to relate these events to the population as at a specific date. It is necessary, therefore, to devise a measure which takes account of the change in population which occurs continuously throughout any period. This measure is known as the *mean population*.

As stated earlier, estimates of population are prepared as at the end of each quarter of the year. The mean population of a quarter might be taken to be the average, or arithmetic mean, of the populations at the beginning and the end of the quarter. If a represents the population at the beginning of a year and b , c , d and e the populations at the end of the first, second, third and fourth quarters respectively, these quarterly means would then be $\frac{1}{2}(a + b)$ for the first quarter, $\frac{1}{2}(b + c)$ for the second, $\frac{1}{2}(c + d)$ for the third and $\frac{1}{2}(d + e)$ for the fourth quarter. The mean population for the year might then be taken as the arithmetic mean of the four quarterly average populations, or

$$\frac{1}{4}\left\{\frac{1}{2}(a + b) + \frac{1}{2}(b + c) + \frac{1}{2}(c + d) + \frac{1}{2}(d + e)\right\}$$

which may be more simply expressed as $\frac{1}{8}(a + 2b + 2c + 2d + e)$. This method of deriving mean

population had been in use in Western Australia prior to its general adoption by the 1903 Conference of Australian Statisticians. It was later superseded by the more precise measure

$$1/12(a + 4b + 2c + 4d + e)$$

which is now commonly used in Australian statistics. In order to establish uniformity with current practice, estimates of mean population for 1901 and later years have been revised, where necessary, by the application of this formula.

ESTIMATED MEAN POPULATION (a)

Year	Year ended 30th June			Year ended 31st December		
	Males	Females	Persons	Males	Females	Persons
1951	293,353	276,938	570,346	293,646	281,671	580,317
1952	304,031	285,856	589,887	309,976	290,639	600,615
1953	315,458	295,733	611,191	320,492	300,542	621,034
1954	325,557	305,143	630,705	330,214	309,749	639,963
1955	333,893	314,329	648,222	338,041	319,282	657,323
1956	342,877	324,021	666,898	346,631	327,828	674,459
1957	349,475	331,474	680,949	352,223	335,225	687,448
1958	354,799	338,769	693,568	357,575	342,340	699,915
1959	360,285	345,584	705,869	362,796	348,941	711,737
1960	365,252	352,064	717,316	368,112	354,738	722,900

(a) Revised in accordance with results of 1961 Census.

SOURCES OF INCREASE

The following table shows the population of the State at each census from 1933 to 1961, and the intercensal gains by natural increase and by migration. The annual rates of total increase for each period are also shown.

POPULATION—ANALYSIS OF INTERCENSAL INCREASE: 1933 TO 1961

Particulars	Intercensal Period (a)		
	1933-1947 (14 years)	1947-1954 (7 years)	1954-1961 (7 years)
Population at Beginning of Period	438,852	502,480	639,771
Natural Increase—			
Births	134,871	100,665	118,134
Deaths	(b) 65,432	35,089	38,702
Excess of Births over Deaths	(c) 69,439	65,576	79,432
Migration—			
Arrivals	(d) 179,995	535,480	635,158
Departures	(d) 196,550	461,857	607,820
Excess of Arrivals over Departures	(d) -16,555	73,623	27,338
Total Recorded Increase	52,884	139,199	106,770
Intercensal Adjustment (e)	10,744	-1,908	-9,912
Population at End of Period	502,480	639,771	736,629
Increase during Period—			
Total	63,628	137,291	96,858
Per Cent.	14.50	27.32	15.14
Average Annual Rate (per cent.)	0.97	3.51	2.03

(a) For Census dates, see table on page 102. (b) Includes deaths of defence personnel. (c) See note (b).
(d) Excludes troop movements. Interstate migration has also been excluded for the period July, 1943 to June, 1947. (e) Un-recorded movement of population disclosed by the Census.

The population made considerable gains by natural increase during each intercensal period, the rates per thousand of mean population being 10.58 (1933-1947), 16.48 (1947-1954) and 16.40 (1954-1961), compared with rates for Australia as a whole of 9.01, 13.53 and 13.84. Western Australia's rate of increase from this source during each of the periods 1947-1954 and 1954-1961 was greater than that for any other State except Tasmania, which recorded rates of 17.11 and 17.52 per thousand of mean population.

The total increase of Western Australia's population in the period 1933-1947 was 63,628 persons, equivalent to an average annual gain of 0.97 per cent., compared with the Australian average of 0.96 per cent. In the succeeding period Western Australia experienced a higher rate, 3.51 per cent., than any other State and a considerably greater rate of growth than Australia as a whole, 2.46 per cent. per annum. During the period 1954-1961, Western Australia's increase of 2.03 per cent. per annum was lower than that of any other State except New South Wales (1.94 per cent.) and Tasmania (1.82 per cent.). The corresponding rate for Australia as a whole was 2.26 per cent. per annum.

GEOGRAPHICAL DISTRIBUTION

Western Australia is divided into a number of municipal districts for the purposes of local government administration. At the 30th June, 1961 there were 145 such districts, which are used as the basis of presentation of data derived not only from the population census but also from many of the regular statistical collections. Information presented in this way is valuable when considering activities in particular local government areas but is often more detailed than is required for a broader geographical assessment. For this reason, the municipal districts are combined into eleven Statistical Divisions which provide significant areas for the publication of statistics in a convenient summary form. The Statistical Divisions and their component districts are shown on the map of the State appearing at the back of the Year Book.

POPULATION IN STATISTICAL DIVISIONS—1954 AND 1961

Statistical Division	Census, 30th June, 1954				Census, 30th June, 1961			
	Males	Females	Persons	Masculinity (a)	Males	Females	Persons	Masculinity (a)
Metropolitan	171,832	176,815	348,647	97.18	205,107	215,026	420,133	95.39
Swan	24,370	22,032	46,402	110.61	28,477	26,788	55,265	106.31
South-West	36,607	31,946	68,553	114.59	37,314	34,323	71,637	108.71
Southern Agricultural	19,140	16,985	36,125	112.69	21,999	19,624	41,623	112.10
Central Agricultural	30,502	25,422	55,924	119.98	30,964	26,030	57,594	116.27
Northern Agricultural	17,663	14,405	32,068	122.62	19,578	16,207	35,785	120.80
Eastern Goldfields	18,560	16,018	34,578	115.87	18,430	15,712	34,142	117.30
Central	2,930	1,864	4,794	157.19	2,365	1,594	3,959	148.37
North-West	2,751	1,469	4,220	187.27	2,754	1,809	4,563	152.24
Pilbara	1,795	855	2,650	209.94	2,119	1,124	3,243	188.52
Kimberley	2,303	1,240	3,543	185.73	3,816	1,852	5,668	206.05
Total—All Divisions	328,453	309,051	637,504	106.28	372,923	360,689	733,612	103.39
Migratory (b)	1,905	362	2,267	526.24	2,529	488	3,017	518.24
Whole State	330,358	309,413	639,771	106.77	375,452	361,177	736,629	103.95

(a) Number of males to each 100 females. (b) Comprises persons (both passengers and crew) not enumerated elsewhere who, at midnight on Census night, were on board ships or were travelling on long-distance trains, motor coaches or aircraft.

The growing urbanization occurring in other States is also apparent in Western Australia. The population of the Metropolitan Statistical Division at the Census of the 30th June, 1961 was 420,133, or 57.0 per cent. of the State total, compared with 348,647 (54.5 per cent.) seven years earlier, an increase of 71,486 persons, or 20.5 per cent. The State's natural increase between the Censuses was 79,432 of which the Metropolitan Statistical Division contributed 35,846. In addition, this Division experienced a net gain by migration of 35,640. The larger towns of the Agricultural and South-West Statistical Divisions also showed substantial population increases, the greatest being those of Bunbury (3,317 persons; or 33.6 per cent.), Geraldton (2,585; 31.1 per cent.) and Albany (2,261; 27.4 per cent.).

The total population of the non-metropolitan Divisions rose by 24,622 or little more than 8.5 per cent. The natural increase recorded in these Divisions was 43,586, so that there was a loss of 18,964 persons by migration from the area. Of the net increase of 24,622 persons, the Swan Division accounted for more than one-third with a population gain of 8,863, equivalent to 19.1 per cent. The greatest proportional

increase, 60·0 per cent., occurred in the Kimberley Division which added 2,125 persons to its population of 3,543 at the 1954 Census. Other Divisions showing an increase were Southern Agricultural, 5,498 (15·2 per cent.); Northern Agricultural, 3,717 (11·6 per cent.); South-West, 3,084 (4·5 per cent.); Central Agricultural, 1,670 (3·0 per cent.); Pilbara, 593 (22·4 per cent.); and North-West, 343 (8·1 per cent.). Divisions which experienced a decrease in population were Central which lost 835 persons (—17·4 per cent.) and Eastern Goldfields with a decline of 436 (—1·3 per cent.).

Outside the Metropolitan Statistical Division, the largest towns are Kalgoorlie-Boulder (gold mining), Bunbury, Geraldton and Albany (seaports), Collie (coal mining) and Northam (agricultural centre). These towns are included in the following list, which shows the names and the population of all towns which had more than 1,000 inhabitants at the Census. Those designated "N.M." are "non-municipal" towns, which are unincorporated towns having a Census population of 1,000 or more, are situated outside the Metropolitan Statistical Division and for which boundaries have been specially delineated for Census purposes.

PRINCIPAL TOWNS (†)—POPULATION AT CENSUS OF 30th JUNE, 1961

Name	Designation	Population	Name	Designation	Population
PERTH AND SUBURBS (a)—			Bunbury	Town	13,186
Perth	City	94,508	Geraldton	Town	10,894
Perth	Shire	84,045	Albany	Town	10,526
Melville	Shire	39,207	Collie	N.M.	7,547
South Perth	City	29,941	Northam	Town	7,200
Nedlands	City	23,218	Narrogin	Town	4,620
Fremantle	City	21,980	Hamilton Hill	N.M.	3,544
Belmont	Shire	20,393	Busselton	N.M.	3,495
Bayswater	Shire	19,296	Katanning	N.M.	3,360
Canning	Shire	17,701	Kwinana New Town	N.M.	3,269
Subiaco	City	16,033	Merredin	N.M.	3,029
Midland	Town	9,256	Manjimup	N.M.	2,978
Claremont	Town	8,601	Kalamunda-Gooseberry Hill	N.M.	2,488
Bassendean	Shire	8,310	Mandurah	N.M.	2,132
Cottesloe	Town	7,827	Norseman	N.M.	2,104
East Fremantle	Town	6,542	Gosnells	N.M.	1,987
Mosman Park	Shire	5,702	Armadales	N.M.	1,970
Swan-Guildford (part)	Shire	3,548	Harvey	N.M.	1,898
North Fremantle	Town	2,863	Bridgetown	N.M.	1,877
Peppermint Grove	Shire	1,662	Carnarvon	Town	1,809
TOTAL	(a)	420,133	Mount Barker	N.M.	1,632
KALGOORLIE AND SUBURBS			Wagin	N.M.	1,608
Kalgoorlie	Town	9,696	York	Town	1,524
Kalgoorlie (part)	Shire	6,304	Rockingham	N.M.	1,301
Boulder	Town	5,773	Broome	N.M.	1,222
TOTAL ....	....	21,773	Pemberton	N.M.	1,201
			Kellerberrin	N.M.	1,191
			Moora	N.M.	1,145
			Esperance	N.M.	1,111
			Wundowie	N.M.	1,102
			Donnybrook	N.M.	1,011

(†) The names and designations used are those which became current on the 1st July, 1961 when the Local Government Act, 1960 came into operation; see page 97. (a) Metropolitan Statistical Division.

N.M. denotes "non-municipal" town.

The area described officially as the *South-West Land Division* often has particular importance in matters of legislation and administration. Its boundaries are almost coincident with those of the area formed by the aggregation of the Metropolitan, Swan, South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Statistical Divisions. It embraces an area of 98,305 square miles, a little more than one-tenth of the whole State (975,920 square miles), and had a population of 681,977 persons at the 1961 Census, equivalent to 92·6 per cent. of the State total.

The Eastern Goldfields, Central and Pilbara Statistical Divisions together comprised an area of 636,756 square miles (or almost two-thirds of the State) and had a population of only 41,344 persons at the Census of the 30th June, 1961. A low rainfall renders much of it virtually uninhabitable and desert or near-desert conditions prevail over some 350,000 square miles which includes much of the eastern and northern parts of the area and extends into the southern portion of the Kimberley Statistical Division. Almost no part of the area has an annual rainfall greater than ten inches and a considerable proportion has much less. Of the total of 41,344 persons enumerated in these three Divisions at the Census, more than 30,000 were living in the towns of Kalgoorlie-Boulder (21,773), Norseman (2,104), Esperance (1,111), Gwalia-Leonora (970), Port Hedland (965), Wittenoom (881), Southern Cross (779), Bullfinch (727),

Meekatharra (640) and Coolgardie (625). Only about 10,000 persons, therefore, were resident in the remainder of the area.

For administrative and other purposes, the portion of the State lying north of the 26th parallel of latitude frequently has special significance. This area, which embraces part of the Central, almost all of the North-West and the whole of the Pilbara and Kimberley Statistical Divisions, is 529,486 square miles in extent. It is therefore somewhat greater in area than half the entire State, but had a population at the 1961 Census of only 13,657 persons. Of these, more than 8,000 were to be found at or near the ports of the north and north-west coasts, and only about 5,000 on the sheep and cattle stations and at mines and developmental projects in the hinterland.

Density—The most densely populated part of the State is the Metropolitan Statistical Division. At the Census of the 30th June, 1961 it had a population of 420,133 and an area of 192 square miles, representing a density of 2,188 persons per square mile. The Central Division is the most sparsely populated with an area of 215,070 square miles (more than one-fifth of the entire State) and a Census population of only 3,959 persons, equivalent to an average of one person to every 54 square miles.

AREA, POPULATION AND DENSITY—STATISTICAL DIVISIONS CENSUS, 30th JUNE, 1961

Statistical Division	Area		Population				Persons per square mile
	Square Miles	Proportion of State (per cent.)	Males	Females	Persons	Proportion of State (per cent.)	
Metropolitan	192	0.02	205,107	215,026	420,133	57.03	2,188.19
Swan	1,885	0.19	28,477	26,788	55,265	7.50	29.32
South-West	11,025	1.13	37,314	34,323	71,637	9.73	6.50
Southern Agricultural	22,050	2.26	21,999	19,624	41,623	5.65	1.89
Central Agricultural	29,077	2.98	30,964	26,630	57,594	7.82	1.98
Northern Agricultural	36,840	3.77	19,578	16,207	35,785	4.86	0.97
Eastern Goldfields	250,224	25.64	18,430	15,712	34,142	4.63	0.14
Central	215,070	22.04	2,365	1,594	3,959	0.54	0.02
North-West	75,732	7.76	2,754	1,809	4,563	0.62	0.06
Pilbara	171,462	17.57	2,119	1,124	3,243	0.44	0.02
Kimberley	162,363	16.64	3,816	1,852	5,668	0.77	0.03
Total—All Divisions	975,920	100.00	372,923	360,689	733,612	99.59	0.75
Migratory (a)	....	....	2,529	488	3,017	0.41	....
Whole State	975,920	100.00	375,452	361,177	736,629	100.00	0.76

(a) Comprises persons (both passengers and crew) not enumerated elsewhere who, at midnight on Census night, were on board ships or were travelling on long-distance trains, motor coaches or aircraft.

Western Australia had a population density at the 1961 Census of only 0.76 persons per square mile, compared with an average of 3.54 for Australia as a whole. Victoria was the most densely populated State, having an average of 33.34 persons per square mile.

The following table shows the area of each of the States and Territories together with the population and its density at the Census of 30th June, 1961.

AREA, POPULATION AND DENSITY—STATES AND TERRITORIES CENSUS, 30th JUNE, 1961

State or Territory	Area in square miles	Population			Persons per square mile
		Males	Females	Persons	
New South Wales	309,433	1,972,911	1,944,105	3,917,016	12.66
Victoria	87,884	1,474,395	1,455,718	2,930,113	33.34
Queensland	667,000	774,579	744,249	1,518,828	2.28
South Australia	380,070	490,225	479,115	969,340	2.55
Western Australia	975,920	375,452	361,177	736,629	0.76
Tasmania	26,215	177,628	172,712	350,340	13.36
Northern Territory	523,620	16,206	10,889	27,095	0.06
Australian Capital Territory	939	30,853	27,970	58,823	62.66
Australia	2,971,081	5,312,254	5,195,935	10,508,189	3.54

ABORIGINALS

It is provided in section 127 of the Commonwealth of Australia Constitution Act that "in reckoning the numbers of the people of the Commonwealth, or of a State or other part of the Commonwealth, aboriginal natives shall not be counted." Commonwealth legal authorities have given an opinion that persons of the half-blood are not "aboriginal natives" within the meaning of the Constitution, and *a fortiori* that persons of less than half aboriginal blood are not aboriginal natives.

The principle followed in classification for census purposes is that persons having a preponderance of aboriginal blood are regarded as full-blood, those of half aboriginal and half European blood as half-caste, while those having aboriginal blood to a degree less than one-half and European blood to a degree greater than one-half are regarded as being of European race. Full-blood Australian aboriginals so defined are thus excluded, by the requirements of the Constitution Act, from the main tabulations relating to the population census. Nevertheless, every endeavour is made in the course of the census enumeration to record all full-blood aboriginals in contact with civilization. The nomadic habits of the natives, even of those in employment, in remote areas make this compilation extremely difficult, and much more so in the case of those living under tribal conditions. At the 1961 Census, 8,097 full-blood aboriginals were enumerated in Western Australia, and of these one-half were in the Kimberley Statistical Division, one-quarter in the Eastern Goldfields and Central Divisions and one-fifth in the Pilbara and North-West Divisions. It is estimated by the Department of Native Welfare that some 2,000 full-blood aboriginals are living "beyond the confines of civilization," so that the total population may reasonably be assumed to be about 10,000.

CHAPTER IV—continued

PART 2—BIRTHS, DEATHS AND MARRIAGES

THE REGISTRATION SYSTEM

Compulsory registration of births, deaths and marriages in Western Australia was originally provided for by legislation of the year 1841. The Statute currently in force is the Registration of Births, Deaths and Marriages Act, 1894–1956. For the administration of the Act, the State is divided into 27 Registry Districts, each having a District Registrar. Returns and duplicates of all registrations, together with the original supporting documents, are sent monthly from the district offices to the Registrar-General at Perth, where a Central Registry Office has been maintained since 1841.

Births are required to be registered within sixty days of the event, and must be notified by the father, the mother or the occupier of the premises where the birth took place. Special provisions and penalties apply to notification and registration after the expiration of the sixty-day period.

A stillbirth must be registered both as a birth and a death. (A stillborn child is defined as one of seven months' gestation or over, not born alive.)

Deaths are required to be registered within fourteen days. Notification must be given by the person who disposes of the body or by the occupier of the premises where the death occurred. As in the case of births, special provisions and penalties exist for the late registration of a death.

Marriages may be celebrated by duly authorized ministers of religion (registered for this purpose by the Registrar-General) or by District Registrars. Ministers are required to lodge a marriage certificate with the District Registrar for registration within fourteen days of the celebration of a marriage, and to furnish to the Registrar-General a monthly return of all marriages celebrated. A penalty fee is provided for registrations after fourteen days from the date of marriage.

Statistics of births, deaths and marriages are prepared from the registration documents. These vital statistics are compiled according to date of registration and not date of occurrence, and according to place of usual residence and not place of occurrence.

BIRTHS

Statistics of births in each of the five years 1956 to 1960 in the Metropolitan Statistical Division, the rest of the State, and in Western Australia as a whole are shown in the following table.

BIRTHS

Year				Births (a)			Ex-Nuptial Births (a)	Multiple Births (a)	Stillbirths
				Males	Females	Total			
METROPOLITAN STATISTICAL DIVISION									
1956	....	....	....	4,591	4,128	8,719	370	184	111
1957	....	....	....	4,454	4,105	8,559	358	209	117
1958	....	....	....	4,398	4,157	8,555	400	182	107
1959	....	....	....	4,516	4,290	8,806	426	203	102
1960	....	....	....	4,507	4,173	8,680	418	202	117
REST OF STATE									
1956	....	....	....	4,279	3,918	8,197	426	207	115
1957	....	....	....	4,284	4,081	8,365	437	182	131
1958	....	....	....	4,134	4,042	8,176	454	211	118
1959	....	....	....	4,210	4,095	8,305	478	213	123
1960	....	....	....	4,192	4,054	8,246	503	156	109
WHOLE STATE									
1956	....	....	....	8,870	8,046	16,916	796	391	226
1957	....	....	....	8,738	8,186	16,924	795	391	248
1958	....	....	....	8,532	8,199	16,731	854	393	225
1959	....	....	....	8,726	8,385	17,111	904	416	225
1960	....	....	....	8,699	8,227	16,926	921	358	226

(a) Excluding stillbirths.

Birth Rates—The crude birth rate in any period may be defined as the number of live births occurring during the period for every thousand of the mean population.

The average annual rates for each five-year period in the fifty years from 1911 to 1960 and the rates for single years from 1951 to 1960, for Western Australia and Australia as a whole, are shown in the following table.

CRUDE BIRTH RATES*—WESTERN AUSTRALIA AND AUSTRALIA

Period	Average Annual Rate		Year	Annual Rate	
	Western Australia	Australia		Western Australia	Australia
1911-1915	28.62	27.78	1951	25.49	22.96
1916-1920	24.49	25.35	1952	25.66	23.35
1921-1925	22.85	23.86	1953	25.54	22.94
1926-1930	21.54	20.98	1954	24.89	22.50
1931-1935	18.36	16.94	1955	25.29	22.57
1936-1940	19.16	17.52	1956	25.08	22.51
1941-1945	21.72	20.28	1957	24.62	22.86
1946-1950	25.24	23.39	1958	23.90	22.60
1951-1955	25.37	22.86	1959	24.04	22.57
1956-1960	24.20	22.59	1960	23.41	22.42

* Revised in accordance with the results of the 1961 Census.

In each year of the period under review, Western Australia's crude birth rate has been higher than that of the Commonwealth with the exception of the latter part of World War I and during the early 1920's.

In Western Australia, the rate showed a marked and almost continuous decrease from the beginning of the century to the depression of thirty years later when the unprecedentedly low rate of 17.64 was recorded in 1934 (see Graph—*Rates of Birth, Death and Marriage*). In the years since then a fairly well-sustained improvement was evident until 1952 when the rate reached 25.66, its highest level since 1917. Since 1952 there has been a decline and in 1960 the rate was 23.41, the lowest since 1945.

Gross and Net Reproduction Rates—As a measure of fertility, the crude birth rate has the advantage of simplicity in calculation. The data necessary for its computation are usually readily available from published statistics, and it is therefore useful in comparing the fertility of the populations of States and countries for which no additional data are available. However, it is of limited use, since it does not take into account the important factors of age and sex composition of the population. Gross and net reproduction rates, which do have regard to these factors, are therefore generally to be preferred to the crude birth rate as measures of fertility.

The gross reproduction rate is derived from age-specific fertility rates, which represent the number of female births occurring to women of specified ages per thousand women of those particular ages. It thus takes cognizance of the considerable variations in fertility experienced by women at the successive stages of their child-bearing life. The gross reproduction rate is a measure of the number of female children who would be born, on the average, to every woman assuming that she lives through the whole of the child-bearing period and that the basic fertility rates remain unaltered throughout.

The gross reproduction rate assumes that all females survive to the end of their child-bearing capacity. A more accurate measure, which takes into account the effect of mortality among women during this period is the net reproduction rate. This rate represents the average number of female children who would be born to women during their lifetime if they were subject in each succeeding year of life to the fertility and mortality rates on which the calculation is based. The net reproduction rate is a measure of the number of women who, in the next generation, will replace the women of reproductive age in the current generation. It provides a useful indication of likely future population trends. A rate remaining stationary at unity indicates an ultimately static population. If a rate greater than unity is maintained, an ultimate increase of population will result, while a continuing rate less than unity will lead to an ultimate decline.

The gross reproduction rates for Western Australia and the Commonwealth in 1954, the latest Census year for which particulars are available, were 1.772 and 1.558, and the corresponding net rates 1.704 and 1.497.

The following table shows the age-specific fertility rates, in terms of female births only, the gross reproduction rates and the net reproduction rates for Western Australia and Australia in each of the Census years 1947 and 1954.

FERTILITY RATES AND REPRODUCTION RATES—WESTERN AUSTRALIA AND AUSTRALIA, 1947 AND 1954

Rate	Western Australia		Australia	
	1947	1954	1947	1954
Age-Specific Fertility Rates (a)				
Age Group (years)				
15-19	16.87	20.58	15.36	19.12
20-24	89.45	116.12	80.68	96.24
25-29	99.75	106.22	90.08	94.49
30-34	72.12	65.07	63.76	59.91
35-39	42.87	34.72	36.48	31.17
40-44	14.44	11.02	11.44	9.85
45-49	1.17	0.76	0.80	0.71
Gross Reproduction Rate	1.683	1.772	1.493	1.558
Net Reproduction Rate	1.595 (b)	1.704 (c)	1.416 (b)	1.497 (c)

(a) Number of female births per 1,000 women in each age group.
(c) Based on 1953-1955 mortality experience.

(b) Based on 1946-1948 mortality experience.

DEATHS

Statistics of deaths in each of the five years 1956 to 1960 in the Metropolitan Statistical Division, the rest of the State, and in Western Australia as a whole appear in the next table. Infant deaths (those which occur in the first year of life) are also shown.

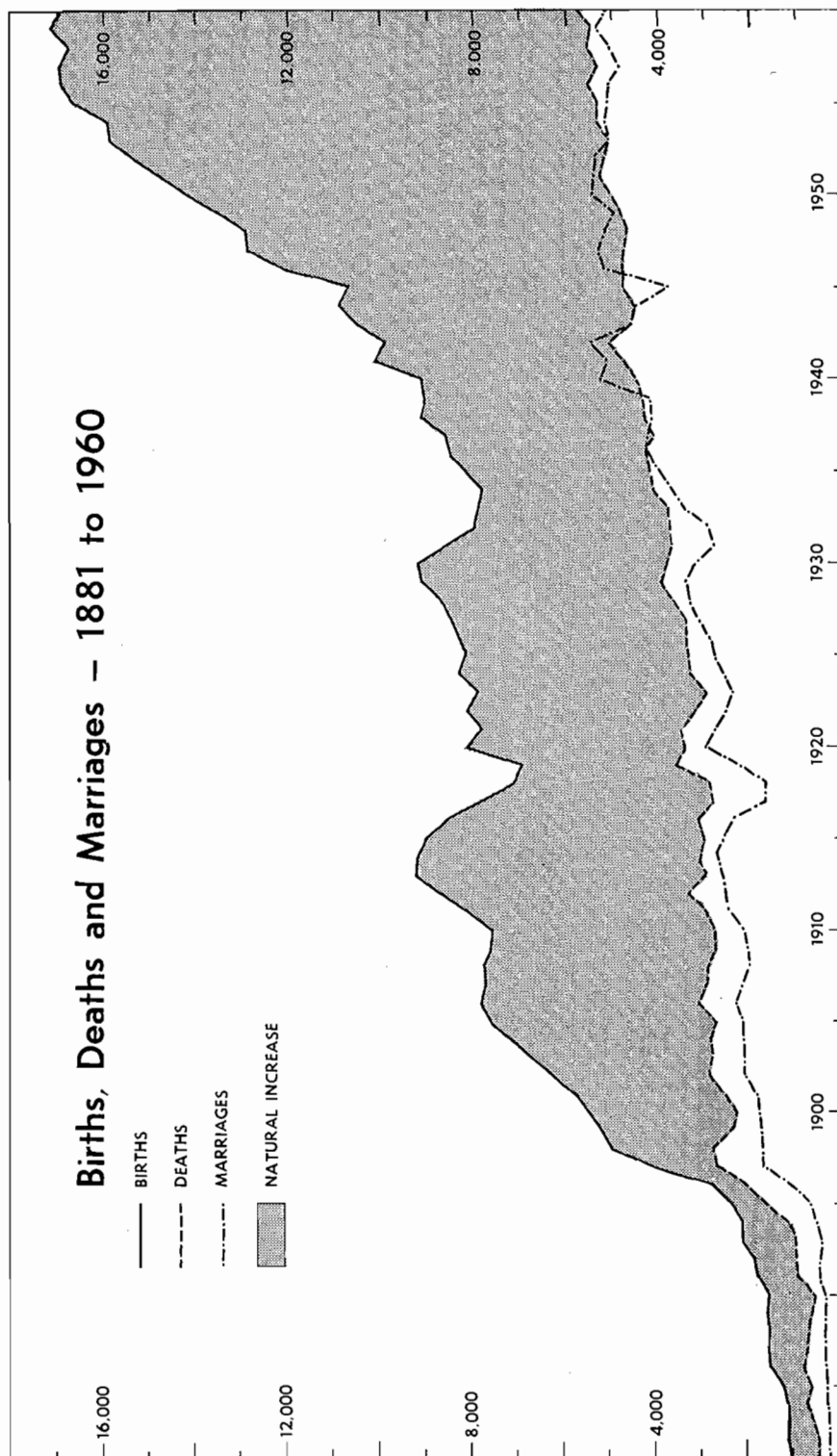
DEATHS

Year	Deaths (a)			Infant Deaths (b)		
	Males	Females	Total	Males	Females	Total
METROPOLITAN STATISTICAL DIVISION						
1956	1,942	1,540	3,482	88	68	156
1957	1,866	1,453	3,319	104	62	166
1958	1,939	1,538	3,477	94	*74	*168
1959	1,972	1,539	3,511	86	75	161
1960	2,026	1,587	3,613	87	82	169
REST OF STATE						
1956	1,323	767	2,090	123	105	228
1957	1,260	718	1,978	109	82	191
1958	1,331	746	2,077	103	*89	*192
1959	1,268	718	1,986	109	75	184
1960	1,327	757	2,084	107	90	197
WHOLE STATE						
1956	3,265	2,307	5,572	211	173	384
1957	3,126	2,171	5,297	213	144	357
1958	3,270	2,284	5,554	197	163	360
1959	3,240	2,257	5,497	195	150	345
1960	3,353	2,344	5,697	194	172	366

(a) Including Infant Deaths.

(b) Deaths occurring in the first year of life.

* Revised.



Death Rates—The crude death rate is perhaps the most common measure of mortality, and is derived by relating the deaths occurring in a period to the mean population for that period. It is usually expressed as number of deaths per thousand of mean population.

The rates for Western Australia and for the Commonwealth in the period 1911 to 1960 are compared in the following table.

CRUDE DEATH RATES*—WESTERN AUSTRALIA AND AUSTRALIA

Period	Average Annual Rate		Year	Annual Rate	
	Western Australia	Australia		Western Australia	Australia
1911-1915	9.86	10.73	1951	9.11	9.71
1916-1920	9.93	10.78	1952	8.67	9.45
1921-1925	9.17	9.52	1953	8.17	9.09
1926-1930	8.91	9.26	1954	8.38	9.10
1931-1935	8.83	9.00	1955	8.18	8.92
1936-1940 (a)	9.22	9.63	1956	8.26	9.13
1941-1945 (a)	9.86	9.96	1957	7.71	8.81
1946-1950 (a)	9.23	9.74	1958	7.94	8.50
1951-1955	8.49	9.25	1959	7.72	8.87
1956-1960	7.90	8.78	1960	7.88	8.61

* Revised in accordance with the results of the 1961 Census. (a) Excludes deaths of members of defence forces from September, 1939 to June, 1947.

In the early years of the century, the Western Australian rate was higher than that for Australia as a whole, but fell below the Australian average in 1909. Since that time, the rate for Western Australia has, with very few exceptions, remained lower than that for the Commonwealth.

Western Australia's crude death rate for the year 1902 was 13.79 per thousand of the mean population but by 1931 it had fallen to 8.51 (see Graph—*Rates of Birth, Death and Marriage*). After that year, the rate increased until it reached 10.65 in 1942. Since then there has been a general decline and in 1957 it fell to 7.71, the lowest level ever recorded in Western Australia. The rate for 1960 remained low at 7.88 per thousand of mean population.

Infant Mortality Rates—The infant mortality rate expresses the relationship between deaths of infants and the live births occurring in a period, and is stated in terms of number of deaths under one year of age per thousand live births.

The rates for Western Australia and for the Commonwealth in the period 1911 to 1960 are shown in the following table.

INFANT MORTALITY RATES—WESTERN AUSTRALIA AND AUSTRALIA

Period	Average Annual Rate		Year	Annual Rate	
	Western Australia	Australia		Western Australia	Australia
1911-1915	72.43	70.32	1951	28.73	25.24
1916-1920	61.73	64.67	1952	24.91	23.79
1921-1925	59.14	57.88	1953	23.83	23.30
1926-1930	49.27	51.99	1954	22.54	22.48
1931-1935	40.81	41.27	1955	22.44	22.01
1936-1940	39.70	38.81	1956	22.70	21.72
1941-1945	33.30	34.97	1957	21.09	21.41
1946-1950	28.15	26.98	1958	21.52	20.49
1951-1955	24.41	23.34	1959	20.16	21.54
1956-1960	21.42	21.05	1960	21.62	20.16

In the first decade of the century, the average annual rate (106.07) in Western Australia was considerably above the Commonwealth average of 86.83, and was the highest among the Australian States. Since then both the Western Australian and the Australian rates have shown a remarkable decrease. Despite the improvement in Western Australia, the experience of recent years reveals a less favourable situation than for the Commonwealth as a whole. In the five years ended 1960, Western Australia's average annual rate was 21.42 compared with the Australian rate of 21.05 and was greater than that for any other State except New South Wales, 22.24.

Causes of Infant Deaths—The causes of death in the first year of life, in certain broad groups, during the period 1901 to 1960 are set out in the following table. Changes in description and in method of classification make such a comparison somewhat difficult, but it is thought that the figures give a reasonably reliable indication of trends within the various groups.

INFANT DEATHS†—NUMBERS AND RATES (a)

Year	Cause of Death											
	Diseases of Early Infancy (b)		Congenital Malformation		Diseases of Digestive System		Infective and Parasitic Diseases		All Other Causes		Total	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
1901	249	43·55	6	1·05	277	48·44	51	8·92	154	26·93	737	128·89
1911	222	27·43	19	2·35	213	26·34	30	3·71	131	16·19	615	76·01
1921	195	24·98	28	3·59	197	25·23	(c)	(c)	(c)191	(c)24·46	611	78·26
1931	179	20·94	37	4·33	40	4·68	25	2·92	74	8·66	355	41·53
1941	180	17·79	43	4·25	54	5·34	9	0·89	71	7·02	357	35·28
1951	264	17·85	61	4·12	25	1·69	9	0·61	66	4·46	425	28·73
1956	219	12·95	72	4·26	9	0·53	9	0·53	75	4·43	384	22·70
1957	210	12·41	66	3·90	16	0·95	4	0·24	61	3·60	357	21·09
1958	201	12·01	63	3·77	24	1·43	6	0·36	66	3·94	360	21·62
1959	194	11·34	53	3·10	17	0·99	14	0·82	67	3·92	345	20·16
1960	218	12·88	63	3·72	13	0·77	10	0·59	62	3·66	366	21·62

† Excluding stillbirths. (a) Rate per 1,000 live births. and Parasitic Diseases" included in "All Other Causes."

(b) Including premature births.

(c) "Infective

The greatest decrease has taken place in the group "Diseases of the Digestive System." The principal cause of death in this group is diarrhoea and enteritis, which in 1901 accounted for 223 of the 737 deaths under one year of age. This represented a mortality rate from this cause alone of 39·00 per thousand live births. The corresponding rate for 1960, when there were nine infant deaths from diarrhoea and enteritis, was 0·53.

Stillbirths—The infant mortality rate discussed above is that most commonly used, and takes no account of stillbirths. It is informative, however, to examine these two factors in relation, as in the next table. The importance of stillbirths is evident from the fact that, in the period 1951 to 1960, the average annual number of stillbirths registered was 251, compared with an average of 373 deaths in the first year of life.

STILLBIRTHS AND INFANT DEATHS

Year	Stillbirths				Deaths under One Year of Age			
	Males	Females	Total	Masculinity (a)	Males	Females	Total	Masculinity (a)
1951	177	120	297	147·5	239	186	425	128·5
1952	156	128	284	121·9	211	173	384	122·0
1953	146	122	268	119·7	218	160	378	136·3
1954	145	125	270	116·0	225	134	359	167·9
1955	126	113	239	111·5	217	156	373	139·1
1956	113	113	226	100·0	211	173	384	122·0
1957	135	113	248	119·5	213	144	357	147·9
1958	136	89	225	152·8	197	163	360	120·9
1959	127	98	225	129·6	195	150	345	130·0
1960	121	105	226	115·2	194	172	366	112·8

(a) Number of males to each 100 females.

The relationship between stillbirths and infant deaths during the same period is further examined in the following table, which shows the numbers of stillbirths and of infant deaths at various ages. The rates shown represent the number of stillbirths, or of infant deaths, per thousand of total births (*i.e.*, including stillbirths).

STILLBIRTHS AND INFANT DEATHS—NUMBERS AND RATES

Year	Stillbirths	Infant Deaths			Stillbirths and Infant Deaths
		Under One Week	Under One Month	Under One Year	
NUMBER					
1951	297	245	297	425	722
1952	284	244	278	384	668
1953	268	216	261	378	646
1954	270	230	256	359	629
1955	239	224	266	373	612
1956	226	223	269	384	610
1957	248	233	256	357	605
1958	225	217	240	360	585
1959	225	214	234	345	570
1960	226	239	269	366	592
RATE (a)					
1951	19.68	16.23	19.68	28.16	47.84
1952	18.09	15.54	17.71	24.46	42.56
1953	16.62	13.39	16.18	23.43	40.05
1954	16.67	14.20	15.80	22.16	38.83
1955	14.17	13.28	15.78	22.12	36.29
1956	13.18	13.01	15.69	22.40	35.59
1957	14.44	13.57	14.91	20.79	35.23
1958	13.27	12.80	14.15	21.23	34.50
1959	12.98	12.34	13.50	19.90	32.88
1960	13.18	13.93	15.68	21.34	34.51

(a) Rate per 1,000 of total births (*i.e.*, including stillbirths).

Of the 6,239 failures during the ten years to complete the first year of life, due either to stillbirth or to death in the first year, 2,508 or 40.20 per cent. were attributable to stillbirth.

Standardized Death Rates—The crude death rate, as noted earlier, expresses simply the number of deaths occurring in a population during any period as a proportion of the mean population for that period. Although this rate is useful as a measure of the absolute level of mortality, its value is necessarily restricted when comparing the mortality in different communities in the same period, or in one community at different times.

The effect on the crude death rate of the presence in a community of a high proportion of young people or of aged people, or of a high or low masculinity, will be readily appreciated. To devise an adequate measure of comparative mortality, it is therefore necessary to select a "standard" population to which the varying mortality experiences may be referred. A standard population compiled by the International Statistical Institute, based upon the age and sex distribution of the population of 19 European countries at their censuses nearest to the year 1900, has been used as the basis of the standardized death rates for Western Australia and Australia quoted in the following paragraph. The rate is computed by applying to each sex and age group in the standard population, the death rates actually recorded in the corresponding groups of the State and Australian populations. The sum of these results represents the number of deaths which would have occurred in the standard population if it had been exposed to the same risks of mortality. The standardized death rate is derived by expressing this number in terms of "per thousand of the standard population."

For the Census years 1921, 1933, 1947 and 1954 the standardized death rates for Western Australia were 11.88, 8.74, 7.28 and 6.71, and the corresponding rates for Australia as a whole were 10.58, 8.62, 7.34 and 6.90.

Causes of Death—Statistics of causes of death provide important numerical facts by which to evaluate the varying health conditions and needs of different countries. In order to enable valid international comparisons, it is necessary that each country present its statistics of causes of death in a uniform manner. The first Classification of Causes of Death to be adopted internationally was that compiled by Dr. J. Bertillon at the request of the International Statistical Institute meeting in Vienna in 1891. Subsequently this Classification was periodically revised by the Institute in collaboration with the League of Nations Health Organization. The current revision, the seventh to be made, was carried out by a Committee of the World Health Organization.

The following table shows the number of deaths in Western Australia during each year from 1956 to 1960 classified according to cause, together with the corresponding rates per thousand of mean population.

DEATHS CLASSIFIED ACCORDING TO PRINCIPAL CAUSES—NUMBERS AND RATES (a)

Cause of Death	1956	1957	1958	1959	1960
NUMBER					
Diseases of the heart	1,896	1,766	1,968	1,908	1,996
Cancer	803	819	880	911	907
Cerebral haemorrhage, etc.	669	594	691	614	651
Automobile accidents	192	155	191	173	205
Other accidents	216	194	171	169	194
Pneumonia	225	208	204	211	209
General arteriosclerosis	154	139	126	144	192
Enteritis and diarrhoea	23	28	40	37	21
Other diseases of digestive system	158	164	169	126	146
Nephritis	78	71	64	62	48
Other diseases of genito-urinary system	83	96	81	92	78
Suicide	89	95	103	86	92
Homicide	6	12	6	13	10
Bronchitis	67	62	74	79	85
Diabetes mellitus	63	66	57	48	60
Tuberculosis	46	36	27	24	30
Maternal causes	9	11	8	5	8
All other causes	795	781	694	795	765
All Causes	5,572	5,297	5,554	5,497	5,697
RATE (a)					
Diseases of the heart	2.81	2.57	2.81	2.68	2.76
Cancer	1.19	1.19	1.26	1.28	1.25
Cerebral haemorrhage, etc.	0.99	0.86	0.99	0.86	0.90
Automobile accidents	0.29	0.23	0.27	0.24	0.28
Other accidents	0.32	0.28	0.24	0.24	0.27
Pneumonia	0.33	0.30	0.29	0.30	0.29
General arteriosclerosis	0.23	0.20	0.18	0.20	0.27
Enteritis and diarrhoea	0.03	0.04	0.06	0.05	0.03
Other diseases of digestive system	0.24	0.24	0.24	0.18	0.20
Nephritis	0.12	0.10	0.09	0.09	0.07
Other diseases of genito-urinary system	0.12	0.14	0.12	0.13	0.11
Suicide	0.13	0.14	0.15	0.12	0.13
Homicide	0.01	0.02	0.01	0.02	0.01
Bronchitis	0.10	0.09	0.11	0.11	0.12
Diabetes mellitus	0.09	0.10	0.08	0.07	0.08
Tuberculosis	0.07	0.05	0.04	0.03	0.04
Maternal causes	0.01	0.02	0.01	0.01	0.01
All other causes	1.18	1.14	0.99	1.11	1.06
All Causes	8.26	7.71	7.94	7.72	7.88

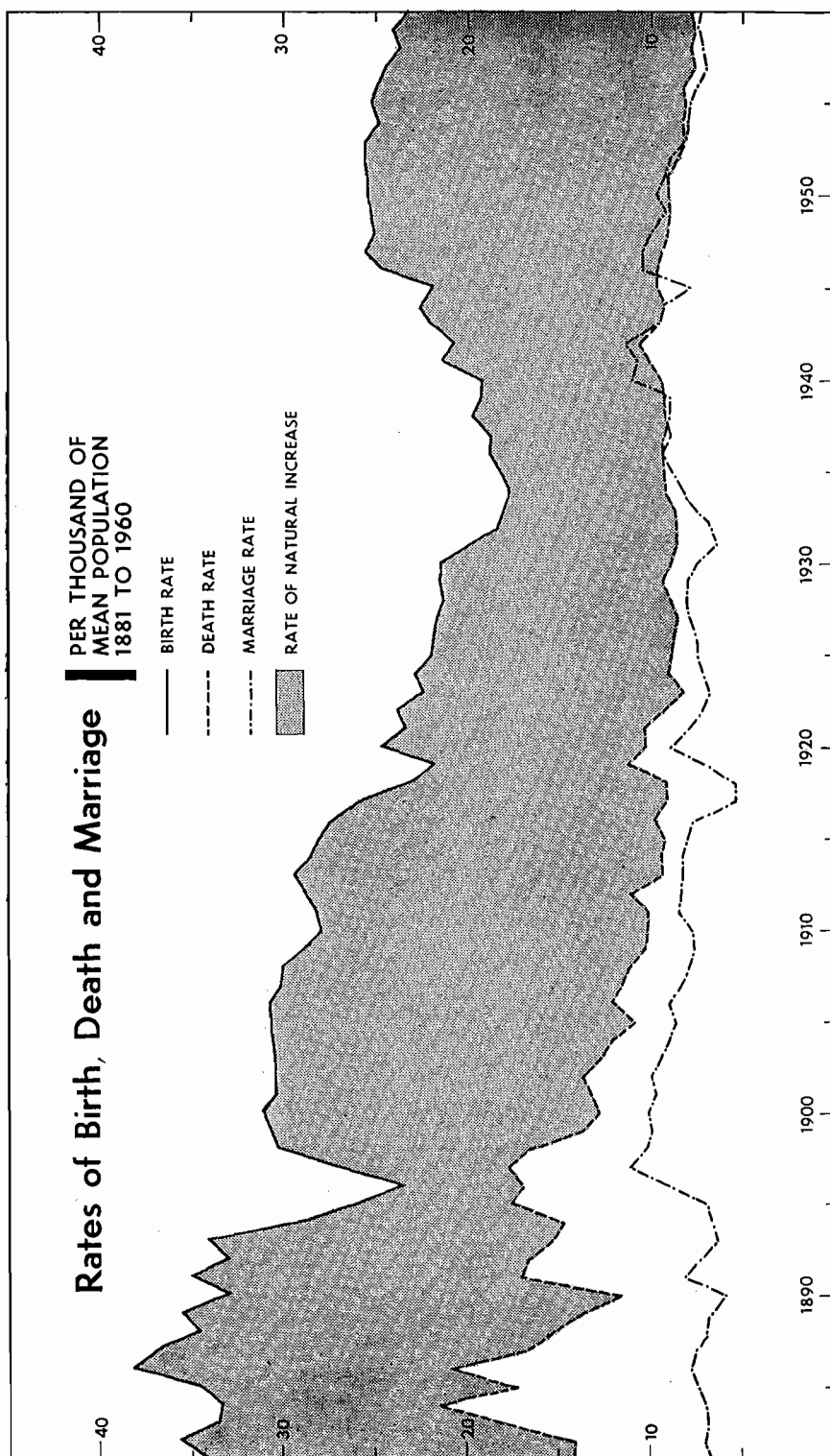
(a) Rate per thousand of mean population; revised in accordance with results of 1961 Census.

Expectation of Life—The Australian Life Tables, prepared on the basis of the results of the national population census, form a comprehensive series covering the experience of seven separate periods, 1881–1890, 1891–1900, 1901–1910, 1920–1922, 1932–1934, 1946–1948 and 1953–1955. The expectation of life of males and females at various ages as revealed by these investigations is shown in the following table.

It will be seen that there has been a substantial and consistent increase in the expectation of life of both the Australian male and the Australian female. Thus, while males, according to the experience of the period 1881–1890, had at birth an average expectancy of 47.20 years of life, the latest investigation shows that the expectancy has risen to 67.14 years. The anticipated life-span of females at birth has increased from 50.84 years to 72.75 years in the same period. This greater expectation of life of females than of males applies, with very few exceptions, at each age and in each period covered by the table.

EXPECTATION OF LIFE—AUSTRALIA, 1881-1890 TO 1953-1955
(Years)

Age last birthday (years)	1881-1890	1891-1900	1901-1910	1920-1922	1932-1934	1940-1948	1953-1955
MALES							
0	47.20	51.08	55.20	59.15	63.48	66.07	67.14
1	53.34	56.88	59.96	62.67	65.49	67.25	67.86
2	54.26	57.41	60.04	62.60	65.00	66.47	67.05
3	54.01	56.98	59.45	61.99	64.25	65.60	66.17
4	53.49	56.33	58.71	61.25	63.43	64.70	65.26
5	52.86	55.61	57.91	60.43	62.57	63.77	64.32
10	48.86	51.43	53.53	56.01	58.02	59.04	59.53
15	44.45	46.98	49.03	51.44	53.36	54.28	54.72
20	40.58	42.81	44.74	46.99	48.81	49.64	50.10
25	37.10	38.90	40.60	42.70	44.37	45.04	45.54
30	33.64	35.11	36.52	38.44	39.90	40.40	40.90
35	30.06	31.34	32.49	34.20	35.46	35.79	36.25
40	26.60	27.65	28.56	30.05	31.11	31.23	31.65
45	23.04	23.99	24.78	26.03	26.87	26.83	27.18
50	19.74	20.45	21.16	22.20	22.83	22.67	22.92
55	16.65	17.08	17.67	18.51	19.03	18.84	19.00
60	13.77	13.99	14.35	15.08	15.57	15.36	15.47
65	11.06	11.25	11.31	12.01	12.40	12.25	12.33
70	8.82	8.90	8.67	9.26	9.60	9.55	9.59
75	6.72	6.70	6.58	6.87	7.19	7.23	7.33
80	5.11	5.00	4.96	5.00	5.22	5.36	5.47
85	3.86	3.79	3.65	3.62	3.90	3.84	4.01
90	2.91	2.91	2.64	2.60	2.99	2.74	2.93
95	2.16	2.16	1.88	1.86	2.11	1.93	2.10
100	1.32	1.29	1.18	1.17	1.10	....	....
FEMALES							
0	50.84	54.76	58.84	63.31	67.14	70.63	72.75
1	56.44	59.89	62.89	66.03	68.67	71.45	73.22
2	57.39	60.40	62.95	65.86	68.12	70.66	72.40
3	57.16	59.98	62.34	65.21	67.34	69.77	71.49
4	56.63	59.35	61.60	64.44	66.50	68.84	70.55
5	56.00	58.64	60.80	63.64	65.64	67.91	69.61
10	51.95	54.46	56.39	59.20	61.02	63.11	64.78
15	47.64	49.97	51.86	54.55	56.29	58.27	59.90
20	43.43	45.72	47.52	50.03	51.67	53.47	55.06
25	39.67	41.69	43.36	45.71	47.19	48.74	50.24
30	36.13	37.86	39.33	41.48	42.77	44.08	45.43
35	32.68	34.14	35.37	37.28	38.37	39.46	40.67
40	29.08	30.49	31.47	33.14	34.04	34.91	36.00
45	25.56	26.69	27.59	28.99	29.74	30.45	31.44
50	22.06	22.93	23.69	24.90	25.58	26.14	27.03
55	18.64	19.29	19.85	20.95	21.58	22.04	22.81
60	15.39	15.86	16.20	17.17	17.74	18.11	18.78
65	12.27	12.75	12.88	13.60	14.15	14.44	15.02
70	9.70	9.89	9.96	10.41	10.98	11.14	11.62
75	7.24	7.37	7.59	7.73	8.23	8.32	8.69
80	5.27	5.49	5.73	5.61	6.01	6.02	6.30
85	3.90	4.12	4.19	4.06	4.30	4.32	4.52
90	2.98	3.07	2.99	2.91	3.05	3.08	3.24
95	2.25	2.18	2.10	2.07	2.00	2.14	2.31
100	1.37	1.23	1.24	1.24	1.02	....	....



MARRIAGES

The number of marriages celebrated in Western Australia in each of the five years 1956 to 1960 is shown in the following table. Marriages celebrated by ministers of religion are distinguished from those celebrated by District Registrars, and the numbers of minors marrying are also shown.

MARRIAGES

Year	Marriages Celebrated by		All Marriages	Proportion Celebrated by Registrars (per cent.)	Number of Minors Married		
	Ministers	Registrars			Males	Females	Persons

METROPOLITAN STATISTICAL DIVISION

1956	2,478	535	3,013	17.8	217	1,002	1,219
1957	2,364	487	2,851	17.1	227	1,029	1,256
1958	2,544	483	3,027	16.0	278	1,053	1,329
1959	2,873	533	3,206	16.6	275	1,142	1,417
1960	2,695	478	3,173	15.1	290	1,154	1,444

REST OF STATE

1956	1,708	359	2,067	17.4	193	903	1,096
1957	1,709	337	2,046	16.5	177	858	1,035
1958	1,705	306	2,011	15.2	181	899	1,080
1959	1,856	325	2,181	14.9	201	954	1,155
1960	1,849	301	2,150	14.0	213	974	1,187

WHOLE STATE

1956	4,186	894	5,080	17.6	410	1,905	2,315
1957	4,073	824	4,897	16.8	404	1,887	2,291
1958	4,249	789	5,038	15.7	457	1,952	2,409
1959	4,529	858	5,387	15.9	476	2,096	2,572
1960	4,544	779	5,323	14.6	503	2,128	2,631

The statistics of minors marrying shown above during the five-year period reveal that 38.75 per cent. of brides were minors, compared with only 8.75 per cent. of bridegrooms.

Marriage Rates—The average annual marriage rates per thousand of mean population for Western Australia and for the Commonwealth in each five-year period from 1911 to 1960, as well as the rates for each of the years from 1951 to 1960, are shown in the following table.

MARRIAGE RATES*—WESTERN AUSTRALIA AND AUSTRALIA

Period	Average Annual Rate		Year	Annual Rate	
	Western Australia	Australia		Western Australia	Australia
1911-1915	8.26	8.86	1951	9.29	9.18
1916-1920	6.80	7.82	1952	8.97	8.59
1921-1925	7.27	8.04	1953	8.10	8.01
1926-1930	7.80	7.52	1954	8.13	7.92
1931-1935	7.58	7.16	1955	7.83	7.84
1936-1940	9.49	9.35	1956	7.53	7.62
1941-1945	9.74	9.94	1957	7.12	7.65
1946-1950	10.01	9.77	1958	7.20	7.52
1951-1955	8.44	8.29	1959	7.57	7.40
1956-1960	7.36	7.50	1960	7.36	7.34

* Revised in accordance with the results of the 1961 Census.

CHAPTER V—SOCIAL CONDITION

PART I—EDUCATION

PRIMARY AND SECONDARY EDUCATION

The Blue Books of the Colony of Western Australia indicate that some form of education was available from the earliest years of settlement but it was not until 1847 that an authority for the control of public schools was appointed. This body, the General Board of Education, was empowered to charge fees but provision was made for an adjustment in accordance with the parents' ability to pay. There was thus a measure of assistance in education but school attendance was not compulsory.

The first Elementary Education Act was passed in 1871 and established a Central Board of Education. The Act provided for payment by the Government of grants-in-aid to non-government elementary schools, and designated as "assisted" schools those to which grants were made. The Central Board was "to exercise a general supervision over all schools receiving Government aid in secular instruction only, and a more special direction over purely Government schools." It was also the function of the Central Board to apportion and distribute funds provided for educational purposes by the Legislature and to fix a scale of fees for attendance at government schools which, however, were not to be charged in cases of hardship. District Boards were established to inspect and supervise both government and "assisted" schools in their areas and to report periodically to the Central Board. Compulsory schooling was prescribed for all children aged more than six but less than fourteen years who lived within three miles of a school.

The Elementary Education Act Amendment Act, 1893 abolished the Central Board of Education and vested control in a Minister of Education. In 1895 grants-in-aid to "assisted" schools were discontinued under the provisions of the Assisted Schools Abolition Act. These measures were the forerunners of the Public Education Act, 1899. By this Act the payment of fees was abolished for children of the ages to which the terms of compulsory attendance applied. The Elementary Education Act of 1871, with its amendments, and the Public Education Act of 1899 as amended were repealed by the Education Act of 1928 which, with the incorporation of later amendments, is the Statute now in force for the administration and control of education in Western Australia.

School Attendance

Attendance is compulsory for all children aged six years and upward to the fourteenth birthday who live within reasonable access of a government or approved non-government school but, where transport is not available, children aged from six to eight years may be exempted if they live more than two miles from a school. Amendments made to the Education Act in 1943 and 1957 authorize the raising of the school-leaving age from 14 to 15 years but this provision has not yet been enforced.

SCHOOL CHILDREN CLASSIFIED ACCORDING TO AGE—JULY, 1960

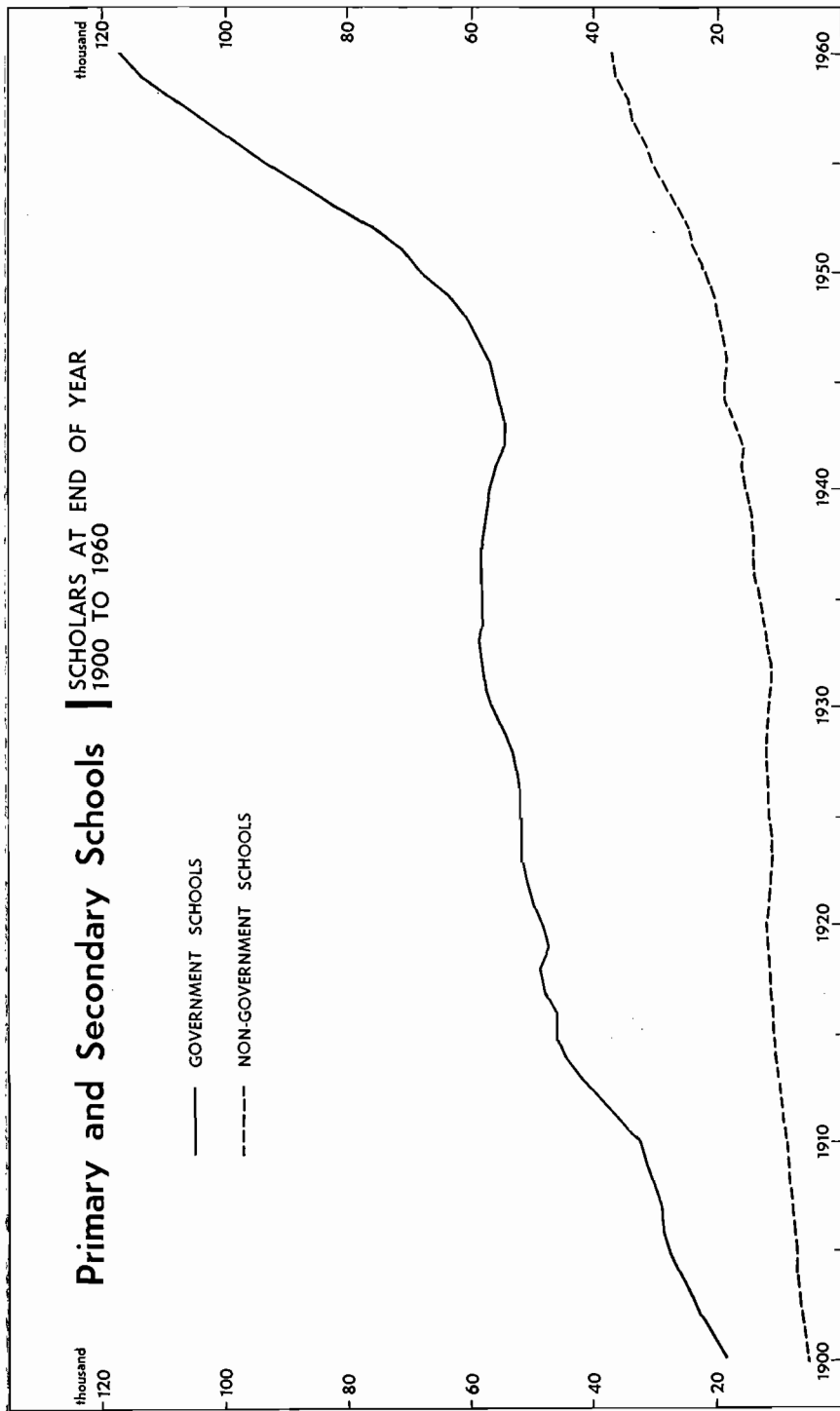
Age last birthday (years)	Children Attending—						Total		
	Government Schools (a)			Non-government Schools (b)					
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Under 6	2,735	2,587	5,322	2,817	2,811	5,628	5,552	5,398	10,950
6 and under 14	51,762	48,135	99,897	11,744	12,977	24,721	63,506	61,112	124,618
14 and under 16	6,518	5,256	11,774	2,431	2,403	4,834	8,949	7,659	16,608
16 and over	1,039	1,156	2,795	1,166	852	2,018	2,805	2,008	4,813
Total	62,654	57,134	119,788	18,158	19,043	37,201	80,812	76,177	156,989

(a) Excluding Technical Schools and Colleges.

(b) Including kindergartens.

THE EDUCATION DEPARTMENT

The Education Department is responsible for the organization and management of the State Government's education programme and is controlled by a Director-General of Education responsible to the Minister for Education. The administrative structure of the Department provides for five Divisions and a number of Special Branches. The Divisions, each of which is in the charge of a Director, are



those of Primary Education, Secondary Education, Technical Education, Teacher Training and Special Services. The work of the Special Branches is related to such activities as physical education (including swimming instruction), music, drama, art and crafts, visual education and publications. In addition there is provision for a number of other services which are concerned with particular aspects of the education and welfare of school children, such as the library service, the Nature Advisory Service, and the Schools Medical and Dental Services conducted in collaboration with the Public Health Department.

Primary and Secondary Schools

Instruction in the primary school is given in seven grades. A child who makes normal progress completes the course at the age of 12 years and may then enter high school. A Senior High School provides tuition to standards required for the Junior Certificate examination, usually taken at the age of 15 years, and the Leaving Certificate examination, which is the final examination in Western Australian secondary schools and is normally taken at the age of 17 years. A pass in certain specified subjects qualifies a candidate to matriculate at the University. A High School gives instruction in the first three years of the secondary school curriculum leading to the Junior Certificate examination. A Junior High School is one which provides primary and post-primary education to Junior Certificate level. At some centres where there is no high school, post-primary subjects are taught at the primary school.

The following table shows the number of schools in each category, the number of teachers employed in primary and secondary education and the number of scholars classified according to grade of education, for each of the years 1956 to 1960. The figures shown under the heading of Special Duties represent teachers engaged in activities associated with the Special Branches of the Department. Scholars in the Post-Primary group comprise children preparing for the Junior Certificate examination or doing work of a comparable standard, while those shown under the heading of Secondary are scholars in the fourth and fifth years of the high school course.

GOVERNMENT SCHOOLS

Particulars	1956	1957	1958	1959	1960
NUMBER OF SCHOOLS (a)					
Primary Schools	440	448	447	456	459
Junior High Schools	23	29	31	29	35
High Schools	9	11	12	14	13
Senior High Schools	11	11	13	13	14
Total	488	499	503	512	521
NUMBER OF TEACHERS (a)					
Head Teachers and Assistants	3,232	3,298	3,514	3,709	3,950
Special Duties	124	113	149	149	147
Total	3,356	3,411	3,663	3,858	4,097
Males	1,657	1,744	1,891	1,998	2,205
Females	1,699	1,667	1,772	1,860	1,892
Total	3,356	3,411	3,663	3,858	4,097
NUMBER OF SCHOLARS (b)					
Grade of Education—					
Primary	82,575	85,240	88,948	91,405	92,236
Post-Primary	16,910	18,360	20,387	22,330	25,034
Secondary	1,249	1,485	1,791	2,117	2,518
Total	100,734	105,585	111,126	115,852	119,788
Males	52,460	55,296	58,181	60,600	62,654
Females	48,274	50,289	52,945	55,252	57,134
Total	100,734	105,585	111,126	115,852	119,788

(a) At end of year.

(b) At July in each year.

The Education Department's policy of "consolidating" its schools in country areas has tended to concentrate teaching in the larger towns. Pupils are taken to and from school by motor bus at government expense and it has been possible by this means to close a number of small rural schools, so enabling teaching staff to be used more effectively in the better-equipped consolidated schools.

Primary and Secondary Curriculum

In primary schools the subjects taught are English, arithmetic, social studies, elementary science, physical education, handicrafts, music and art. Handicrafts in the primary schools consist of needlework for girls and such crafts as leatherwork, bookbinding, papiermache work and canework for boys. At the post-primary levels, mathematics, languages, science subjects, economics, home science, woodwork, metalwork and technical drawing are introduced. The teaching of general science, as distinct from the pure sciences, aims at a better understanding of the child's physical environment. In the primary school the elementary science course is adapted to the conditions of the particular neighbourhood, and so varies between town and country areas. In musical expression, choral singing receives most attention, although school orchestras are being developed in some primary and high schools. Advisory teachers, under the direction of specialist superintendents, assist teachers in the fields of home science, manual training, handicrafts, physical education, art, music, speech, drama and elementary science.

Education in the government schools is secular in character but periods are set aside during which representatives of various religious denominations attend to give religious instruction. In addition, instruction in scripture stories is given by class teachers.

The general curriculum differs slightly between urban and rural areas, an example being the teaching of elementary agricultural science in country schools. It is nevertheless sufficiently consistent to ensure a uniform standard of education throughout the State.

Radio and Film Aids

Extensive use is made of radio and films, most schools having radio receivers and many being equipped also with film projectors and sound-reproduction systems. The Australian Broadcasting Commission co-operates with the Education Department in devising suitable radio programmes and Parents and Citizens' Associations assist in providing the necessary equipment. The Visual Education Branch of the Department maintains an extensive film library.

Student Counselling and Vocational Guidance

Guidance officers of the Division of Special Services are available to discuss with parents the most suitable courses of study for their children and vocational guidance is given to pupils leaving high school. In addition, cases of handicapped or educationally retarded children are investigated and appropriate courses of education recommended.

Government Scholarships and Bursaries

The Education Department each year awards 100 scholarships for assistance in secondary education. At the end of the primary school course, fifty scholarships valued at £30 per annum are awarded, on the recommendation of District Superintendents, to children who have to live away from home to attend country high schools. Another fifty scholarships valued at £60 per annum are awarded on a competitive basis, according to results obtained at the Junior Certificate examination, to assist students proceeding to the Leaving Certificate examination.

Boarding allowances are paid to high school students who are obliged to live away from their homes while attending school. The Department also grants bursaries to selected students who, having passed the Junior Certificate examination, are willing to study for the Leaving Certificate preparatory to entering the teaching service. These bursaries are tenable for two years at either government high schools or non-government secondary schools.

Special Schools and Classes

The Division of Special Services provides a variety of assistance for physically and mentally handicapped children. A Kindergarten and Infant School for Deaf Children is maintained, as well as a Deaf School for older pupils. Special classes are organized for the blind and for the mentally handicapped, and instruction is given to patients at the Princess Margaret Hospital for Children and at other hospitals. The Department co-operates with welfare organizations, such as the Spastic Welfare Association and the Slow Learning Children's Group, by making teachers available to them.

Correspondence Tuition

Tuition by correspondence was introduced in 1918 to provide education for children living in remote areas or unable to attend school for other reasons. The service of the Western Australian Correspondence School now extends also to post-primary students in the smaller country schools, to sick and invalid children, and to some adults in country areas. Adults enrol mainly to prepare for nursing training or for the Junior Certificate and similar examinations, to supplement Technical Correspondence School courses with subjects not otherwise available, or to improve their general education. During 1960, instruction was given to 1,742 students of whom 400 were adults.

Schools of the Air are conducted through the radio network of the Royal Flying Doctor Service from bases at Derby, Kalgoorlie and Meekatharra to supplement tuition provided by the Correspondence School.

Itinerant Teacher Service

The Department conducts an itinerant teacher service which operates in the sparsely-settled areas of the State beyond Geraldton northward to the West Kimberley and inland as far as the Wiluna area. Two teachers, following separate itineraries and travelling from homestead to homestead by motor van, supplement the correspondence tuition of the children by personal advice to them and to their supervisors. A strip film projector is carried, together with a film library and a collection of children's books. The aim of the Department is to provide each year three visits, of up to three days' duration, to each family. In 1960 the teachers visited 173 children at 110 pastoral stations.

Native Education

Aboriginal and part-aboriginal children are admitted to ordinary schools and are educated under the same conditions as other children. For schools with a preponderance of native children, special attention is directed to the framing of courses of study suited to the vocational needs of the older native pupils. In December, 1960 there were 2,916 aboriginal and part-aboriginal children at government primary schools and high schools and 858 at non-government schools.

Agricultural Education

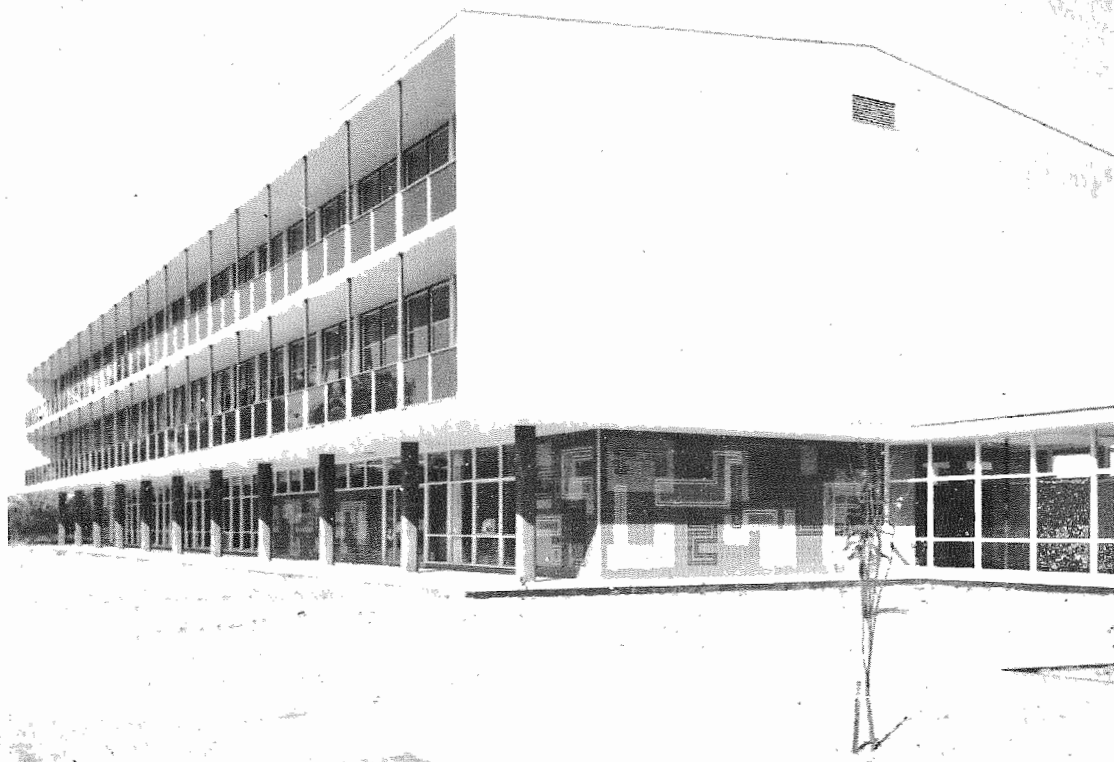
Agricultural education is provided at certain high schools. The former Narrogin School of Agriculture was absorbed into the high school system early in 1955 when it became a wing of the Narrogin Agricultural High School. Boys aged from 14 to 16 years who have successfully completed the general primary course are eligible for enrolment at this School or the Agricultural Junior High Schools at Cunderdin, Denmark, Harvey, Margaret River and Pinjarra where the two-year agricultural course is also available. Preference is given to the sons of farmers but other suitably qualified boys, with the physical capacity for farm work, are admitted. The curriculum is designed as a continuation of general education to standards equivalent to those of other types of schools but with adequate vocational emphasis. The aim is to produce young men capable of becoming leaders in rural communities as well as being successful farmers with an appreciation of the value of scientific methods in agriculture.

In addition to the activities of the Education Department in the field of agricultural education, facilities are also provided by the Department of Agriculture at the Muresk Agricultural College to which reference is made on page 130.

Technical Education

The principal institution of the Division of Technical Education is the Perth Technical College which originated in 1900 as the Perth Technical School. The greater part of the senior work of the Division, including the later stages of Technical Diplomas and most Associateship studies, is carried out at the College.

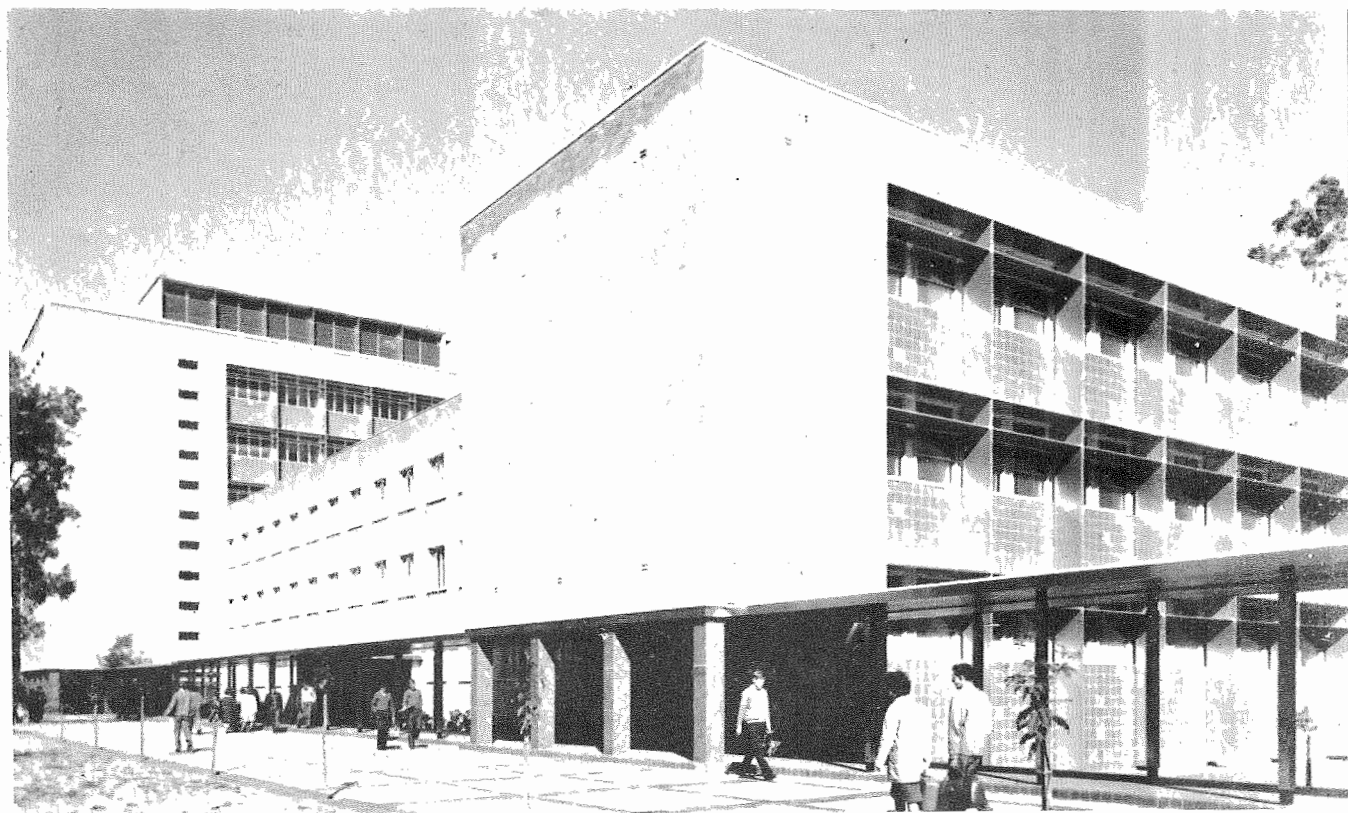
The work of the Leederville Technical School relates mainly to the building industry and furnishing trades, but the School also accommodates a matriculation group. The Wembley Trades School provides courses for apprentices in the heavy metal trades, while the Carlisle Technical School is mainly concerned with training for trades associated with the automotive industry. Area schools at Fremantle, Midland, Collie and Kalgoorlie aim to give instruction in any subject for which there is sufficient local demand. For this reason, courses at the Midland school are designed primarily to meet the needs of railway apprentices, while the school at Collie gives emphasis to mining. Technical centres, where evening classes are provided, are located at nine of the Department's ordinary country schools and three of its metropolitan schools. The Technical Extension Service conducts correspondence courses and extension classes to provide instruction where it is not practicable to establish a technical school or centre.



Above—Engineering Building, opened May, 1961

UNIVERSITY OF WESTERN AUSTRALIA

Below—Physics Building, opened April, 1962



The Division has a Psychology and Counselling Service which is available to advise students in selecting a course and to assist them in their studies. It also provides consultant services to industry and commerce on staff selection and training and conducts courses of study in psychology and related subjects.

The highest qualification provided is that of Associateship, which generally entails three years' full-time study, or its part-time equivalent, from matriculation level in such fields as Applied Science, Architecture, Chemistry, Commerce, Engineering, Home Economics, Management, Mathematics, Metallurgy and Public Administration. Some Diploma and Certificate courses, with lower entry requirements, are also offered on a full-time or part-time basis.

There are part-time day and evening vocational classes, usually leading to the award of a Diploma or Certificate, for skilled technical and semi-professional workers. Many of these courses are in fields not covered by an apprenticeship award. Part-time classes are established at all technical schools and centres, subject to local demand for tuition and availability of teaching staff.

Apprentices who live within reach of a technical school providing the appropriate instruction must attend classes, usually for eight hours per fortnight. In 1960, the number of trade apprentices enrolled was 4,619. For apprentices in country areas correspondence courses, sometimes conducted in supervised study groups, are available as well as intensive courses during which they have access to the full range of specialized instructors and equipment in the metropolitan area.

Home-making and hobby classes are held at all technical schools and centres where there is enough demand and teachers can be provided. Instruction is given in such activities as dressmaking, millinery, cookery, home furnishing, pottery, woodwork and motor vehicle maintenance.

The Associateships of the Perth Technical College and certain of the Diplomas are recognized by various professional institutes. Some Diplomas or groups of subjects are accepted for promotional purposes by the Public Service and other employing organizations, and a pass in some subjects may be credited by the University as a completed unit in courses leading to a University degree.

TECHNICAL EDUCATION

Particulars	1956	1957	1958	1959	1960
Number of—					
Colleges	1	1	1	1	1
Schools	6	6	6	6	6
Centres	17	17	16	17	12
Total	24	24	23	24	19
Number of Teachers (a)—					
Perth Technical College	357	425	445	440	433
Schools	147	211	223	231	278
Centres	114	135	123	142	152
Total	618	771	791	813	863
Students Enrolled (b)—					
Perth Technical College	9,935	12,366	13,506	13,221	13,329
Schools	6,851	8,084	7,877	8,016	8,824
Centres	2,017	3,305	3,030	3,255	3,603
Total	18,803	23,755	24,413	24,492	25,756
Males	12,100	15,098	15,977	15,604	17,017
Females	6,703	8,657	8,436	8,888	8,739
Total	18,803	23,755	24,413	24,492	25,756

(a) A teacher may occupy teaching positions at more than one school or centre. The number of individual teachers is not available. Figures for 1956 represent the average for the year and those for 1957 to 1960, the number at 1st July in each year.

(b) Figures for 1956 represent the average number of individual students during the year and those for 1957 to 1960, the number enrolled for any part of the year.

Teacher Training

Teacher training is conducted at two colleges especially established for the purpose, the first at Claremont in 1902 and the second at Graylands in 1955. The basic course is of two years' duration and the minimum requirement for entrance is the possession of the Leaving Certificate or its equivalent. Selected students may study in extended fields for periods of from three to six years to obtain University degrees and other qualifications. There is also a one-year training course open to University graduates.

TEACHERS' COLLEGES

Particulars	1956	1957	1958	1959	1960
Number of Instructors—					
Males	37	37	42	44	45
Females	18	21	15	19	19
Total	55	58	57	63	64
Number of Students Enrolled—					
Males	440	469	496	541	558
Females	475	526	576	649	752
Total	915	995	1,072	1,190	1,310
Number of Students Graduating—					
Males	159	199	184	216	222
Females	202	220	254	264	322
Total	361	419	438	480	544

OTHER GOVERNMENT EDUCATION

Muresk Agricultural College

The Muresk Agricultural College was established by the Department of Agriculture in 1926 to provide scientific training in agriculture and farming practice. Students are admitted one year after passing the Junior Certificate examination, provided their headmasters give satisfactory reports of their work in specific subjects at the sub-Leaving level. At the College the students' general education is continued, and studies during the two years required for a Muresk Diploma of Agriculture include English, farm management and economics, agriculture, animal husbandry, chemistry, book-keeping and veterinary science.

Practical instruction is also given in cereal farming, stock husbandry, wool classing, pasture management, fodder conservation, farm building construction, farm mechanics and engineering, gardening, fruit growing and bee keeping. Breeding of pure-bred stock for distribution to farmers is another activity at the College which provides valuable training for the students. To help farmers to keep in touch with new developments in agriculture, the College also holds short courses in selected subjects at appropriate times.

The number of students enrolled at the College in 1960 was 52.

School of Mines

A School of Mines was established at Kalgoorlie in 1904 and now has branches at Norseman, opened in 1939, and at Bullfinch where class work began in 1953. The School is under the control of the Department of Mines. There are courses leading to Associateship in Mining, in Metallurgy, in Engineering and in Mining Geology, as well as Certificate courses in assaying, surveying, mine management, engineering draughting, electrical engineering and mechanical engineering. Some technicians' courses are also available.

In the final term of the 1960 school year, the total number of students enrolled was 383.

NON-GOVERNMENT SCHOOLS

The non-government schools, which are conducted mainly by religious organizations, provide education from kindergarten to the end of the secondary school course, equivalent to the final year in the government high schools. The curriculum at the primary and secondary levels is substantially the same as that in the government schools.

Almost all of the schools shown under the heading of Undenominational in the following table are kindergartens. The Education Act requires that every person conducting a kindergarten must hold a permit issued for the purpose by the Education Department. The Kindergarten Union of Western Australia, a voluntary organization subsidized from government funds, maintains a training college for kindergarten teachers. Some of the staff at kindergartens are teachers who have been trained by the Education Department.

During the year 1960 the number of kindergartens registered with the Education Department was 125, of which 40 were in country areas. Of the total, 55 were affiliated with the Kindergarten Union, 38 were controlled by independent committees, 10 by other organizations and 22 were conducted privately.

The table shows, for each of the years from 1956 to 1960, the numbers of non-government schools, teachers and scholars, classified according to the religious denomination of the school. The grade of education of scholars is also given, the grades corresponding to those used in the table relating to government schools on page 126.

NON-GOVERNMENT SCHOOLS

Particulars	1956	1957	1958	1959	1960
NUMBER OF SCHOOLS (a)					
Denomination—					
Church of England	8	8	8	9	9
Methodist	3	3	3	3	3
Presbyterian	2	2	2	2	2
Roman Catholic	164	168	170	172	173
Other	5	5	7	8	8
Undenominational	93	105	110	120	123
Total	275	291	300	314	318
NUMBER OF TEACHERS (a)					
Denomination of School—					
Church of England	113	112	135	159	168
Methodist	52	52	57	65	66
Presbyterian	49	50	55	57	58
Roman Catholic	675	690	722	736	758
Other	21	19	27	26	26
Undenominational	184	211	221	208	224
Total	1,094	1,134	1,217	1,251	1,300
Males	252	255	277	286	286
Females	842	879	940	965	1,014
Total	1,094	1,134	1,217	1,251	1,300
NUMBER OF SCHOLARS (b)					
Denomination of School—					
Church of England	2,175	2,258	2,427	2,960	3,082
Methodist	1,002	1,090	1,148	1,274	1,320
Presbyterian	1,057	1,089	1,093	1,104	1,153
Roman Catholic	23,737	25,202	25,948	26,849	27,177
Other	243	313	380	432	469
Undenominational	3,708	3,790	3,904	3,825	4,000
Total	31,922	33,742	34,900	36,444	37,201
Grade of Education—					
Kindergarten	3,781	4,050	4,078	4,349	4,412
Primary	20,335	21,140	21,731	22,286	22,087
Post-Primary	6,552	7,083	7,418	8,014	8,639
Secondary	1,254	1,469	1,673	1,795	2,063
Total	31,922	33,742	34,900	36,444	37,201
Males	15,650	16,581	17,105	17,847	18,158
Females	16,272	17,161	17,795	18,597	19,043
Total	31,922	33,742	34,900	36,444	37,201

(a) At end of year.

(b) At July in each year.

UNIVERSITY EDUCATION

University education first became available in Western Australia in 1898, with the formation of the Extension Committee of the University of Adelaide by which facilities were provided for external studies in courses for degrees in Arts and Science. The first step towards the establishment of a university in Western Australia was taken in 1904, when a University Endowment Act providing for the incorporation of a trust to administer funds for the purpose was passed by the State Parliament. Following a favourable report made by a Royal Commission under the chairmanship of Dr. (later Sir Winthrop) J. W. Hackett, the University was established by the University of Western Australia Act of 1911. Teaching began in 1913 in subjects related to the Faculties of Arts, Science and Engineering. Additional faculties established since that time are those of Law (1927), Agriculture (1936), Dental Science (1946), Education (1947), Economics (1954) and Medicine (1956). The Faculty of Economics was reconstituted as the Faculty of Economics and Commerce in 1961.

The following table shows the number of members of the teaching staff, the number of students and the numbers of degrees conferred and diplomas and certificates granted during each of the years 1956 to 1960.

UNIVERSITY OF WESTERN AUSTRALIA

Particulars						1956	1957	1958	1959	1960
NUMBER OF TEACHERS										
Professors	....	....	....	....	....	22	25	27	32	33
Readers	....	....	....	....	....	20	23	24	29	24
Lecturers, Full-time	....	....	....	....	....	67	82	101	120	130
" Part-time	....	....	....	....	....	55	57	53	51	53
Graduate Assistants, Demonstrators, Tutors, etc.	....	....	....	....	....	37	33	43	116	97
Total	....	....	....	....	....	201	220	248	348	337
NUMBER OF STUDENTS										
Internal, Full-time	....	....	....	....	....	1,076	1,151	1,335	1,663	1,851
" Part-time	....	....	....	....	....	839	883	962	1,075	1,219
External	....	....	....	....	....	300	342	358	426	431
Total	....	....	....	....	....	2,215	2,376	2,655	3,164	3,501
	....	....	....	....	Males	1,691	1,835	2,067	2,436	2,674
	....	....	....	....	Females	524	541	588	728	827
	....	....	....	....	Total	2,215	2,376	2,655	3,164	3,501
DEGREES (†), DIPLOMAS AND CERTIFICATES										
Degrees (†) Conferred—										
Agriculture	....	....	....	....	....	7	11	17	10	13
Arts	....	....	....	....	....	74	76	111	107	130
Dental Science	....	....	....	....	....	8	7	9	10	11
Economics	....	....	....	....	....	....	....	1	2	3
Education	....	....	....	....	....	10	22	27	25	27
Engineering	....	....	....	....	....	33	38	48	31	33
Law	....	....	....	....	....	9	10	3	17	12
Medicine	....	....	....	....	....	....	....	....	13	3
Science	....	....	....	....	....	30	48	71	65	74
Total	....	....	....	....	....	171	212	287	280	306
	....	....	....	....	Males	126	174	241	227	249
	....	....	....	....	Females	45	38	46	53	57
	....	....	....	....	Total	171	212	287	280	306
Diplomas Granted—										
Education	....	....	....	....	....	....	71	52	47	42
Other	....	....	....	....	....	....	9	2	2	....
Certificates Granted										
	....	....	....	....	....	19	3	....	....	....
Total	....	....	....	....	....	19	83	54	49	42
	....	....	....	....	Males	11	64	40	38	31
	....	....	....	....	Females	8	19	14	11	11
	....	....	....	....	Total	19	83	54	49	42

(†) Excluding honorary degrees.

Degrees

Degrees are granted in the Faculties of Arts, Law, Education, Economics and Commerce, Science, Engineering, Agriculture, Dental Science and Medicine.

Courses for the degrees of Bachelor of Arts, Bachelor of Economics, Bachelor of Commerce and Bachelor of Science extend over a period of not less than three years; those for the degrees of Bachelor of Music, Bachelor of Laws, Bachelor of Education and Bachelor of Science in Agriculture, over not less than four years; and those for the degrees of Bachelor of Science in Forestry, Bachelor of Engineering, Bachelor of Surveying and Bachelor of Dental Science, over not less than five years. Honours degree courses in Arts, Economics and Science are usually of four years' duration. The course in the Faculty of Medicine for the degrees of Bachelor of Medicine and Bachelor of Surgery extends over six years, and that for the degree of Bachelor of Medical Science over four or five years according to the subjects taken.

The degrees of Master of Arts and Doctor of Letters, Doctor of Music, Master of Laws and Doctor of Laws, Master of Education, Master of Economics, Master of Science and Doctor of Science, Master of Engineering Science, Master of Engineering and Doctor of Engineering, Master of Science in Agriculture and Doctor of Science in Agriculture, Master of Dental Science and Doctor of Dental Science, and Master of Surgery and Doctor of Medicine, are conferred by the University. The degree of Doctor of Philosophy is also given for research in faculties other than Law and Economics and Commerce.

University Government

The original Act provided that the Senate and Convocation should constitute the governing authority with power to make statutes for "the management, good government and discipline of the University."

The Senate consists of 21 members, of whom six are appointed by the Governor, six are elected by Convocation, two are elected by the full-time teaching staff, three are *ex officio* members (the Vice-Chancellor of the University, the Under Treasurer of the State, and the Director-General of Education), and four are co-opted members. Convocation consists of graduates of the University and such other persons as are eligible for membership under the provisions of the University of Western Australia Act.

Since an amendment to the Act in 1944 the Senate alone has been the governing authority and is responsible, subject to the Act and the statutes, for the entire control and management of the University. Statutes originate in the Senate and are submitted to Convocation for its consideration, and although Convocation may suggest amendments the Senate is not bound to accept them. The Act requires that statutes shall be submitted to the Governor for approval, after which they have the force of law.

The Chancellor is the titular head of the University. He is elected annually by the Senate from among its members and presides over its meetings. The Vice-Chancellor is the chief executive officer of the University and is appointed by the Senate for a period not exceeding ten years, at the end of which term he is eligible for reappointment. At meetings of Convocation the chairman is the Warden who is elected annually by Convocation from among its members.

The Guild of Undergraduates is constituted under the Act as an association of undergraduates "for furthering of their common interests, and shall be the recognised means of communication between the undergraduates and the governing authority of the University." The government of the student body is vested in the Guild Council to which the Senate appoints two of its own members, the remaining members of the Council being elected in accordance with regulations made by the Guild.

Principal Benefactions

A large bequest to the University was made under the will of its first Chancellor, Sir Winthrop Hackett, who died in 1916. Of the total amount of £425,000, a sum of £200,000 together with accrued interest was allocated to the erection and maintenance of a group of buildings comprising a ceremonial hall (Winthrop Hall), a Senate Chamber, administrative offices, a library, lecture rooms and a students' building (Hackett Hall). A further sum of £200,000 was devoted to the provision of studentships, scholarships, bursaries and other financial help for deserving students of limited means. Under his will Sir Winthrop Hackett also provided an endowment for a Chair of Agriculture, and Saint George's College, the first residential college within the University, was built and endowed by the Church of England from funds bequeathed by him from the residue of his estate.

In 1927 the University received from the late Robert Gledden an estate valued at £60,000 to provide two travelling scholarships in "applied science more particularly related to surveying, engineering or mining, or cognate subjects." The bequest has been used to establish the Robert and Maude Gledden Travelling Fellowships and to provide research studentships and fellowships.

In 1957 Mrs. M. B. Raine made a deed of gift in favour of the University for an amount of £153,900 to be applied to medical research. Mrs. Raine died in 1960 and bequeathed her estate, valued for probate at £688,784, to the University for the same purpose.

The sum of £62,500 was presented to the University in 1958 by the Wellcome Trust to endow the Wellcome Research Chair of Pharmacology.

Student Fees and Scholarships

The Royal Commission appointed to inquire into the establishment of a University recommended that teaching should be free and suggested that "if fees are found to be necessary, they should be on the lowest possible scale." Until 1962 lecture fees were not charged to students normally resident in Australia, except those in the Faculty of Medicine, where tuition fees were payable in the second and later years, and those enrolled at the Western Australian College of Dental Science, an institution affiliated

with the University, who paid lecture fees to the College. All students paid a "faculty service charge" designed to cover such items as the use of the library, annual examination fees, the use of laboratory equipment, and the lecture synopses provided in some courses. To assist in meeting the increasing costs of operation resulting from a rapidly growing student population and to enable the University to take full advantage of Commonwealth financial aid available under the States Grants (Universities) Act, a new system of annual "enrolment fees" was introduced in 1962. These fees, which are considerably higher than the faculty service charges previously levied, are assessed on the number and grade of subjects to be taken during the year by students in the Faculties of Arts, Law, Education, Economics and Commerce, and Science. In the Faculties of Engineering, Agriculture, Dental Science and Medicine, they take the form of an annual charge varying with the year of study in the particular course. In all faculties, students whose normal place of residence is outside Australia are required to pay an annual overseas students' fee. Subscriptions to the Guild of Undergraduates and to certain faculty associations are payable by all students.

Financial assistance is available to students under the Commonwealth Scholarship Scheme. Awards are made on merit and, in addition to having their fees paid, scholarship holders may receive a living allowance, which is subject to a means test. Hackett Bursaries are offered each year for students of merit whose means make it difficult for them to undertake or continue a full-time undergraduate course. The Education Department provides a number of University Exhibitions for competition among candidates at the Leaving Certificate examination.

As well as the normal awards under the Commonwealth Scholarship Scheme, there is provision in the Scheme for financial assistance for post-graduate studies in the form of a living allowance, which is not subject to a means test, and payment of fees. Hackett Scholarships, tenable at the University of Western Australia or in special circumstances at other recognized institutions in Australia, are open to graduates of the University. Graduates may also apply for Hackett Studentships which, in addition to other financial benefits, carry a travel grant where the Student elects to study overseas or in another State. Some large private industrial concerns also make annual awards for study at post-graduate level.

Tuition

In addition to the normal lectures and tutorials for full-time students, courses for part-time students are offered in the Faculties of Arts, Education, and Economics and Commerce. By arrangement with the Perth Technical College, evening instruction is given in some science subjects. Certain subjects may be taken at institutions affiliated with the University. These are the Perth Technical College, the School of Mines of Western Australia, the Western Australian College of Dental Science, and the Claremont and Graylands Teachers' Colleges at one of which students proceeding to degrees in Education are required to spend a year. The Kindergarten Training College is also affiliated with the University in connexion with certain part units for the degree of Bachelor of Education and the Diploma in Education.

Students who live within the State but outside the metropolitan area are able to enrol as external students in the Faculties of Arts, Education, and Economics and Commerce.

Colleges and Hall of Residence

There are three residential colleges within the University. For men students, Saint George's College is conducted by the Church of England, and Saint Thomas More College by the Roman Catholic Church. Saint Catherine's College is an undenominational college for women students. Kingswood College, which is being established by the Methodist Church, is in course of construction and is expected to be in operation from the beginning of the 1963 academic year.

Currie Hall is an undenominational hall of residence for men students.

Public Examinations Board

The Public Examinations Board is constituted by University statute for the purpose of conducting school certificate examinations. The University, the Education Department and the non-government secondary schools are represented on the Board. The Junior Certificate examination is normally taken by scholars at the end of the third year in government high schools or non-government secondary schools. The Leaving Certificate examination is the final examination in Western Australian schools and a pass in certain specified subjects enables a student to matriculate at the University.

Adult Education Board

The Adult Education Board was established by the University in 1928. Its activities are controlled by a full-time Director of Adult Education.

The Board has its headquarters in Perth and operates at a number of centres in the suburbs and in country towns. Its work is generally non-vocational in character and, although the emphasis is on cultural entertainment, attention is given to the applied social sciences. Several series of classes, lectures, conferences, discussion groups and leadership training schools are conducted. The Board co-operates with other organizations, such as the Junior Farmers' Movement, the Country Women's Association and the Parents and Citizens' Federation. Music recitals, ballet performances, art exhibitions, screenings of high-quality films, drama presentations and drama schools are arranged by the Board in the metropolitan area and most of these activities extend also to the larger country towns. A Summer School is held at the University each year. The annual Festival of Perth was inaugurated by the Board in 1953.

The Board maintains an Adult Education Library and operates a Box Library Scheme for local discussion groups in both metropolitan and country areas.

Finance

The following table relates to University finance in each of the years from 1956 to 1960. The figures shown under the heading of Special Activities exclude the transactions of the University of Western Australia Press.

UNIVERSITY OF WESTERN AUSTRALIA—FINANCE

Particulars	1956	1957	1958	1959	1960
GENERAL ACTIVITIES					
Receipts—	£	£	£	£	£
Government Grants—					
State	508,312	555,611	632,079	670,571	755,312
Commonwealth	164,398	190,500	310,590	375,400	454,175
Interest, Rents, Dividends and Donations	13,501	17,386	31,347	35,053	54,674
Students' Fees	24,141	36,348	45,896	58,832	66,827
Engineering and other Testing Fees	4,233	3,670	4,137	4,196	5,369
Other Receipts	2,074	7,258	9,502	10,334	15,094
Total	716,650	810,773	1,033,551	1,154,386	1,351,451
Payments—					
Administration :					
Salaries	35,760	43,325	53,680	59,468	75,473
Other	21,722	25,665	29,272	30,690	37,825
Teaching Department :					
Salaries	370,517	453,922	589,741	659,743	794,555
Other	94,098	112,236	170,960	135,611	166,934
Library :					
Salaries	10,987	14,248	16,445	20,566	28,385
Other	19,815	25,409	40,736	34,133	41,617
Maintenance of Premises :					
Salaries and Wages	26,883	28,538	29,138	32,434	41,835
Other	48,761	43,411	52,996	62,196	69,400
Adult Education—Senate Subsidy	13,294	17,610	19,040	21,000	29,376
Other Payments	42,226	56,417	56,116	60,557	82,129
Total	684,063	820,831	1,058,124	1,116,398	1,367,529
SPECIAL ACTIVITIES (a)					
Receipts—	£	£	£	£	£
Government Grants :					
State—Adult Education	1,850	4,850	4,850	4,850	4,850
Commonwealth—Research	7,611	11,677	25,047	63,417	70,777
Non-Government Research Grants	36,591	43,769	52,707	26,624	25,686
Interest, Rents, Dividends and Donations	30,369	32,040	27,846	67,138	64,652
Candidates' Fees for Public Examinations	32,095	35,802	41,489	46,049	50,611
Adult Education and Extension Fees	13,558	14,985	16,140	14,707	11,914
Adult Education—Senate Subsidy	13,294	17,610	19,040	21,000	29,376
Other Receipts	8,288	12,497	19,697	33,434	31,397
Total	143,656	173,230	206,816	277,219	289,263
Payments—					
Expenses of Public Examinations	28,062	32,750	38,912	43,935	47,333
Adult Education and Extension	26,217	35,611	40,405	42,772	48,165
Scholarships, Bursaries, Prizes, etc.	22,638	23,183	30,968	35,698	50,031
Special Research Expenses	46,087	49,209	61,296	83,732	84,398
Other Payments	4,738	5,292	5,504	6,782	6,664
Total	127,742	146,045	177,085	212,919	236,571

(a) Figures exclude transactions of University of Western Australia Press.

The University's principal source of revenue is in the form of grants made by the State Government. The University of Western Australia Act provides for the payment of an annual subsidy of £250,000 and "such additional amounts as may be appropriated by Parliament from time to time." In 1960, State Government assistance accounted for more than one-half of the total receipts of £1,351,451 for general activities. By a series of States Grants (Universities) Acts, the first of which was passed in 1951, the Commonwealth Government has also made regular annual contributions, and the amount of £454,175 paid to the University in 1960 represented about one-third of its total income for general activities. A Committee on Australian Universities (the "Murray Committee") was appointed in 1957 to investigate, among other things, the financial position of the universities. In accepting its principal recommendations the Commonwealth agreed, under the provisions of the States Grants (Universities) Act of 1958, to continue grants for recurrent expenditure between the years 1958 and 1960, to make additional recurrent grants, to assist the universities in the provision of buildings and equipment, and to make grants for expenditure on residential college buildings and halls of residence. Similar provisions relating to the years 1961, 1962 and 1963 are contained in the States Grants (Universities) Act passed by the Commonwealth Parliament in 1960.

PART 2—PUBLIC LIBRARIES, MUSEUM, ART GALLERY, AND SCIENTIFIC INSTITUTIONS

PUBLIC LIBRARIES

Library Board of Western Australia

The Library Board of Western Australia was established under the provisions of the Library Board of Western Australia Act, 1951. The Board, which comprises thirteen members appointed by the State Government, is responsible for all forms of public library services which are financed either wholly or in part from State funds. The Director-General of Education and the Director of Adult Education are *ex officio* members of the Board which includes in addition five representatives of local governing authorities and associations, a representative of the Library Association of Australia and five other members.

The Board was set up as an independent statutory body in 1952. Its functions are to encourage and assist local authorities to establish public libraries and to co-ordinate those libraries into a State-wide system, to administer funds made available by the Government for this purpose, to provide for the training of librarians and library assistants and to advise the Minister for Education and participating bodies on matters of general policy relating to libraries. Following an amendment to the Act, the administration of the Public Library of Western Australia was transferred to the Board on the 1st December, 1955 and its name changed to the State Library of Western Australia.

The library service of Western Australia thus consists of the State Library, which functions as the reference division of the service, and a number of independent public libraries which are jointly supported by local authorities and the Board.

The book stock of the Board at the 30th June, 1960 comprised approximately 187,000 bound volumes in the State Library and about 174,000 volumes in lending library services, including local public libraries.

State Library of Western Australia

The original Library was established in 1887 as the Victoria Public Library in commemoration of Queen Victoria's Golden Jubilee. It became known later as the Public Library of Western Australia and in 1955 as the State Library of Western Australia.

In addition to providing reference library facilities for the metropolitan area, its service extends throughout the State, through the agency of a local public library wherever possible but also by post direct to country inquirers not in contact with a local library.

It is divided into six specialist subject units, comprising four libraries and two centres. The J. S. Battye Library of West Australian History was developed from the former Archives Branch. All material relating to Western Australia, including the State archives, has been concentrated in this library. The other libraries are The Library of Business, Science and Technology, The Library of Social Sciences, Philosophy and Religion and The Library of Literature and the Arts. The Bibliographical Centre contains catalogues of the State Library and of all local public libraries, of additions since 1956 to all other major libraries in the State, as well as a wide range of printed bibliographies, indexes to periodicals and subject guides. It is a centre of co-operation between libraries in Western Australia and with those in other Australian States and overseas countries. The Information Centre provides the information services for the State-wide public library system. It is equipped with current Australian and overseas telephone and trade directories, business guides, commercial publications and a wide variety of similar quick reference material. The Centre is designed principally to provide immediate answers to inquiries, mainly in the commercial field. Current newspapers, which include all those published in Western Australia, the main ones from other Australian States and a representative selection from overseas countries, are available for reference in the Information Centre.

The State Library is fully equipped with micro-film and photo-copy apparatus and copies of material are available on payment of an appropriate fee.

Local Public Libraries

At the 30th June, 1960, there were 41 local public libraries associated with the Library Board's service. The local government authorities conducting these libraries provide accommodation and staff, while the Library Board provides all the books and bibliographical services and does all cataloguing on behalf of the local libraries. The administrative independence of the local libraries is secured under the provisions of the Library Board of Western Australia Act, 1951. Apart from exercising a statutory obligation in respect to the expenditure of State subsidies, the Board takes no direct part in the administration of local public libraries. If the Board's expenditure in respect of a local library exceeds that of the local authority, an amount to equalize the expenditure is payable to the Board by the local authority. Books are provided on a minimum basis of one volume per head of the population of the district concerned and all non-fiction books in public libraries throughout the State are made available on request to the Board at any library associated with its library service.

MUSEUM

The Western Australian Museum has developed from two earlier collections. One of these, the Museum of the Swan River Mechanics' Institute, was founded by public subscription in 1860, and the other was the Geological Museum at Fremantle, which was started in 1881. In 1889 the contents of the Geological Museum were moved to the former Perth Gaol (which is still part of the Western Australian Museum) and a Curator was appointed in 1891. In the following year the museum of the Swan River Mechanics' Institute was purchased, and the collections combined to form the Public Museum.

The Museum, which became known as the Western Australian Museum in 1897, is controlled by a Board of five members appointed by the State Government under the provisions of the Museum Act, 1959. The staff includes a Director, five curators and other professional and technical staff.

The Museum is devoted mainly to natural history and includes extensive geological collections and collections of ethnography. Emphasis in both display and research is on the fauna of Western Australia and there is a fairly extensive scientific library. Research is related specifically to the marine fauna of Western Australian waters, mammals, birds, reptiles, insects and anthropology.

The Museum is an active educational instrument. The scientific staff lecture in Adult Education programmes and in the University departments. Public lectures are held and there is also an extensive programme of nature study for children. A children's centre, staffed by a Museum teacher provided by the Education Department, is open during school holidays. Regular classes are held during school terms and 2,735 children from metropolitan schools attended during 1960. In addition, special visits were made by 1,127 children from schools not included in the regular series.

The Museum serves as a centre for associations with interests in natural history. The Royal Society, the Naturalists' Club, the Astronomical Society and the Gould League hold regular meetings at the Museum.

ART GALLERY

The Western Australian Art Gallery is under the control of a Board of five members appointed by the State Government. The Gallery occupies part of a building shared with the Museum. The lower gallery is used mainly for lectures, art films and the display of interstate and oversea exhibitions. Works from the permanent collection are exhibited in the upper gallery, while the print room is used to house and exhibit the collection of prints and drawings. Both displays are changed regularly. Selections from the art collection are shown on the upper floor and a special display in the entrance to the lesser hall is devoted to the work of a different artist each month.

The Art Gallery's collection at the 30th June, 1960 consisted of 362 oil paintings, 202 water colours, 10 pastels, 792 drawings, 552 prints, 24 sculptures, 9 miniatures and a large number of reproductions, ceramics and other art objects. The collection is constantly being increased by purchases, gifts and bequests.

The Gallery has extended its services throughout the metropolitan area and country districts. Reproductions of paintings are circulated by means of its loan service to various public institutions in the metropolitan area. Educational and cultural bodies in rural areas participate in a similar scheme, related groups of reproductions being boxed for country distribution together with discussion notes. Touring exhibitions from the permanent collection are also taken to country districts at regular intervals.

These activities are supplemented by publications of various kinds, which are distributed to schools and other institutions or direct to the public. Reproductions of some works in the collection are also available.

The Art Gallery operates a general information service which is widely used.

SCIENTIFIC INSTITUTIONS

State Government Observatory

The State Government Observatory, which was established in September, 1896, on a site overlooking Perth from the west, carries out time-service, astronomical and seismological functions for Western Australia. Time signals are provided twice daily for transmission to ships and aircraft from the VIP Radio Station at Applecross. Hourly time signals from the Observatory control the time services of radio broadcasting stations, the Post Office and the Railways Department, while time to the nearest half-minute, or to the nearest second, may be obtained by telephone. Tide tables for the northern ports of the State are prepared annually. In research work connected with the Astrographic Catalogue, the Observatory was allotted the section 31° – 41° south declination, and in this section the positions of nearly half a million stars were determined. Besides the observation of astronomical phenomena as these occur, recent research work has included the Markowitz Moon Camera Programme, comet observations, and the occultation programme. Planned astrometric research includes fundamental and differential star position observations with the meridian transit circle, and photographic studies of stellar motions are being undertaken with the astrographic telescope. The Perth Observatory Seismological Station makes important contributions to the investigations of earthquakes in this part of the world, and is one of a world-wide network of 15 stations equipped with special long-period instruments. A continuous seismic photographic record is obtained, and tabulations from the records are distributed to 63 reciprocating stations throughout the world. Public interest in astronomy is promoted by the provision of information to radio broadcasting services and newspapers, encouragement of the local Astronomical Society and other educational activities, including organized evening and day visits to the Observatory by the public generally.

State Government Chemical Laboratories

In 1922 the various chemical services of the State Government were amalgamated to form the Government Chemical Laboratories, primarily for the performance of chemical work required by Government Departments. In addition, the Laboratories serve government instrumentalities and semi-government authorities and undertake some chemical work for the general public. The activities of the Laboratories are organized under six Divisions, and a Physics Section, the separate functions of which are described briefly in the following summary.

The *Agriculture, Forestry and Water Supply Division* does analytical work, on soils, related principally to the experimental work of the Department of Agriculture (see also Chapter VIII, Part 1); on waters, for the Metropolitan Water Supply and the Country Water Supply Departments, as well as for primary producers seeking an assessment of the suitability of private supplies for domestic, irrigation and livestock purposes; on plants, as fodders for livestock and also to assess the nutritional requirements of plants with particular reference to the use of fertilizers and the correction of trace element deficiencies; on fertilizers and manures generally; and on animal tissues for diagnostic purposes.

The *Engineering Chemistry Division* was formerly the Bureau of Research and Development of the Department of Industrial Development and was associated with the Fuel Technology Division in the production of a metallurgical fuel from Collie coal. It is now actively concerned with chemical means of utilization of mineral resources, such as production of sponge iron, upgrading of ilmenite and low grade ores, and the beneficiation and calcination of lime sand.

The *Food, Drugs, Toxicology and Industrial Hygiene Division* deals with the analysis of foods, including milk; drugs; police work, including human and animal toxicological examinations for poisons and analysis of blood and urine for alcohol concentration; industrial hygiene, including determinations relating to the amount of potentially harmful substances present in industrial and commercial materials or associated with working conditions; and industrial effluents and pollution surveys of river and ocean waters.

The *Fuel Technology Division* has been primarily concerned with Collie coal and its uses and has done important work on this local coal for the making of coked briquettes as a metallurgical fuel and for the production of town gas. The Division's investigations have extended to other fuels, including sawdust and woodwaste, and also to domestic appliances using fuel, and reduction of atmospheric pollution by emission from smoke-stacks.

The *Industrial Chemistry Division* is used extensively as a source of information and advice on technical problems relating to industry in Western Australia. Research is also in progress on protective coatings, including paint, and on natural products from native vegetation.

The *Mineralogy, Mineral Technology and Geochemistry Division* is basically concerned with minerals, their occurrence and identification, but it also carries out the testing of clays and of aggregates for cement and concrete work, as well as corrosion and other tests. Analyses are done for the Government Geologist in connexion with mineral surveys, notably those for copper and iron. This Division is also the reference laboratory for analyses of crushings of gold ores by the State Batteries. An important part of its work is the identification of mineral specimens forwarded by prospectors and others and the Division deals with many hundreds of such samples every year.

The *Physics and Pyrometry Section* is mainly concerned with X-ray examination of minerals and as a reference laboratory for heat and temperature measurement.

Details of the operations of the Government Chemical Laboratories are published in the Annual Report of the Director.

The Institute of Agriculture, University of Western Australia

The Institute of Agriculture was established in 1938 within the University to provide research facilities and staff essential for the effective training of professional agricultural scientists at both undergraduate and graduate levels. It comprises the teaching and examining Faculty of Agriculture, and the research staff associated with it. Although the Institute is financed to some extent from University funds, substantial research grants from producer organizations and other bodies and individuals interested in the promotion of agriculture have made possible most of the research that has been undertaken since its establishment.

During the first ten years of its existence, and despite the dislocation of the war years, it initiated research on plant and animal problems of the pastoral areas, commenced a series of fundamental studies related to the nutrition of ruminants, investigated factors affecting the baking quality and nutritive value of wheat and flour, elucidated factors affecting the fertility of sheep, and carried out a series of economic surveys of the sheep, wheat, dairying, pig and poultry industries. The work of these years is summarized in the report of the Director, published in 1949.

Since 1948 the research programme has been greatly increased and its scope widened to give greater emphasis to agronomic problems, especially those concerned with the maintenance and improvement of fertility in the wheat-growing regions. Fields of research included an extensive programme of plant breeding and genetical research aimed at increasing the productivity and extending the climatic limits of legumes, particularly subterranean clover, medics and lupins; the investigation of the agronomic value of native legumes; and the examination of the factors influencing the gains and losses of nitrogen and organic matter in wheat belt soils, including nitrogen in rainfall, nitrogen and organic matter increments and losses under a range of treatments, and nitrogen fixation by free-living bacteria as well as by root nodule organisms. A particularly strong research group concerned with nodulation problems in legumes has been built up.

In addition, attempts have been made to discover and develop useful salt-tolerant plants. Factors affecting leaching losses of potassium, sulphur and other minerals from soils have also been investigated.

At the same time, investigations into animal, economic and pastoral problems have been further developed. Fundamental studies on factors affecting the microbial population of ruminants and the nutritive value of feeding stuffs, which have already contributed to the better and more economical feeding of sheep and cattle during the dry summer season, have attracted world-wide attention, as have the researches into the nature and cause and control of the oestrogenic effects of subterranean clover.

Further and more detailed economic surveys have been made of the wheat-sheep farming industry, of the dairying industry not using irrigation and of dairy farms producing whole milk for the metropolitan area. The John Thomson Agricultural Economics Centre was established in 1961 as part of the Institute. The staff of this Centre is concerned with "operations research" into economic problems of the agricultural and pastoral industries.

This brief review of the very wide range of the research activities of the Institute of Agriculture, at both the fundamental and at the more applied level, illustrates the extent to which it contributes to the assistance and service of the rural industries, indirectly by its training of agricultural scientists and directly through its manifold research projects.

Commonwealth Scientific and Industrial Research Organization

Several Divisions of the Commonwealth Scientific and Industrial Research Organization are actively engaged in research work in Western Australia.

Division of Soils—During the post-war period the Division of Soils has carried out soil surveys of large areas, mainly in the Great Southern districts to assist in the planning of War Service Land Settlement schemes. The soils of the areas concerned are predominantly lateritic and the study of their trace mineral status and clay mineralogy is nearing completion. In the Swan Coastal Plain, detailed soil surveys of existing and proposed irrigation areas of Pinjarra, Harvey and Capel and the vine-growing areas of the Swan Valley have been completed. Information obtained during this work provides the basis for study of the pedology and distribution of the soils of the whole Coastal Plain.

In recent years more attention has been given to the principles governing the distribution of soils. Field studies on the development of soils in relation to landscape evolution and past climates are in progress in representative areas of York and Merredin. As an extension of the work in the Merredin area, a study of the hydrology of a typical wheat-belt valley in relation to soil salinity is in progress.

An important part of the work of the Division is a study of the chemistry of lateritic soils as it affects the growth of exotic pines. This research is being done in collaboration with the Western Australian Forests Department.

Division of Plant Industry—Most of the activities of the Division of Plant Industry have been directed to the pasture problems of the sheep areas in the south-west of the State. More recently, studies were initiated on the sandy soils of the Swan Coastal Plain.

The influence of environmental factors on the growth and persistence of pasture plants, for the most part clovers and grasses, is still under examination.

In the plant nutrition programme, studies on phosphorus and nitrogen are continuing, and some attention is now being given to potassium and cobalt. A comprehensive examination is being made of the many factors influencing soil fertility build-up in subterranean clover pastures.

A large number of introductions of pasture plants and crop plants are under test by the Plant Introduction group, the main emphasis being on new pasture plants for the wheat-belt.

Studies on pasture utilization with particular reference to the breeding ewe are proceeding and new work is being done on the clover infertility problem.

The Division's programme is centred at the Western Australian Regional Laboratory at Perth and includes field work at a number of country centres.

Division of Entomology—Since 1946 the Division of Entomology has been concerned with developing satisfactory methods of controlling the Red-legged Earth Mite and Lucerne Flea in pastures. Attention is now being directed to an intensive study of the population dynamics of these two pests. Detailed observations have been made on density fluctuations in pastures in the Moora and Waroona districts with the object of determining the factors which govern abundance in nature. A special study is being made of the part played by the predatory Bdellid Mites.

Wildlife Survey Section—The Wildlife Survey Section is concerned with investigations on the higher vertebrates (more particularly mammals and birds) which are of economic importance, and some attention is also paid to studies of various aspects of the State's native fauna which may not have at present a direct economic bearing. The Section played a part, in association with the Department of Agriculture, in the control of rabbits by the introduction of the disease myxomatosis.

Among birds, the ecology of the emu and of several species of the parrot tribe which are agricultural pests is being studied. The factors controlling breeding seasons under Western Australian conditions are also being investigated.

Division of Fisheries and Oceanography—The Division of Fisheries and Oceanography has supplied the project leader for the Western Fisheries Project set up co-operatively by the Commonwealth Scientific and Industrial Research Organization, the Department of Primary Industry, the Fisheries Departments of Western Australia and South Australia, the Zoology Department of the University of Western Australia, and the Western Australian Museum. At present the research includes work on crayfish, Australian salmon, prawns, tuna and whales. Using naval frigates the Division is continuing work on the physico-chemical and biological oceanography of the eastern Indian Ocean.

Division of Mathematical Statistics—Officers of the Division of Mathematical Statistics stationed at Perth are currently investigating the application of statistical methods to special problems of local interest in the fields of engineering, microbiology, plant breeding and plant ecology. In addition, they act in an advisory capacity to other research workers in the State on matters relating to the design of experiments and the analysis and interpretation of data.

Other Divisions—Besides the research work being conducted at the Regional Laboratory, Perth and at field stations, various co-operative programmes are under way in University departments and in the State Department of Agriculture. The Commonwealth Scientific and Industrial Research Organization has several officers stationed at the Kimberley Research Station investigating the crop and pasture problems of the northern areas.

Department of Agriculture

Reference to the scientific work of the Department of Agriculture appears in the section *The Department of Agriculture* in Chapter VIII, Part 1—*Primary Production*.

CHAPTER V — *continued*

PART 3—HEALTH SERVICES, HOSPITALS AND HOMES FOR THE AGED

HEALTH SERVICES

The Commonwealth and State Government health authorities, together with Boards of Health under local government administration, co-operate in maintaining health services and in the prevention and control of infectious diseases in Western Australia.

The Commonwealth Department of Health administers the National Health Services in this State and is responsible for quarantine, where necessary, of persons, animals and plants entering Western Australia from overseas. It conducts a Health Laboratory at Kalgoorlie where miners undergo periodical X-ray examinations for silicosis and other industrial diseases, and also an Acoustics Laboratory at Perth where persons under 21 years of age and ex-servicemen with defective hearing may obtain specialist advice and hearing aids without charge. Further information relating to the National Health Services appears in Part 5 of this Chapter.

The State Department of Health is concerned primarily with the prevention and control of infectious diseases. It is also responsible for the enforcement of sanitation, building and pure food standards, certain of these activities being undertaken in conjunction with the Local Boards of Health.

The Health Education Council is established as a statutory body under the provisions of the Health Education Council Act, 1958-1961. The Council conducts publicity campaigns and public lectures on matters affecting public health, including home accidents, handling of poisons, poliomyelitis and diphtheria immunization and methods to control the common house fly.

The Cancer Council of Western Australia is constituted under the provisions of the Cancer Council of Western Australia Act, 1958 as a statutory body with the functions of co-ordinating, promoting and subsidizing cancer research. The Council absorbed the former Anti-Cancer Council established originally for the purpose of raising funds for the purchase of a linear accelerator which is now installed in a building erected for the purpose adjacent to the Perth Chest Hospital at Hollywood. The establishment of this cancer treatment and research unit is part of the plan for a comprehensive medical centre close to the University, to develop the facilities available to the Medical School.

The Department of Public Health has a central laboratory housed in the Perth Chest Hospital and branch laboratories at Albany, Bunbury, Derby, Geraldton, Margaret River, Narrogin, Northam and Wooroloo. The principal activity of the laboratories is the examination of medical and public health specimens, but there is increasing emphasis on research, particularly in the fields of virology, salmonellosis, tuberculosis and unclassified mycobacteria.

Infectious Diseases

A joint campaign of tuberculosis control is conducted by the Commonwealth and State Governments. Under the provisions of the Tuberculosis Act 1948, the Commonwealth reimburses the State for capital expenditure incurred after the 1st July, 1948, and for net maintenance expenditure in excess of that of the base year 1947-48. In addition, the Commonwealth Government pays allowances to tuberculosis sufferers and their dependants, as set out in Part 5 of this Chapter. Western Australia, like the other States, carries out the actual work of diagnosis and treatment. Under the Health Act, 1911-1960 (State), all persons in Western Australia who are over the age of fourteen years may be required to undergo X-ray examinations, which are conducted by the mobile units of the Tuberculosis Control Branch and at its Perth and Fremantle Chest Clinics.

Poliomyelitis, diphtheria and trachoma are other notifiable diseases which have received special attention during recent years. Epidemics of poliomyelitis occurred in 1948, 1954 and during the early months of 1956. Immunization of children with Salk vaccine supplied by the Commonwealth Serum Laboratories began in July, 1956 and by the end of 1960 the full course of three injections had been completed by 181,000 children. Mass immunization of adults commenced in May, 1958 and, by the end of 1960, 231,000 had completed the full course. The incidence of poliomyelitis in Western Australia since 1956 has been negligible, as will be seen from the table on page 144.

Although leprosy and trachoma are endemic among the aboriginal natives of the Kimberley Division in the far north of the State, cases are with few exceptions confined to the native population. The State Department of Public Health and the Northern Territory Medical Service co-operate in the control of these diseases.

The incidence of notifiable infectious diseases other than venereal diseases during each year from 1956 to 1960 is shown in the following table.

INFECTIOUS DISEASES NOTIFIABLE IN WESTERN AUSTRALIA—CASES REPORTED

Disease	1956	1957	1958	1959	1960
Ankylostomiasis	1	....	1	1	....
Brucellosis	3	2	....	8	7
Chorea	1	1	1	2	3
Dengue Fever	....	....	....	1	....
Diphtheria	145	63	24	48	5
Dysentery	87	56	123	190	114
Encephalitis, Acute Infectious	2	2	....	....	....
Erythema Nodosum	1	1	2	1	1
Hepatitis, Infective	181	363	396	142	256
Hydatid Disease	....	....	....	....	1
Infantile Diarrhoea	48	23	12	26	30
Lead Poisoning	13	1	1	2	2
Leprosy (a)	34	33	38	18	18
Leptospirosis	....	....	....	2	9
Malaria	6	2	2	3	4
Meningococcal Infection	13	6	9	3	4
Ornithosis	....	....	....	....	2
Paratyphoid Fever	....	3	2	....	4
Pleural Effusion	5	5	5	11	14
Poliomyelitis, Acute	401	3	2	3	7
Puerperal Fever	1	2	1	3	1
Purulent Ophthalmia	31	9	30	50	67
Rheumatism, Acute	21	27	21	15	14
Rubella	85	550	3,059	221	127
Salmonella Infections	27	21	45	40	28
Scarlet Fever	57	120	190	60	38
Tetanus	16	4	11	5	8
Trachoma (a)	280	656	364	1,149	437
Tuberculosis—					
Pulmonary	419	327	350	309	282
Other	44	32	24	34	34
Typhoid Fever	8	9	22	8	1
Typhus Fever (Brill's Disease)	16	7	5	6	....

(a) Aborigines account for practically all of these cases.

Under the Health Act, 1911–1960, the State Commissioner of Public Health may compel any person believed to be suffering from venereal disease to undergo examination by a medical practitioner. Any person who is aware or suspects that he is suffering from venereal disease is required to consult a medical practitioner and, if found to be infected, must continue treatment until a certificate of cure is issued. Clinics for the treatment of venereal diseases are conducted by the Department of Public Health at Royal Perth Hospital and Fremantle Hospital.

The following table shows the number of cases of venereal disease reported to the Department during each year from 1956 to 1960. Since the second World War, new methods of treatment have effected considerable improvement in the control of these diseases.

CASES OF VENEREAL DISEASE NOTIFIED

Disease	1956	1957	1958	1959	1960
Syphilis—					
Primary	4	4	2	3	1
Secondary	5	6	....	2	3
Tertiary	3	3	3	3	2
Congenital	....	1	....	....	....
Total Syphilis	12	14	5	8	6
Gonorrhoea	188	213	148	72	87
Chancroid	....	....	1	1	....
Granuloma (a)	....	5	....	....	....
Grand Total	200	232	154	81	93

(a) Aboriginal cases.

Special Health Services for Children

In addition to measures provided for immunization against poliomyelitis, diphtheria and other infectious diseases, Infant Health Services and Schools Medical and Dental Services assist in maintaining the general health of children in Western Australia.

Infant Health Centres have been established throughout the State to advise mothers concerning the care of infants. Expectant mothers are also assisted in this way and country mothers who are unable to attend a Centre may receive advice by letter under a Correspondence Nursing Scheme.

INFANT HEALTH CENTRES AND CORRESPONDENCE NURSING SCHEME

Particulars	1956	1957	1958	1959	1960
Infant Health Centres—					
Number of:					
Centres	55	61	59	61	63
Attendances of Infants	214,588	217,728	218,134	229,431	221,619
Visits to Households	21,418	22,762	23,330	27,482	23,480
Correspondence Nursing Scheme—					
Number of:					
Infants on Roll	767	628	921	1,000	1,001
Letters Received	795	908	826	1,022	1,226
Letters Dispatched	1,830	3,015	3,930	4,495	4,730
	1956-57	1957-58	1958-59	1959-60	1960-61
Receipts and Payments (a)—	£	£	£	£	£
Receipts:					
Government Aid	59,646	69,914	71,935	84,625	103,100
Local Government Aid	2,302	2,373	2,709	1,988	1,916
Lotteries Commission Grants	5,350	5,350	5,350	5,350	5,350
Total	67,298	77,637	79,994	91,963	110,366
Payments:					
Salaries and Wages	52,880	60,097	61,320	71,302	88,462
Travelling Expenses, etc.	14,418	17,540	18,674	20,661	21,408
Total	67,298	77,637	79,994	91,963	109,870

(a) Infant Welfare Centres Trust Account only. Particulars of receipts and expenditure of local committees (e.g. certain expenditure on buildings and motor vehicles) are not available.

It is estimated that three out of every four infants in the State are taken to a Centre at least once in the first year of life. Infant Health Sisters also visit remote areas of the State and interview mothers who are normally dependent on advice given by correspondence.

The Schools Medical Services provide for the examination of each child twice during his school life. In addition, a teacher who at any time observes symptoms of illness in a child may refer the matter for attention by a medical practitioner. Parents are notified of physical defects found during medical examinations and, where a condition needs home supervision, are advised of the action required. Dental defects, ear, nose and throat affections and defective vision are most frequently reported.

The Schools Dental Services operate mainly in the country, where private dental treatment may not be readily available. Because of limited staff, dental examinations of school children can be repeated only at fairly long intervals, at best about once every two years. Accordingly, in the larger schools, attention is concentrated on the younger children, but at smaller schools all children are examined. Parents are notified of dental treatment required and may have the work done by private dentists or may consent to their children being treated without charge by the schools dentists.

HOSPITALS OTHER THAN MENTAL HOSPITALS

Commonwealth Government Hospitals

The Repatriation General Hospital, Hollywood is established for the purpose of providing free medical treatment for ex-servicemen in respect of disabilities which have been accepted as due to war service. Widows and children of deceased ex-servicemen and widowed mothers of deceased unmarried ex-servicemen whose deaths have been accepted as due to war service may also receive free medical treatment.

Serving members of the armed forces of Australia are treated at the Hospital, the cost of treatment being met by the appropriate service Department. Treatment is also provided for British, Canadian, New Zealand and certain other ex-servicemen, expenses being paid by the country concerned.

The Edward Millen Home is also a Repatriation Department hospital, which provides treatment for ex-servicemen suffering from tuberculosis.

State Government and Government-Assisted Hospitals

For administrative purposes, a hospital under the direct control of the Medical Department is classified as "departmental" and is financed from State funds. On the other hand, a "Board" hospital has its own board of management and is subsidized by the State Government.

Four large metropolitan hospitals, comprising Royal Perth Hospital, Fremantle Hospital, Princess Margaret Hospital for Children and King Edward Memorial Hospital for Women, are Board hospitals, and a fifth, the Perth Chest Hospital, is controlled and staffed by the Medical Department. Other Board hospitals in the metropolitan area are the Home of Peace, which is the State's main hospital for the incurable, and the Perth Dental Hospital, which incorporates a training school for dentists. In addition, 38 departmental and 49 Board hospitals were located throughout the State at the 30th June, 1960.

DEPARTMENTAL AND BOARD HOSPITALS (a)

Particulars	At 30th June :				
	1956	1957	1958	1959	1960
Number of Hospitals—					
Departmental	38	38	37	38	39
Board	57	56	56	55	54
Total	95	94	93	93	93
Medical Staff—					
Visiting	309	297	330	376	379
Salaried	107	107	116	119	120
Total	416	404	446	495	499
Nursing Staff—					
Matrons	109	100	97	105	106
Nurses	509	572	569	674	725
Trainees	1,031	1,091	1,193	1,259	1,370
Nursing Assistants	727	790	879	876	816
Total	2,376	2,553	2,738	2,914	3,017
Beds and Cots—					
In Departmental Hospitals	1,700	1,691	1,703	1,942	1,886
In Board Hospitals :					
Metropolitan	1,344	1,360	1,552	1,481	1,557
Country	1,097	1,031	1,063	1,166	1,062
Total	4,141	4,082	4,318	4,589	4,505

(a) Excluding Perth Dental Hospital.

With the increase of population in Western Australia in recent years, there has been a growing demand for hospital accommodation. At the same time some private hospitals have closed, imposing additional pressure on the government hospital services. The following table gives details of the activities of departmental and Board hospitals during the five years ended 30th June, 1960.

PATIENTS TREATED IN DEPARTMENTAL AND BOARD HOSPITALS

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
In-patients—					
Number at beginning of year—					
Males	1,350	1,256	1,336	1,444	1,398
Females	1,374	1,314	1,407	1,487	1,541
Admissions—					
Males	35,709	36,207	38,652	39,762	40,770
Females	42,838	42,052	45,200	46,876	47,937
Discharges—					
Males	34,496	34,761	37,148	38,413	39,346
Females	42,041	41,063	44,207	45,884	46,937
Deaths—					
Males	1,307	1,366	1,396	1,395	1,361
Females	857	896	913	938	946
Number at end of year—					
Males	1,256	1,336	1,444	1,398	1,461
Females	1,314	1,407	1,487	1,541	1,595
Total	2,570	2,743	2,931	2,939	3,056
Average daily number	2,648	2,656	2,748	2,847	2,913
Out-patients—Total attendances	363,180	347,482	382,729	356,339	371,516

Departmental and Board hospitals collect fees from patients able to pay for treatment, and receive Commonwealth hospital benefit payments provided under Part V of the National Health Act 1953-1961, but are financed mainly from State Government funds.

The effect of the marked rise in costs experienced by all hospitals in recent years is reflected in the following table, which shows the receipts and payments of departmental and Board hospitals. Although fees have been greatly increased, these hospitals have become more and more dependent on assistance from the State.

RECEIPTS AND PAYMENTS OF DEPARTMENTAL AND BOARD HOSPITALS

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
	£	£	£	£	£
Receipts—					
From Government Funds	4,508,127	5,156,715	5,918,778	5,834,421	6,770,328
Local Government Aid	332	261	89	6,705	1,434
Public Subscriptions, Legacies, etc.	245,077	183,534	249,269	116,276	70,279
Fees	902,116	1,155,363	1,358,782	1,521,822	1,795,864
Other	91,972	70,788	49,791	64,289	31,219
Total	5,747,624	6,566,661	7,576,709	7,543,513	8,669,124
Payments—					
Salaries and Wages	2,728,406	3,115,380	3,376,316	3,747,569	4,342,103
Maintenance of Buildings and Grounds	271,238	252,742	565,192	415,260	553,452
Other Maintenance	1,826,848	1,793,918	1,946,556	2,174,082	2,353,689
Capital Expenditure	870,789	1,590,921	1,639,529	1,173,355	1,571,152
Total	5,697,281	6,752,961	7,527,593	7,510,266	8,820,396

As previously indicated, the control of tuberculosis is chiefly a State Government activity, supported by Commonwealth subsidies and carried out under the direction of the Commissioner of Public Health. The principal institution for the treatment of tuberculosis is the Perth Chest Hospital at Hollywood which was opened in 1958.

There is a leprosarium for the treatment of aboriginal natives at Derby and a small lazaret at Wooroloo for other patients.

Private Hospitals

In addition to the government hospitals there are a number of private general and maternity hospitals, which are registered and inspected by the Department of Public Health. The principal private hospitals are those established by religious bodies in the metropolitan area and the main country towns. These include the Hospitals of Saint John of God at Subiaco, Belmont, Bunbury, Geraldton, Kalgoorlie and Notham; Saint Anne's, Mt. Lawley; the Mount Hospital, Perth and the Hillcrest Maternity Hospital, North Fremantle. The private hospitals form an important part of the hospital services of the State.

Private hospitals collect fees from patients and receive Commonwealth hospital benefit payments provided under Part V of the National Health Act 1953-1961.

MENTAL INSTITUTIONS

Compulsory admission to mental hospitals is provided for under the Lunacy Act, 1903-1954 and the Mental Treatment Act, 1927-1956. Admission is usually made after application to a magistrate supported by the certification of two medical practitioners. Both Acts provide also for voluntary admissions. Adults may submit themselves for treatment in a mental hospital and children may be admitted on the application of parents or guardians. There are special provisions for the committal of persons from courts and prisons to mental hospitals for observation or treatment.

Except in the case of a person committed from a court or a prison, inmates of mental institutions may be released on trial leave or discharged by the medical superintendent or on the recommendation of a Board of Visitors. Voluntary patients may leave an institution after 24 hours' notice.

All mental hospitals in Western Australia are administered by an Inspector-General of Mental Health Service responsible to the Minister for Health. Four hospitals provide for patients certified as insane, the principal institution being the Claremont Mental Hospital. The Heathcote Reception Hospital is for patients who are suffering from nervous or mental disorders but who have not been certi-

fied as insane. A Board of Visitors for each institution makes regular inspections and reports to the Minister on the general welfare of patients and the administration of the institution.

Other institutions of the Mental Health Service are the Nathaniel Harper Homes, the Havelock Out-patient Clinic, the Graylands Day Hospital and the Child Guidance Clinic. The Nathaniel Harper Homes are at Guildford and care for mentally handicapped children, the number of inmates at the 31st December, 1960 being 53. Havelock Clinic functions as a preventive and therapeutic psychiatry centre and provides treatment for about 900 out-patients each year. Graylands Day Hospital admits voluntary patients with mental disorders which require hospital treatment, but which permit patients to spend nights and week-ends at home. The Child Guidance Clinic carries out preventive, diagnostic and therapeutic work on an out-patient basis.

The treatment of inebriates as provided for by the Inebriates Act, 1912-1919 is also a function of the Mental Health Service. A magistrate may commit an inebriate to a mental hospital for treatment in accommodation set aside for the purpose. At the 31st December, 1960 there were 19 patients who had been admitted to these institutions under the Act.

The following table shows particulars of the inmates of the four hospitals which admit patients certified as insane. The figures refer mainly to certified patients but include also voluntary patients who, however, represent a small proportion of the total, there being only 79 voluntary patients out of a total of 1,971 under care at the 31st December, 1960. Patients admitted under the Inebriates Act are not included.

PATIENTS OF MENTAL HOSPITALS

Particulars	1956		1957		1958		1959		1960	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Admissions and Readmissions	158	108	154	117	192	121	191	151	181	120
Discharges—										
Recovered	11	4	....	....	1	1	....	....	8	1
Relieved	34	29	38	30	47	29	79	31	86	67
Not improved	15	4	24	2	14	7	24	2	17	6
Not insane	3	....	3	....	....	....	2	....	1	....
Deaths	76	66	93	50	65	68	85	79	64	46
Total	139	103	158	82	127	105	190	112	176	120
Number remaining at 31st December—										
In hospital	953	681	944	702	998	711	971	696	987	708
On trial leave	73	107	78	121	89	128	117	182	106	170
Total	1,026	788	1,022	823	1,087	839	1,088	878	1,093	878

Details of patients of the Heathcote Reception Hospital during each year from 1956 to 1960 are shown in the next table.

PATIENTS OF HEATHCOTE RECEPTION HOSPITAL

Particulars	1956		1957		1958		1959		1960	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Admissions and Readmissions	474	440	482	456	512	472	590	527	593	535
Discharges—										
Recovered	138	228	68	217	135	236	268	304	350	337
Relieved	205	136	258	157	215	147	161	153	118	140
Not improved	82	33	98	28	82	35	62	23	73	23
Deaths	5	4	4	....	3	2	4	3	3	4
Transfers to other Mental Hospitals	54	34	56	47	79	40	70	42	56	32
Total	484	435	484	449	514	460	565	525	600	536
Number remaining at 31st December—										
In hospital	53	55	56	50	49	56	49	48	38	36
On leave	54	63	49	75	54	81	79	91	83	102
Total	107	118	105	125	103	137	128	139	121	138

HOMES FOR THE AGED AND INFIRM

The principal government homes for the aged and infirm in Western Australia are "Sunset" at Dalkeith, "Mount Henry" near Canning Bridge and "Woodbridge" at Guildford. There are also several homes for the aged conducted by religious and charitable organizations.

The following table shows particulars of inmates of the State Government institutions during the five years ended 30th June, 1960.

GOVERNMENT HOMES FOR THE AGED AND INFIRM

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
Inmates at beginning of year—					
Males	490	497	483	458	432
Females	324	417	427	431	442
Admissions—					
Males	215	172	295	252	280
Females	226	181	164	125	107
Discharges—					
Males	79	86	180	79	104
Females	18	43	53	34	20
Deaths—					
Males	129	100	140	199	157
Females	115	128	107	80	80
Inmates at end of year—					
Males	497	483	458	432	451
Females	417	427	431	442	449
Total	914	910	889	874	900

CHAPTER V—continued

PART 4—HOUSING

HOUSING AND THE CENSUS

NOTE—Dwellings occupied solely by full-blood aboriginals are excluded from all tables in this Part which contain information compiled from census schedules (see also letterpress relating to *Aboriginals* in the final section of Chapter IV, Part 1—*Population*).

Details relating to the Census of 30th June, 1961 are subject to minor amendment.

For the purpose of the census, an "occupied dwelling" is any habitation occupied by a household group living together as a domestic unit, whether comprising the whole or only part of a building. The term has therefore a very wide reference and includes, in addition to houses and flats, a great variety of dwellings ranging from a single-roomed shack to a multi-roomed hotel or institution.

The term "unoccupied dwellings" is not synonymous with vacant houses and flats available for sale or renting. While these are included, the figures refer also to dwellings, including those used for week-end and holiday purposes, whose usual occupants were temporarily absent on the night of the Census. Newly-completed dwellings whose owners or tenants had not entered into occupation on the night of the Census are also included.

Dwellings According to Class

Occupied dwellings are classified into private dwellings and other dwellings. "Private Dwellings" comprise private houses; shares of private houses; flats; apartments, rooms, and the like. "Dwellings other than Private" include such habitations as hotels, boarding houses, lodging houses, hostels, hospitals, educational, religious and charitable institutions, defence and penal establishments.

"Private Houses" include houses, sheds, huts, garages, etc. used for dwelling purposes, and shared private houses for which only one Householder's Schedule was received. "Share of Private House" is that portion of a shared private house which is occupied separately and for which a separate Householder's Schedule was furnished. "Flat" is any part of a house or other building which can be completely closed off and which has its own cooking and bathing facilities. "Other" private dwellings include dwellings such as apartments, rooms, etc., which are parts of buildings but are not self-contained units.

The following table shows the number of occupied dwellings in Western Australia according to class of dwelling at the Censuses of 1954 and 1961. Private houses constituted 93.5 per cent. of all occupied private dwellings in 1961 compared with 90.8 per cent. in 1954. The proportion of flats to total occupied private dwellings increased from 3.3 per cent. in 1954 to 4.5 per cent. at the 30th June, 1961.

DWELLINGS ACCORDING TO CLASS

Class of Dwelling	Census of 30th June :—	
	1954	1961
Occupied Private Dwellings—		
Private House—		
House	140,383	175,495
Shed, Hut, etc.	4,480	3,641
Total, Private Houses	144,863	179,136
Share of Private House	7,487	2,788
Flat	5,257	8,672
Other	1,889	1,020
Total—Private Dwellings	159,496	191,616
Occupied Dwellings other than Private—		
Boarding House, Private Hotel, Motel, etc.	1,504	1,089
Licensed Hotel	445	451
Educational, Religious or Charitable Institution	218	229
Other	(a) 1,072	932
Total—Other Dwellings	3,327	2,701
GRAND TOTAL—OCCUPIED DWELLINGS	162,823	194,317
Unoccupied Dwellings	6,614	13,626

(a) Includes "caretakers' quarters" which in 1961 were classified as private dwellings.

Dwellings According to Material of Outer Walls

Brick was found to be the most frequently used material for outer walls at the 30th June, 1961, being used in 43·8 per cent. of all occupied private dwellings where the material of outer walls was stated, compared with 38·2 per cent. in 1954. Wood, second in importance as a material for outer walls in 1954, fell to third place, after fibro-cement, in 1961. Of those private dwellings where the material of outer walls was stated, 30·2 per cent. in 1961 had outer walls of fibro-cement and 16·7 per cent. had outer walls of wood, compared with 23·1 per cent. and 25·5 per cent. respectively in 1954. The proportion of private dwellings with walls of iron dropped from 5·5 per cent. in 1954 to 3·5 per cent. in 1961. The highest percentage increases between the Censuses were recorded by occupied private dwellings with walls of fibro-cement, 57·6 per cent., and of brick, 37·7 per cent. The number of occupied private dwellings with walls of iron, wood or stone decreased by 22·8 per cent., 21·4 per cent. and 15·4 per cent. respectively.

OCCUPIED PRIVATE DWELLINGS CLASSIFIED ACCORDING TO MATERIAL OF OUTER WALLS

Material of Outer Walls	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (a)	Share of Private House	Flat	Other	Total	Private House (a)	Share of Private House	Flat	Other	Total
Brick	52,183	3,711	3,637	1,250	60,781	75,006	1,466	6,579	656	83,707
Stone	3,702	360	181	154	4,397	3,319	108	238	53	3,718
Concrete	4,313	143	87	3	4,546	4,858	75	156	5	5,094
Wood	37,998	1,909	564	216	40,687	30,899	494	474	109	31,976
Iron	8,409	175	105	99	8,788	6,546	40	153	43	6,782
Fibro-cement	34,778	1,128	663	158	36,727	56,097	586	1,043	148	57,874
Other	3,286	48	17	9	3,360	2,141	16	19	3	2,179
Not Stated	194	13	3	....	210	270	3	10	3	286
Total	144,863	7,487	5,257	1,889	159,496	179,136	2,788	8,672	1,020	191,616

(a) Includes Sheds, Huts, etc.

Dwellings According to Number of Inmates

The greatest proportional increase (39·1 per cent.) since 1954 occurred in occupied private dwellings with one inmate, due to an increase of 39·8 per cent. in the number of private houses with one inmate and an increase of 144·8 per cent. in the number of flats with one inmate. At the 30th June, 1961, dwellings with less than six inmates represented 85·6 per cent. of total occupied private dwellings compared with 85·9 per cent. in 1954. Dwellings with six or more inmates increased by 22·1 per cent. between the Censuses while those with less than six increased by 19·8 per cent. Dwellings with two inmates were the most numerous in 1961 and 1954, accounting for 22·9 per cent. and 21·5 per cent. respectively of total occupied private dwellings.

OCCUPIED PRIVATE DWELLINGS CLASSIFIED ACCORDING TO NUMBER OF INMATES

Number of Inmates per Dwelling	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (a)	Share of Private House	Flat	Other	Total	Private House (a)	Share of Private House	Flat	Other	Total
1	11,810	1,307	1,074	601	14,292	15,815	874	2,629	559	19,877
2	29,094	2,510	2,064	674	34,342	39,207	861	3,630	271	43,969
3	28,825	1,683	1,025	340	31,873	32,519	452	1,302	98	34,371
4	31,425	1,038	598	153	33,214	37,066	277	633	45	38,021
5	22,341	527	298	72	23,238	27,327	188	309	27	27,851
6	12,031	247	122	20	12,420	15,300	78	105	11	15,494
7	5,519	104	47	13	5,683	6,811	33	44	7	6,895
8	2,535	42	17	12	2,606	3,075	16	15	....	3,106
9	995	15	7	1	1,018	1,085	8	4	....	1,097
10	424	10	2	1	437	509	1	....	....	510
11 and over	364	4	3	2	373	422	....	1	2	425
Total—Dwellings	144,863	7,487	5,257	1,889	159,496	179,136	2,788	8,672	1,020	191,616
Average Number of Inmates per Dwelling	3·74	2·80	2·56	2·27	3·64	3·69	2·48	2·19	1·82	3·59

(a) Includes Sheds, Huts, etc.

Dwellings According to Number of Rooms

At the 30th June, 1961, occupied private dwellings of four, five and six rooms accounted for 80.5 per cent. of all occupied private dwellings where the number of rooms was stated. In 1954 the proportion was 75.7 per cent. In both 1961 and 1954 private dwellings with five rooms were the most numerous and represented 37.8 per cent. and 30.6 per cent. respectively of private dwellings where the number of rooms was stated. The greatest proportional increases in the number of occupied private dwellings since the 1954 Census occurred in five and seven roomed private dwellings which increased by 48.3 per cent. and 38.6 per cent. respectively. There were notable increases since 1954 in the number of flats with two and three rooms, the increases being 198.7 per cent. and 77.1 per cent. respectively.

OCCUPIED PRIVATE DWELLINGS CLASSIFIED ACCORDING TO
NUMBER OF ROOMS (a)

Number of Rooms (a) per Dwelling	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (b)	Share of Private House	Flat	Other	Total	Private House (b)	Share of Private House	Flat	Other	Total
1	2,734	902	31	673	4,340	1,756	201	93	251	2,301
2	4,566	1,698	384	620	7,268	2,455	592	1,147	296	4,490
3	8,736	1,640	1,561	334	12,271	6,240	842	2,764	283	10,129
4	38,176	1,262	1,943	133	41,514	37,390	605	2,890	112	40,997
5	46,781	898	905	48	48,632	70,540	393	1,143	32	72,108
6	29,162	570	296	19	30,047	40,177	66	403	8	40,654
7	9,262	191	87	16	9,556	13,124	15	107	3	13,240
8	3,120	68	24	12	3,224	4,315	5	50	1	4,371
9	1,071	32	7	5	1,115	1,486	1	29	....	1,516
10	450	4	2	4	460	628	5	2	....	635
11 and over	425	2	2	2	431	476	2	3	3	484
Not Stated	380	220	15	23	638	540	61	41	31	682
Total—Dwellings	144,863	7,487	5,257	1,889	159,496	179,136	2,788	8,672	1,020	191,616
Average Number of Rooms per Dwelling (a)	4.91	3.36	3.90	2.21	4.77	5.15	3.27	3.69	2.45	5.04

(a) Includes kitchen and permanently enclosed sleep-out, but does not include bathroom, pantry, laundry, or storehouse.
(b) Includes Sheds, Huts, etc.

Dwellings According to Nature of Occupancy

The most significant feature of the following table is the increase in the number of occupied private dwellings being purchased by instalments. Of those occupied private houses where the nature of occupancy was stated, the proportion being purchased by instalments rose from 15.7 per cent. in 1954 to 24.8 per cent. in 1961. The proportion of owner-occupied dwellings declined from 50.7 per cent. in 1954 to 46.6 per cent. in 1961. The proportion of tenanted dwellings also declined, from 32.2 per cent. to 27.7 per cent.

OCCUPIED PRIVATE DWELLINGS CLASSIFIED ACCORDING TO
NATURE OF OCCUPANCY

Nature of Occupancy	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (a)	Share of Private House	Flat	Other	Total	Private House (a)	Share of Private House	Flat	Other	Total
Owner	77,548	2,083	666	123	80,420	86,926	886	982	77	88,871
Purchaser by Instalments	22,573	421	60	22	23,076	44,255	206	118	19	44,598
Tenant (b)	40,032	4,792	4,450	1,700	50,974	43,077	1,612	7,315	891	52,895
Caretaker	1,890	65	47	27	2,029	1,994	22	163	14	2,193
Other Methods of Occupancy	1,951	62	19	8	2,040	1,999	19	72	6	2,096
Not Stated	869	64	15	9	957	885	43	22	13	963
Total	144,863	7,487	5,257	1,889	159,496	179,136	2,788	8,672	1,020	191,616

(a) Includes Sheds, Huts, etc. (b) Includes dwellings occupied by "Tenants (Governmental Housing)" in 1954 and by "Tenants (State Housing Commission)" in 1961.

Occupied Tenanted Private Dwellings According to Weekly Rent (Unfurnished)

The following table shows particulars of rents paid for *unfurnished* private dwellings. Many dwellings were occupied on a furnished basis, and this accounts largely for the high proportion of tenanted private dwellings for which an *unfurnished* rental could not be stated.

OCCUPIED TENANTED PRIVATE DWELLINGS (†) CLASSIFIED ACCORDING TO WEEKLY RENT (UNFURNISHED)

Weekly Rent (Unfurnished)	Census, 30th June, 1954					Census, 30th June, 1961				
	Private House (a)	Share of Private House	Flat	Other	Total	Private House (a)	Share of Private House	Flat	Other	Total
Under 20s.	4,293	210	36	78	4,617	2,477	27	116	36	2,656
20s. and under 30s.	4,643	433	146	61	5,283	2,524	61	138	21	2,744
30s. " " 40s.	4,874	437	347	62	5,720	2,194	66	161	32	2,453
40s. " " 50s.	3,660	441	212	88	4,401	3,269	140	191	45	3,645
50s. " " 60s.	2,384	295	196	70	2,945	2,401	101	205	22	2,729
60s. " " 70s.	1,903	244	259	53	2,459	3,005	131	266	38	3,440
70s. " " 80s.	712	107	186	26	1,031	2,484	63	261	29	2,837
80s. " " 90s.	566	88	231	12	897	1,960	48	292	16	2,316
90s. " " 100s.	240	25	178	6	449	1,209	33	374	4	1,620
100s. and over	711	74	344	23	1,152	3,196	59	1,864	19	5,138
Not Stated (b)	8,034	2,364	2,049	1,202	13,649	8,093	856	2,749	616	12,314
Total	32,020	4,718	4,184	1,681	42,603	32,812	1,585	6,617	878	41,892

(†) Excludes particulars of dwellings occupied by "Tenants (Governmental Housing)" in 1954 and by "Tenants (State Housing Commission)" in 1961. (a) Includes Sheds, Huts, etc. (b) Includes tenanted dwellings which were rent-free, those rented on a furnished basis, and those for which the rents were not applicable (e.g., for shop and dwelling combined).

Of those tenanted private dwellings for which rent (unfurnished) was stated, 38.9 per cent. had rentals below 50s. in 1961 compared with 69.1 per cent. in 1954. In the range 50s. and under 100s. the proportion rose from 26.9 per cent. in 1954 to 43.7 per cent. in 1961. The proportion in the category 100s. and over rose from 4.0 per cent. in 1954 to 17.4 per cent. in 1961. The greatest number of tenanted private houses at the 30th June, 1961 were in the rental range 40s. and under 50s. while the greatest number of tenanted flats were in the range 100s. and over.

Unoccupied Dwellings

Of the total of 13,626 dwellings unoccupied at the 30th June, 1961 more than one-third (4,838) were in the category of holiday or week-end home or seasonal quarters, 3,558 were dwellings whose usual occupants were temporarily absent, 2,541 were available for sale or renting, and 298 had been condemned or were due to be demolished.

GOVERNMENT AND GOVERNMENT-SPONSORED HOUSING

State Housing Commission

The State Housing Commission was established in 1947 under the State Housing Act of 1946 to replace the Workers' Homes Board which had been created in 1913 to "erect and dispose of workers' dwellings and to make advances to people of limited means to provide homes for themselves." The Act conferred on the Commission the legal authority formerly vested in the Board. The legislation was comprehensive in scope, providing for the erection of homes for workers, the making of advances to workers for the purchase of homes, the erection of homes for letting on a weekly rental basis, the acquisition and development of land, the clearing of slums, the erection of hostels and the planning of community facilities.

The Commission consists of seven members of whom three must be officers of the State Public Service, one a woman, one a returned serviceman, one a registered builder (or a person qualified to be so registered) and one a representative of the building trades unions. Government housing is primarily the responsibility of the Commission, whose functions include the construction and the letting and sale of dwellings under the authority of the State Housing Act, and the administration in Western Australia of the Commonwealth and State Housing Agreements and the War Service Homes Act.

Operations under the State Housing Act—Under the authority of the State Housing Act, 1946–1960, the State Housing Commission uses funds provided by the State Government to build houses for letting or sale and to lend money for home building. Eligibility for assistance is restricted to persons with income below a prescribed amount. Loans of up to £2,500 (or more, in some cases) may be made on a minimum deposit of 10 per cent. (or less, at the discretion of the Commission), the maximum period of repayment being 45 years. The rate of interest, previously $5\frac{1}{2}$ per cent. per annum, was increased to $5\frac{3}{4}$ per cent. from April, 1961.

Various forms of assistance have been granted, including loans secured by mortgage, advances made under contract of sale, advances for acquiring homes under leasehold conditions, second mortgage loans and loans for the completion of partly-built dwellings.

Operations under the Commonwealth and State Housing Agreement—The final draft of an agreement on housing between the Commonwealth and State Governments was prepared at the Conference of Premiers in August, 1945 and was later ratified by Commonwealth and State legislation. The Commonwealth and State Housing Agreement Act, passed by the State Parliament in 1945, enabled Western Australia to participate in the Agreement, the purpose of which was to provide homes quickly, primarily for persons at the lower income levels, by standardization of design and erection in large groups. The Agreement provided a broad basis of collaboration between the Commonwealth and the State, with the Commonwealth providing advances of money, general direction on policy and co-ordination of effort and the State undertaking the actual site acquisition and planning, the construction of the dwellings, the selection of tenants and the detailed administrative work.

Homes built under the Commonwealth and State Housing Agreement Act of 1945 were let at an "economic rent" calculated according to a formula laid down in the Agreement. The rents so determined were to be sufficient to meet repayments by the State to the Commonwealth of the capital cost of each dwelling with interest and also current outgoings such as the cost of maintenance, administration, rates, taxes and insurance. Provision was made for a system of rental rebates so designed that families with income near the basic wage level should pay not more than about one-fifth of the family income in rent, irrespective of the "economic rent" of the dwelling, but in no case was the rent paid by a tenant to be less than 8s. per week. The Commonwealth Government was to bear three-fifths and the State two-fifths of all losses incurred in operations under the Agreement.

Although the principal aim of the arrangement was to make homes available on a rental basis, provision existed for the sale by the State of houses erected under the scheme, on condition that the full capital cost was immediately repaid to the Commonwealth. To satisfy this requirement, the State Housing Commission made use of funds provided by the State Government by means of the State Housing Act when, in 1950, it first offered tenants the option of purchasing their homes by instalments on payment of a moderate deposit. The Commonwealth and State Housing Supplementary Agreement Act, 1955, modified the original Agreement by allowing finance provided by the Commonwealth to be applied for the purchase, by tenants, of houses built under the scheme. The Agreement prescribed a minimum deposit of 5 per cent. of the first £2,000 of the purchase price and 10 per cent. of the balance. The rate of interest specified was $4\frac{1}{2}$ per cent. per annum, subject to alteration by agreement between the Commonwealth and the State, the maximum loan being £2,750 and the maximum period of repayment 45 years.

With the expiry of the 1945 Agreement, the Commonwealth Parliament in 1956 passed the Housing Agreement Act providing "financial assistance to the States for the purpose of housing" for a period of five years ending on the 30th June, 1961. The complementary State legislation authorizing the State Government to enter into the Agreement is the Commonwealth and State Housing Agreement Act of 1956.

The 1956 Agreement required that, for the first two years of its operation, 20 per cent. of the money allocated to the State was to be advanced to building societies and other approved institutions for lending to private persons for the building or purchase of homes, the proportion to be increased to 30 per cent. during the remainder of the period. On the introduction of the Agreement, the State Housing Commission adopted the policy of offering for sale before occupancy one-half of the total number of houses built, the remainder being made available on a rental basis. The proportion has since been varied several times, and in 1960–61 more than 80 per cent. of homes built by the Commission during the year were disposed of on a purchase basis.

Under the provisions of Commonwealth and State legislation passed in 1961 the period of operation of the Commonwealth and State Housing Agreement has been extended for a further five years to the

30th June, 1966. The 1961 Agreement incorporates all the main provisions of the earlier arrangement, with only minor modifications. The requirement that building societies and other approved institutions shall receive 30 per cent. of moneys allocated to a State is continued.

Although Agreements subsequent to that of 1945 make no provision for rebates to tenants unable to pay the full rental, the State Government has continued the system and meets the full cost of all rental rebates granted.

The McNess Housing Trust—The State Housing Commission carries out free of charge the administrative, technical and other work associated with the operations of the McNess Housing Trust, which was established by a bequest made in 1930 by the late Sir Charles McNess. The Trust has been assisted by allocations from State Government funds and by donations from the Lotteries Commission. The income of the Trust is used to provide homes for aged and infirm persons not able to purchase or acquire a home from their own resources.

Other Operations—Among the more important of the special projects carried out by the Commission for the State Government has been the construction, in the period 1951–52 to 1953–54, of 237 home units for the accommodation of evicted families. In terms of the agreement contained in the Oil Refinery Industry (Anglo-Iranian Oil Company Limited) Act of 1952, the Commission built 653 homes at Kwinana New Town between 1952–53 and 1955–56. The Commission also undertakes the construction of houses for some other State Government Departments and semi-government authorities.

Housing Units Completed—Statistics of housing units built by the State Housing Commission during the period 1955–56 to 1959–60 are given later in this Part in the section *Building Operations*.

War Service Homes

Financial assistance by means of loans is provided by the Commonwealth Government, under the War Service Homes Act 1918–1956, to Australian ex-service personnel of the first and second World Wars, the Korean War and the operations in Malaya. Subject to their having resided in Australia prior to enlistment, other British ex-service personnel are eligible for assistance, which may be extended also to the widow or the dependent widowed mother of a member of the Forces. Loans are made within statutory limits for the building of new homes and arrangements may be made in some circumstances for the discharge of mortgages on existing properties.

The State Housing Commission acts as representative in Western Australia of the War Service Homes Division of the Commonwealth Department of National Development.

CONTROL OF BUILDING

Each of the local government authorities as constituted under the provisions of the Local Government Act, 1960 has power to exercise general control over the erection of buildings in its own district. The Act, which repealed the Municipal Corporations Act and the Road Districts Act, came into operation on the 1st July, 1961. From that date former Municipalities, other than Cities, became known as "Towns" and Road Districts were renamed "Shires." Municipalities which already had city status remained "Cities." The executive body in each local government district became a "Council." At the date of commencement of the Act there were 5 City Councils, 14 Town Councils and 126 Shire Councils in Western Australia. The powers of these local government authorities to control building derive from the Town Planning and Development Act and the Local Government Act.

The Town Planning and Development Act, 1928–1959 gives local authorities the right to make by-laws covering such aspects of town planning as the purchase or reservation of land for thoroughfares, the density of dwelling accommodation per acre, the classification of areas for residential, commercial, industrial and recreational use, the prescription of building standards, and the general planning of new subdivisions. Town planning measures proposed by a local authority are subject to the approval of the Minister for Town Planning, who has the advice of a Town Planning Commissioner and a Town Planning Board.

The Local Government Act, 1960 contains provisions for the control of building which are compatible with those exercised under the Town Planning and Development Act but are in a more detailed form. Many local government authorities have adopted comprehensive by-laws relating to building construction, and the erection of all buildings must be carried out in compliance with these by-laws. The Local Government Act provides that no new building or the alteration of an existing building may be begun before the plans have been approved by the local authority. The Governor may by Order,

at the request of a local authority, suspend the operation of this provision in its district. Generally, in remote parts of the State prior approval of plans is required only in the case of building in townsite areas. Where any local authority refuses to approve plans an appeal may be made to the Minister for Local Government, who has the power to modify or reverse the decision of the local authority. Other appeals or matters in dispute in relation to the control of building may be determined only by two referees, one of whom is appointed by the Governor and the other by the local authority concerned.

BUILDING OPERATIONS

Since the end of the second World War, the Australian Statisticians have undertaken a quarterly collection of statistics of building operations. The first of these collections in Western Australia related to the quarter ended 30th September, 1945.

The survey covers the activities of building contractors who undertake the construction of new buildings; the building operations of Commonwealth, State, semi-government and local government authorities; and work performed by owner-builders.

An owner-builder is one who is actually building his own house, or is having his house built under his own direction without the services of a contractor responsible for the whole job. Details of owner-builder activity cover in the main only those areas subject to building control by a local government authority. For this reason some building in areas not subject to control, as for instance on farms and stations, is not included, but this omission does not materially affect the figures.

Minor alterations and additions as well as renovations and repairs are excluded.

The following tables relate only to dwellings, as distinct from offices, factories, shops (without dwellings) and other non-residential buildings. The term "contract-built," as used in the first of these tables, refers to the operations of all building contractors and government instrumentalities undertaking the erection of new buildings. The values shown exclude the value of land and represent the estimated value of dwellings on completion. The figures for houses exclude temporary dwellings as well as dwellings attached to other buildings, such as dwellings attached to shops.

NEW HOUSES COMPLETED (†)—CLASSIFIED ACCORDING TO MATERIAL OF OUTER WALLS

Year	Brick, Stone, Cement		Wood or predominantly Wood		Fibro-Cement or predominantly Fibro-Cement		Other		Total	
	Number	Value	Number	Value	Number	Value	Number	Value	Number	Value
1955-56—Contract-built	2,073	£'000 7,339	123	£'000 348	3,170	7,583	4	£'000 10	5,370	£'000 15,280
Owner-built	1,189	4,429	29	90	1,168	2,735	4	8	2,390	7,262
Total	3,262	11,768	152	438	4,338	10,318	8	18	7,760	22,542
1956-57—Contract-built	2,204	7,216	9	20	1,324	3,020	....	....	3,537	10,256
Owner-built	734	2,630	18	38	736	1,593	5	10	1,493	4,271
Total	2,938	9,846	27	58	2,060	4,613	5	10	5,030	14,527
1957-58—Contract-built	3,503	11,104	9	28	1,409	3,439	....	....	4,921	14,571
Owner-built	664	2,379	18	43	588	1,262	5	8	1,275	3,692
Total	4,167	13,483	27	71	1,997	4,701	5	8	6,196	18,263
1958-59—Contract-built	2,925	9,588	24	70	1,388	3,407	....	....	4,337	13,065
Owner-built	712	2,517	22	51	769	1,559	6	13	1,509	4,140
Total	3,637	12,105	46	121	2,157	4,966	6	13	5,846	17,205
1959-60—Contract-built	3,615	11,468	6	20	1,144	2,954	....	....	4,765	14,442
Owner-built	561	1,953	17	35	650	1,293	4	4	1,232	3,285
Total	4,176	13,421	23	55	1,794	4,247	4	4	5,997	17,727

(†) Includes operations of State Housing Commission; see separate table on next page.

The following table shows completions of dwellings other than houses. The figures relating to flats refer to individual dwelling-units provided. In the case of dwellings attached to shops, the value of the dwelling(s) is not available separately and the figures shown under this heading are, in fact, the total value of the combined buildings.

OTHER NEW DWELLINGS COMPLETED (a)

Year	Dwellings other than Houses							
	Flats		Hotels, Guest-houses, etc.		Dwellings attached to Shops		Total	
	Number	Value	Number	Value	Number	Value	Number	Value
1955-56	584	£'000 1,282	5	£'000 70	27	£'000 117	616	£'000 1,469
1956-57	365	751	14	364	14	56	393	1,171
1957-58	171	356	11	193	18	74	200	623
1958-59	212	420	8	141	14	49	234	610
1959-60	263	493	19	451	14	64	296	1,008

(a) Includes operations of State Housing Commission; see next table.

The following table shows the number of housing units completed by the State Housing Commission in various categories during each year from 1955-56 to 1959-60.

STATE HOUSING COMMISSION—HOUSING UNITS (†) COMPLETED

Category	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
State Housing Act	874	353	262	321	362
Commonwealth and State Housing Agreement	1,579	800	1,138	853	657
McNess Housing Trust	12	36	12	20	11
War Service Homes	1,220	571	966	510	354
Other	11	2	7	27	55
Total	3,696	1,762	2,385	1,731	1,439

(†) Comprises houses and individual flat units.

DWELLINGS COMPLETED AND POPULATION INCREASE

Examination of the statistics of houses and flats completed in relation to population increases in the several States provides some interesting comparisons. The following table relates to the period between the Censuses of the 30th June, 1954 and the 30th June, 1961. Actual completions and the rate per thousand of population increase are shown for each State and Territory and for Australia as a whole. Percentage figures of population growth during the period are also given.

DWELLINGS COMPLETED AND POPULATION—STATES AND TERRITORIES
30th JUNE, 1954 TO 30th JUNE, 1961

State or Territory	Population (a)				New Houses and Flats (†) Completed 1st July, 1954 to 30th June, 1961		
	Census, 30th June :		Increase (b)		Number	Proportion of Australian Total	Per thousand of Population Increase (b)
	1954	1961 (b)	Number	Per cent.			
	persons	persons	persons	%		%	
New South Wales	3,423,529	3,917,016	493,487	14.41	206,136	36.02	418
Victoria	2,452,341	2,930,113	477,772	19.48	170,357	29.77	357
Queensland	1,318,259	1,518,828	200,569	15.21	80,292	10.53	301
South Australia	797,094	969,340	172,246	21.61	59,261	10.36	344
Western Australia	639,771	736,629	96,858	15.14	47,945	8.38	495
Tasmania	308,752	350,340	41,588	13.47	18,811	3.29	452
Northern Territory	16,469	27,095	10,626	64.52	2,214	0.39	208
Australian Capital Territory	30,315	58,828	28,513	94.06	7,263	1.27	255
Australia	8,986,530	10,508,189	1,521,659	16.93	572,279	100.00	376

(a) Exclusive of full-blood aboriginals.
vidual dwelling-units.

(b) Subject to minor revision on basis of final Census results.

(†) Indi-

The ratio which Western Australia's population bore to that of Australia was 7·12 per cent. at the 30th June, 1954 and 7·01 per cent. at the 30th June, 1961. Completions of houses and flats in Western Australia during the period numbered 47,945, representing 8·38 per cent. of the Australian total. The rate of completions, 495 per thousand of population increase, was greater than that of any other State and considerably higher than the rate of 376 for Australia as a whole. Western Australia's population increased during the period by 96,858 or 15·14 per cent., compared with a gain of 16·93 per cent. in the Australian population.

CHAPTER V—*continued*

PART 5—SOCIAL BENEFITS, RELIEF PAYMENTS AND CHILD WELFARE

NOTE—The rates and the conditions applying to payment of the several benefits dealt with in this Part are described as they existed at the 31st December, 1960. Where variations have occurred since that date, the effect of the changes is summarized in the *Appendix*.

The information given is intended to serve as a general guide to the main provisions relating to social benefits and relief payments provided by the Commonwealth and State Governments. For more complete details of the Commonwealth benefits, reference should be made to the *Official Year Book of the Commonwealth of Australia*.

In the statistical tables in this Part, figures expressed in terms of *per 10,000 of population* or *per head of population* have been amended on the basis of population estimates revised in accordance with the preliminary results of the 1961 Census. Further adjustments may be necessary when the final results are available.

Social benefits are provided by the Commonwealth Government under a series of Acts, and their payment is financed from a National Welfare Fund established for the purpose. The principal revenue of the Fund was formerly the Social Services Contribution which until 1950–51 was levied as a separate tax upon incomes but is now amalgamated with the normal Income Tax. Since 1952–53, the Fund has been financed by the transfer each year from Consolidated Revenue of an amount sufficient to meet the cost of social services and health benefits for the year.

War and service pensions are paid by the Commonwealth Government from the Consolidated Revenue Fund.

The Social Services Act 1947–1960 provides for the payment of age and invalid pensions, widows' pensions, unemployment and sickness benefits, maternity allowances and child endowment; the Repatriation Act 1920–1960, for war and service pensions; and the Tuberculosis Act 1948, for allowances to sufferers from tuberculosis as well as assistance to the States in a national campaign against the disease.

Health services, such as medical, hospital and pharmaceutical benefits, are provided under the National Health Act 1953–1959.

War pensions, child endowment, maternity allowances and health service benefits, other than tuberculosis allowances, are paid regardless of income received from other sources or of property owned by the claimant. These payments do not affect eligibility for other social services benefits.

Age and invalid pensions, widows' pensions and service pensions are subject to a means test in respect of both income and property. Only income is taken into account in assessing eligibility for unemployment and sickness benefits or tuberculosis allowances. Generally, a person receiving a pension or an allowance under one category is ineligible for benefit under any other.

A provision of the Social Services Act 1959 enabled an extension of the social service benefits payable to aboriginal natives. Aboriginals other than the nomadic or primitive had previously been entitled to child endowment and unemployment and sickness benefits on much the same basis as other persons. Eligibility for a pension or a maternity allowance, however, depended on whether the aboriginal possessed a certificate of exemption from State laws relating to the control of aboriginal natives. The amending Act repealed this provision and made all aboriginal natives, other than those who are nomadic or primitive, eligible for the various social service benefits on the same basis as other members of the community. The new provision was proclaimed to come into operation on the 2nd February, 1960, and from that date all aboriginals not being nomadic or living in the primitive state could qualify for age, invalid and widows' pensions and maternity allowances, as well as child endowment and unemployment and sickness benefits.

The State Government makes certain payments for the relief of women and others in necessitous circumstances which in most cases supplement benefits provided by the Commonwealth Government.

SOCIAL SERVICES BENEFITS

Age and Invalid Pensions

Age pensions were first paid on the 1st July, 1909 and invalid pensions on the 15th December, 1910. Pensions are payable subject to a means test which does not, however, apply to invalid pensions paid to blind persons.

The age pension is paid to men aged 65 years and over and to women aged 60 years and over who have resided in Australia continuously for any period of 20 years. Invalid pensions are payable to persons aged 16 years or over who have resided continuously in Australia for any period of five years and who are permanently incapacitated for work or are permanently blind.

The maximum rate of pension is £5 per week. The wife of an invalid pensioner or of an age pensioner who is permanently incapacitated for work or permanently blind may be granted a wife's allowance of not more than £1 15s. per week. Where a pensioner who is an invalid is maintaining children under 16 years of age, a child's allowance of 11s. 6d. per week is paid in respect of the first child and the pension is increased by 10s. per week for each additional child.

If the pensioner pays rent and is deemed to be entirely dependent on his pension, supplementary assistance is payable at the rate of 10s. per week to a single pensioner or to a married pensioner whose spouse does not receive a pension or allowance.

The rate of pension is reducible by the application of a means test in respect of income and property which, for the purposes of assessment, excludes the pensioner's home, furniture and personal effects and some other specified assets.

AGE AND INVALID PENSIONS—WESTERN AUSTRALIA

Year ended 30th June :—	Number of pensioners at 30th June			Number per 10,000 of population		Average fortnightly pension at 30th June		Pensions paid during year (a)	
	Age	Invalid	Total Age and Invalid	Age	Invalid	Age	Invalid	Total Amount	Per head of population
1956	(b) 30,244	(b) 4,425	(b) 34,669	(b) 448	(b) 66	£ s. d. 7 13 1	£ s. d. 7 16 8	£'000 6,681	£ s. d. 10 0 4
1957	32,102	5,039	37,231	468	73	7 12 2	7 15 10	7,254	10 13 1
1958	33,124	5,519	38,643	473	79	8 5 11	8 9 5	8,077	11 12 11
1959	34,629	5,941	40,570	486	83	8 5 7	8 11 3	8,622	12 4 4
1960	36,575	6,152	42,727	507	85	8 19 5	9 8 8	9,916	13 16 6

(a) Includes amounts paid to benevolent homes for maintenance of pensioners and to pensioner inmates of these homes. Includes also allowances to wives of invalid pensioners. From 1958-59 includes supplementary assistance. (b) Excludes pensioners in benevolent homes.

Rehabilitation Service—Since the 10th December, 1948 a rehabilitation service has been provided for invalid pensioners and others whose disabilities are remediable and who have reasonable prospects of engaging in a suitable vocation within three years. With the aim of restoring disabled persons to independence and usefulness, the service provides the necessary treatment and training together with books, tools and equipment. Rehabilitation and training allowances are paid. Commonwealth expenditure in respect of the Rehabilitation Service in Western Australia was £61,426 in 1955-56; £70,770 in 1956-57; £79,428 in 1957-58; £93,322 in 1958-59 and £85,370 in 1959-60.

Funeral Benefit—From the 1st July, 1943, a funeral benefit of up to £10 has been payable to persons who are required to meet the funeral expenses of an age or invalid pensioner or of a claimant who, but for death, would have been granted an age or invalid pension. Commonwealth payments of funeral benefit in Western Australia amounted to £22,530 in 1955-56; £23,170 in 1956-57; £23,482 in 1957-58; £23,244 in 1958-59 and £24,153 in 1959-60.

Widows' Pensions

Widows' pensions have been paid since the 30th June, 1942 and are granted subject to a means test and residential qualifications. The term "widow" is extended to include deserted wives, divorcees and women who have been deprived of support by the insanity or imprisonment of the husband.

WIDOWS' PENSIONS—WESTERN AUSTRALIA

Year ended 30th June :—	Pensions current at 30th June		Average fortnightly rate of pension	Pensions paid during year	
	Number	Per 10,000 of population		Total Amount	Per head of population
1956	3,015	45	£ s. d. 7 2 8	£'000 531	£ s. d. 15 11
1957	3,243	47	7 7 10	612	18 0
1958	3,542	51	8 2 7	708	1 0 5
1959	3,833	54	8 3 11	800	1 2 8
1960	4,039	56	9 0 9	914	1 5 6

A widow having the care of one or more children under 16 years of age may receive £5 5s. per week together with an additional 10s. per week for each child other than the first. Widows aged 50 years and over with no dependent children may be paid £4 7s. 6d. per week. Those aged under 50 and having no children under 16 years of age are entitled to a pension if in necessitous circumstances, when a weekly pension of £4 7s. 6d. may be paid for not more than 26 weeks after the death of the husband but, where the widow is pregnant, payment may be continued until the birth of her child. Prior to the 11th October, 1960 benefits at a lower rate than for widows applied, in general, to women whose husbands had been in prison for at least six months, but from that date they become eligible for benefits on the same basis as widows. A widow pensioner who pays rent and is considered to be entirely dependent on her pension may receive supplementary assistance of 10s. per week.

The rate of pension is reducible by the application of a means test in respect of income and property which, for the purposes of assessment, excludes the pensioner's home, furniture and personal effects and some other specified assets.

Unemployment and Sickness Benefits

Payments to persons unemployed or temporarily incapacitated for work by sickness or accident were introduced on the 1st July, 1945 and are subject to residential qualifications and a means test in respect of income but not of property.

The maximum weekly rate of benefit for an unmarried claimant over 21 years of age is £3 5s. per week. For unmarried juveniles, the rate is £1 15s. for those aged under 18 years and £2 7s. 6d. for those aged 18 and under 21 years. A married claimant with dependent spouse may receive £5 12s. 6d. per week, with an additional 10s. per week if there are dependent children under 16 years of age. In the case of claimants aged over 21 years, income of £2 per week is allowed in addition to the benefit but any income in excess of £2 is deducted from the benefit. Where the claimant is less than 21 years of age, the permissible weekly income is £1 and the rate of benefit is reducible by the amount of any income in excess of £1 per week. For unemployment benefit purposes, the incomes of both husband and wife are taken into account. For sickness benefit purposes, the income of the claimant only is taken into account, and any payment received on account of the sickness from an approved friendly society or similar body is disregarded. In general, a married woman may not receive sickness benefit, but provision exists for payment in special circumstances. There is a waiting period of seven days, during which time neither unemployment nor sickness benefit is payable.

UNEMPLOYMENT AND SICKNESS BENEFITS—WESTERN AUSTRALIA

Period	Average number on benefit at end of each week	Persons on benefit at end of period		Benefits paid during year	
		Number	Per 10,000 of population	Total Amount	Per head of population
UNEMPLOYMENT BENEFITS					
Year ended 30th June :—				£	s. d.
1956	473	1,606	24	*77,589	2 4
1957	1,940	2,441	36	336,846	9 11
1958	2,330	3,005	43	482,735	13 11
1959	2,852	2,939	41	654,387	18 6
1960	2,512	2,293	32	564,491	15 9
Quarter ended :—					
30th September, 1959	3,075	2,670	37	(a)	(a)
31st December, 1959	2,370	2,538	35	(a)	(a)
31st March, 1960	2,477	2,073	29	(a)	(a)
30th June, 1960	2,125	2,293	32	(a)	(a)
SICKNESS BENEFITS					
Year ended 30th June :—				£	s. d.
1956	428	410	6.1	*93,153	2 10
1957	458	454	6.6	96,907	2 10
1958	508	574	8.2	130,959	3 9
1959	594	649	9.1	159,230	4 6
1960	700	691	9.6	163,528	4 7
Quarter ended :—					
30th September, 1959	722	752	10.5	(a)	(a)
31st December, 1959	714	728	10.1	(a)	(a)
31st March, 1960	683	704	9.8	(a)	(a)
30th June, 1960	682	691	9.6	(a)	(a)

(a) Not applicable.

* Revised.

Special Benefits—Special Benefits have been provided since the 1st July, 1945. A special benefit may be granted to a person not qualified for unemployment or sickness benefit and who receives no Commonwealth pension if, on account of age, physical or mental disability or for any other reason, he is unable to earn a sufficient livelihood for himself and his dependants. Special benefits are also paid to migrants who are in reception centres and are awaiting their first placement in employment. Payments of special benefits in Western Australia amounted to £16,291 in 1955-56; £14,055 in 1956-57; £18,696 in 1957-58; £23,110 in 1958-59 and £23,898 in 1959-60.

Maternity Allowances

Maternity allowance payments were introduced on the 10th October, 1912. The allowance is payable to a woman who, at the date of giving birth to a child (live or stillborn), is residing in Australia. There is no means test. Part of the allowance may be paid four weeks before the expected date of birth, and the balance immediately after the birth.

The allowance is £15 where there are no other children, £16 where the mother has one or two other children under 16 years, or £17 10s. where she has three or more such children. These rates have been paid from the 1st July, 1947.

The amount payable is increased by £5 for each additional child of a multiple birth.

MATERNITY ALLOWANCES—WESTERN AUSTRALIA

Year ended 30th June :—	Number of claims paid	Amount paid		
		Total	Average amount per claim	Per head of population
		£	£ s. d.	s. d.
1956	17,180	276,123	16 1 5	8 3
1957	16,853	271,129	16 1 9	8 0
1958	16,820	271,032	16 2 1	7 10
1959	16,594	266,760	16 1 6	7 7
1960	17,012	274,816	16 3 1	7 8

Child Endowment

Child endowment was introduced on the 1st July, 1941. A person who is resident in Australia and has the custody, care and control of one or more children under the age of 16 years, or an approved institution of which children are inmates, is qualified to receive endowment in respect of each child. The payment is not subject to a means test.

At the inception of the scheme, the first child of a family was not endowed. Endowment for second and subsequent children and for each child in an approved institution was 5s. per week on introduction, 7s. 6d. per week from the 1st July, 1945 and 10s. per week from the 9th November, 1948. Since the 20th June, 1950 child endowment has been extended to include the first or only child of a family at the rate of 5s. per week.

CHILD ENDOWMENT—WESTERN AUSTRALIA

Year ended 30th June :	Endowed families at 30th June—			Number per 10,000 of population		Amount paid during year	
	Claims in force	Endowed children (a)		Claims	Endowed children (a)	Total (b)	Per head of population (b)
		Total	Average number per claim				
						£'000	£ s. d.
1956	100,047	220,792	2·21	1,483	3,273	4,684	7 0 6
1957	102,157	227,575	2·23	1,486	3,310	4,461	6 11 0
1958	104,472	234,265	2·24	1,493	3,349	4,572	6 11 10
1959	106,752	241,552	2·26	1,499	3,392	5,198	7 7 3
1960	107,918	246,788	2·29	1,495	3,418	4,860	6 15 6

(a) Excludes endowed children in approved institutions. There were 3,661 endowed child inmates in 67 institutions at the 30th June, 1960 and 3,538 endowed children in 66 institutions at the 30th June, 1959. (b) A number of endowments are paid every twelve weeks. During two years in every three, there are four such payments each year, and five in the third year. This accounts very largely for the fluctuations apparent in the amounts shown.

Reciprocal Arrangements with Other Countries

Reciprocal arrangements in respect of payment of age and invalid pensions, widows' pensions, unemployment and sickness benefits and child endowment have been in force between the Governments of Australia and New Zealand since the 1st July, 1949 and between Australia and the United Kingdom since the 7th January, 1954.

WAR AND SERVICE PENSIONS

War Pensions

The Repatriation Act 1920-1960 provides for the payment of pensions to ex-servicemen and their dependants in respect of death or disabilities accepted as being due to war service.

For members of the Forces who served outside Australia, or in actual combat against the enemy within Australia, pensions are payable in respect of incapacity or death which may result from any occurrence during the whole period of service. If a member served only in Australia, incapacity or death to be pensionable must have been attributable to service. In all cases, providing a member had at least six months' camp service, a condition which existed before enlistment is pensionable if it is considered that such condition was aggravated by service. The rate of pension varies according to the pensioner's previous Service rank.

Pensions for Incapacity—Incapacitated members who are able to engage in employment may, according to the degree of incapacity, receive a pension of up to £5 10s. per week (or higher according to rank) with an additional weekly amount of £1 15s. 6d. for a wife and 13s. 9d. for each child under 16 years of age.

Totally and permanently incapacitated members and the totally blinded receive a pension of £12 15s. per week. An attendant's allowance is also paid where an attendant is necessary. Allowances for wife and children are the same as for other incapacitated members.

Where a member is temporarily incapacitated by his war disability, for a period of not less than three months, to a degree which prevents him from earning more than a negligible percentage of a living wage, an additional payment may be made to bring his total pension up to £12 15s. per week. This payment continues throughout the period of his incapacity.

Pensions for Death—Where the death of a member is accepted as being due to war service, the widow is pensionable at a rate based on the member's Service rank. The minimum rate is £5 10s. per week, with a domestic allowance of £3 per week where there are dependant children or the widow is aged 50 years or over or is permanently unemployable.

The weekly rate of pension for the eldest child under 16 years of age is £1 11s. 6d. and for each younger child, £1 2s. 6d. Where both parents are dead, the rate becomes £3 3s. in respect of each child.

Widowed mothers may receive a war pension ranging from £2 5s. to £5 10s. per week, according to the Service rank of a deceased son who was unmarried, if widowhood occurred either prior to or within three years after his death.

Service Pensions

The payment of service pensions is provided for in the Repatriation Act 1920-1960 and has operated since the 1st January, 1936. A means test is applied in respect of income and property.

A service pension may be granted to a former member of the Forces, qualified under the Act, who is suffering incapacity from pulmonary tuberculosis, or who has served in a theatre of war (or, in the case of an ex-servicewoman, served abroad) and has attained the age of 60 years (or, in the case of an ex-servicewoman, 55 years) or is permanently unemployable. An ex-member of the Forces cannot receive a service pension in respect of more than one of the above categories at the same time and cannot receive an age or invalid pension while being paid a service pension granted on the ground of age or of being permanently unemployable.

Where a service pension is granted to an ex-serviceman on the ground that he is permanently unemployable or suffering from pulmonary tuberculosis, a service pension may also be paid to his wife and for eligible children but a service pension cannot be paid to dependants when the ex-serviceman is receiving a service pension on the ground of age.

The maximum rate for a service pensioner is £5 per week and for his wife, £1 15s. per week. For the first child under 16 years of age an amount of 11s. 6d. per week is payable and for each additional child, up to and including the fourth child of the family, an amount of 2s. 6d. per week. If an ex-

serviceman has the custody, care and control of children under the age of 16 years and is in receipt of a service pension on the ground that he is permanently unemployable, his service pension may be increased by 10s. per week in respect of each such child other than the first.

An ex-serviceman may receive supplementary assistance to the extent of 10s. per week if he is receiving the maximum rate of service pension, is paying rent or board and is deemed to be entirely dependent on his pension.

Under the provisions of an amendment in 1960 to the Repatriation Act, service pensioners are entitled to free medical benefits, including hospital care and dental treatment, for disabilities not due to war service.

WAR PENSIONS—WESTERN AUSTRALIA

Year ended 30th June :—	Number of War Pensions current at 30th June				Average fortnightly pension at 30th June			Expenditure during year	
	Incapacitated Ex-servicemen	Dependants of incapacitated Ex-servicemen	Dependants of deceased Ex-servicemen	Total	Incapacitated Ex-servicemen	Dependants of deceased and incapacitated Ex-servicemen	All War Pensioners	Total	Per head of population
					£ s. d.	£ s. d.	£ s. d.	£'000	£ s. d.
1956	17,986	32,630	3,811	54,427	4 8 6	1 10 0	2 9 4	3,451	5 3 6
1957	18,053	33,132	3,802	54,987	4 10 0	1 10 5	2 10 0	3,584	5 5 3
1958	18,076	33,406	3,789	55,251	4 19 6	1 11 9	2 13 11	4,008	5 15 7
1959	18,201	34,046	3,781	56,008	5 2 11	1 12 0	2 15 0	3,947	5 11 10
1960	18,353	34,476	3,815	56,644	5 12 0	1 13 5	2 18 11	4,236	5 18 1

SERVICE PENSIONS—WESTERN AUSTRALIA

Year ended 30th June :—	Number of Service Pensions at 30th June paid to—						Average fort- nightly pension at 30th June	Expenditure during year	
	Ex-servicemen who are—			Dependants of Ex-servicemen who are—		Total		Total	Per head of popu- tion
	Aged	Per- manently unem- ployable	Suffering from pul- monary tuber- culosis	Per- manently unem- ployable	Suffering from pul- monary tuber- culosis				
1956	1,522	986	101	918	121	3,648	£ s. d.	£'000	£ s. d.
1957	1,726	1,146	139	1,113	186	4,310	5 13 5	482	14 5
1958	1,903	1,252	159	1,159	199	4,672	5 10 10	547	16 1
1959	2,068	1,332	183	1,179	247	5,009	5 19 8	697	1 0 1
1959	2,068	1,332	183	1,179	247	5,009	5 18 9	776	1 2 0
1960	2,257	1,427	176	1,257	227	5,344	6 7 9	875	1 4 5

NATIONAL HEALTH SERVICES

The National Health Act 1953-1959 provides for expenditure from the National Welfare Fund in respect of a free general practitioner service to eligible pensioners and their dependants, and hospital, medical and pharmaceutical benefits to the community generally. Other services financed from the Fund are the nutrition of children by the free supply of milk, the payment of allowances to sufferers from tuberculosis, reimbursement to State Governments of maintenance expenditure in relation to the diagnosis, treatment and control of tuberculosis, and a number of miscellaneous health services.

Hospital Benefits

The payment of hospital benefits to the States is authorized under Part V of the National Health Act. This Act continues the agreements entered into with the various States under the Hospital Benefits Act 1945-1951. Under these agreements the Commonwealth pays the States certain sums of money which vary according to the number of occupied beds in public hospitals.

The rates of payment for occupied beds in public hospitals are determined by the category into which patients are grouped. Payment of 12s. per day is made for a patient who is a pensioner or a dependant of a pensioner. The rate of 8s. per day is paid for other patients.

A payment of 8s. per day is made also for patients in approved private hospitals. This payment is made to the proprietor of the private hospital.

An additional benefit is paid in the case of patients who are contributing to an approved hospital benefit fund. A patient contributing for a fund benefit of at least 6s. but less than 16s. per day receives an additional Commonwealth benefit of 4s. per day but where he contributes for a fund benefit of 16s. per day or more the Commonwealth benefit is 12s. per day. This payment is made through the benefit organization and is normally paid to the patient with the amount payable by the organization.

Prior to an amendment to the National Health Act in 1958, the rules of benefit organizations generally provided for disallowance of claims for fund benefit in cases of chronic or pre-existing disabilities, or after the contributor had received benefit for a specified maximum period in any twelve consecutive months. Under the provisions of the amendment, fund benefit has been paid, or continued, in these cases from the 1st January, 1959, generally at a rate of 16s. per day. Financial transactions relating to such contributors may be recorded by the organization in a special account and the Commonwealth reimburses the organization each year to the extent of the deficit of the account.

Australian residents and their dependants who receive hospital treatment while temporarily living overseas are eligible for hospital benefits.

The following table shows the amounts of benefit paid in Western Australia during each financial year from 1955-56 to 1959-60, and the number and membership of registered benefit organizations at the 30th June in each year. It should be noted that the total number of persons covered by hospital benefit schemes is considerably higher than the number of members shown, as many members contribute on account of dependants as well as for personal benefits.

HOSPITAL BENEFITS—WESTERN AUSTRALIA

Year ended 30th June :	Amount of Benefit Paid				Registered Organizations		
	Commonwealth Benefit				Fund Benefit	Number of Organizations (d)	Number of Members (d)
	Ordinary (a)	Additional (b)	Special Account Deficit (c)	Total			
	£	£	£	£	£		
1956	617,979	161,314	....	779,293	386,412	13	182,927
1957	594,007	177,875	....	771,882	489,378	13	193,527
1958	644,149	285,032	....	929,181	618,576	13	201,768
1959	720,164	565,493	....	1,285,657	665,533	12	230,559
1960	740,266	793,818	141,604	1,675,688	952,343	11	244,111

(a) Paid to hospitals in respect of occupied beds.
paid to benefit organizations.

(d) At 30th June.

(b) Paid through benefit organizations.

(c) Reimbursements

Medical Benefits

A Medical Benefits Scheme commenced to operate from the 1st July, 1953, being authorized under the National Health (Medical Benefits) Regulations. These regulations were superseded by the National Health Act. The basic principle of the scheme is the encouragement of voluntary insurance by individuals against the costs of medical attention. The scheme provides for the payment of benefits by the Commonwealth, through medical insurance organizations registered for the purpose. The Commonwealth benefits supplement the benefits paid by the registered organizations in respect of a proportion of the medical expenses, such as fees for medical and surgical treatment, incurred by members of those organizations and their dependants.

The Act was amended in 1958 to enable registered organizations to extend their payment of medical benefits on the same conditions as those applying to the extension of hospital fund benefits referred to in the preceding section. Medical fund benefits previously disallowed in cases of pre-existing disabilities and protracted illnesses have been paid from the 1st January, 1959 under the provisions of this amendment.

The following table shows the number and cost of medical services rendered in Western Australia to members of medical benefit organizations and their dependants during each financial year from 1955-56 to 1959-60. The number of organizations and their membership at the 30th June in each year are also shown. It should be noted that the total number of persons covered by medical benefit schemes is considerably higher than the number of contributors, as many members subscribe for benefits on account of dependants as well as for themselves.

MEDICAL BENEFITS—WESTERN AUSTRALIA

Year ended 30th June:	Medical Services						Registered Organizations	
	Number	Cost					Number of Organizations (b)	Number of Members (b)
		Total	Amount paid by :—					
			Commonwealth		Fund Benefit	Insured Member		
			Ordinary Benefit	Special Account Deficit (a)				
		£	£	£	£	£		
1956	1,206,135	1,627,231	532,501	....	677,619	417,111	9	171,654
1957	1,325,646	1,856,288	600,727	....	772,116	483,445	9	174,077
1958	1,432,450	2,082,889	656,813	....	854,629	571,447	9	184,934
1959	1,519,362	2,221,783	699,802	....	906,888	615,093	9	199,429
1960	1,784,036	2,610,298	842,856	3,384	1,061,817	702,241	9	207,677

(a) Reimbursements paid to benefit organizations.

(b) At 30th June.

A Pensioner Medical Service, which commenced on the 21st February, 1951, was introduced under the authority of the National Health (Medical Services to Pensioners) Regulations made under the provisions of the National Health Service Act 1948-1949. The service has been continued under the provisions of the National Health Act 1953-1959.

Under this scheme, eligible pensioners and their dependants, as defined in the following section describing pharmaceutical benefits, are provided with a free general practitioner service. Specialist services are not provided. A small fee may be charged by practitioners who attend qualified patients outside normal surgery or visiting hours. Practitioners in the scheme are remunerated on a fee-for-service basis by the Commonwealth.

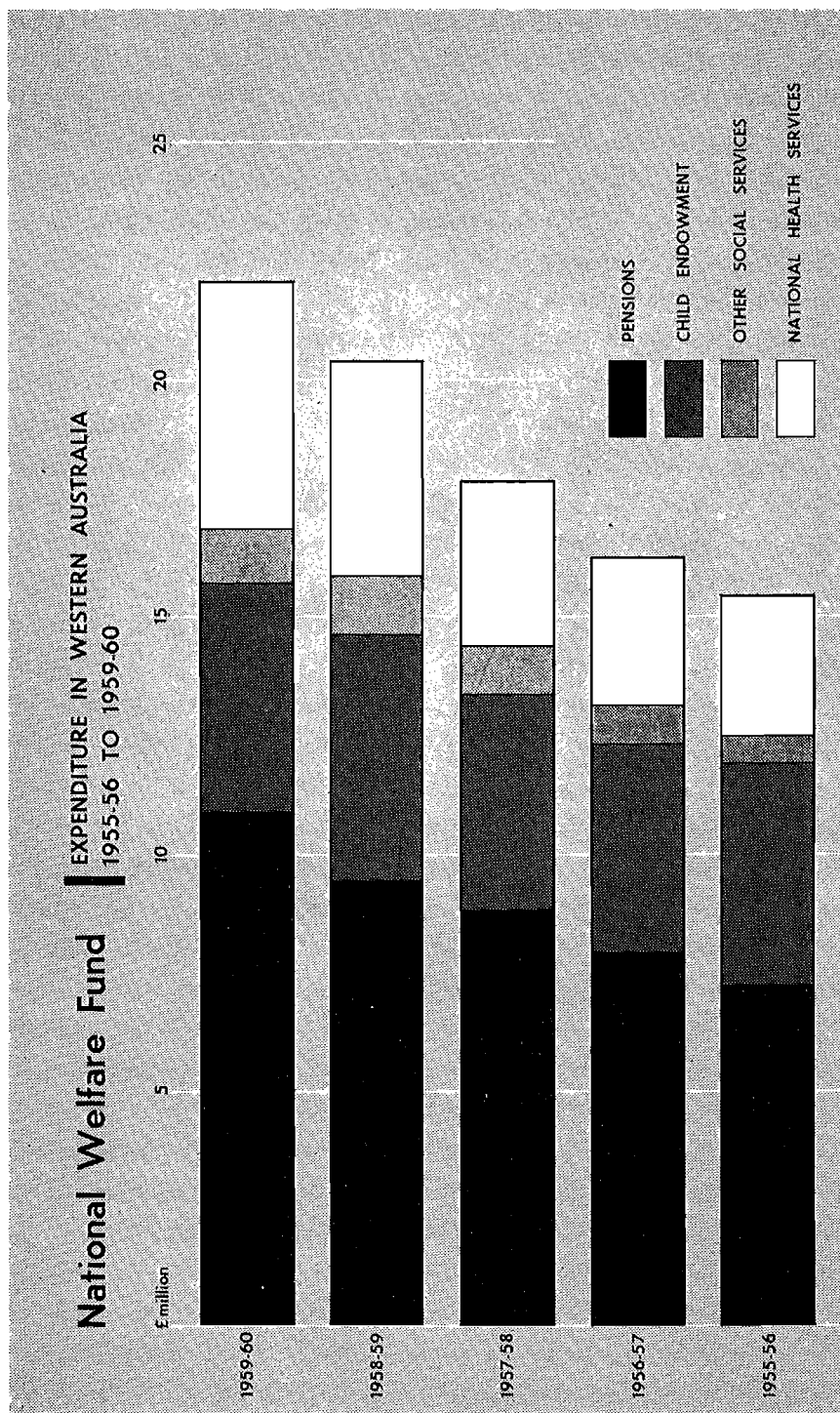
Pharmaceutical Benefits

The Pharmaceutical Benefits Scheme was inaugurated on the 4th September, 1950 when certain life-saving and disease-preventing drugs became available to the general community free of charge if duly prescribed by a medical practitioner registered in Australia. From the 1st March, 1960 a charge of 5s. has been levied, except in the case of pensioners or their dependants, for each prescription dispensed and for a repeat supply of the prescription. This amount represents the first 5s. of the total cost, the remainder being met by the Commonwealth. With the introduction of this charge, the list of drugs available as pharmaceutical benefits was greatly expanded and now includes the majority of those covered by the British Pharmacopoeia and a wide range of other drugs. Additions are recommended from time to time by the Pharmaceutical Benefits Advisory Committee, a committee of medical experts which advises the Government on the value of drugs most suitable for the treatment of various diseases.

A service providing pharmaceutical benefits free of charge to pensioners has been in operation since the 2nd July, 1951. The full range of medicines supplied under the general scheme, and certain additional drugs, are available for this service. Persons qualifying for benefits are those who satisfy a means test and are receiving an age, invalid or widow's pension, a service pension or a tuberculosis allowance. The benefits of the scheme apply also to the dependants of persons so qualified.

Free Milk for School Children

The States Grants (Milk for School Children) Act 1950 provides for the distribution of free milk to school children throughout the Commonwealth, with the object of improving their diet. All children



under the age of 13 years attending school are eligible to receive this issue. The cost of the milk plus half the capital or incidental costs, including expenses incurred in administering the scheme, is reimbursed by the Commonwealth to the State, which arranges for the distribution.

Tuberculosis Campaign

The Tuberculosis Act 1948 provides for a joint Commonwealth and State campaign against tuberculosis. The Commonwealth has an arrangement with the States, whereby each State is required to conduct a campaign against tuberculosis and to provide adequate facilities for that purpose. In consideration of this, the Commonwealth undertakes to reimburse the State for all approved capital expenditure in relation to tuberculosis and for net maintenance expenditure to the extent that it is in excess of net maintenance expenditure for the base year 1947-48. Thus, the States are required to carry out the actual physical or field work of the national campaign with the Commonwealth acting in an advisory, co-ordinating and financial capacity.

A system of tuberculosis allowances to individuals is provided. Payments under the scheme commenced on the 13th July, 1950. The rate of allowance to a married sufferer with dependent wife is £11 12s. 6d. per week. An amount of 10s. per week, additional to child endowment, is payable for each dependent child under 16 years of age. A sufferer without dependants is eligible to receive £7 2s. 6d. per week, reducible to £5 per week if maintained free of charge in an institution. There is a means test, which applies only to income and not to property. The allowance is reduced by the amount by which income from other sources exceeds £7 per week in the case of a married sufferer and £3 10s. per week in the case of a person without a dependent wife.

The amounts of expenditure shown in the next table exclude Commonwealth payments to the State Government in the form of reimbursement of capital expenditure in connexion with the campaign. These payments were £215,744 in 1955-56; £503,977 in 1956-57; £682,997 in 1957-58; £257,164 in 1958-59 and £39,198 in 1959-60.

Miscellaneous Health Services

Commonwealth expenditure under the heading of Miscellaneous Health Services includes the cost of district laboratory services, the free supply of prophylactic materials and biological products such as insulin and poliomyelitis and diphtheria prophylactics, the supply and maintenance of hearing aids for children, subsidies to voluntary organizations conducting home-nursing services, and certain costs associated with the blood transfusion services of the Australian Red Cross Society.

Summary of Expenditure

Expenditure on health services in Western Australia from the National Welfare Fund in each financial year from 1955-56 to 1959-60 is summarized in the following table.

NATIONAL WELFARE FUND EXPENDITURE ON HEALTH SERVICES—WESTERN AUSTRALIA

Service	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
	£	£	£	£	£
Hospital Benefits—					
Ordinary	617,979	594,007	644,149	720,164	740,266
Additional	161,314	177,875	285,032	565,493	793,818
Special Account Deficits .....	....	....	....	....	141,604
Medical Benefits—					
Ordinary	532,501	600,727	656,813	699,802	842,856
Special Account Deficits .....	....	....	....	....	3,384
Medical Benefits for Pensioners	198,243	194,421	216,113	258,836	274,503
Pharmaceutical Benefits	717,498	698,473	863,884	1,221,487	1,337,231
Pharmaceutical Benefits for Pensioners	95,553	113,632	139,282	175,557	251,829
Nutrition of Children	136,361	157,809	152,600	182,249	228,797
Tuberculosis Campaign—					
Allowances	111,295	91,545	76,109	78,084	70,230
Maintenance	397,349	469,945	444,410	557,969	511,505
Miscellaneous Services	10,863	12,470	12,975	14,334	17,237
TOTAL	2,978,956	3,110,904	3,491,367	4,473,975	5,213,280

Mental Institutions

Under the States Grants (Mental Institutions) Act 1955 the Commonwealth is authorized to make payments to the States for, or in connexion with, the buildings or equipment of mental institutions. Commonwealth expenditure on mental hospitals in Western Australia was £9,984 in 1955-56; £51,855 in 1956-57; £29,236 in 1957-58; £17,210 in 1958-59 and £36,799 in 1959-60. Under the Act the Commonwealth liability in Western Australia is limited to a total of £720,000.

STATE RELIEF PAYMENTS

The State Government, through the Child Welfare Department, makes relief payments which in most cases supplement the social benefits provided by the Commonwealth Government. The payments are made primarily to ensure that dependent children do not suffer hardship from the indigence of parents or guardians. Those assisted include deserted wives, unmarried mothers, widows having the care of children, and women with husbands unable to support them owing to sickness, unemployment, age or imprisonment.

Other aid provided by the State for persons in need includes rail passes for country people requiring medical treatment in the metropolitan area and the provision of school requisites for children of women receiving financial assistance. In certain circumstances, the burial of indigent persons is arranged at State expense.

Deserted wives and unmarried mothers applying to the Department for assistance are given advice concerning the legal redress available to them and it is usual for application to be made to a Married Persons' Relief Court or a Children's Court for an order requiring the husband or the father to provide maintenance. Court orders are enforceable throughout Australia and in certain oversea countries.

State monetary assistance to deserted wives, women with husbands in prison and widows, not in receipt of a Commonwealth widow's pension, is at the rate of £4 2s. 6d. per week, plus £1 10s. per week for the first dependent child and 15s. per week for each other dependent child. To a widow receiving a Commonwealth pension the State pays 12s. 6d. per week for the first dependent child and 15s. per week for each additional child. Where an age or invalid pensioner has dependent children, the State allows £1 per week for the first child, 5s. per week for the second child and 15s. per week for each additional child. Where the wife of an age pensioner is not eligible to receive a wife's allowance from the Commonwealth and there are dependent children, she may be paid an amount of £2 6s. 6d. per week by the State. Where Commonwealth unemployment or sickness benefits are payable to married men, the State allows 7s. 6d. per week for the wife, £1 4s. per week for the first dependent child and 15s. per week for each additional child. In addition, Commonwealth child endowment is payable in respect of all dependent children. Details of Commonwealth Social Services benefits are given earlier in this Chapter in the section *Social Services Benefits*. The amount of State assistance granted is subject to a means test and in assessing income the earnings of the children of a family are taken into account.

WOMEN RECEIVING FINANCIAL ASSISTANCE FROM CHILD WELFARE DEPARTMENT

Description	Number at 30th June—				
	1956	1957	1958	1959	1960
Widows	143	155	153	181	180
Unmarried Mothers	28	29	31	22	15
Deserted Wives	209	333	403	405	333
Other Married Women—					
Husband Pensioner	47	60	110	125	144
Husband Sick or Unemployed	158	702	989	929	702
Husband Imprisoned	49	76	62	59	58
Divorced Women	1	8	11	6	9
Foster-mothers	37	56	106	101	98
Special Cases	10	12	16	18	11
Total Women	682	1,431	1,881	1,846	1,550

CHILD WELFARE

Under the provisions of the Child Welfare Act, 1947-1959 the State Government, through the Child Welfare Department, is responsible for the care of State wards and children placed under supervision or released on probation by Children's Courts. For the purposes of the Act, a child is defined as "any boy or girl under the age of eighteen years." Institutions caring for children, as well as children brought

to Western Australia under child migration schemes, are subject to supervision by the Department, as also are foster-mothers who have in their care children under six years of age and are required under the Act to be licensed for this purpose. Among other functions of the Department are the arranging of legal adoptions and the licensing of children employed in street trading and in public entertainment. A provision of the Child Welfare Act Amendment Act, 1959 vests in the Department the right to decide which institution or what form of treatment is appropriate to the needs of a child committed by a Children's Court to the care of the Department for treatment, discipline and training.

Children's Courts are established at Perth and at other centres throughout the State and have jurisdiction in all cases where children under 18 years of age are involved whether as offenders or as being neglected or destitute. The Courts also have jurisdiction to deal with adults committing certain specified offences against children. The public is excluded from Court hearings and names of juvenile offenders are withheld from publication. Adults charged with certain indictable offences against children may forgo the right to trial by jury and agree to be dealt with summarily by Children's Courts. This power to exercise summary jurisdiction is designed to eliminate as far as possible the necessity for children to appear in open courts as witnesses in cases dealing with sex offences. A Children's Court may commit such offenders for sentence by the Supreme Court.

Children guilty of minor offences may be cautioned, fined, bound over, placed on probation, or dismissed without a conviction being recorded. A Court may declare a child to be neglected or destitute and may order the child to be committed to the care of the Child Welfare Department, sent to an approved institution, or released on probation. Children found guilty of offences punishable by imprisonment may be committed to the care of the Department, released on security given by parents, or released on probation under the supervision of the Department. Those guilty of less serious or first offences are generally placed in the care of their parents or suitable guardians under appropriate supervision by officers of the Child Welfare Department. Supervision and probation cases, other than State wards, numbered 613 at the 30th June, 1960.

Wards of the Child Welfare Department—A child committed to the care of the Child Welfare Department or to an institution becomes a ward of the Department. A ward may be placed in an institution, boarded out with a relative or other approved person, paroled or placed in suitable employment. The Director of Child Welfare has authority to place wards of working age in employment or apprenticeship. Where a ward is required to live at the place of employment, a service agreement covering wages and working conditions is made between the employer and the Department, which continues to watch the interests of the ward. At the 30th June, 1960, there were 2,062 wards, of whom 482 were in institutions, 1,267 were boarded out, 77 were in service or apprenticed and 236 were on parole or probation.

Private Children—In addition to wards, there are some private children under the supervision of the Department. These comprise children under six years of age who may be either in institutions or in the care of licensed foster-mothers. At the 30th June, 1960 there were 93 such children in institutions and 49 in the care of foster-mothers.

Institutions—The State Government subsidizes homes for children in Western Australia. Most of these institutions are conducted by religious organizations and several of them provide for children brought from Great Britain, Ireland and Malta under child migration schemes. All institutions having the care of wards, migrant children or private children under six years of age are subject to the supervision of the Department.

The Anglican Farm School at Stoneville and "Riverbank" at Caversham are reformatories for delinquent boys. "Riverbank" is a maximum security institution for the treatment of the more difficult offenders and is controlled by the Child Welfare Department. The Home of the Good Shepherd at Leederville and the Baptist community at Wattle Grove care for delinquent and maladjusted girls.

The Child Welfare Department maintains a Reception Home at Mount Lawley which serves as a temporary shelter for deprived or neglected children awaiting placement, a haven for children whose parents are temporarily unable to care for them, and a remand home for children awaiting appearance before Children's Courts.

The following table shows details of children in institutions under the supervision of the Child Welfare Department at the 30th June, 1960.

CHILDREN IN INSTITUTIONS AT 30TH JUNE, 1960

(Excluding children at Native Missions)

Institution	State Wards		Migrant Children (a)		Private Children		Total		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Children
ANGLICAN—									
Parkerville Children's Home, Parkerville	55	35	...	...	19	25	74	60	134
Swanleigh, Middle Swan	8	5	25	29	73	30	106	64	170
Anglican Farm School, Stoneville	48	...	...	...	...	...	48	...	48
Total	111	40	25	29	92	55	228	124	352
METHODIST—									
Mofflyn (†), Victoria Park	1	2	...	...	26	18	27	20	47
Allandale (‡), Werribee	21	...	...	...	1	...	22	...	22
Total	22	2	...	...	27	18	49	20	69
PRESBYTERIAN—									
Benmore Boys' Home, Caversham	...	1	...	...	8	7	8	8	16
Sister Kate's Children's Home, Queens Park	6	4	...	...	22	19	28	23	51
Total	6	5	...	...	30	26	36	31	67
ROMAN CATHOLIC—									
Castledare Boys' Home, Cannington	24	...	9	...	38	...	71	...	71
Clontarf Boys' Town, Victoria Park	31	...	78	...	42	...	151	...	151
Home of the Good Shepherd, Leederville	...	17	...	...	...	47	...	64	64
St. Joseph's Orphanage, Wembley	...	21	...	14	...	47	...	82	82
St. Vincent's Foundling Home, Wembley	9	6	...	...	18	16	27	22	49
St. Mary's Agricultural School, Tardun	1	...	43	...	12	...	56	...	56
St. Joseph's Boys' Town, Bindoon	4	...	34	...	13	...	51	...	51
Nazareth House, Geraldton	...	...	9	...	...	44	...	53	53
Total	69	44	164	23	123	154	356	221	577
SALVATION ARMY—									
Boys' Home, Hollywood	37	...	...	...	55	...	92	...	92
Girls' Home, Cottesloe	...	20	...	...	...	51	...	71	71
Total	37	20	...	...	55	51	92	71	163
UNDENOMINATIONAL—									
Kingsley Fairbridge Farm School, Pinjarra	...	...	95	25	...	...	95	25	120
Shiloh College, Broomelhill	11	...	...	...	...	...	11	...	11
Child Welfare Reception Home	27	11	...	...	...	...	27	11	38
Riverbank, Caversham	4	...	...	...	...	...	4	...	4
Ngal-a, South Perth	8	13	...	...	17	11	25	24	49
Total	50	24	95	25	17	11	162	60	222
GRAND TOTAL	295	135	284	77	344	315	923	527	1,450

(a) Children brought to Western Australia under child migration schemes. (†) Previously known as Methodist Children's Home. (‡) Previously known as Tom Allan Memorial Home for Boys.

Maintenance of Children—Payments by the Child Welfare Department to foster-parents having the care of State wards are at the rate of £2 5s. per week for each child. Institutions are paid subsidies at the rate of £1 16s. per week for each ward in their care. The British Government pays 12s. 6d. per week for each British migrant child in institutions or boarded out and the State Government pays an additional amount of 6s. per week. A further grant of 10s. per week for each child maintained is paid to the institutions by the State Lotteries Commission. Where an institution refuses assistance from the Commission on religious or moral grounds the State Government may grant an equivalent allowance to the institution for each ward maintained. All institutions and foster-parents having the care of children receive Commonwealth child endowment payments.

Parents or near relatives are required to contribute towards the maintenance of wards in institutions or boarded out.

Employment of Children—The Child Welfare Act, 1947–1959 provides that children may not engage in street trading except under licence granted by the Department. The issue of licences is restricted to those aged 12 years and over and it is an offence to employ an unlicensed child. Most of the licences issued are for the sale of newspapers.

The Act provides further that children under the age of 16 years may not take part in any form of public entertainment for profit or reward unless under licence, except in the case of an occasional

entertainment for the benefit of a school or charitable or patriotic object. Most of these licences are issued for concerts arranged by dancing teachers and other tutors.

Adoption of Children—Any person who takes charge of a child with the object of adoption must notify the Director of Child Welfare. Legal adoptions may be arranged by the Department or privately by solicitors. In either case, the Director is required to investigate the suitability of applicants and an order for adoption must be obtained from a Judge of the Supreme Court. During the year ended 30th June, 1960, adoption orders numbering 332 were granted.

Expenditure—The following table gives details of the annual expenditure of the Child Welfare Department during the five-year period ended 30th June, 1960.

EXPENDITURE OF CHILD WELFARE DEPARTMENT

Nature of Expenditure	1955-56	1956-57	1957-58	1958-59	1959-60
	£	£	£	£	£
Administration	82,790	104,611	114,633	127,329	143,368
Departmental Institutions	39,244	57,703	72,789	76,122	92,151
Maintenance of Wards	82,596	86,912	96,508	103,901	112,332
Maintenance of Migrant Children	53,906	49,678	47,641	39,069	32,432
Outdoor Relief (a)	92,962	199,694	151,880	164,265	148,059
Unemployment Relief			149,959	205,550	122,933
Parole Classes .....	.....	.....	.....	2,003	2,266
Total Expenditure	351,498	498,598	633,410	718,329	653,541
Total Revenue	34,140	36,917	46,162	52,351	56,151
Net Expenditure	317,358	461,681	587,248	665,978	597,390

(a) Assistance to women with dependent children and to the infirm.

CHAPTER V—*continued*

PART 6—LAW COURTS, POLICE AND PRISONS

LAW COURTS

The principal courts operating in Western Australia are the High Court of Australia, the Supreme Court of Western Australia, the Session Courts, the Magistrates' and Coroners' Courts, the Married Persons' Relief Court, the Western Australian Court of Arbitration and the Licensing Court.

High Court of Australia

The High Court of Australia is the Federal Supreme Court and its powers are defined in the Commonwealth Constitution and in the Judiciary Act 1903-1960. The High Court consists of a Chief Justice and six other Justices. Sittings are held in the capital city of each State as occasion may require. The High Court exercises both original and appellate jurisdiction, acting as a court of appeal for Australia. An appeal may lie from a judgment of the High Court of Australia to the Judicial Committee of the Privy Council in London.

Supreme Court of Western Australia

The Supreme Court of Western Australia, as constituted under the Supreme Court Act, 1935-1960, consists of a Chief Justice and such other Judges, not exceeding six in number, as may from time to time be appointed. The jurisdiction of the Court in both civil and criminal matters is exercised by a single Judge, sitting alone or with a jury, unless it is provided that an action must be brought before a Full Court. Criminal cases are heard before a jury. Criminal sittings of the Supreme Court are held at Perth each month from February to December and civil sittings each month from March to December.

The Eastern Goldfields Circuit Court sits at Kalgoorlie four times a year, a Judge of the Supreme Court presiding.

Any two or more Judges together comprise a Full Court except that when sitting as a court of criminal appeal there must be an uneven number of Judges. The Full Court sits at least five times in every year with additional sittings when necessary. Appeals are heard against judgments of the Supreme Court and of the Circuit and Session Courts as well as against decisions of the magistrates in lower courts.

Appeal from a judgment of the Supreme Court of Western Australia lies to the High Court of Australia, subject to the provisions of the Judiciary Act 1903-1960 (Commonwealth). Under the Bankruptcy Act 1924-1960 (Commonwealth) the Supreme Court is invested with federal jurisdiction in bankruptcy.

Session Courts of the State

The Session Courts are held four times a year at the principal court houses of each of the fourteen session divisions. The Stipendiary Magistrate stationed at the centre at which a Court is held usually presides. Only criminal cases are dealt with and a jury is therefore required at all sittings. A case may be reserved for hearing before a Judge of the Supreme Court. Magistrates presiding at Session Courts may sit in association with one or more Justices of the Peace.

Magistrates' and Coroners' Courts

In addition to their usual functions, magistrates act as coroners and mining wardens where required. Two or more Justices of the Peace sitting together in petty sessions may deal with cases which could be decided by a magistrate sitting alone.

Police Courts are held at centres of population throughout the State. Minor offences are dealt with summarily, but a person charged with an indictable offence may be committed to a higher court for trial or sentence if there is sufficient evidence to justify this course.

Children's Courts—Special Children's Courts are established in Perth, and at other centres as required, to deal with offenders under the age of eighteen years and to hear cases of offences against children. A Children's Court has power to deal summarily with most offences concerning children. The public is excluded from Children's Court hearings and names of juvenile offenders are withheld from publication. Further reference to Children's Courts appears in the section *Child Welfare* in Part 5 of this Chapter.

Coroners' Courts may be held to inquire into the circumstances of sudden or unnatural deaths or the cause and origin of fires. A Coroner may charge a person with a major offence and commit him for trial at a higher court.

Married Persons' Relief Court—The Married Persons' Relief Court is established under the provisions of the Married Persons (Summary Relief) Act, 1960 to which reference is made in Chapter III under the heading "Acts Passed during 1960" in the section *Legislation During 1959 and 1960*.

Local Courts are held throughout the State to determine minor civil issues, largely the recovery of small debts. Jurisdiction is limited in most cases to claims not exceeding £500.

Civil Proceedings

Civil Cases—Particulars of civil cases dealt with by the courts in the ten years ended 31st December, 1960 are shown in the following table.

CIVIL CASES (a)

Year	Higher Courts				Lower Courts			
	Writs		Judgments Signed and Entered		Plaints		Judgments	
	Number	£	Number	£	Number	£	Number	£
1951	703	300,902	201	113,908	15,151	242,889	4,228	93,008
1952	839	329,596	206	185,438	18,217	269,535	4,614	129,036
1953	1,083	482,436	378	215,987	19,643	374,484	6,479	187,777
1954	1,143	599,955	453	275,929	24,773	583,761	8,246	244,451
1955	847	526,303	361	307,785	31,079	1,051,654	9,480	448,213
1956	715	518,027	270	280,531	40,313	1,255,197	12,460	415,698
1957	718	478,960	262	337,049	39,259	1,271,653	14,058	525,064
1958	792	351,921	273	300,626	46,077	1,487,625	14,816	562,166
1959	822	530,290	219	356,805	45,794	1,412,790	14,382	527,805
1960	890	644,924	285	310,501	43,810	1,350,023	15,125	589,977

(a) Excludes proceedings in divorce (see next table) and in bankruptcy (see page 206).

Divorce—Orders for the dissolution of marriage, nullity of marriage and judicial separation may be granted by the Supreme Court or the Eastern Goldfields Circuit Court. The following table shows the number of writs issued and final orders granted in each year from 1951 to 1960.

DIVORCE

Year	Writs	Final Orders for—		
		Dissolution of Marriage	Nullity of Marriage	Judicial Separation
1951	735	682	3	1
1952	662	585	4	...
1953	620	535	6	...
1954	596	530	2	1
1955	575	479	6	3
1956	662	544	4	4
1957	633	541	1	3
1958	665	536	6	2
1959	681	584	2	1
1960	570	540	2	5

Western Australian Court of Arbitration

The main purpose of the Court of Arbitration is to determine wages and working conditions and to maintain industrial peace in Western Australia. The Court comprises a President, a representative of employers' organizations and a representative of employees' unions. The President of the Court must be a person qualified to be appointed a Judge of the Supreme Court.

The Court of Arbitration has power to intervene in any industrial dispute occurring within the State, whether or not the parties are registered under the Industrial Arbitration Act.

Commonwealth Industrial Court

The Commonwealth Industrial Court is constituted by the Conciliation and Arbitration Act 1904-1960. It comprises a Chief Judge and three other Judges and is empowered to deal with judicial matters under the Act. Although, in general, decisions of the Court are final, an appeal may be made to the High Court of Australia, but only when the High Court grants leave to appeal.

Commonwealth Conciliation and Arbitration Commission

The Commonwealth Conciliation and Arbitration Commission, as constituted under the provisions of the Conciliation and Arbitration Act 1904-1960, consists of a President, not less than two Deputy Presidents, a Senior Commissioner and not less than five Commissioners. At the 31st December, 1960 there were, in addition to the President and the Senior Commissioner, five Deputy Presidents and seven Commissioners. Generally, the Commission's jurisdiction is limited to the prevention or settlement, by conciliation or arbitration, of industrial disputes which extend beyond the limits of any one State, but the Commission is empowered to conciliate or arbitrate in respect of any dispute or industrial matter associated with Commonwealth Government undertakings or projects. The Principal Registry of the Commission is in Melbourne, Victoria, and there are Deputy Industrial Registrars in each State.

Licensing Court

The Licensing Court consists of three members appointed by the Governor to administer the Licensing Act and to issue licences for the sale of alcoholic liquor.

CRIME STATISTICS

Statistics appearing in this section exclude particulars of aborigines unless otherwise stated.

Magistrates' Courts

The following table gives particulars of convictions in Magistrates' Courts, including Children's Courts, during the ten years ended 31st December, 1960.

CONVICTIONS IN MAGISTRATES' COURTS

Year	Offences against the Person		Offences against Property		Forgery and Offences against Currency		Offences against Good Order		Other Offences (a)		Total Convictions (a)		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
1951	335	14	2,577	188	1	....	7,119	462	18,358	709	28,390	1,373	29,763
1952	342	19	2,889	196	....	....	7,376	541	25,770	976	36,377	1,732	38,109
1953	323	25	3,034	250	....	....	7,319	626	27,949	1,117	38,625	2,018	40,643
1954	368	18	3,618	235	2	....	7,094	503	34,747	1,420	45,829	2,176	48,005
1955	363	26	3,667	312	....	....	6,821	523	50,654	2,752	61,505	3,613	65,118
1956	489	17	4,430	352	1	....	7,185	481	44,577	2,351	56,682	3,201	59,883
1957	377	15	4,439	374	....	....	6,571	578	41,842	2,101	53,229	3,068	56,297
1958	448	22	5,139	407	....	....	6,023	571	32,707	1,720	44,317	2,720	47,037
1959	381	13	4,671	354	4	....	6,675	710	32,768	2,003	44,499	3,080	47,579
1960	356	26	4,896	483	3	....	6,302	616	32,431	2,349	43,988	3,474	47,462

(a) Including traffic offences. In addition, fines collected by the Crown Law Department and the Perth City Council for minor traffic offences numbered :—1956, 32,130 ; 1957, 31,405 ; 1958, 36,999 ; 1959, 42,973 ; 1960, 50,879.

In 1955, the Traffic Act was amended to provide for the imposition of small fines for minor traffic offences without the formality of court hearings. In 1956 legislation was enacted to empower the Perth City Council to provide parking facilities in the City area and to impose fines for parking offences. As a result of these measures, total convictions in Magistrates' Courts have declined from the record number of 65,118 reached in 1955. Disregarding traffic offences, convictions increased by 15.2 per cent. from 1951 to 1960, compared with an increase of 24.6 per cent. in the mean population for those years.

CONVICTIONS IN MAGISTRATES' COURTS FOR CERTAIN OFFENCES

Year	Assault, Wounding, etc.		Stealing, Receiving, etc.		Drunkenness		Disorderliness		Gaming		Traffic Offences (a)	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1951	304	10	1,815	175	5,592	382	928	45	2,321	4	11,909	454
1952	295	16	1,917	188	5,594	448	830	36	2,803	2	18,357	640
1953	296	18	2,103	234	5,092	518	882	54	2,485	3	20,213	780
1954	319	18	2,466	222	5,426	383	895	59	2,951	6	26,506	1,054
1955	327	19	2,537	302	5,307	413	771	44	(b)1,858	9	43,229	2,430
1956	323	15	2,973	330	5,552	360	889	59	299	11	37,473	1,911
1957	259	15	2,936	337	4,968	400	924	54	394	4	35,022	1,637
1958	303	20	3,263	362	4,409	412	990	66	245	1	25,194	1,053
1959	303	12	3,025	329	5,046	541	900	97	214	2	25,219	1,183
1960	249	25	3,106	431	4,079	465	903	86	136	....	26,178	1,242

(a) See note to previous table. (b) The Betting Control Act, 1954, legalizing off-course betting on premises licensed for the purpose came into operation on the 1st August, 1955.

Particulars of distinct persons convicted in Magistrates' Courts are not available, but it is known that many are charged with multiple offences. This applies particularly to juveniles. Statistics of convictions of juvenile offenders during 1960, classified according to age, sex and nature of offence, are shown in the following table.

CONVICTIONS OF JUVENILES, 1960

Age (years)	Breaking, Entering and Stealing		Stealing, Receiving, etc.		Wilful Damage		Traffic Offences		Other Offences		Total Convictions		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
7	1	....	....	....	1	....	1
8	6	....	....	4	....	....	....	2	....	12	....	12
9	48	....	12	3	8	1	....	....	....	70	4	74
10	44	....	33	6	6	2	....	....	5	88	8	96
11	35	....	37	12	11	....	7	1	1	91	13	104
12	87	....	81	6	21	....	16	1	21	226	7	233
13	79	10	143	17	16	....	25	4	26	2	289	33
14	104	3	192	20	21	....	116	6	59	5	492	34
15	131	2	198	29	9	....	174	5	146	6	658	42
16	123	....	179	35	16	....	265	24	233	14	816	73
17	81	....	178	29	15	....	849	28	283	8	1,406	65
Not Stated	111	2	229	20	21	....	533	11	186	6	1,080	39
Total	849	17	1,282	177	148	3	1,986	80	964	41	5,229	318

An upward trend is evident in the figures for offences by children under eighteen years of age, as shown in the following table. The increase is largely due to minor offences, although convictions for offences against property more than doubled during the period.

CONVICTIONS OF JUVENILES

Year		Breaking, Entering and Stealing		Stealing, Receiving, etc.		Wilful Damage		Traffic Offences		Other Offences		Total Convictions		
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
1951	....	262	7	703	50	67	2	602	59	472	11	2,106	129	2,235
1952	....	307	1	685	63	70	....	647	37	572	23	2,281	124	2,405
1953	....	338	7	732	64	99	....	1,073	85	401	26	2,643	182	2,825
1954	....	490	2	871	82	115	2	1,102	67	510	30	3,088	183	3,271
1955	....	502	2	946	116	73	....	1,359	74	556	14	3,436	206	3,642
1956	....	468	5	1,078	102	90	2	1,753	66	826	29	4,215	204	4,419
1957	....	586	28	1,125	92	97	1	2,037	56	915	29	4,760	206	4,966
1958	....	664	5	1,229	131	162	2	2,067	77	1,231	38	5,353	253	5,606
1959	....	605	1	1,065	91	125	3	2,698	151	941	32	5,434	278	5,712
1960	....	849	17	1,282	177	148	3	1,986	80	964	41	5,229	318	5,547

Higher Courts

Details of penalties inflicted by the Higher Courts during the ten years ended 31st December, 1960 are shown in the following table.

HIGHER COURTS—NATURE OF PUNISHMENT OF DISTINCT PERSONS

Year	Bound Over		Fined		Imprisoned		Sentenced to Death		Total Convictions		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
1951	22	2	3	....	107	6	1	....	133	8	141
1952	52	4	9	2	139	6	1	....	201	12	213
1953	49	5	15	1	163	5	3	....	230	11	241
1954	39	1	5	....	168	3	....	....	212	4	216
1955	56	....	8	1	189	2	3	1	256	4	260
1956	37	5	3	....	184	10	2	....	226	15	241
1957	53	2	3	....	134	5	3	....	193	7	200
1958	55	3	7	1	185	4	....	....	247	8	255
1959	28	1	4	1	175	6	1	....	208	8	216
1960	45	1	2	....	132	2	1	....	180	3	183

Only two executions were carried out during the period. All other death sentences were commuted to life imprisonment.

Particulars of persons dealt with in Higher Courts are shown in the following table. Where a person was charged with more than one offence, only the most serious charge has been included.

HIGHER COURTS, 1960

Offence	Distinct Persons Charged			Distinct Persons Convicted		
	Males	Females	Total	Males	Females	Total
I—Offences against the Person—						
Murder	3	....	3	1	....	1
Attempted murder	3	....	3	1	....	1
Manslaughter	4	....	4	1	....	1
Negligent driving causing death	1	....	1	1	....	1
Rape	6	....	6	5	....	5
Incest	4	2	6	4	2	6
Unlawful carnal knowledge	2	....	2	....	....	....
Indecent assault	3	....	3	3	....	3
Indecent dealing	2	....	2	....	....	....
Unnatural offences	3	....	3	3	....	3
Abduction	1	....	1	1	....	1
Abortion	....	1	1	....	1	1
Bigamy	1	....	1	1	....	1
Assault, wounding, etc.	12	1	13	11	....	11
Total, Class I	45	4	49	32	3	35
II—Offences against Property—						
Robbery	6	....	6	6	....	6
Breaking, entering and stealing	91	....	91	88	....	88
Stealing, receiving, etc.	51	1	52	41	....	41
Arson	1	....	1	1	....	1
Wilful damage	2	....	2	2	....	2
Total, Class II	151	1	152	138	....	138
III—Forgery, Uttering and Offences against Currency						
	7	....	7	7	....	7
IV—Offences against Good Order						

V—Other Offences						
	4	1	5	3	....	3
GRAND TOTAL	207	6	213	180	3	183

Offences by Aborigines

Particulars are given in the next table of charges brought against aboriginal natives and convictions recorded in Magistrates' and Higher Courts during the year 1960. It will be seen that more than one-half of the charges are in connexion with the consumption of alcoholic liquor, which is denied most natives to whom the provisions of the Native Welfare Act, 1905–1960 apply.

OFFENCES BY ABORIGINALS, 1960

(Inclusive of concurrent offences)

Offence	Magistrates' Courts—						Higher Courts— Convictions		
	Charges			Summary Convictions					
	M.	F.	Total	M.	F.	Total	M.	F.	Total
I—Offences against the Person—									
Manslaughter	2	....	2	....	....	....	1	....	1
Attempted suicide .....	....	1	1	....	1	1	....	....	....
Rape	1	....	1	....	....	....	1	....	1
Unlawful carnal knowledge	6	....	6	6	....	6	....	....	....
Assault, wounding, etc.	113	16	129	99	12	111	1	....	1
Total, Class I	122	17	139	105	13	118	3	....	3
II—Offences against Property—									
Robbery	1	....	1	....	....	....	1	....	1
Breaking, entering and steal- ing	62	4	66	48	4	52	10	....	10
Unlawfully on premises	5	1	6	5	1	6	....	....	....
Stealing, receiving, etc.	160	15	175	146	12	158	2	....	2
Unlawfully using vehicle, etc.	47	2	49	42	2	44	....	....	....
Unlawfully killing animals	1	....	1	1	....	1	....	....	....
Wilful damage	40	15	55	37	15	52	....	....	....
Total, Class II	316	37	353	279	34	313	13	....	13
IV—Offences against Good Order—									
Drunkenness	1,462	376	1,838	1,452	375	1,827	....	....	....
Disorderliness	363	145	508	355	143	498	....	....	....
Vagrancy, etc.	63	11	74	60	11	71	....	....	....
Indecent behaviour	1	....	1	1	....	1	....	....	....
Escaping, resisting and hin- dering police	74	9	83	72	9	81	....	....	....
Other offences	1	....	1	1	....	1	....	....	....
Total, Class IV	1,964	541	2,505	1,941	538	2,479	....	....	....
V—Other Offences—									
Native Welfare Act :									
Receiving liquor	304	39	343	298	38	336	....	....	....
Supplying liquor to natives	102	11	113	97	11	108	....	....	....
Other offences	100	13	113	99	13	112	....	....	....
Traffic offences	275	2	277	260	1	261	....	....	....
Breaches of liquor laws	41	9	50	41	9	50	....	....	....
Other offences	71	2	73	66	2	68	....	....	....
Total, Class V	893	76	969	861	74	935	....	....	....
GRAND TOTAL	3,295	671	3,966	3,186	659	3,845	16	....	16

POLICE

The Western Australian Police Force comprises six main branches under the direction of the Commissioner of Police. The Commissioner is responsible to the Minister for Police and is assisted by a Deputy Commissioner.

Five branches, namely the Criminal Investigation Branch, the Uniformed Branch, the Weights and Measures Branch, the Traffic Branch and the Plainclothes Branch, are each headed by an Inspector-in-Charge. The Women Police form the sixth branch.

At the 30th June, 1960, the Police Force had a chief inspector, 32 inspectors, 194 sergeants and 900 constables. Of these, three were detective inspectors, 33 detective sergeants and 52 detective constables. In addition, there were thirteen women police, comprising two sergeants and eleven constables.

The Uniformed Branch comprises the main body of the Police Force and is responsible for the routine maintenance of law and order throughout the State. Where required, officers of the Branch act as Clerks of Courts and perform special duties for other government authorities.

The Criminal Investigation Branch is centred in Perth, with several sub-branches in the metropolitan area and at Albany, Bunbury, Geraldton, Kalgoorlie, Narrogin and Northam. The Branch is equipped with radio patrol cars and the usual facilities for work on fingerprints, photography and ballistics.

Special staffs attached to the Criminal Investigation Branch are responsible for security and for police work in connexion with gold stealing, pillaging and thefts from retail shops.

The Weights and Measures Branch—Officers of the Branch test and verify commercial weighing and measuring instruments and check quantities where goods are pre-packaged for sale.

The Traffic Branch has its principal office in Perth and has five suburban sub-branches. It is responsible for the regulation of traffic and the licensing of motor vehicles in the Metropolitan Traffic Area. In other parts of the State these functions are performed by the local government authorities. Licences to drive motor vehicles are issued by police officers throughout the State. Officers of the Branch instruct school children in the principles of road safety and assist the National Safety Council of Western Australia to conduct a school where young persons are instructed in the proper use of motor cycles. Traffic Education Classes, although held mainly for the instruction of minor offenders against traffic laws, also admit members of the public who attend voluntarily.

The Plainclothes Branch is mainly concerned with the enforcement of the liquor laws and laws for the suppression of vice and gaming. Licensing of firearms is also a responsibility of the Branch.

The Women Police—Policewomen are stationed at Perth, Fremantle and Kalgoorlie. They are mainly employed in police duties concerning women and children.

Police and Citizens' Youth Clubs are established by the Department to provide recreational facilities for young people and to give them an appreciation of civic responsibilities. In 1960, there were seven clubs in the metropolitan area and 22 in country districts, with a total membership of approximately 4,000.

PRISONS

There are two common gaols, at Fremantle and Broome, and seventeen police gaols in Western Australia. The prison at Barton's Mill and the Pardelup Prison Farm are outstations of the Fremantle Prison.

Fremantle Prison is divided into separate sections for females, prisoners on remand or awaiting trial, reformatory prisoners and others. There are workshops where prisoners are usefully employed in boot-making, carpentry, printing, tailoring and tinsmithing. A school is conducted by a teacher supplied by the Education Department, while tuition in technical subjects is available by correspondence.

At Barton's Mill, where prisoners are employed in cutting firewood, and at the Pardelup Prison Farm supervision is fairly open, but escapes are rare, the number of escapes from all gaols averaging only nine per year during the five years ended 30th June, 1960.

Broome gaol is situated in the northern part of the State and is mainly used for the imprisonment of aboriginal natives.

Police gaols are established in Perth and at other centres and are used for short-term prisoners and for prisoners awaiting trial. In addition, provision is made for holding prisoners for short periods at police stations throughout the State.

In the following table, which shows the number of prisoners received for penal imprisonment in gaols in Western Australia during the five years ended 30th June, 1960, a prisoner is counted once for each time he is received.

PRISONERS RECEIVED FOR PENAL IMPRISONMENT

Year	Prisoners other than Aboriginals			Aboriginals			Total Prisoners		
	M.	F.	Total	M.	F.	Total	M.	F.	Total
1955-56	2,705	132	2,837	735	200	935	3,440	332	3,772
1956-57	2,853	139	2,992	691	239	930	3,544	378	3,922
1957-58	2,680	167	2,847	723	221	944	3,403	388	3,791
1958-59	2,754	173	2,927	719	322	1,041	3,473	495	3,968
1959-60	2,822	181	3,003	785	289	1,074	3,607	470	4,077

In the next table a prisoner is counted only once in a particular year, irrespective of the number of times he is imprisoned during that year.

DISTINCT PERSONS IMPRISONED

Year	Prisoners other than Aboriginals			Aboriginals			Total Prisoners		
	M.	F.	Total	M.	F.	Total	M.	F.	Total
1955-56	1,581	72	1,653	431	80	511	2,012	152	2,164
1956-57	1,687	80	1,767	412	114	526	2,099	104	2,203
1957-58	1,572	80	1,652	444	109	553	2,016	189	2,205
1958-59	1,554	79	1,633	460	129	589	2,014	208	2,222
1959-60	1,612	86	1,698	479	128	607	2,091	214	2,305

The following table shows the number of prisoners, excluding trial and remand prisoners and debtors, in gaols in Western Australia at the 30th June in each of the years 1956 to 1960.

PRISONERS IN GAOL

Date	Prisoners other than Aboriginals			Aboriginals			Total Prisoners		
	M.	F.	Total	M.	F.	Total	M.	F.	Total
30th June :—									
1956	472	10	482	66	8	74	538	18	556
1957	478	10	488	80	2	82	558	12	570
1958	518	9	527	100	4	104	618	13	631
1959	468	9	477	92	15	107	560	24	584
1960	513	13	526	82	17	99	595	30	625

Remission of up to twenty-five per cent. of the sentence imposed is allowed to all prisoners for diligence and good conduct.

Prisoners may be sentenced by a Court to imprisonment for a finite term and thereafter to be detained at the Governor's pleasure. At the expiration of the finite sentence, these prisoners are placed in the reformatory section under the supervision of the Indeterminate Sentences Board. On the other hand, the Court may order that a prisoner be held during the Governor's pleasure without imposing a finite sentence. Such prisoners automatically come under the supervision of the Board. In addition, a prisoner serving a finite sentence may be transferred to the reformatory section on the recommendation of the Board.

The following table shows the number of prisoners under the supervision of the Indeterminate Sentences Board during the five years ended 30th June, 1960.

PRISONERS UNDER THE SUPERVISION OF INDETERMINATE SENTENCES BOARD

Year	Placed under Supervision during Year			Under Supervision at 30th June			
	Serving Indetermin- ate Sentence	Serving Finite Sentence	Total	In Reformatory Prison	On Parole	On Probation	Total
1955-56	12	26	38	39	31	12	82
1956-57	6	19	25	33	44	8	85
1957-58	13	24	37	47	28	17	92
1958-59	12	20	32	37	37	20	94
1959-60	12	8	20	34	28	23	85

CHAPTER VI—FINANCE

PART 1—PUBLIC FINANCE

In Western Australia there are three groups of authorities responsible for the collection and expenditure of public moneys. They are the State Government and associated semi-governmental authorities, the Commonwealth Government, and the local government authorities, comprising City Councils, Town Councils and Shire Councils.

COMMONWEALTH-STATE FINANCIAL RELATIONS

The Financial Agreement of 1927

Under the terms of the Financial Agreement, the Commonwealth Government took over from the States their public debts existing at the 30th June, 1927 and assumed responsibility for all future loan raisings by the Australian Governments. The Commonwealth also agreed to contribute annually for a period of 58 years from the 1st July, 1927 an amount of £7,584,912 towards the interest payable on the State debts, Western Australia's share of this amount being £473,432. A Sinking Fund, under the control of the National Debt Commission, was created to finance all State debts. In respect of the net public debts of the States at the 30th June, 1927, a contribution of 7s. 6d. per cent. per annum was prescribed, the Commonwealth paying one-third and the States the remaining two-thirds, each according to the amount of its net indebtedness at the date of transfer. All moneys and securities standing to the credit of sinking, redemption and similar funds of the States at the 30th June, 1929 were assigned to the National Debt Commission, except in cases where the conditions relating to a fund precluded a transfer.

In the case of loans raised by a State after the 30th June, 1927 it is provided that, for a period of 53 years from the date of the raising, the sinking fund contribution shall be at the rate of 10s. per cent. per annum shared equally between the Commonwealth and the State. This provision does not, however, apply to loans raised by a State to meet a revenue deficit. In respect of debt incurred in financing deficits accruing after the 30th June, 1927 and before the 1st July, 1935 it was agreed that until the 30th June, 1944 the rate of 10s. per cent. per annum shared equally between the Commonwealth and the State should operate, but that for a period of 39 years from the 1st July, 1944 the annual contribution should be 5s. per cent. from the Commonwealth and 15s. per cent. from the State. For the funding of all other revenue deficits contributions are at a rate of not less than 4 per cent. per annum to be paid wholly by the State.

The Australian Loan Council

The Australian Loan Council was established by the Financial Agreement Act of 1928 to co-ordinate the public borrowings of the Commonwealth and the States. The Council has as its Chairman the Prime Minister of the Commonwealth, or a Minister nominated by him, and the other members are the Premiers of the States or, in the absence of a Premier, a Minister nominated by him. The Commonwealth and each State submits to the Council a programme of its desired loan raisings during each financial year, including the amount of any revenue deficit to be funded. The Commonwealth Government's borrowings for defence purposes are expressly excluded from its submissions to the Council. If the Council decides that the total amount of the loan programme for a year cannot be borrowed at reasonable rates and conditions it decides the amount to be borrowed during the year, and may by unanimous decision allocate this amount between the Commonwealth and the States. Where the members fail to arrive at a unanimous decision the Commonwealth is entitled to a maximum of one-fifth of the total sum to be borrowed. Of the balance, each State is entitled to an amount in the proportion which its net loan expenditure during the preceding five years bears to the aggregate for all the States.

The Commonwealth Grants Commission

Section 96 of the Commonwealth Constitution provides that the States may be granted financial assistance and Western Australia, as one of the States experiencing peculiar financial disabilities under Federation, has regularly received assistance under this provision. In 1933 the Commonwealth Parliament passed the Commonwealth Grants Commission Act establishing a Commission of three members to inquire into and report on applications made by States for grants of financial aid. During the initial

period of its work the Commonwealth Grants Commission considered compensation for disabilities arising from Federation as a possible basis upon which its recommendations should be made. It considered also the basis of financial need. In its Third Report, submitted in 1936, the Commission finally rejected the principle of compensation for disabilities arising from Federation, and chose instead the principle of financial need, having come to the conclusion that "special grants are justified when a State through financial stress from any cause is unable efficiently to discharge its functions as a member of the Federation and should be determined by the amount of help found necessary to make it possible for that State by reasonable effort to function at a standard not appreciably below that of other States." Another essential feature of special grants, noted in the Commission's Second Report, is that they are "continuous in principle with other transfers of Commonwealth revenue to the States. They should be the amount required to complete the work begun by other transfers, and to reduce the financial inequality of the States sufficiently for the harmonious and effective working of Federal Government."

In each year from 1934-35, in respect of which the Commission made its first recommendation, Western Australia's application has resulted in a special grant. The amount received annually from 1955-56 to 1958-59, after authorization by the Commonwealth Parliament under a States Grants Act, and in 1959-60 under the States Grants (Special Assistance) Act 1959 is shown against the item "Special Grants" in the table on page 183.

Tax Reimbursements

With the passage of enabling legislation in 1942, the Commonwealth Government became the sole taxing authority in the field of income tax. At the time of introduction of this "uniform tax scheme," Western Australia was levying three separate taxes on incomes. These were income tax on individuals and on companies, a hospital fund contribution and a tax on the profits of gold-mining companies. The States Grants (Income Tax Reimbursement) Act of 1942 provided for the payment to each State of a fixed annual amount by way of financial assistance to compensate for loss of revenue from income tax. The Act was repealed in 1946 by the States Grants (Tax Reimbursement) Act which prescribed a fixed grant for each of the financial years 1946-47 and 1947-48 and, for subsequent years, an amount to be varied in accordance with changes in population and in average wages per person employed.

Special and Additional Financial Assistance

With the increasing financial needs of the States it became necessary for the Commonwealth Government to make grants in excess of those prescribed by the States Grants (Tax Reimbursement) Act 1946-1948. Financial aid was extended by a States Grants (Special Financial Assistance) Act passed in each year from 1951 to 1958 and by the States Grants (Additional Assistance) Act of 1958.

Financial Assistance Grants

The States Grants Act 1959 repealed the States Grants (Tax Reimbursement) Act and provided for a new system of annual payments which are described as "Financial Assistance Grants." The Act incorporates an arrangement, unanimously agreed to by the States at a Premiers' Conference in June, 1959, which is designed to eliminate the need for supplementary grants in the form of Special Financial Assistance and to reduce to a marginal level the special grants provided for under the Commonwealth Grants Commission Act 1933-1957.

The amount of the Financial Assistance Grant to Western Australia for 1959-60, the first year of operation of the scheme, is prescribed by the Act as £25,462,000. The grant is essentially a *per capita* payment, which varies as between States. In each year subsequent to 1959-60, this *per capita* payment is to be increased, if average wages paid in Australia as a whole increased in the preceding year, by a percentage equal to 1.1 times the percentage rise in average wages. By this means, not only are the effects on State finances of population changes and wage increases taken into account but a "betterment factor" is also introduced to enable a State Government to extend the range or improve the standard of its services.

The Act provides that the system may be reviewed in relation to grants for any year subsequent to 1964-65.

Other Financial Assistance

As well as providing general financial assistance to the States by means of grants, the Commonwealth Government allocates to them funds for specific purposes. These include moneys for roads (see letterpress, Chapter IX, Part 2), the tuberculosis campaign (Chapter V, Part 5), mental institutions

(Chapter V, Part 5), universities (Chapter V, Part 1) and also, in the case of Western Australia, for water-works (Chapter VII, Part 2) and the development of the part of the State north of 20°S. latitude (Chapter VII, Part 2). These payments, together with various forms of assistance to industries, are made from the Consolidated Revenue Fund. In addition, finance for housing (see letterpress, Chapter V, Part 4) is provided from Loan Fund, for social services and health services (Chapter V, Part 5) from the National Welfare Fund, for war and service pensions (Chapter V, Part 5) from Consolidated Revenue and for war service land settlement (Chapter VII, Part 1) from Consolidated Revenue and from Loan Fund.

FINANCIAL ASSISTANCE TO WESTERN AUSTRALIA

Consolidated Revenue Fund

The following table gives particulars of payments made by the Commonwealth Government from Consolidated Revenue Fund to or on behalf of the Government of Western Australia, as well as payments to industry in the form of subsidy or bounty, in each of the financial years 1955-56 to 1959-60. The items included are those dealt with in the corresponding paragraphs of the preceding section *Commonwealth-State Financial Relations*.

COMMONWEALTH CONSOLIDATED REVENUE FUND FINANCIAL ASSISTANCE TO WESTERN AUSTRALIA

Nature of Payment	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
PAID TO OR FOR STATE GOVERNMENT	£	£	£	£	£
Financial Agreement—					
Interest on State Debts	473,432	473,432	473,436	473,432	473,428
Sinking Fund on State Debts	428,240	454,590	497,313	526,238	578,401
Special Grants (a)	8,900,000	9,200,000	10,150,000	11,100,000	3,500,000
Tax Reimbursement Grants	11,251,429	12,250,928	13,061,264	13,773,042	....
Special Financial Assistance	1,060,354	1,454,163	1,901,825	2,401,520	....
Additional Financial Assistance ....	....	....	315,062	....	....
Financial Assistance Grants ....	....	....	....	....	25,462,000
Commonwealth Aid Roads—					
Grants	5,177,859	6,105,163	6,183,000	6,491,802	7,611,449
Special Assistance ....	....	....	475,000	475,000	....
Additional Grants ....	....	....	....	....	351,591
Tuberculosis Act—Reimbursement of Capital Ex- penditure	215,744	503,977	682,997	257,164	39,198
Mental Institutions—Contribution to Capital Ex- penditure	9,984	51,855	29,236	17,210	36,799
Grants for Universities	134,014	193,943	253,045	612,605	630,910
Western Australia Waterworks Grant	681,796	462,500	676,766	524,377	608,541
Development of North Western Australia ....	....	....	....	170,766	484,151
Encouragement of Meat Production	190,000	52,000	5,000	....	....
Tobacco Industry Assistance	4,340	5,000	3,750	....	....
Dairy Industry Extension Grant	13,540	19,043	14,762	13,250	10,648
Expansion of Agricultural Advisory Services	24,940	34,000	27,000	22,486	21,855
Other Payments	29,461	26,608	29,628	27,333	23,666
Total	28,600,133	31,287,202	34,779,084	36,890,025	39,832,637
SUBSIDIES AND BOUNTIES					
Subsidies—					
Dairy Industry	506,000	500,000	545,000	450,000	455,000
Gold-mining Industry	299,830	426,811	525,237	755,090	728,740
Bounties—					
Tractor	53,815	158,303	129,100	172,599	371,767
Sulphuric Acid	132,995	77,508	95,458	211,156	280,268
Flax Fibre	10,537	10,265	4,050	19,574	14,249
Copper ....	....	....	....	6,201	4,254
Total	1,003,177	1,172,887	1,298,845	1,614,620	1,854,278
GRAND TOTAL	29,603,310	32,460,089	36,077,929	38,504,645	41,686,915

(a) See letterpress *The Commonwealth Grants Commission* on pages 181-2.

National Welfare Fund

The National Welfare Fund was established in 1943 by the National Welfare Fund Act passed by the Commonwealth Parliament in that year. The purpose of the Fund is to provide for the payment of social service and health benefits. From 1952-53, the Fund has been financed by the transfer each year from Consolidated Revenue of a sum equal to the amount paid out during the year. Its principal sources of revenue had previously been Pay-roll Tax collections and the Social Services Contribution which until 1950-51 was levied as a separate tax upon incomes but is now amalgamated with the normal Income Tax.

Details of the amounts paid in Western Australia from the National Welfare Fund in each financial year from 1955-56 to 1959-60 are given in the following table.

NATIONAL WELFARE FUND—PAYMENTS IN WESTERN AUSTRALIA

Pension or Benefit	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
	£	£	£	£	£
Social Services—					
Age and Invalid Pensions	6,681,441	7,253,944	8,077,093	8,622,166	9,916,337
Rehabilitation Service	61,426	70,770	79,428	93,322	85,370
Funeral Benefits	22,530	23,170	23,482	23,244	24,153
Widows' Pensions	530,751	612,271	707,480	800,460	913,589
Unemployment and Sickness Benefits—					
Unemployment	*77,589	336,846	482,735	654,387	564,491
Sickness	*93,153	96,907	130,959	159,230	163,528
Special	16,291	14,055	18,696	23,110	23,898
Maternity Allowances	276,123	271,129	271,032	266,760	274,816
Child Endowment	4,684,167	4,461,588	4,571,540	5,197,754	4,859,840
National Health Services—					
Hospital Benefits—					
Ordinary	617,979	594,007	644,149	720,164	740,266
Additional	161,314	177,875	286,032	565,493	793,818
Special Account Deficits (a) .....	....	....	....	....	141,604
Medical Benefits—					
Ordinary	532,501	600,727	656,813	699,802	842,856
Special Account Deficits (a) .....	....	....	....	....	3,384
Medical Benefits for Pensioners	198,243	194,421	216,113	258,836	274,503
Pharmaceutical Benefits	717,498	698,473	863,884	1,221,487	1,337,231
Pharmaceutical Benefits for Pensioners	95,553	113,632	139,282	175,557	251,829
Nutrition of Children	136,361	157,809	152,600	182,249	228,797
Tuberculosis Campaign—					
Allowances	111,295	91,545	76,109	78,084	70,230
Maintenance (b)	397,349	469,945	444,410	557,969	511,505
Miscellaneous (a)	10,863	12,470	12,975	14,334	17,237
Rental Rebates (c) .....	....	....	....	25,000	....
TOTAL	15,422,427	16,251,584	17,853,812	20,339,408	22,039,282

(a) See letterpress *National Health Services*, Chapter V Part 5. (b) Figures exclude payments and reimbursements from Consolidated Revenue Fund in respect to capital expenditure by the State Government. See preceding table. (c) Represents an interim payment towards the Commonwealth's contribution of three-fifths of rental losses incurred under the Commonwealth and State Housing Agreement Act 1945 (see letterpress *Operations under the Commonwealth and State Housing Agreement*, Chapter V Part 4). * Revised.

The conditions applying to the payment of social service and health benefits are summarized in Chapter V, Part 5.

COMMONWEALTH TAXATION COLLECTIONS IN WESTERN AUSTRALIA

The taxes levied in Western Australia by the Commonwealth Government are listed in the following table. Reference to Customs and Excise Duties is made in Chapter IX, Part 1. The rates and conditions relating to the imposition of other duties, taxes and charges are summarized in the *Pocket Year Book of Western Australia* and in the *Official Year Book of the Commonwealth of Australia*.

It is important to note that, although the figures shown in the table represent the amounts of taxes actually collected in Western Australia, they do not necessarily indicate the amounts contributed by the people of the State, as moneys may be collected in one State in respect of goods consumed or assessments made in other States.

COMMONWEALTH TAXATION—NET COLLECTIONS IN WESTERN AUSTRALIA

Tax, Duty, Charge or Levy	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
	£	£	£	£	£
Customs	3,630,068	2,424,738	2,590,594	2,202,278	2,664,410
Excise	12,032,979	15,022,692	16,120,407	16,075,070	16,761,681
Sales Tax	5,652,058	6,345,967	6,869,322	7,176,057	8,694,910
Income Tax and Social Services Contribution	26,376,217	30,081,626	29,586,257	27,874,728	29,818,902
Pay-roll Tax	2,732,959	2,824,293	2,795,843	2,830,333	3,030,006
Estate Duty	601,948	767,408	629,457	432,809	530,775
Gift Duty	124,362	140,083	159,231	152,142	132,701
Entertainments Tax (a)	18	....	....	....	....
Wool Tax (b)	92,491	95,593	135,994	147,719	152,603
Stevedoring Industry Charge (b)	87,306	180,119	319,771	439,712	380,740
Export Charges on Primary Products (b)	13,626	14,942	12,725	20,372	18,581
Tobacco Charge (b) .....	....	1,522	1,920	2,455	3,248
Dairy Produce Levy (b) .....	....	....	....	2,879	11,524
Canning-Fruit Charge (b) .....	....	....	....	....	23
TOTAL	51,344,032	57,898,978	59,221,621	57,356,554	62,180,104

(a) Entertainments Tax discontinued as a Commonwealth tax, 30th September, 1953; amount shown represents arrears. (b) Paid to trust or other account for the purposes of the industry concerned.

STATE GOVERNMENT FINANCE

Moneys collected and expended by the State Government are dealt with through accounts based on funds of three types, the Consolidated Revenue Fund, the General Loan Fund and Trust Funds. The transactions of these Funds are summarized in the Public Accounts prepared each year by the Treasurer and in the Financial Statement presented to the Parliament by the Treasurer in introducing the annual budget.

Consolidated Revenue Fund

All State revenues, apart from those which are credited to trust or special accounts, are paid into the Consolidated Revenue Fund. Disbursements from the Fund are authorized by the Parliament, each year under an Appropriation Act, or under Special Acts subject to periodical review. Among the permanent appropriations by Special Acts are such items as the salaries of the Governor, the Judges of the Supreme Court and Members of Parliament, interest charges on the public debt, contributions to the Public Debt Sinking Fund, payments to the State Superannuation Fund and the annual subsidy to the University of Western Australia.

The principal sources of revenue, as shown in the following table, are the grants and other financial assistance received from the Commonwealth Government; the income of public utilities; departmental revenues from reimbursements, fees and services; taxation; and territorial revenues.

The payments made to Western Australia by the Commonwealth Government from Consolidated Revenue during each of the years from 1955-56 to 1959-60 appear in the table on page 183. Not all of these moneys are paid to the State Consolidated Revenue Fund, as some of them are provided for specific purposes and are therefore paid to trust or other accounts.

CONSOLIDATED REVENUE FUND—SOURCES OF REVENUE

Nature of Revenue	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Collected by the State—	£	£	£	£	£
Taxation (a)	4,019,463	4,514,227	5,366,954	5,184,153	5,917,223
Territorial Revenues (b)	1,248,828	1,216,345	1,258,135	1,391,548	1,438,943
Public Utilities—					
Railways, Tramways and Omnibuses	14,003,369	15,380,352	13,833,375	14,435,914	15,662,491
Water Supplies, Sewerage and Drainage	2,686,263	2,897,351	3,143,537	3,301,572	3,341,915
Other Public Utilities	296,099	(c) 288,843	(c) 285,738	(c) 302,549	(c) 282,997
Departmental Revenue—Reimbursements, Fees, etc.	4,889,376	(c) 6,273,964	(c) 6,819,805	(c) 7,261,009	(c) 7,848,174
State Trading Concerns (c)	395,363				
Other	389,430	381,329	444,846	443,498	460,741
Total	27,927,191	30,952,411	31,152,390	32,320,243	34,952,484
Received from the Commonwealth (d)—					
Interest on State Debts	473,432	473,432	473,436	473,432	473,428
Special Grants	8,900,000	9,200,000	10,150,000	11,100,000	3,500,000
Tax Reimbursement Grants	11,251,429	12,250,928	13,061,264	13,773,042	...
Special Financial Assistance	1,060,354	1,454,163	1,901,825	2,401,520	...
Additional Financial Assistance ....	...	...	315,062	...	...
Financial Assistance Grants ....	...	...	...	...	25,462,000
Total	21,685,215	23,378,523	25,901,587	27,747,994	29,435,428
GRAND TOTAL	49,612,406	54,330,934	57,053,977	60,068,237	64,387,912

(a) Figures include small amounts representing arrears of State income taxes collected by the Commonwealth. For net amounts collected, see table *Net Collections of State Taxation* on page 186. (b) Comprises revenue from sales, leases and licences relating to lands, timber and mining. (c) From 1956-57, figures for Fremantle Harbour Trust, previously included in *Other Public Utilities*, and those for *State Trading Concerns* have been included in the item *Departmental Revenue*. (d) See table on page 183.

Approximately three-fifths of the revenue collected by the State comes from public utilities, predominant among which are transport undertakings owned and operated by the Government. Next in importance in earnings from public utilities is the income from water supplies, which include the metropolitan and country areas systems and sewerage, drainage and irrigation services.

Departmental revenues amount to more than one-fifth of all receipts, the main contributing Departments in 1959-60 being Treasury (£4,079,970, including £3,492,561 on account of interest and sinking funds), Harbour and Light (£436,150), Forests (£315,269), Printing (£290,404), Police (£268,937), Public

Works (£254,589) and Agriculture (£249,133). In the Public Accounts for the financial year 1956-57 certain changes were made in the treatment of revenue collected from the State Trading Concerns. Previously credits to Consolidated Revenue Fund from the Trading Concerns, comprising State Brickworks and State Saw Mills (amalgamated from the 1st July, 1957 under the name of "State Building Supplies"), State Hotels, State Engineering Works, State Shipping Service, Wyndham Meatworks and West Australian Meat Export Works, had been grouped under the headings of Interest, Sinking Fund, Profits and Departmental Charges. These "Departmental Charges" represented recoups to Consolidated Revenue for services rendered to the Concerns by Government Departments. For 1956-57 and later years recoups of these charges have been included in the revenue of the Departments concerned while Profits, Interest and Sinking Fund charges have been included in Treasury revenue.

Although the figures appearing against the item "Taxation" are described as having been "collected by the State" they do, in fact, include small sums representing arrears of State income taxes collected by the Commonwealth. Otherwise the amounts shown comprise Consolidated Revenue Fund receipts from probate and succession duties, stamp duties, land tax, entertainments tax, liquor licences, totalisator duty and licences, bookmakers' turnover tax, bookmakers' licences and certain other licences. Some account of the rates and conditions applying to these and other levies is given in the *Pocket Year Book of Western Australia*.

Territorial revenues are those derived from sales of Crown land and the issue of leases, licences and permits in connexion with land, mining and timber. Reference to the several types of tenure in these categories will be found in Chapter VII, Part 1—*Land Tenure and Settlement*.

The following table gives details of net collections of State taxation. Payments to trust or special accounts as well as to Consolidated Revenue are shown. The collections are grouped according to the nature of the tax rather than the method of collection. Thus stamp duties on betting tickets and revenue from bookmakers' licences and totalisator licences are included under the heading "Racing" and not under "Stamp Duties" or "Licences." It will be seen that, although the figures represent net collec-

NET COLLECTIONS OF STATE TAXATION

Nature of Tax	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Paid to Consolidated Revenue Fund—					
Probate and Succession Duties	£ 1,083,922	\$ 1,004,450	£ 1,083,036	£ 1,083,867	£ 1,285,472
Stamp Duties not elsewhere included	1,194,188	1,249,995	1,415,791	1,480,095	1,786,919
Land	517,389	(a) 994,148	(a) 1,402,003	1,220,759	1,285,168
Income (Arrears)	1,479	670	2,338	81	...
Entertainments	255,922	271,654	285,093	291,107	268,814
Liquor	300,544	367,440	422,755	446,341	456,162
Racing	621,503	593,974	718,804	626,951	791,405
Motor Vehicle—					
Drivers' and Riders' Licences and Fees (b)	103,639	116,588	128,814	137,562	(c) 17,158
Transport Board Licences (c)	220	220	220	110	...
Licences not elsewhere included	40,429	43,769	62,414	64,758	67,993
Total	4,119,235	4,642,908	5,521,208	5,352,231	5,959,091
Paid to Trust or Special Accounts—					
Motor Vehicle—					
Registration Fees (d)	1,291,139	1,585,014	1,984,026	2,102,354	2,431,030
Drivers' and Riders' Licences (e) (f)	...	...	...	...	164,863
Passenger and Carriers' Licences	15,101	17,874	18,858	19,562	20,340
Transport Board Licences (e)	105,495	91,285	92,650	65,011	60,136
Other Vehicle Registration Fees	2,786	2,795	2,464	1,785	1,840
Land	...	(a) 100,000	(a) 100,000	...	...
Metropolitan Region Improvement	...	...	...	...	210,593
Vermine—					
Fruit Fly Eradication	10,512	10,948	11,626	11,567	16,895
Other	87,919	(g) 20,698	(g) 2,346	77,864	113,435
Total	1,512,952	1,828,614	2,211,970	2,278,143	3,019,132
GRAND TOTAL	5,632,187	6,471,522	7,733,178	7,630,374	8,978,223

(a) For 1956-57 and 1957-58, total net collections of Land Tax were £1,094,148 and £1,502,003 respectively, of which amounts £100,000 was paid in each year to the Vermine Act Trust Account under the provisions of the Vermine Act Amendment Act (No. 2), 1956. (b) Includes conductors' licences. (c) Part collections only; for amounts paid to Trust or Special Accounts, see below. (d) For purposes of comparison with other States, fees collected and retained by local government authorities outside the Metropolitan Traffic Area have been treated as State Taxation and included here. See also table *Summary of Local Government Revenue* on page 194. (e) Part collections only; for amounts paid to Consolidated Revenue Fund, see above. (f) See letterpress *Finance for Roads*, Chapter IX Part 2. (g) See note (a).

tions, the aggregates of the amounts shown as payments to the Consolidated Revenue Fund exceed those appearing as taxation revenue (gross) in the preceding table. This is accounted for by the fact that some types of licences are not included under the heading of taxation in the Public Accounts, earnings from them being credited to departmental revenue. One of the items dealt with in this way is that shown as "Motor Vehicle" taxation in the first part of the table. Others are licences relating to firearms; factories and shops; fishing, pearling and game; explosives; and marine collectors.

Expenditure from the Consolidated Revenue Fund in each of the financial years 1955-56 to 1959-60 is shown in the following table.

More than two-fifths of the total represents expenditure under the heading "Departmental," and of this almost one-half is attributable to Education and Public Health. Further large sums are accounted for by Police, Public Works and Buildings, Mental Health Services and Agriculture. Another significant item is that shown as "State Shipping Service—Loss." By a provision of the State Trading Concerns Act of 1917, any loss sustained by a Concern is to be treated in such manner as the Treasurer shall direct and it has been the practice to make good from Consolidated Revenue the losses of the State Shipping Service.

Expenditure on public utilities amounts to approximately one-third of the total, the predominant item being transport undertakings.

Commitments under Special Acts account for about one-fifth of all expenditure. The principal amounts relate to Loan Acts and are applied to interest charges on the public debt and contributions to the Public Debt Sinking Fund. Another large item is expenditure incurred under the Superannuation and Family Benefits Act, 1938-1960 and other legislation providing pensions for government employees.

CONSOLIDATED REVENUE FUND EXPENDITURE ACCORDING TO NATURE OF SERVICE

Nature of Expenditure	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Expenditure on Public Utilities—					
Railways, Tramways and Omnibuses	£ 16,878,369	£ 18,138,362	£ 17,098,306	£ 17,111,289	£ 17,878,818
Water Supplies, Sewerage and Drainage	2,306,678	2,454,410	2,541,471	2,617,923	2,900,221
Other	406,941	418,062	411,844	429,227	430,027
Total	19,591,988	21,010,834	20,051,621	20,158,439	21,209,066
Departmental Expenditure—					
Agriculture	700,730	808,925	828,800	865,282	973,631
Child Welfare and Outdoor Relief	351,498	498,598	633,410	718,330	653,541
Crown Law	469,063	522,620	549,235	583,610	646,285
Education	6,240,768	6,818,031	7,586,227	7,909,615	8,640,807
Forests	323,929	331,695	391,293	369,500	404,700
Harbour and Light and Jetties	179,255	224,545	233,080	235,988	277,058
Lands and Surveys	618,431	726,226	764,361	770,334	826,819
Mental Health Services	797,543	862,665	888,920	935,152	1,059,248
Mines	379,170	408,652	412,702	414,175	461,400
Native Welfare	407,343	437,350	518,766	580,763	625,149
Police	1,442,756	1,558,838	1,676,188	1,755,896	1,921,498
Printing	392,793	444,105	434,427	473,724	496,820
Public Health	3,874,269	4,171,054	4,624,298	5,048,354	5,723,062
Public Works and Buildings	1,377,683	1,410,639	1,506,426	1,536,200	1,636,149
State Shipping Service—Loss	706,611	1,077,217	728,859	963,145	911,898
Treasury	133,231	159,636	156,357	156,778	167,815
Other	3,268,237	3,713,389	3,951,894	5,198,402	4,927,853
Total	21,663,310	24,174,185	25,885,263	28,515,248	30,353,739
Expenditure under Special Acts—					
Forests Act	751,759	745,962	757,768	775,047	762,602
Loan Acts (Public Debt)—					
Interest	6,306,882	6,991,560	7,941,711	8,545,825	9,428,506
Sinking Fund Contributions	1,418,509	1,529,740	1,709,825	1,876,104	2,007,872
Parliamentary Allowances	174,765	189,674	190,875	190,960	193,423
Superannuation Acts—Government Employees	856,745	894,897	926,870	983,319	975,922
University of Western Australia Act	250,000	250,000	250,000	250,000	250,000
Other	346,270	361,862	373,122	383,491	417,856
Total	10,104,930	10,963,695	12,150,171	12,984,746	14,126,181
Other Expenditure	83,009	94,588	90,252	94,537	104,740
GRAND TOTAL	51,443,237	56,243,302	58,177,307	61,752,970	65,793,726

The amount paid under the Forests Act, 1918-1954 represents nine-tenths of the net annual revenue of the Department and is credited to a fund for forests improvement and reforestation. The University of Western Australia Act, 1911-1957 provides for the payment of an annual subsidy of £250,000 and "such additional amounts as may be appropriated by Parliament from time to time." In 1959-60 additional payments amounting to £472,103 were made from Departmental Expenditure. Further details of University finance are given in Chapter V, Part 1.

The particulars shown in the preceding table and in the table on page 185 are an abridged form of the presentation given in the Public Accounts. It is, of course, possible to present the figures of income and expenditure of the Consolidated Revenue Fund on other bases for particular purposes. One such grouping is a dissection according to function as in the following table. The classification used is one which was devised by the Conference of Australian Statisticians and has been summarized for the purposes of this table from a more detailed statement appearing in the *Statistical Register of Western Australia—Part II, Public Finance*.

The table is designed to show (in respect to the Consolidated Revenue Fund only) the gross and net cost of each function of Government irrespective of the Department or Departments administering these functions. In cases where an activity is such that it involves more than one function, each of its components has been included in that function which is considered to be the most appropriate. For example, in classifying revenue and expenditure attributable to the care of aboriginals, the education of natives is included in "Education," and hospitals for natives in "Public Health," only the balance being assigned to the item "Welfare."

CONSOLIDATED REVENUE FUND REVENUE AND EXPENDITURE CLASSIFIED ACCORDING TO FUNCTION

Function	Financial Year					
	1958-59			1959-60		
	Revenue	Expenditure		Revenue	Expenditure	
		Gross	Net		Gross	Net
Legislation	£ 3	£ 410,128	£ 410,125	....	£ 445,513	£ 445,513
General Administration and Services (N.E.I.)	33,437,713	2,924,738	Cr. 30,512,975	35,820,685	2,116,874	Cr. 33,709,811
Law, Order and Public Safety	574,431	2,046,542	2,072,111	626,428	2,887,394	2,200,966
Education	183,362	9,238,951	9,055,599	211,080	10,061,557	9,850,477
Cultural and Recreational Facilities	754,030	230,141	230,141	1,733	280,314	278,581
Public Health	341,726	6,196,893	5,442,803	733,079	7,035,855	6,302,176
Welfare .....	....	1,607,768	1,260,042	377,805	1,648,636	1,270,831
War and Defence .....	....	600	600	....	1,100	1,100
Immigration .....	....	21,861	21,861	....	21,462	21,462
Regulation of Trade and Industry and Industrial Safety	88,203	204,778	116,575	97,361	224,956	127,595
Development and Conservation of National Resources and Assistance to Industry	6,071,409	7,510,293	1,438,884	6,149,296	8,382,581	2,233,285
Transport and Communication	14,895,170	18,687,899	3,792,729	16,166,574	19,480,968	3,314,394
Power, Fuel and Light .....	....	7,247	....	....	731	731
Housing .....	....	24,253	17,006	6,045	16,131	10,086
Banking and Insurance	29,928	24,700	Cr. 5,228	68,893	15,789	Cr. 53,104
Public Debt Charges	3,685,015	(a) 10,913,101	7,228,086	4,122,333	(a) 12,049,324	7,926,991
Miscellaneous .....	....	1,104,324	1,104,324	....	1,124,541	1,124,541
TOTAL	60,068,237	61,752,970	1,684,733	64,387,912	65,793,726	1,405,814

(a) Comprises the amounts shown under "Loan Acts (Public Debt)" in the preceding table and exchange on interest payments and other charges aggregating £491,172 in 1958-59 and £522,946 in 1959-60.

The amount shown as revenue under the heading "General Administration and Services, not elsewhere included" is more than one-half of the total. The item includes receipts from the Commonwealth in the form of Special Grants, Tax Reimbursement Grant, Special Financial Assistance and Financial Assistance Grant (see table on page 183) as well as Taxation collected by the State (see table on page 185), amounting in all to £32,458,715 in 1958-59 and £34,879,223 in 1959-60.

By a provision of the State Government Insurance Office Act, 1938-1958 the State Government Insurance Office is required to pay each year to the Treasury the equivalent of the amount of State taxes on profits or income that any insurance company, other than a life assurance company, would be liable to pay. The amounts shown as revenue under Banking and Insurance include sums of £26,508 for 1958-59 and £54,537 for 1959-60 in relation to such payments. The remainder of the revenue included under this heading comprises rental charges for the leasing of bank premises and of portion of the State Government Insurance Office Building. The expenditure under the heading of Banking and Insurance represents a recoup from the Treasury to the Rural and Industries Bank of Western Australia of administration expenses incurred in the conduct of its Government Agency Department.

General Loan Fund and Public Debt

General Loan Fund—The first Loan Act in Western Australia was assented to in 1872 and gave authority for the raising of a loan for public works, mainly in connexion with harbours and rivers, for the purchase of the Perth-Fremantle telegraph line and for railway surveys in the Champion Bay district. A General Loan Fund was established by the Loans Consolidation Act of 1896 which provided for the merging in the Fund of all loan balances unexpended at the 30th June, 1896, and since that time the proceeds of each new loan have been paid to the credit of the General Loan Fund.

The principal net expenditures from the General Loan Fund during the five years ended 30th June, 1960 were those relating to Water Supplies, Sewerage and Drainage (£19,135,610), Public Buildings (£15,904,685), Railways, Tramways and Omnibuses (£13,265,970), Housing (£6,934,154), Electricity Supply (£6,241,196) and Harbours and Rivers (£3,393,820).

NET LOAN EXPENDITURE

Nature of Expenditure	From 1872 to 30th June, 1955	Financial Year					From 1872 to 30th June, 1960
		1955-56	1956-57	1957-58	1958-59	1959-60	
Public Works, Services, etc.—	£	£	£	£	£	£	£
Railways, Tramways and Omnibuses	57,289,534	3,069,649	2,759,379	2,104,682	2,855,615	2,476,645	70,555,504
Electricity Supply	14,482,289	1,024,690	2,100,000	1,240,000	1,100,000	776,506	20,723,485
Harbours and Rivers	13,717,192	819,147	475,057	699,109	713,790	686,717	17,111,012
Public Buildings—							
Schools	6,991,350	1,379,859	1,586,554	1,651,381	1,777,206	2,106,332	15,492,682
Hospitals	5,288,039	522,976	973,539	894,828	1,123,006	1,368,137	10,170,525
Other	1,747,273	190,810	239,409	399,099	804,758	886,791	4,268,140
Housing (a)	5,726,340	1,829,079	1,359,175	1,149,387	1,353,011	1,243,502	12,660,494
Water Supplies, Sewerage and Drainage	34,013,262	2,758,108	3,559,439	3,847,128	4,197,363	4,773,572	53,148,872
Development of Goldfields and Mineral Resources	5,962,334	73,360	307,654	517,394	442,431	226,476	7,529,649
Development of Agriculture	26,606,014	*26,186	*181,090	*161,821	218,948	202,626	27,396,685
Miscellaneous	20,400,394	*1,620,451	*2,736,715	*1,470,956	1,584,997	1,504,718	29,318,231
Total	192,224,021	13,314,315	16,278,011	14,135,785	16,171,125	16,252,022	268,375,279
Other Expenditure—							
Discounts and Flotation Expenses	6,153,796	Cr. 12,755	1,585,719	Cr. 200,398	Cr. 680,683	Cr. 415,415	6,430,264
Revenue Deficits	12,175,166	157,883	463,723	1,508,831	570,368	1,432,330	16,308,291
Total	18,328,952	145,128	2,049,442	1,308,433	Cr. 110,315	1,016,915	22,738,555
GRAND TOTAL	210,552,973	13,459,443	18,327,453	15,444,218	16,060,810	17,268,937	291,113,834

(a) Excludes expenditure from Commonwealth loans under Commonwealth-State Housing Agreement. See letter-press, Chapter V Part 4. * Revised.

Expenditure on Water Supplies, Sewerage and Drainage included the cost of work on the Comprehensive Water Supply Scheme, a pipehead dam and the main dam at Serpentine and associated reticulation works, the raising of the wall of Wellington Dam, developmental and improvement work in irrigation districts, sewerage works construction and extension of services in the metropolitan area and in country towns, water supplies for towns and stock routes in northern and north-western areas, irrigation works at Uralla Creek in the Kimberley and investigations and surveys on the Fitzroy and Ord Rivers. An account of progress in the field of water conservation and supply is given in Chapter VII, Part 2.

Of the total expenditure of £15,904,685 on Public Buildings, £8,501,332, or more than one-half, was spent on the construction of new schools and additions or improvements to existing schools. Work on the completion of the second section of the Royal Perth Hospital and the provision of new or improved hospitals in both metropolitan and country areas accounted for £4,882,486. Other expenditure included the cost of work on the construction of a new Government Printing Office, a reformatory institution for boys at Caversham, extensions to Parliament House and the Supreme Court building and the erection of new court houses and police stations at a number of centres.

Expenditure under the heading of Railways, Tramways and Omnibuses included the cost of new rolling stock, maintenance and renewals of permanent way, the installation of centralized railway traffic control, the extension of trolley-bus services in Perth and suburbs and a major overhaul of trolley-buses and motor omnibuses. Advances were made in 1958-59 and 1959-60 for the acquisition of transport services by the Metropolitan (Perth) Passenger Transport Trust and for the purchase of new omnibuses. Reference is made to the operations of the Trust in Chapter IX, Part 2.

The amounts shown under the heading of Housing consist mainly of additional capital provided to the State Housing Commission for the erection of houses, land acquisition and development and assistance to home builders. The expenditure, which relates only to the General Loan Fund, does not, of course, include moneys applied to the Commission's purposes from Commonwealth loans under the Commonwealth-State Housing Agreement. Reference to the Agreement and to the work of the State Housing Commission will be found in Chapter V, Part 4.

Expenditure attributed to Electricity Supply includes amounts spent by the State Electricity Commission on power stations at South Fremantle, East Perth and Bunbury, the development of the South-West Power Scheme and the conversion of metropolitan consumers' equipment and appliances necessitated by a change in frequency from 40 cycles to 50 cycles. The figures do not represent all of the Commission's expenditure as they refer only to the General Loan Fund and therefore exclude moneys available to the Commission from its own public loan raisings. The activities of the State Electricity Commission are described in Chapter VIII, Part 2.

The principal works under the heading of Harbours and Rivers were those undertaken at the Port of Fremantle, including additional berthing accommodation, the reconstruction of quays and the installation of new mechanical equipment, the completion of a new signal station, dredging, the provision of navigational aids and the construction and improvement of slipways. Among other works were the extension of berthing facilities at Albany, harbour and wharf improvements at Bunbury and Geraldton and at ports on the north and north-west coasts, and the construction of a fishing-boat harbour at Geraldton.

Expenditure on the Development of Goldfields and Mineral Resources refers to moneys spent on assistance to prospectors, loans to mine owners, drilling in connexion with mineral exploration, hydrological drilling and miscellaneous works at various State Batteries. It also includes advances on account of the Wundowie Charcoal Iron and Steel Industry for completion of a new blast furnace and improvements and extensions to the existing plant, and for the installation of iron ore crushing equipment at Koolyanobbing for the increase of supplies to Wundowie.

Expenditure under the heading of Development of Agriculture includes the cost of a new administrative building and laboratories for the Department of Agriculture at South Perth, improvements to research stations operated by the Department and to the Agricultural College at Muresk, the purchase of land for a horticultural research station, work on a ground water utilization centre at Wiluna, land regeneration at Ord River and assistance to the flax industry.

The aggregate expenditure described as "Miscellaneous" amounted to £8,917,837, of which £2,910,790, or almost one-third, was used to provide additional capital for the Rural and Industries Bank of Western Australia and to finance advances by the Bank to primary and secondary industries. A further sum of £2,391,316 was spent on account of the State Shipping Service in progress payments on new ships under construction, instalment payments on ships already in operation and structural alterations to some of its fleet. The remaining expenditure relates to such items as industrial development and assistance to industry, including loan advances made to Cockburn Cement Pty. Ltd. under the provisions of the Industry (Advances) Act, 1947-1959, the purchase and resumption of land for industrial purposes, and development of a light industrial area at Kwinana, pine planting, and loans and grants to a number of welfare organizations.

Public Debt—Reference is made on page 181 to the National Debt Commission and its functions in relation to the public debts of the States.

Western Australia's gross public debt at the 30th June, 1960 was £246,787,292, compared with £177,881,349 at the 30th June, 1955, representing an increase of £68,905,943 during the five years. Total raisings in the financial years 1955-56 to 1959-60 amounted to £80,052,227 and the value of securities repurchased and redeemed in London, New York and Australia by the National Debt Commission was £11,146,284. The State's balance on Sinking Fund available to the National Debt Commission at the 30th June, 1960 was £85,529 and Western Australia's net public debt at that date was therefore £246,701,763.

The following table presents a summary of public debt transactions in each year of the period between the 30th June, 1955 and the 30th June, 1960 and provides a reconciliation between public debt and the aggregate net loan expenditure to each of those dates as shown in the preceding table.

NET LOAN EXPENDITURE AND PUBLIC DEBT

Particulars	As at 30th June :—					
	1955	1956	1957	1958	1959	1960
Debits—	£	£	£	£	£	£
Aggregate Net Loan Expenditure	(a)210,552,973	224,012,416	242,339,869	257,784,087	273,844,897	(a)291,113,834
Inscribed Stock issued under Agricultural Bank Act	1,566,000	1,566,000	1,566,000	1,566,000	1,566,000	1,566,000
Unexpended Balance of General Loan Fund	512,651	....	....	....	....	4,017
Total Debits	212,631,624	225,578,416	243,905,869	259,350,087	275,410,897	292,683,851
Credits—						
Aggregate Redemptions	34,750,275	36,729,991	38,757,939	40,921,495	43,292,155	45,896,559
Over-expenditure from General Loan Fund .....	....	115,685	2,887	147	163	....
Total Credits	34,750,275	36,845,676	38,760,826	40,921,642	43,292,318	45,896,559
Balance—Gross Public Debt	177,881,349	188,732,740	205,145,043	218,428,445	232,118,579	246,787,292
Amount of Public Debt Maturing in :—						
London	35,770,204	35,770,204	29,585,490	29,530,491	30,630,491	30,490,491
New York	1,037,912	1,125,244	1,148,259	1,525,326	1,912,873	2,249,049
Australia	141,073,233	151,837,292	174,411,294	187,372,628	199,575,215	214,047,752
Total—Gross Public Debt	177,881,349	188,732,740	205,145,043	218,428,445	232,118,579	246,787,292
Sinking Fund available for further Debt Redemption	221,058	122,377	55,918	73,659	86,437	85,529
Net Public Debt	177,660,291	188,610,363	205,089,125	218,354,786	232,032,142	246,701,763

(a) From preceding table.

Trust Funds

The transactions of accounts which constitute the State Government's Trust Funds are recorded in a *Statement of the Receipts and Disbursements of Western Australia* which is published quarterly in the *Government Gazette*.

Trust Funds are divided into three groups, Governmental, Private, and those which deal with moneys advanced by the Commonwealth Government for specific purposes. Governmental Trust Funds relate generally to the financial activities of semi-governmental authorities although they include some accounts, such as the Forests Improvement and Reforestation Fund and accounts concerning certain aspects of agriculture, which are connected with the work of Government Departments. Among the government instrumentalities whose operations are financed entirely or largely from Trust Funds are the State Housing Commission, the Rural and Industries Bank, the Main Roads Department and the State Government Insurance Office. Finance for public hospitals is also provided from Trust Funds. Private Trust Fund balances comprise moneys available for disbursement to or on behalf of private persons. Examples are the Coal Mine Workers' Pensions Fund and the fund for grants to institutions from the Lotteries Commission. Funds relating to advances from the Commonwealth include those made under the Commonwealth Aid Roads Acts and the Commonwealth-State Housing Agreement as well as finance for war service land settlement, the encouragement of meat production and other assistance to primary industry.

The detailed list of Trust Fund transactions appearing in the quarterly statement of receipts and disbursements is an extensive one, and in the following summary only selected items are shown separately.

They have been chosen as being those under which the largest totals of receipts and expenditure, though not necessarily the largest balances, are recorded, and as giving some indication of the diverse nature of the government Trust Funds.

SUMMARY OF TRUST FUNDS—RECEIPTS AND EXPENDITURE

Title of Account	Financial Year				
	1958-59		1959-60		
	Receipts	Expenditure	Receipts	Expenditure	Balance of Fund at 30th June
Governmental Trust Funds—	£	£	£	£	£
Agriculture Protection Board	169,206	231,864	193,384	162,243	37,876
Argentine Ant Control Committee	138,847	136,753	119,841	100,872	21,063
Forests Improvement and Reforestation	1,109,010	1,083,046	1,092,960	1,163,453	165,210
Hospital Buildings and Equipment	299,929	278,791	364,482	334,172	48,916
Hospital Fund Contributions	5,068,333	5,068,333	5,983,184	5,983,184	....
Housing—					
Kwinana Housing	109,625	124,448	109,850	112,918	33,288
State Housing Commission	5,333,104	4,806,878	5,437,020	5,579,979	506,925
Insurance—					
Government Fire and Marine Insurance....	286,332	175,318	254,822	326,889	161,089
Government Workers' Compensation	562,248	465,524	580,922	621,765	99,788
State Insurance	1,184,109	1,253,479	1,588,008	1,599,085	19,926
Plant Hire	920,684	918,188	1,037,222	919,126	950,550
Public Debt Sinking Fund	2,409,604	2,396,826	2,680,079	2,680,987	85,529
Railways—					
Expenditure Advance	18,296,175	18,245,333	14,081,191	14,361,621	....
Rolling Stock Replacement	568,010	523,289	980,152	595,024	673,948
Roads—					
Central Road Fund .....	....	....	839,728	136,533	703,195
Main Roads	1,593,665	1,523,132	1,215,213	1,313,672	332,352
Main Roads Contribution	212,281	495,933	281,605	313,623	....
Metropolitan Traffic	1,098,371	1,095,587	1,283,120	1,439,442	....
Narrows Bridge Construction	1,215,576	1,210,033	904,792	887,141	39,811
Rural and Industries Bank	890,783	883,125	1,024,852	1,039,771	3,693
Rural and Industries Bank Investment Reserve	2,175,000	2,525,000	1,300,000	1,300,000	....
State Electricity Commission Loans Sinking					
Funds	178,623	146,774	183,055	136,293	231,373
Transport Co-ordination	356,766	343,538	403,467	410,683	45,044
Vermín Act	134,295	174,479	150,420	139,115	54,820
Other	4,552,164	4,061,838	4,051,410	4,061,867	3,845,998
Total	48,862,740	48,167,509	46,130,779	45,719,458	8,060,394
Private Trust Funds—					
Charitable Institutions	67,407	62,983	117,338	101,045	76,601
Clerk of Courts	1,079,253	1,084,634	1,082,377	1,083,619	38,409
Coal Mine Workers' Investment Reserve	76,268	832	66,055	7,007	787,015
Coal Mine Workers' Pensions	204,795	209,012	197,420	195,112	6,283
Local Authorities Sinking Funds	11,710	11,538	10,513	3	70,882
Lotteries Commission Grants to Institutions	72,492	80,357	6,519	35,519	227,635
Public Trustee Common Fund	1,103,233	1,118,040	1,355,709	1,349,242	23,341
Superannuation Fund	1,877,451	1,928,921	2,094,643	2,075,124	26,288
Superannuation Investment Reserve	653,575	1,024	714,540	8,746	6,062,984
Other	513,581	515,019	1,089,832	926,156	765,882
Total	5,659,765	5,012,360	6,734,946	5,781,573	8,085,300
Funds financed from Commonwealth Advances—					
Housing—					
Commonwealth-State Housing Agreement	4,727,494	4,366,184	5,626,078	5,213,176	796,665
Home Builders	1,078,828	1,152,389	1,081,613	943,306	144,959
War Service Homes	2,841,935	2,857,125	3,071,745	3,074,319	10,966
Private Hospitals Benefit	210,000	208,860	235,000	238,110	25
Public Hospitals Benefit	530,000	508,044	535,000	501,594	72,961
Roads—Commonwealth Aid Roads Acts	7,596,812	7,203,921	12,193,254	12,648,935	194,251
War Service Land Settlement	3,116,733	3,130,884	2,708,796	2,655,680	413,191
Other	393,606	406,987	524,874	532,353	323,438
Total	20,495,408	19,834,394	25,976,360	25,807,473	1,956,456
GRAND TOTAL	75,017,913	73,014,263	78,842,085	77,308,504	18,102,150

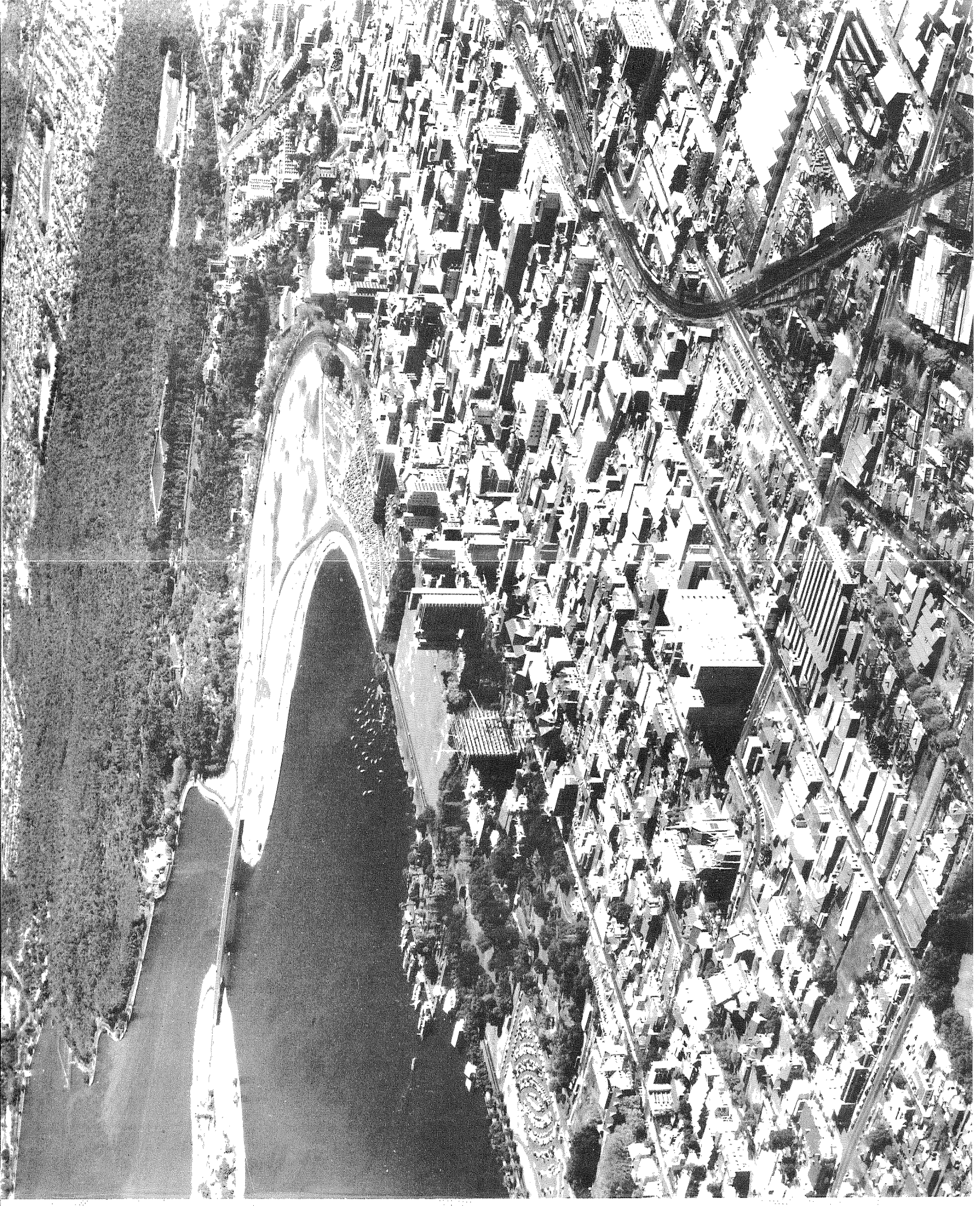
LOCAL GOVERNMENT FINANCE

Prior to the operation of the Local Government Act of 1960, effective from the 1st July, 1961, the financial and other powers of local government authorities in Western Australia were derived mainly from the Municipal Corporations Act and the Road Districts Act. This legislation was repealed by the

CITY OF PERTH

Aerial View looking South-West

The City of Perth, capital of Western Australia, is situated on the right bank of the Swan River about 12 miles upstream from the Port of Fremantle. The town of Perth was founded on the 12th August, 1829 at a ceremony which took place near the present site of the Rural and Industries Bank in Barrack Street. Perth was constituted a City on the 23rd September, 1856 when it became the seat of a Bishop. The status of Mayor of the City was raised to that of Lord Mayor in 1929 on the centenary of its foundation. Perth is to be host city for the VII British Empire and Commonwealth Games to be held between the 22nd November and the 1st December, 1962.



Local Government Act, the main provisions of which are outlined in Chapter III—*Constitution and Government*. Among other statutes affecting local government finance are the Traffic Act, the Health Act, the Water Boards Act, the Vermin Act and the Fire Brigades Act.

The figures and the letterpress in this section relate only to the operations of Municipal Councils (now City Councils or Town Councils), Road Boards (now Shire Councils), Local Boards of Health, Water Boards and Vermin Boards. The activities of the Fremantle Municipal Transport Board and the Eastern Goldfields Transport Board, which are summarized in Chapter IX, Part 2—*Transport*, are not included except that allocations of profit to the general revenue of certain local government authorities appear in the table on page 194 against the item "Profits from Other Business Undertakings."

The financial year for Municipal Councils ended on the 31st October and for Road Boards on the 30th June.

General Revenue

Taxation—As may be seen from the following table, revenue from taxation other than motor vehicle registration fees accounts for about two-fifths of the total receipts of local authorities and is derived almost entirely from rates. The most important of these is the general rate, provided for in the local government legislation. Rates specifically authorized by other legislation are health, sanitary and sewerage rates, water rates and vermin rates, which are used in financing Local Boards of Health, Water Boards and Vermin Boards, and rates relating to fire brigades, cemeteries and libraries and the control of Argentine ants and noxious weeds. Other forms of taxation are permits required under building by-laws, dog licences, and licences and permits issued under the Health Act.

Public Works and Services—Revenue from Public Works and Services amounts to about one-fifth of the total. Income from property and plant is the largest item and includes rents and hire charges for buildings, plant and recreational facilities as well as sales of land, vehicles and plant. Next in importance are the receipts from sanitary services and from construction of private roads which include driveways to premises. Other sources of income under this heading are the charges made for services by Water Boards and Vermin Boards.

Government Reimbursements and Grants—Grants for specific road works and recoups of road construction costs and of vermin bonus payments are the main items in this category. The local governing bodies are reimbursed by the State Government for expenditure incurred on its behalf in road construction and maintenance, which is undertaken principally for the Main Roads Department but also for other State authorities as, for example, the State Housing Commission. Amounts paid as bonuses for the destruction of wild dogs, foxes and other vermin are recouped by the Department of Agriculture.

Business Undertakings—The only type of business undertaking from which any substantial revenue is derived is the supply of electricity. The expansion of the area served by the State Electricity Commission and its progressive acquisition of the generating plants of local authorities in the south-west part of the State may be expected to cause some decline in the importance of this field of local government activity. The figures shown for "Electricity Undertakings" for the years 1955-56 and 1956-57 include the operations of a municipal gas works at Geraldton which was closed down in November, 1956. Some details of local government operations in the generation of electricity during 1959-60 appear in the table "Summary of Factories according to Industry" in Chapter VIII, Part 2.

The amounts described as "Profits from Other Business Undertakings" comprise allocations of profits to certain local government authorities made by the Fremantle Municipal Transport Board. As the figures include only moneys appropriated to general revenue they do not necessarily represent the working profits for the year stated.

Motor Vehicle Registration Fees—Revenue from motor vehicle registration fees is an important item in local government finance. In Western Australia, there is no single authority responsible for the licensing of motor vehicles. The Traffic Branch of the Police Department licenses vehicles in the Metropolitan Traffic Area, which comprises the whole of the Metropolitan Statistical Division and some adjacent local government districts or parts of districts (see letterpress *Vehicle Registration, Licences and Traffic Control* in Chapter IX, Part 2). Outside this Area each local government authority licenses vehicles in its own district and retains the fees collected. Metropolitan local authorities receive proportionate allocations of the revenue from vehicle licences issued by the Police Department in the Metropolitan Traffic Area. These disbursements are made from the Metropolitan Traffic Trust Fund, to which the licence fees for vehicles registered in the Metropolitan Traffic Area are paid in the first instance.

Total Revenue—Details of the aggregate revenue of local government authorities, Local Boards of Health, Water Boards and Vermin Boards throughout the State are shown in the following table. Amounts appropriated to general revenue as profits from electricity undertakings are not included.

SUMMARY OF LOCAL GOVERNMENT REVENUE
(Exclusive of Loan Receipts)

Source of Revenue	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Taxation—	£	£	£	£	£
Rates—					
General	1,681,561	1,945,329	2,084,668	2,186,106	2,271,738
Loan	628,063	782,827	836,571	974,050	1,153,652
Health and Sanitary	264,574	347,430	334,197	369,880	346,954
Vermin	52,929	55,611	54,535	53,679	52,113
Other	127,881	126,880	136,909	157,209	159,900
Total	2,755,008	3,258,077	3,446,880	3,740,924	3,984,357
Licences and Fees (a)	54,306	55,229	58,905	58,835	73,660
Total—Taxation (a)	2,809,314	3,313,306	3,505,785	3,799,759	4,058,017
Public Works and Services—					
Sanitary Services, including Garbage Collection	427,736	443,975	466,393	470,517	494,963
Water Supply	9,380	11,427	12,388	17,317	12,970
Vermin Eradication	6,448	6,195	6,438	6,806	7,317
Income from Property and Plant—					
Parks, Gardens and Recreational Facilities	78,650	91,497	94,742	108,713	128,381
Halls and Other Buildings	127,396	135,817	149,129	162,908	170,380
Vehicles and Plant	163,927	160,481	166,377	176,090	168,913
Other Properties	433,022	498,495	436,872	668,054	720,579
Road Construction	226,436	240,760	255,862	307,733	358,956
Other Works and Services	47,879	52,884	73,501	92,708	91,554
Total—Public Works and Services	1,520,874	1,641,531	1,661,702	2,010,846	2,152,013
Government Reimbursements and Grants—					
Roads	1,065,608	1,164,565	1,267,053	1,113,168	1,348,641
Vermin Destruction Bonuses	17,868	16,317	18,747	8,938	14,194
Other	47,458	22,557	42,926	25,482	42,151
Total—Reimbursements and Grants	1,130,934	1,203,439	1,328,726	1,147,588	1,404,986
Motor Vehicle Registration Fees—					
Direct Collections (b)	696,474	815,770	971,216	1,036,556	1,170,450
Allocations from Metropolitan Traffic Trust Fund	351,114	393,879	451,108	484,805	554,032
Total—Vehicle Registration Fees	1,047,588	1,209,649	1,422,324	1,521,361	1,733,482
Other Revenue—					
Electricity Undertakings (c)	565,582	572,108	619,984	678,683	724,924
Profits from Other Business Undertakings	11,567	11,062	11,197	21,184	21,000
Fines and Penalties	14,487	16,051	22,648	54,226	56,297
Other	196,098	195,304	210,488	164,698	219,526
Total—Other Revenue	787,734	794,525	864,317	948,791	1,015,747
GRAND TOTAL (d)	7,296,444	8,162,450	8,782,854	9,428,345	10,364,245

(a) Excludes revenue from vehicle licences (see "Motor Vehicle Registration Fees" below), as this item is included in the table *Net Collections of State Taxation* on page 186 for purposes of comparison with other States. Excludes also sanitary and garbage fees (see "Public Works and Services" below). (b) Fees collected and retained by local government authorities outside the Metropolitan Traffic Area. (c) Figures for 1955-56 and 1956-57 include the operations of a municipal gas works at Geraldton which ceased in November, 1956. (d) Figures exclude amounts appropriated to general revenue as profits from electricity undertakings.

General Expenditure

General Administration—The amounts shown under this item in the following table comprise the administration costs of local government authorities. Expenditure on the administration of Local Boards of Health, Water Boards and Vermin Boards is not included but is shown separately under the heading of Public Works and Services.

Debt Services—Expenditure on debt services includes debt redemption charges, interest payable under hire purchase agreements and interest charges on loans and overdrafts.

Public Works and Services—The principal expenditure under the heading of Public Works and Services relates to roads, paths and bridges and includes construction and maintenance costs as well as moneys spent on other road work such as the cleaning and watering of thoroughfares, the construction of private roadways, the provision of street nameplates and seats, street tree planting and street lighting.

Other costs are those connected with health, sanitation and garbage services, capital and maintenance expenditure on property and on vehicles and other plant. Some of the items included under the general heading of Public Works and Services are financed only partly from revenue, the remaining expenditure being from loan funds (see table on page 196).

Grants and Donations—Many of the local authorities make annual contributions as required by the Fire Brigades Act towards the maintenance of fire brigades, while grants are also made in some cases to hospitals and ambulances, to infant health clinics where they are not under the direct control of the local authority concerned, to other local organizations and to the Western Australian State Symphony Orchestra.

Electricity Undertakings—The figures shown for expenditure of electricity undertakings exclude amounts appropriated from profits to the general account of the local authority concerned.

Total Expenditure—Details of the aggregate expenditure of local government authorities, Local Boards of Health, Water Boards and Vermin Boards throughout the State are shown in the following table.

SUMMARY OF LOCAL GOVERNMENT EXPENDITURE
(Exclusive of Loan Expenditure)

Nature of Expenditure	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
General Administration	£ 833,897	£ 890,504	£ 945,803	£ 1,005,828	£ 1,106,214
Debt Services (a)—					
Interest and Other Charges	242,537	293,419	349,354	425,079	507,505
Redemptions	478,062	557,888	656,514	734,955	934,560
Total—Debt Services	720,599	851,307	1,005,868	1,160,034	1,442,065
Public Works and Services—					
Roads, Paths and Bridges—					
Construction and Maintenance	1,968,745	2,058,038	2,111,510	2,162,187	2,285,675
Other Road Work	207,174	236,127	249,941	271,530	276,197
Street Lighting	87,488	88,709	101,411	116,673	139,464
Property and Plant—					
Parks, Gardens and Recreational Facilities	521,643	500,871	584,277	647,866	721,037
Halls and Other Buildings	349,605	432,318	376,822	506,741	489,503
Vehicles and Plant	709,864	723,041	824,350	869,168	936,916
Other	457,697	493,415	506,297	542,258	724,246
Administration of—					
Local Boards of Health	187,848	195,575	213,294	237,970	266,035
Water Boards	6,588	6,828	7,414	7,037	6,302
Vermin Boards	13,216	13,813	15,174	15,314	15,590
Other Public Works and Services—					
Sanitary and Garbage Services	506,239	509,745	540,067	535,168	555,874
Water Supply Services	38,891	42,000	36,868	39,409	32,716
Vermin Destruction	63,620	64,215	60,284	52,536	63,399
Other	88,801	59,278	103,331	90,212	87,681
Total—Public Works and Services	5,207,509	5,424,663	5,731,040	6,094,069	6,600,635
Grants and Donations—					
Fire Brigades	77,074	84,660	97,879	106,420	114,257
Hospitals and Ambulances	8,017	9,922	6,142	13,139	8,369
Other	12,946	13,908	19,322	19,245	18,585
Total—Grants and Donations	98,037	108,490	123,343	138,804	141,211
Electricity Undertakings (including debt services) (b)	538,501	555,263	601,047	640,569	698,319
Other Expenditure	144,136	156,243	160,026	159,396	290,485
GRAND TOTAL (b)	7,542,679	7,986,470	8,567,627	9,198,700	10,278,929

(a) Excludes debt services of Electricity Undertakings.
revenue as profits from electricity undertakings.

(b) Figures exclude amounts appropriated to general

Loan Transactions

Under the provisions of the local government legislation, local government authorities are constituted as corporate bodies and are authorized to raise loans for works and undertakings and for the liquidation of existing loan debts. The conditions imposed by the Local Government Act, 1960 in relation to loan raisings, the levying of loan rates, the expenditure of loan moneys and the repayment of loans are summarized in the section *The Local Government System* in Chapter III.

Loans are raised mainly from banks, insurance companies and superannuation funds.

LOCAL GOVERNMENT LOAN RECEIPTS AND EXPENDITURE

Item	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
RECEIPTS					
Ordinary Services	£ 1,354,808	£ 1,562,928	£ 1,687,895	£ 2,019,250	£ 2,545,425
Health Services	34,000	29,500	140,000	61,400	46,401
Water Supply	8,500	37,000	31,000	39,000	27,000
Electricity and Gas Undertakings	41,500	57,000	83,500	66,500	68,703
Total	1,438,808	1,686,428	1,942,395	2,186,150	2,687,529
EXPENDITURE					
Roads, Paths and Bridges	£ 726,749	£ 646,893	£ 699,792	£ 823,233	£ 981,976
Property and Plant	480,017	458,470	465,953	489,154	487,888
Parks, Gardens and Recreational Facilities	206,281	133,372	186,790	473,821	247,997
Water Supply	11,644	30,143	37,985	32,276	19,373
Electricity and Gas Undertakings	49,403	23,629	88,856	92,715	59,546
Other Works and Services	67,327	95,330	224,481	286,376	119,853
Redemptions	955	1,172	53,920	67,708	5,035
Other Loan Charges	4,610	11,612	19,266	3,909	2,522
Total	1,546,936	1,400,621	1,777,043	2,269,192	1,924,190

The following table shows the aggregate local government loan debt outstanding at the end of each financial year during the period from 1955-56 to 1959-60.

The State Government exercises a measure of supervision over the loan transactions of local government authorities and, where a loan is repayable in full at maturity, maintains the necessary sinking fund at the Treasury. It will be seen that the amount of £71,025 shown as "Sinking Fund Balances" at the end of the financial year 1959-60 differs from the trust fund balance of £70,882 appearing in the table on page 192 as standing to the credit of "Local Authorities Sinking Funds." This is accounted for by the fact that the figure shown in the table "Summary of Trust Funds" relates to amounts actually held by the Treasury at the 30th June, 1960, whereas those given in the next table include amounts credited to sinking funds by local authorities but not necessarily received into the Treasury at that date.

LOCAL GOVERNMENT LOAN DEBT

Nature of Debt	At End of Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Loan Debt Outstanding	£ 6,615,730	£ 7,644,806	£ 8,827,544	£ 10,174,433	£ 11,885,914
Sinking Fund Balances	116,290	67,083	61,979	60,515	71,025
Net Loan Debt	6,499,440	7,577,723	8,765,565	10,113,918	11,814,889
Net Loan Debt on Account of—					
Ordinary Services	5,897,566	6,921,264	7,893,763	9,147,482	10,804,826
Health Services	76,443	81,053	234,611	269,461	281,367
Water Supply	99,120	128,306	138,451	167,127	170,408
Electricity and Gas Undertakings	426,311	447,100	498,740	529,848	558,288
Total—Net Loan Debt	6,499,440	7,577,723	8,765,565	10,113,918	11,814,889

CHAPTER VI—*continued*

PART 2 – PRIVATE FINANCE

CURRENCY

The power to legislate with respect to currency, coinage and legal tender and the issue of paper money is vested by the Constitution in the Commonwealth Parliament. This power was originally exercised by the Commonwealth Government under the Coinage Act of 1909 and the Australian Notes Act of 1910. The Statutes now in force are the Coinage Act 1909–1947 and the Reserve Bank Act 1959.

The Australian monetary system is based on that used in the United Kingdom and therefore has as its unit the pound (£) divided into 20 shillings (s.) each of 12 pence (d.). When the Australian currency was first introduced, the Australian pound was identical in value with the pound sterling. Following a gradual depreciation of the Australian pound in terms of sterling during 1930 and 1931, it was stabilized from the 3rd December, 1931 at the rate of £125 Australian = £100 sterling, which has continued to be the prevailing rate. Notes are issued by the Reserve Bank of Australia which is authorized to make issues in the denominations of 5s., 10s., £1, £5, £10 or any multiple of £10. Only notes in the denominations of 10s., £1, £5 and £10 are now in general circulation, no 5s. notes having been issued and public issue of those of denominations higher than £10 having ceased in 1945. The coinage consists of silver and bronze coins, which are minted by branches of the Royal Mint in Melbourne and Perth. Silver coins are issued in denominations of two shillings, one shilling, sixpence and threepence. The bronze coins are the penny and the halfpenny.

Australian notes are legal tender in Australia to any amount, silver coins for amounts not exceeding forty shillings and bronze coins for amounts up to and including one shilling.

In 1959 the Commonwealth Government, having accepted the principle of decimal coinage, appointed a Decimal Currency Committee to consider the adoption of the system. In its report, presented to the Parliament in August, 1960, the Committee recommended the introduction of decimal currency. Previous investigations, each of which resulted in a similar recommendation, had been made in 1902 by a Select Committee of the House of Representatives and in 1937 by the Royal Commission on Monetary and Banking Systems.

BANKING

The banking system in Western Australia comprises the Commonwealth banking institutions, The Rural and Industries Bank of Western Australia and the private trading banks.

Commonwealth Banking Institutions

Prior to the operation of the Reserve Bank Act and the Commonwealth Banks Act, passed by the Commonwealth Parliament in 1959, the Commonwealth banking institutions were the Commonwealth Bank, the Commonwealth Trading Bank and the Commonwealth Savings Bank. The Commonwealth Bank, in addition to performing the functions of a central bank, controlled the Australian note issue through a Note Issue Department and also provided special banking facilities through the Rural Credits Department, the Mortgage Bank Department and the Industrial Finance Department. The policy of the Banks was determined by a Commonwealth Bank Board.

The Reserve Bank Act 1959 repealed the Commonwealth Bank Acts, the first of which was passed in 1911, and established the Reserve Bank of Australia under the control of a Reserve Bank Board. The Reserve Bank was constituted as the central bank and took over the Note Issue Department and the Rural Credits Department of the former Commonwealth Bank. The function of the Rural Credits Department is to make available to statutory authorities or co-operative associations of primary producers advances to assist the marketing or processing of primary products.

The Commonwealth Banks Act 1959 provided for the formation of a Commonwealth Banking Corporation, to be responsible for the operations of the Trading Bank, the Savings Bank and a new Development Bank. The Development Bank was formed basically from the Mortgage Bank Department and the Industrial Finance Department of the Commonwealth Bank, to provide finance and advice to persons to assist them in primary production or in the establishment or development of industrial undertakings, particularly small enterprises.

The Rural and Industries Bank of Western Australia

The Rural and Industries Bank of Western Australia was established by the State Government under the Rural and Industries Bank Act of 1944 to replace the former Agricultural Bank of Western Australia. The Bank consists of a Rural Department and a Government Agency Department, and management is vested in five Commissioners. The Rural Department provides general banking services, and since 1956 has also conducted savings bank business through a Savings Bank Division.

Trading Banks

The nine trading banks conducting business in Western Australia comprise the Commonwealth Trading Bank of Australia, The Rural and Industries Bank of Western Australia (Rural Department) and seven private trading banks.

The private banks, each of which has its head office either in London or in another State, are the Australia and New Zealand Bank Limited, The Bank of Adelaide, the Bank of New South Wales, The Commercial Bank of Australia Limited, The Commercial Banking Company of Sydney Limited, The English, Scottish and Australian Bank Limited and The National Bank of Australasia Limited. The operations of trading banks are governed by the Banking Act 1959 (Commonwealth) which places them under a degree of control by the central bank, the Reserve Bank of Australia.

The following table shows the averages of total amounts on deposit with the trading banks and of their outstanding advances during each of the years 1955-56 to 1959-60. The figures relate to Western Australian business only and represent the annual average of amounts as at the close of business each Wednesday. The information is prepared from returns furnished under the requirements of the Banking Act 1959 by all trading banks except the Rural and Industries Bank of Western Australia, which supplies information by special arrangement.

TRADING BANKS—AVERAGES OF AMOUNTS ON DEPOSIT AND OF ADVANCES
(£'000)

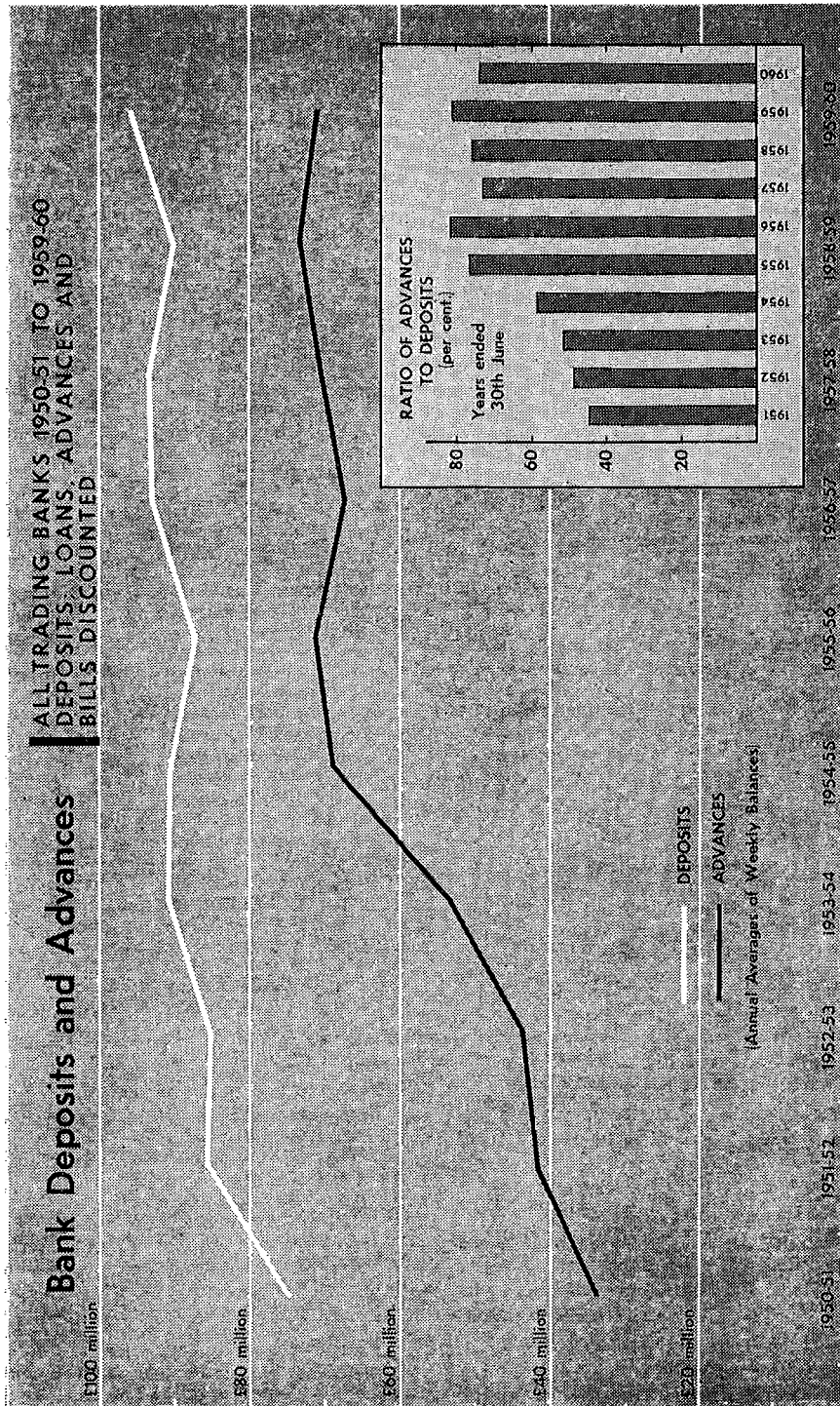
Particulars	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Amounts on Deposit—					
Not bearing Interest—					
Australian Governments	*620	631	786	441	504
Other	70,204	71,083	69,048	64,895	69,881
Bearing Interest—					
Australian Governments	9	8	69	17	23
Other—Current	2,273	3,565	3,253	3,627	4,190
Fixed	13,929	17,502	20,083	21,170	21,440
Total	*87,035	92,789	93,239	90,150	96,038
Loans, Advances and Bills Outstanding (a)	*71,078	67,537	70,599	73,553	71,032
Ratio of Advances to Deposits (per cent.)	*81.67	72.79	75.72	81.59	73.96

(a) Excludes loans to authorized dealers in the short-term money market.

* Revised.

Of outstanding advances amounting in total to £75.2 million at the end of June, 1960, business advances represented £57.5 million, personal advances £15.5 million, advances to non-profit organizations £1.60 million, and to public authorities other than the Commonwealth and State Governments £0.57 million. Business advances were mainly for rural industry (£24.6 million), for retail and wholesale trade (£13.3 million) and for manufacturing (£8.49 million). Of the personal advances, loans for the building or purchasing of homes accounted for £8.86 million.

At the 31st December, 1960 the Commonwealth Trading Bank's discount rate on bills ranged between $5\frac{1}{2}$ and 6 per cent. Under the Banking Act 1959 the Reserve Bank of Australia has the power to fix the rates of interest which may be charged by trading banks on overdrafts. At the 31st December, 1960, by agreement between the Reserve Bank and the trading banks, the maximum rate applying to any overdraft was 7 per cent. and the average rate on all overdrafts was limited to 6 per cent. At the same date, the rate of interest on fixed deposits was 4 per cent. on deposits for 3 months but less than 12 months and $4\frac{1}{2}$ per cent. on those for 12 months, the maximum period for which trading banks may accept fixed deposits.



In the following table, which relates to Western Australian business only, the average amount on deposit with each trading bank and the average of its outstanding advances during the month of June, 1960 are shown, together with the number of branches and agencies of each bank at the 30th June, 1960.

TRADING BANKS—BRANCHES, AGENCIES, DEPOSITS AND ADVANCES : JUNE, 1960

Bank	Number of Branches (a)	Number of Agencies (a)	Amounts on Deposit (b)			Loans, Advances and Bills Outstanding (b) (c)
			Not Bearing Interest	Bearing Interest	Total	
Commonwealth Trading Bank of Australia	48	15	£'000 9,463	£'000 5,186	£'000 14,649	£'000 11,091
The Rural and Industries Bank of Western Australia (Rural Department)	40	24	6,500	1,022	7,522	11,786
Private Trading Banks—						
Australia and New Zealand Bank Limited	32	22	9,126	2,259	11,385	8,090
The Bank of Adelaide	2	2	767	71	838	524
Bank of New South Wales	89	50	21,327	8,775	30,102	19,574
The Commercial Bank of Australia Limited	29	26	5,521	1,476	6,997	6,278
The Commercial Banking Company of Sydney Limited	2	....	288	114	402	386
The English, Scottish and Australian Bank Limited	19	3	3,552	816	4,368	3,181
The National Bank of Australasia Limited	64	28	11,233	5,675	16,908	12,929
Total—Private Trading Banks	237	131	51,814	19,186	71,000	50,942
TOTAL—ALL TRADING BANKS	325	170	67,777	25,394	93,171	73,819

(a) At 30th June. (b) Average as at the close of business on Wednesdays in June. (c) Excludes loans to authorized dealers in the short-term money market.

The following table shows the weekly averages of bank clearings through the Perth clearing house for each of the years from 1956 to 1960 and for each quarter in those years.

BANK CLEARINGS—WEEKLY AVERAGES FOR PERTH
(£'000)

Particulars	1956	1957	1958	1959	1960
Average for Quarter ended—					
March	14,970	16,283	16,210	18,613	21,947
June	14,319	14,653	15,048	15,321	21,156
September	13,898	14,523	13,944	16,506	21,987
December	14,163	16,784	15,504	18,701	24,418
Average for Year	14,538	15,569	15,163	17,250	22,462

At the 31st December, 1960 the bank exchange rate between Perth and Adelaide (South Australia) was 2s. 6d. per cent., between Perth and Melbourne (Victoria) 5s. per cent., between Perth and Sydney (New South Wales), Hobart (Tasmania) and Canberra (Australian Capital Territory) 7s. 6d. per cent., and between Perth and Brisbane (Queensland) 10s. per cent. While no charge is made for transfers within a city or town, a charge is payable for other intrastate transfers on the basis of zones into which Western Australia is divided for the purpose. The rate for transfers within a zone is 2s. per cent., with higher rates applying to transfers between zones.⁽¹⁾

Savings Banks

At the 31st December, 1960 savings bank facilities in Western Australia were provided by the Commonwealth Savings Bank, which commenced business in Western Australia in 1913, and by the Australia and New Zealand Savings Bank Limited, the Bank of New South Wales Savings Bank Limited, the C.B.C. Savings Bank Limited and The Rural and Industries Bank of Western Australia (Savings Bank Division), all of which were established in 1956. A sixth bank, the E.S. and A. Savings Bank Limited, commenced operations on the 29th September, 1961.⁽¹⁾

Individual depositors may not operate on their savings bank accounts by cheque, but cheque accounts are generally available to non-profit organizations such as friendly, co-operative and charitable societies.

⁽¹⁾ See Appendix.

Interest is paid on deposits with savings banks and no charge is made for the keeping of accounts. A school savings bank service is provided and the amount standing to the credit of 82,631 accounts at schools was £557,823 at the end of June, 1960. The operations of the school savings bank service are included in the figures shown in the following table except those which relate to the number of accounts open at the end of each year.

SAVINGS BANK TRANSACTIONS

Particulars	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Deposits (a) £'000	57,628	65,576	71,189	78,259	91,678
Withdrawals (a) £'000	54,491	62,279	69,499	74,487	86,598
Excess of—					
Deposits over Withdrawals £'000	3,137	3,297	1,690	3,773	5,079
Withdrawals over Deposits £'000	....	....	....	....	....
Interest £'000	1,168	1,462	1,565	1,778	2,044
Accounts Open at end of Year No.	440,419	473,548	497,690	527,079	550,966
Amount Due to Depositors at end of Year—					
Total £'000	57,934	62,693	65,948	71,499	78,622
Average per Account £	129.78	132.39	132.51	135.65	142.70
Average per head of Population* £	85.89	91.18	94.27	100.41	108.88

(a) Excluding transfers from and to other States.
1961 Census.

* Revised in accordance with the preliminary results of the

The rates of interest paid by savings banks at the 30th June in each of the years from 1956 to 1960 are shown in the following table. Until the 1st November, 1958 the maximum amount on which interest was payable on sums standing to the credit of ordinary accounts was £1,500. From that date, the maximum was increased to £2,000 and the rate raised to 3 per cent. per annum to apply uniformly to all sums up to that amount. At the same time the rate of interest payable on similar sums in friendly and other society accounts was increased to 3 per cent.

SAVINGS BANKS—INTEREST RATES ON DEPOSITS

(per cent. per annum)

Type of Account	Interest Rates at 30th June :				
	1956	1957	1958	1959	1960
Ordinary Accounts—					
£1 to £1,000	2½	2½	2½	3	3
£1,001 to £1,500	1½	1½	1½	3	3
£1,501 to £2,000	nil	nil	nil	3	3
Friendly and other Society Accounts—					
£1 to £2,000	2½	2½	2½	3	3
£2,001 and over	1½	1½	1½	1½	1½

In December, 1960 it was announced that, from the 1st January, 1961, the maximum amount for interest-bearing deposits in ordinary accounts would be raised to £2,500, and the rate of interest increased to 3½ per cent. per annum, by all savings banks except the Rural and Industries Bank of Western Australia (Savings Bank Division), which would increase the rate to 3½ per cent. At the same time the rate for friendly and other society accounts was to be increased by all banks other than the Rural and Industries Bank to 3½ per cent. on deposits up to £2,500, and to 1½ per cent. on the balance above that amount. The corresponding rates to be paid by the Rural and Industries Bank would be 3½ per cent. and 2 per cent.

INSURANCE

Life Assurance

Life assurance business throughout Australia is regulated by the Life Insurance Act 1945-1959 (Commonwealth), which requires companies to be registered by the Insurance Commissioner appointed under the Act and to establish statutory funds in relation to their life assurance transactions. The purpose of the Act, which supersedes State legislation, is to place life assurance business on a uniform basis throughout the Commonwealth and to afford protection to policy holders. Under a previous

Commonwealth Act, the Insurance Act 1932-1937, the companies were required to deposit money or approved securities with the Treasurer in order to guarantee the claims of insured persons, and this provision is continued by the present Act.

During 1960, there were 22 life assurance companies or societies operating in Western Australia, the local offices being branches of organizations having a head office in another State or overseas. In terms of total sums assured, life assurance policies relate predominantly to ordinary endowment or whole-life assurance, as shown by the following table, although an appreciable volume of industrial business is also undertaken.

LIFE ASSURANCE

Particulars	Year				
	1956	1957	1958	1959	1960
ORDINARY BUSINESS					
Number of Companies	13	16	16	19	22
New Policies Issued—					
Sum Assured	23,239	25,732	27,651	33,606	44,819
Single and Annual Premiums	813	894	916	1,006	1,221
Policies Existing at End of Year—					
Sum Assured	141,069	158,632	176,180	198,161	229,870
Net Increase during Year—					
Sum Assured	15,297	17,563	17,548	21,981	31,709
INDUSTRIAL BUSINESS					
Number of Companies	7	7	7	7	7
New Policies Issued—					
Sum Assured	2,029	1,960	2,110	2,214	2,633
Annual Premiums	92	89	96	103	117
Policies Existing at End of Year—					
Sum Assured	21,057	21,267	21,501	21,639	22,162
Net Increase during Year—					
Sum Assured	313	210	234	133	523
TOTAL BUSINESS					
Number of Companies	13	16	16	19	22
New Policies Issued—					
Sum Assured	25,318	27,692	29,761	35,820	47,452
Single and Annual Premiums	905	983	1,012	1,109	1,338
Policies Existing at End of Year—					
Sum Assured	162,126	179,899	197,681	219,800	252,032
Net Increase during Year—					
Sum Assured	15,610	17,773	17,782	22,119	32,232

General Insurance

General insurance is available to the public in Western Australia from a number of companies and, in some fields, from the State Government Insurance Office. There is also a Motor Vehicle Insurance Trust whose activities are confined to motor vehicle third party insurance.

During 1960, there were 129 companies operative in Western Australia, 57 of which were Australian companies. The other 72 were overseas companies, the head offices of 55 of them being located in the United Kingdom. Of the total number, 93 were "tariff" offices, being members of the Fire and Accident Underwriters' Association and issuing the standard policies of the Association at uniform premium rates. The remaining 36 were "non-tariff" companies effecting insurances at competitive rates and reinsuring direct with Lloyd's or other underwriters.

The State Government Insurance Office covers fire, marine and general insurance risks for State Government instrumentalities and semi-government and local government authorities. It also conducts some classes of insurance business for the general public, the principal transactions being workers' compensation and comprehensive motor vehicle insurance. By authority of amendments to the State Government Insurance Office Act in 1954 and 1958 the Office engages in personal accident insurance in respect of school children and students under a policy which indemnifies the parent or guardian against the cost of medical and surgical treatment and funeral and other expenses.

The following table gives details of revenue and expenditure relating to fire, marine and general insurance during each of the years from 1955-56 to 1959-60. The operations of the State Government

Insurance Office are included, but figures for 1958-59 and earlier years exclude insurances effected by the Office on behalf of State Government, semi-government and local government authorities and on property in which the Government has a financial interest. The transactions of the Motor Vehicle Insurance Trust are not included, but are shown in the first table on page 204. The figures shown under the heading of Contributions to Fire Brigades represent payments made to the Western Australian Fire Brigades Board for the operation and maintenance of fire brigades, as required by the Fire Brigades Act.

FIRE, MARINE AND GENERAL INSURANCE (a)
(£'000)

Particulars	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
REVENUE					
Premiums—					
Motor Vehicles	2,191	2,261	2,579	2,754	2,938
Fire	1,802	1,857	1,972	2,051	2,161
Workers' Compensation	1,243	1,278	1,452	1,559	2,300
Personal Accident	306	331	405	448	538
Hailstone	376	253	312	573	531
Marine	265	270	298	325	448
Other Classes	590	646	783	875	1,060
Total Premiums	6,773	6,896	7,801	8,585	9,976
Other (Interest, Dividends, Rents, etc.)	166	214	281	263	321
Total—Revenue	6,939	7,110	8,082	8,848	10,297
EXPENDITURE					
Claims—					
Motor Vehicles	1,402	1,417	1,560	1,756	1,937
Fire	528	604	451	548	539
Workers' Compensation	1,082	1,157	1,302	1,316	1,848
Personal Accident	123	144	184	199	267
Hailstone	160	505	66	400	302
Marine	100	100	105	108	196
Other Classes	168	174	236	255	246
Total Claims	3,563	4,101	3,904	4,582	5,335
Other—					
Management Expenses	1,434	1,518	1,654	1,836	2,044
Commission and Agents' Charges	749	767	867	945	941
Taxation	238	183	212	259	305
Contributions to Fire Brigades	171	192	213	238	258
Total—Expenditure	6,155	6,761	6,850	7,860	8,883

(a) Excludes transactions of the Motor Vehicle Insurance Trust (see table on page 204). Includes operations of the State Government Insurance Office, but figures for 1958-59 and earlier years exclude insurances effected by the Office on behalf of State Government, semi-government and local government authorities and on property in which the Government has a financial interest.

Motor Vehicle Third Party Insurance

Third party insurance in connexion with motor vehicle accidents became compulsory under the provisions of the Motor Vehicle (Third Party Insurance) Act of 1943. The Motor Vehicle Insurance Trust was established by an amendment to the Act in 1948 and comprises the general manager of the State Government Insurance Office, three members nominated by the Fire and Accident Underwriters' Association of Western Australia and one nominee of those approved insuring organizations which are not members of the Association.

The Trust administers a Motor Vehicle Insurance Fund in which approved insurers participate. Premiums received from motor vehicle third party insurance and revenue from other sources constitute annual "pools" and, after payment of claims and other expenses appropriate to each pool, the resulting profit or loss is shared by the participating insurers, which include the State Government Insurance Office. These shares cannot be finally determined until the last claim is paid and it is usually several years before a pool has satisfied all the claims attributable to it. For this reason, the figures given in the following table are subject to progressive revision as the business of each pool approaches finality.

MOTOR VEHICLE INSURANCE TRUST

Revenue and Expenditure	Pool (£) for the Year—				
	1955-56	1956-57	1957-58	1958-59	1959-60
Revenue—					
Net Premiums	£ 588,661	£ 688,393	£ 731,245	£ 754,938	£ 809,212
Interest Received	57,521	63,334	58,204	55,033	46,848
Total Revenue	646,182	751,727	789,539	809,971	856,060
Expenditure—					
Claims Paid (a)	553,923	624,511	801,815	862,459	991,955
Commission	5,086	5,676	5,570	6,038	6,444
Management Expenses	19,857	24,517	25,296	26,545	31,932
Taxation	1,190	1,484	1,629	1,516	1,711
Total Expenditure	580,065	656,188	834,310	896,558	1,032,042

(£) See accompanying letterpress *Motor Vehicle Third Party Insurance*.

(a) Including estimated outgoings.

Health Insurance Organizations

Voluntary health insurance is offered by a number of organizations which provide one or more types of benefit covering such items as hospital and medical fees, funeral expenses and sick pay to or on behalf of contributing members and their dependants. They include societies registered under the Friendly Societies Act, 1894-1956 and other organizations registered under the National Health Act 1953-1961 (Commonwealth).

Benefits are available in a wide range to meet the cost, either wholly or in part, of such services as treatment by a general or specialist medical practitioner (including surgical operations and obstetrical attention), X-ray, cardiographic and pathological examinations, physiotherapy, dental treatment, hospital care, home nursing and ambulance transport. In many cases, the Commonwealth Government pays a benefit additional to that received from the organization. Reference to these additional benefits is made in Chapter V—*Social Condition*. Members of friendly societies may contribute also for the supply of medicines and some societies maintain endowment assurance funds and supplementary death benefit funds.

The following table gives details, for the years 1955-56 to 1959-60, of the membership and the financial activities of friendly societies registered under the Friendly Societies Act. "Benefit" members are those who contribute to the Sick and Funeral Fund of a society and "honorary" members are principally those who pay only for medical and hospital benefits.

FRIENDLY SOCIETIES

Particulars	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Number of—					
Registered Societies	13	13	12	12	12
Branches	277	275	270	266	262
Members at end of Year—					
Benefit Members	21,949	21,200	20,496	19,753	19,134
Honorary Members	20,895	20,893	20,421	22,501	23,703
Sickness Benefits—					
Number of Members Paid	3,907	3,622	3,607	3,620	3,396
Number of Weeks of Sick Pay	56,546	53,922	54,878	56,931	57,540
Revenue—					
Fees, Contributions and Levies	£ 387,213	£ 411,634	£ 452,534	£ 489,159	£ 529,088
Interest and Rent	53,937	49,550	54,535	56,390	56,202
Other	78,533	11,667	43,039	23,382	33,176
Total	519,683	472,851	550,108	568,931	618,466
Expenditure—					
Sick Pay	26,110	24,760	25,613	26,281	25,000
Medical Attendance and Medicine	298,298	317,808	354,652	398,864	430,541
Death Benefits	18,777	17,618	17,317	18,768	16,642
Administration	58,670	58,331	52,130	56,107	58,133
Other	74,640	18,033	37,641	25,582	32,480
Total	476,495	437,150	487,353	525,602	562,796
Balance of Funds at end of Year	1,277,155	1,312,856	1,375,611	1,418,940	1,474,610

BUILDING SOCIETIES

Building societies in Western Australia are registered under the provisions of the Building Societies Act, 1920 primarily for the purpose of raising funds to assist members by granting loans to build or acquire homes. They also provide a means of investment for shareholder members, trustee funds and other depositors. The revenue of the societies may be in the form of payment for fully-paid shares, subscriptions for contributing shares, or money placed on deposit. Another important source of revenue became available to the societies in 1956-57 when, under the Housing Agreement Act 1956 (Commonwealth), it was provided that moneys should be allocated to approved institutions from Commonwealth funds advanced to the States in terms of the Commonwealth and States Housing Agreement. (Reference is made to this Agreement in Chapter V—*Social Condition*.) The Act requires that during the financial years 1956-57 and 1957-58 the institutions, which include registered building societies, shall receive not less than 20 per cent. of the total advances made to the State, and in each of the succeeding three years, not less than 30 per cent. Loans secured on mortgage are granted to members of building societies for the purchase of freehold or leasehold property.

The following table shows details of the activities of societies operative during the years 1955-56 to 1959-60. Not all bodies registered under the Building Societies Act are included, since many societies which became registered in anticipation of assistance from Commonwealth-State funds have failed to receive an allocation of money from this source.

BUILDING SOCIETIES

Particulars	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Number of—					
Societies	8	9	12	16	20
Investing Shareholders	25,149	24,992	25,413	27,316	27,707
Borrowers	4,442	4,816	5,187	5,835	6,493
Subscriptions and Deposits	£ 870,444	£ 926,723	£ 1,359,925	£ 1,418,979	£ 2,039,820
Loan Repayments	778,080	916,328	1,074,528	1,255,056	1,475,361
Commonwealth-State Housing Advances ....	.....	355,430	685,975	744,982	821,790
Loans Granted	807,286	1,414,093	1,889,976	2,253,867	2,709,921
Working Expenses	44,702	50,138	56,498	80,020	87,353
Assets at end of Year	3,989,844	4,331,018	5,968,489	7,393,159	9,134,296

BANKRUPTCY

Under the provisions of the Bankruptcy Act 1924-1960 (Commonwealth), which is administered by the Attorney-General, the State of Western Australia is a proclaimed Bankruptcy District and the Supreme Court of Western Australia has federal jurisdiction in bankruptcy matters. There is a Registrar in Bankruptcy whose duties include the holding of public sittings for the examination of bankrupts, the examination of witnesses, the issuing of bankruptcy notices and creditors' petitions, and such other duties as are specified in the Act or delegated to him by the Court. Another bankruptcy officer is the Official Receiver, who acts under the general authority and direction of the Court and whose duties relate to the conduct of the debtor and to the realization and administration of his estate.

An order for the sequestration of an estate may result from a petition by either the debtor or the creditors. In cases where it appears certain that the assets of a deceased estate will be insufficient to meet the debts, the executor or a creditor may petition to have the estate administered in bankruptcy.

Compositions, schemes of arrangement and deeds of assignment are provided for in Part XI, and deeds of arrangement in Part XII, of the Act. A debtor may call a meeting of his creditors and either compound with them to pay a certain sum in the £ as full settlement of his debts or enter into a scheme of arrangement allowing him a specified time in which to pay. On the other hand, his creditors may require him to execute a deed of assignment, by which control of his affairs passes to a trustee registered under the Act, or to file a petition in bankruptcy.

The following table relates to bankruptcy proceedings during each of the years from 1955-56 to 1959-60.

BANKRUPTCY PROCEEDINGS

Particulars	Financial Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
Sequestration Orders (a)—					
On Creditors' Petitions	17	22	27	22	24
On Debtors' Petitions	50	85	89	89	95
Assets	£ 49,569	£ 157,360	£ 61,098	£ 100,888	£ 132,130
Liabilities	134,468	224,655	210,598	472,900	370,359
Compositions, Assignments and Deeds of Arrangement—					
Number (b)	65	97	96	95	80
Assets	£ 286,549	£ 464,947	£ 516,999	£ 674,440	£ 282,917
Liabilities	296,340	357,472	582,841	584,764	261,047

(a) Includes orders for administration of deceased debtors' estates.
representatives of deceased debtors.

(b) Includes petitions by legal personal repre-

CHAPTER VII

LAND TENURE AND SETTLEMENT, WATER CONSERVATION AND SUPPLY

PART 1—LAND TENURE AND SETTLEMENT

An outline of the origin and development of the land tenure system in Western Australia from the early years of settlement is given in Chapter VII of the *Official Year Book of Western Australia*, Nos. 1 and 2 (*New Series*) and reference is made to the main developments in the *Chronological Notes from 1829* in Chapter I of the present issue.

The growth of land settlement in relation to particular agricultural and pastoral activities is dealt with in the relevant sections of Chapter VIII, in the *Chronological Notes* and in the *Statistical Summary from 1829* appearing after Chapter X.

LEGISLATION AND ADMINISTRATION

By the Land Act of 1898, earlier legislation relating to the sale, occupation and management of Crown lands was consolidated and amended. Under a series of Agricultural Lands Purchase Acts which were passed between 1896 and 1904 and consolidated by the Agricultural Lands Purchase Act, 1909, provision was made for the repurchase by the Crown of land suitable for closer settlement. The principal criteria applied in the purchase of such land were suitability for wheat or mixed farming and proximity to transport, especially the railways.

The operation of subsequent legislation has not greatly changed the pattern of land development which was created by the Land Act, 1898, and the Agricultural Lands Purchase Act, 1909. The Land Act, 1933-1960, is now the basic statute controlling the leasing and disposal of Crown land. Closer settlement legislation relates predominantly to schemes for the benefit of returned war-service personnel. Crown land is also leased under the Mining Act, 1904-1957, the Petroleum Act, 1936-1954 and the Forests Act, 1918-1954, but no alienations are made under these Acts. In most freehold or leasehold titles of a residential, agricultural or pastoral nature the mineral rights and, in many instances, the timber rights are reserved to the Crown.

The Department of Lands and Surveys is responsible for the leasing and alienation of Crown land, except where mining and forestry tenures are involved. It incorporates the Surveyor-General's Division and the Land Settlement Branch and is under the control of the Minister for Lands. In certain instances, advisory or partly-executive boards have been created to assist in administration. These include the Land Board, which deals with general applications for land, the Land Settlement Board which is concerned with closer settlement areas, and the Bush Fires Board.

Permits and leases for mining purposes are issued by the Mines Department and those for forestry and timber milling by the Forests Department.

METHODS OF LAND ALIENATION

The principal methods of alienation provided for in the Land Act, 1933-1960 are conditional purchase, public auction, private tender, selection under Part VIII which supersedes the Agricultural Lands Purchase Act, endowment (including free Crown grants) and reservation for public purposes.

Conditional Purchase

Titles secured by this method originally take the form of conditional purchase leases, on the satisfactory conclusion of which Crown grants may be obtained. The Act provides that the area of cultivable land taken up shall not exceed 1,000 acres, except in special cases approved by the Governor when the maximum area may be increased to 2,000 acres. For grazing land alone the selected area may not exceed 5,000 acres. In the case of mixed land, however, the area acquired may not exceed 1,000 acres of cultivable land and 2,500 acres of grazing land or the equivalent area of grazing land or cultivable and grazing land mixed. The basis used in determining limits is that five acres of grazing land are taken as equivalent to two acres of cultivable land. Thus a selection of mixed land which includes, say, 3,000

acres of grazing land may also include no more than 800 acres of cultivable land. The minimum purchase price of land acquired by conditional purchase is two shillings per acre and the purchaser must pay the costs of survey as well as the value of any improvements effected by the Government. In addition, he must fence at least one-half of the land within the first five years of the conditional purchase lease and the whole of it within the first 10 years. Expenditure on prescribed improvements is required to equal at least one-fifth of the purchase money during each of the first 10 years and, if the Minister so directs, an adequate water supply must be provided within the first two years.

The maximum period allowed for completion of purchase under an ordinary conditional purchase lease ranges from 25 to 30 years, with a possible extension of 10 years in certain cases. There is, however, provision for conditional purchase by means of accelerated payments under which a 10 per cent. deposit is lodged and the balance of the purchase price paid in four quarterly instalments. The improvement conditions for accelerated-payment leases require that the land shall be fenced within three years of the commencement of the lease and that improvements, equal in value to the purchase money, shall be effected within seven years. Unlike the ordinary conditional purchase lease, which cannot be converted to a Crown grant until the expiry of at least five years from the date of commencement, an accelerated-payments type of lease can be converted to a Crown grant at any time after the conditions have been met. Residential conditions, requiring that the lessee or a near relative shall reside on the property for at least six months in each of the first five years, attach to the ordinary conditional purchase leases but are not obligatory under accelerated-payment leases. Restrictions on transfer are imposed in each case.

Provision is made for conditional purchases of land out of pastoral leases, but these are of a comparatively minor nature designed to grant titles over particular portions of large properties.

Sale by Public Auction

The general conditions governing the sale to the public by auction of town or suburban land are set out in Part IV of the Land Act. Lands may be offered for sale by order of the Minister at such times and places as he may think fit, and notice of forthcoming sales must be published in the *Government Gazette* and in a newspaper. Ten per cent. of the purchase money must be paid at the time of the sale and the balance in four equal quarterly instalments. The purchaser may be required to fence the land on the surveyed boundaries within two years after the sale. Town or suburban land acquired at auction by instalment purchase is regarded as being held on licence until general requirements such as fencing and other prescribed improvements have been met, after which a grant in fee simple may be issued. In some instances special additional conditions may be imposed.

Sale by Private Tender

Sales by private tender, which are also called negotiated cash sales, are comparatively rare and usually relate to unwanted War Service Land Settlement farms and to areas set apart as special settlement lands.

Selections under the Agricultural Lands Purchase Act

Although the Agricultural Lands Purchase Act of 1909 and amending Acts were superseded by Part VIII of the Land Act, 1933-1960, land already acquired by the Government through this form of large-scale repurchase continues to be made available for reselection. Selections are allotted under a special form of conditional purchase lease. The maximum permissible area is 1,000 acres of cultivable land, or its equivalent in grazing land or mixed land, on the basis of two acres of cultivable land being equal to five acres of grazing land, except in special cases approved by the Governor when the maximum area may be increased to 2,000 acres of cultivable land or its equivalent. The normal term of such a conditional purchase lease is 40 years and within that period the lessee must pay for the land a price determined by the Governor. The aggregate of prices fixed in each repurchased estate is required to provide sufficient funds to meet the price paid by the Crown, together with interest and the cost of all improvements made upon it, including survey and subdivision. The improvement and residential conditions, the restrictions on transfer and the arrangements for the obtaining of a Crown grant are identical with those already stated in connexion with ordinary conditional purchase leases.

Endowment of land and reservation for public purposes

Few disposals of Crown land by way of endowment or free grant are now made. However, it is within the power of the Governor to dispose of, in any manner which serves the public interest, lands which are vested in the Crown. Crown land is frequently reserved by order of the Governor for a variety of public purposes, and where alienation is ultimately required for certain of such purposes the necessary



Above—Karri forest

Below—Loading karri log at bush landing



land is granted in fee simple or on a 999 years' lease. Grounds for reservation include :—the general requirements of the Government (*e.g.*, public works and buildings ; conservation of water, timber and indigenous flora and fauna ; housing ; public health and social welfare) ; the benefit of the aboriginal inhabitants ; local government needs for such purposes as the provision of town halls and other buildings, public utilities, social amenities, sports grounds and cemeteries ; sites for churches, hospitals and other institutions ; sites for clubs and club premises ; mining and quarrying purposes ; public parks ; and the provision of camping and watering places for travellers and stock. Reserves may be of class "A", which by proclamation of the Governor are reservations that must remain dedicated to the purpose declared in their proclamation until by Act of Parliament it is otherwise enacted, or classes "B" and "C", which are terminable by the Governor on notice in the *Government Gazette*. In the case of class "B", however, the Land Act provides that in the event of cancellation, a special report by the Minister shall be presented to Parliament setting forth the reasons for such cancellation and the purpose to which it is intended to devote the land. Common uses of class "A" reserves are for public recreation or amusement and for major public buildings. All reserves under Part III of the Act that are not proclaimed as class "A" are classified as either "B" or "C".

The Land Act provides that, when any reserve is not immediately required for the purpose for which it was made, the Governor may grant a lease for a period not exceeding 10 years at such rents and subject to such conditions as he may think fit. By an amendment to the Land Act in 1960 land reserved for parks or recreation grounds may be leased for the depasturing of stock even though the land is being used for the purpose for which it is reserved.

Other methods of alienation comprise mainly reservations of land for housing projects. Individual occupiers may acquire freehold title subject to certain conditions. Otherwise the land remains under Crown lease.

State Forests and Timber Reserves

In addition to the foregoing types of alienation, special provision is made in the Forests Act, 1918–1954, for the Governor, by Order in Council, to dedicate Crown land as a State Forest or to reserve Crown land as a Timber Reserve. While the reservation of a Timber Reserve may be revoked in whole or in part by the Governor in Council, the dedication of a State Forest may not be revoked except with the consent of both Houses of Parliament. The use of such Forests and Reserves comes within the administration of the Conservator of Forests.

METHODS OF LEASING

Brief reference has already been made to the work of the Departments of Lands and Surveys, Mines and Forests in granting leases of Crown lands in Western Australia. The activities of each Department in this field are now described in greater detail.

Lands Department

Approximately 98 per cent. of the Crown land held under lease is covered by tenures granted by the Department of Lands and Surveys under the Land Act, and consists mainly of pastoral leases, special leases, leases of reserves and leases of residential lots. In addition, areas of perpetually-leased farming land have been made available to ex-servicemen under the War Service Land Settlement Act.

Pastoral Leases—The maximum area which may be held by a lessee, either in his own right or when beneficially interested as a shareholder in an incorporated company, is one million acres. The minimum area depends on the Land Division in which the lease is sought, and varies between 3,000 and 50,000 acres. These minimum areas may be reduced in any Division if proximity of other properties makes it necessary.

The term of all pastoral leases taken up under the Land Act of 1898 was due to expire at the end of 1928 but by amending legislation they could be renewed up to the 31st December, 1948. Under current legislation, which was passed in 1933, all leases will now expire on the 31st December, 1982. Rents are determined by the Minister for Lands on the advice of a Board of Appraisalment and are subject to re-appraisal at statutory intervals.

The lessee is required to effect improvements within the first five years to the value of £5 per 1,000 acres and within the first 10 years to the value of £10 per 1,000 acres. In addition, a pastoral lease is liable to forfeiture if it is not stocked within the first two years at the rate of 10 head of sheep or two head of large stock per 1,000 acres, or within five and eight years at rates which are respectively double and treble these amounts. Stock numbers are expected to be maintained at least at the eighth-year

level for the remainder of the term of the lease. Relief from rent is granted where there have been severe losses of stock or reduction in woolclip due to drought, cyclone or flood. No transfer, mortgage or sub-lease can be effected in respect of a pastoral lease without the consent of the Minister for Lands.

Special Leases—Section 116 of the Land Act specifies a variety of industrial and other purposes for which the Governor may grant special leases of Crown land. The yearly rental must be not less than £2 and the period of the lease must not exceed 21 years. It is further provided that, in all cases where the intended period of leasing exceeds 10 years, prior notice must be inserted in the *Government Gazette*.

Leases of Reserves—As stated earlier in this Chapter in the section *Methods of Land Alienation* the Governor may grant a lease of any reserved land which is not immediately required for the purpose intended at the time of reservation, but the period of the lease may not exceed 10 years. By a further provision of the Land Act, no lease for a term exceeding one year shall be granted unless applications are called by notice in the *Government Gazette*. With the consent of the Governor, such land may be sub-leased. When land is reserved for parks or for recreation or amusement, if the land is not placed under the control or management of any person the Governor may, even though the land is being used for the purpose for which it is reserved, grant a lease or licence for one year for the purpose of depasturing stock. The Governor may insert in the lease or licence such conditions as he may think fit to ensure that the land is available for the purpose for which it is reserved and he may renew any lease or licence for a further period of one year.

Leases of Residential Lots—The Governor may lease any town or suburban lands on such terms as he may think fit. The usual procedure is to offer a lease at public auction. Unless otherwise specified, any lessee of town or suburban lands acquired at public auction may apply to purchase the fee simple of the land. Provision is also made for approval of any town or suburban lands being offered for leasing during a period not normally exceeding 99 years, as distinct from public auction. These leases are not convertible to freehold.

Perpetual Leases are authorized under the War Service Land Settlement legislation, which provides that ex-servicemen who have been awarded farms under this joint Commonwealth-State scheme and who meet the requirements of the appropriate agreement may enjoy perpetual leases. The lessee, on payment of such purchase price for the fee simple as is fixed by the Minister for Lands, may obtain the freehold of the property after the expiration of 10 years from the commencement of the term of the perpetual lease or after such shorter period as the Commonwealth and the State have determined or may determine where special circumstances exist.

Mines Department

Under the provisions of the Mining Act, 1904-1957, various special tenures, of which gold-mining leases, mineral leases and coal-mining leases are the most important, are granted by the Governor in connexion with the mining of gold, coal and other minerals. The Act contains provisions relating to the payment of fees, rents and royalties. The royalty provisions were extended by the 1957 amendment of the Act to embrace most minerals and precious stones as notified in the *Government Gazette* of the 20th May, 1958. The Governor may exempt any person or class of persons from the payment of royalties.

Oil search permits and licences are granted by the Minister for Mines and petroleum leases by the Governor under the provisions of the Petroleum Act, 1936-1954, with authority to charge fees, rents and royalties.

Gold-mining Leases—As well as conveying a right to mine for gold to any depth, a gold-mining lease permits the construction of all necessary buildings and plant within the area which it defines. Where, in the opinion of the Minister, land is likely to contain alluvial gold, it is normally exempted from lease. However, a lease may be granted if the Minister is satisfied that the land, having already been worked for alluvial gold, has been abandoned or that there is sufficient reason for waiving the exemption. In such cases the lease may range in area up to 48 acres. In all other instances the maximum area is 24 acres. Leases must, where practicable, be rectangles with a length not exceeding twice the width.

The term of any gold-mining lease shall not exceed 21 years, but shall have a right of renewal for a further 21 years, and the conditions provide that for the first year it must be manned by at least two men and for the remainder of its term by at least two men, or one man for every six acres, whichever is the greater. Subject to certain adjustments of these labour conditions, a person may hold two or more leases as an amalgamated group, provided that the group does not total more than 96 acres and that the length along the line of lode does not exceed 66 chains. A rent of 5s. per acre is charged during the

first year and £1 per acre during the following years. The grant of a gold-mining lease conveys an exclusive right to mine for gold or other minerals within the bounds of the lease, but excludes rights in respect to petroleum.

Mineral Leases—Mineral leases authorize the holders to mine for a specified mineral or combination of minerals to any depth within the confines of the lease and convey the same construction rights as a gold-mining lease. The term of any mineral lease shall not exceed 21 years, but shall have a right of renewal for a further 21 years. Except under special conditions, including the payment of royalty, as set out in the Act, land held under a mineral lease may not be mined for gold. Land which is proved to the satisfaction of the Minister to consist of payable alluvial ground is normally exempted from lease. If, however, a tract of land has already been worked as alluvial ground and has been abandoned, or the Minister is satisfied that there is sufficient reason for waiving the exemption, leases may be granted for areas not exceeding, individually, 96 acres. In all other cases mineral leases may not exceed 48 acres and, where practicable, must be rectangles of a length not exceeding twice the width. The labour conditions provide that a mineral lease must be manned by at least two men for the first twelve months and thereafter by at least one man for every six acres or fraction thereof, with a minimum of two men. An annual rent of 5s. per acre is charged. Leases may, at the discretion of the Minister, be amalgamated in working, but the total area may not exceed 96 acres and the total length along the line of reef or lode may not exceed 90 chains.

Coal-mining Leases—Individual leases for coal mining have a maximum area of 320 acres. The term of any coal-mining lease shall not exceed 21 years, but shall have a right of renewal for a further 21 years. Such leases must be efficiently worked during the first twelve months by at least one man, during the next twelve months by at least two men and during each succeeding year of the lease by at least three men, for every 60 acres or part thereof contained in the lease. The yearly rent of coal-mining leases is sixpence per acre and a royalty of threepence per ton is payable on all coal raised during the first 10 years of the lease, rising to sixpence per ton during the remainder of the term. The Mining Act, 1904–1957 provides for certain royalty rebates on newly-discovered coal deposits, while the Mining Regulations contain special provisions regarding development of the deposits in the Collie district, the only area where coal is being mined in the State.

Other Mining Tenements

Mineral Claims—An area not exceeding 300 acres may be applied for as a mineral claim, but the length must not exceed twice the breadth. The rent for a mineral claim is calculated at the rate of 2s. 6d. per annum per acre. Working conditions require that not less than three men shall be continuously employed for every 100 acres or fraction thereof.

Dredging Claims—Application may be made for dredging claims for gold or minerals in lakes, swamps, marshes, or rivers and the land adjacent thereto, or on the foreshore of, and land under, the ocean. The maximum area of a dredging claim shall not exceed 300 acres. Except in the case of river claims, where there is no restriction on width, the minimum width at right angles to the bank or shore edge shall not be less than 15 chains. A river claim shall not exceed six miles in length. Working conditions require that not less than three men shall be continuously employed on the claim and, in addition, machinery of not less value than £1,000 shall be continuously employed.

Temporary Reserves—To encourage mining, provision is made for the creation of Temporary Reserves of Crown land by the Minister, and an Authority to occupy such reserve for the purpose of searching for gold or other minerals may be granted. In the case of gold, these Temporary Reserves may not exceed 300 acres except for deep alluvial, when there is no restriction as to the area. Temporary Reserves for all other minerals are not restricted as to area. In the event of any mineral being found by the occupier of a Temporary Reserve, he may be required to peg out and apply for ordinary mining titles.

Miners' Homestead Leases—A miner who is not less than 18 years of age and is resident on a goldfield or mineral field, or any incorporated company, may apply for a homestead lease of Crown land within the field. In appropriate circumstances a miner may hold more than one such lease, but the aggregate area may not exceed 20 acres within two miles of the nearest boundary of a townsite or suburban area, or 500 acres elsewhere. However, these maximum areas may be exceeded by the acquisition by transfer of land comprised in a Miners' Homestead Lease which has been in existence for a period exceeding 10 years. During the first 20 years of the lease an annual rent of 2s. per acre is charged where the total area does not exceed 20 acres and for larger areas the annual rental is sixpence per acre. After 20 years

the rent is 1s. per annum if demanded. Basic improvements must be made by the lessee within the first six months and the land must be fenced on its boundaries within three years after the commencement of the lease. Improvements to the value of 10s. per acre must be made within the first five years.

Tenures under provisions of the Petroleum Act, 1936-1954—Exclusive petroleum search rights over an area of not less than 1,000 square miles may be granted in the form of a Permit to Explore which is valid for two years with further annual renewals at the discretion of the Minister for Mines. A fee of £100 is payable on application for a Permit and where it is granted the successful applicant is required to lodge with the Under Secretary for Mines a bond of £1,000. It is further provided that a geologist must be engaged, that drilling be confined to "scout" drilling and have the Minister's approval, and that the Minister be supplied at regular intervals with full information concerning operations.

Any holder of a Permit to Explore may apply for a Licence to Prospect within a defined portion of the area covered by the Permit. A Licence to Prospect cannot cover more than 200 nor less than eight square miles and the licensee must put up a bond of not less than £1,000. The licence is valid for two years and the Minister may grant three successive renewals for further periods of one year each. For an annual fee, based on the rate of 5s. per square mile during the first year of the licence (maximum fee, £12 10s.) and on 10s. per square mile in subsequent years (maximum annual fee, £25), the licensee has the exclusive right to prospect for petroleum within the specified area. Drilling arrangements require the approval of the Minister and operating information must be supplied to him at regular intervals.

A holder of a Licence to Prospect may, upon discovering petroleum within his area, select as a Petroleum Lease or Leases so much of his licence area as he requires if the licence was granted on or before the 1st January, 1955 or select not more than half the land if his licence was granted after that date. The balance of the area contained in the Licence to Prospect reverts to the Crown and may be disposed of upon such terms and conditions as the Governor may determine, subject to the holder of the Licence to Prospect being granted first right of acquisition upon those terms and conditions. A bond of £1,000 must be lodged with the Under Secretary for Mines when the lease is granted.

The area of a Petroleum Lease must not be greater than 100 square miles nor, unless approved by the Minister, less than four square miles. Initially, the term is for 21 years and there is an option of renewal for any further period during which petroleum in payable quantities is produced. A rental of £10 per annum is charged for every square mile or portion of a square mile comprising the lease. The Act provides for the fixing of the rate of petroleum royalty when a lease is granted.

Miscellaneous mining tenures—The leases and licences detailed above are those which are fundamental to mining development but there are several additional tenures which are issued in order to assist the processes of mineral extraction and treatment. These incidental tenures include rights to operate tramways, to conserve and convey water, and to store machinery.

Forests Department

While not designated as leases, certain of the tenures issued under the Forests Act, 1918-1954, such as Sawmilling Permits and Mill Site Permits, are similar in effect.

Sawmilling Permits—A Sawmilling Permit entitles the holder to sole cutting rights in respect of certain classes of timber within a defined area and for a specified period. The cutting programme to be followed by the permit holder must be of such a nature that the forest resources of the area are used to the best advantage and that provision is made for forest regeneration. In consequence, cutting within the permit area is controlled by the Forests Department under a system of defined "coupes," each of which is cut over and closed in turn. Each sawmilling permit holder is required to fall and deliver logs to the mill at a prescribed rate, and to supply the Forests Department with details of the logs taken and the timber cut therefrom.

Sawmilling permits are of major importance because of the capital outlay involved and the area is usually selected so as to give a cutting life of about 30 years. However, the usual practice is to grant the permits for a term of one year, subject to annual renewals. The royalty payable is determined by the sale of cutting rights by auction or by tender, the minimum royalty having first been established by the Forests Department.

Sawmill Site Permits—It is obligatory upon all holders of Sawmilling Permits to erect an efficient sawmill within a short period after the granting of the permit. The sawmill may be erected outside the sawmilling permit area. If, however, a mill is to be established on Crown land, a Sawmill Site Permit must first be obtained. An area not exceeding 50 acres may be leased to the sawmilling permit holder

by the Conservator of Forests for this purpose and the annual rental is £3 for every 10 acres or part thereof. The holder of a Sawmill Site Permit is responsible for the buildings erected and must, if required, submit plans of all such buildings to the Conservator of Forests for his approval.

Other leases, licences and permits—A number of other leases, licences and permits are issued by the Forests Department, one of which, the Forest Produce Licence, authorizes the licensee to collect various types of forest products other than millable timber. Important examples of this form of licence are those granted on the goldfields and in the wheat belt for the cutting of mining and farm timber and firewood and there are special regulations controlling the collection of sandalwood. Provided forestry interests are not prejudiced, the Department also issues Forest Leases, which confer grazing, agricultural or similar rights over forest areas for any term not exceeding 20 years.

Permits involving lesser areas provide residential sites for workmen employed in timber production, and business sites for establishments meeting the normal needs of sawmilling communities. They are issued over small areas of State Forests, usually within sawmilling permit areas, and are granted on a yearly basis at a rental of £3 per annum. Permits are also granted for apiary sites of an area not exceeding three acres. They are issued to persons who are actively engaged in bee keeping and who have at least 25 hives of bees in the State. A permit may not be issued for an apiary site on Crown land if it is within two miles of a site already granted to another apiarist, and not more than four permits may be held for every 50 hives of bees owned.

LAND CLASSIFICATION

Large-scale as well as detailed land classification measures have been developed progressively in Western Australia, the basic data being the reports made by surveyors when traversing and mapping new tracts of land. From the early years of land settlement the staff surveyors of the Lands Department have commented generally on the nature of the country in which they were working and a practical guide to land utilization prospects has been obtained. By such methods the settlement potentialities of the State's area of 975,920 square miles first became approximately known, and the Surveyor-General has estimated that about 11 per cent. of the total area is represented by agricultural areas, 52 per cent. by pastoral areas and the remaining 37 per cent. by practically unoccupied areas of the interior.

In the agricultural and the pastoral areas, detailed classifications have been facilitated by the comments of surveyors when dealing with individual blocks and, although frequent use is now made of soil analyses, surveyors' reports are still the basis for classifying salable or leasable Crown land as First, Second or Third Class. The classification system dates back to 1909 and is used primarily to put a price on land but another important function is to ensure, as far as possible, that newly-selected farms are of sufficient size, with adequate amounts of suitable soil, to make an economic unit. Not only are soils classified, but the positions of rivers, creeks, swamps, hills and valleys are taken into account. When assessing the economic prospects of an area it is consequently possible to make allowance for types of soil, the adequacy of water supplies, the proximity of roads and railways and the costs of development. In arriving at an equitable upset price, all these factors are considered.

In addition to this general method of classifying land for agricultural or pastoral purposes, a considerable area of forest country has been classified by ground survey and by aerial photography and the Mines Department carries out a continuous geological survey. Substantial use is also made of aerial photography and photogrammetric methods by the Mapping Branch of the Lands and Surveys Department.

OCCUPATION OF LAND

The following table shows, for a selection of years during the period from 1900 to 1960, the areas of land absolutely alienated or in process of alienation and of Crown land held under certain types of lease or licence. For the years 1900, 1910 and 1920 the basis of classification according to Department has been made to conform to current practice in the issue of leases and licences. For example, tenures relating to forests, which were originally issued by the Lands Department and later by the Mines Department, have been shown for those years under the heading of Forests Department. For 1930 and later years the figures are as recorded by the Departments concerned. The types of tenure included under the several departmental headings are indicated in the footnotes to the table.

LAND ALIENATED AND LAND HELD UNDER LEASE

Date	Area absolutely alienated	Area in process of alienation	Area of Leases or Licences in Force on Crown Land and Issued (†) by—			
			Lands Department		Mines Department (b)	Forests Department (c)
			Pastoral Leases	Other Leases (a)		
At 30th June—	acres	acres	acres	acres	acres	acres
1900 (d)	3,462,490	3,156,798	86,429,037	10,654	84,470	851,820
1910	4,449,326	12,880,195	165,463,185	501,315	99,732	1,143,572
1920	8,763,051	14,259,769	253,436,312	2,454,204	97,387	1,612,068
1930	14,506,064	21,533,054	241,504,687	2,397,790	84,381	1,402,898
1940	18,244,428	14,192,666	204,950,557	2,008,124	93,709	2,327,371
1950	21,263,085	11,514,531	219,200,060	3,289,017	97,868	3,418,217
1951	22,013,900	11,967,117	(e) 196,821,454	3,481,392	109,243	3,527,438
1952	22,636,334	12,129,588	198,152,532	3,703,937	100,906	3,649,325
1953	23,634,215	12,226,597	198,938,434	3,822,192	105,470	3,571,736
1954	24,385,777	12,850,764	198,870,488	3,883,289	103,765	3,708,647
1955	24,708,930	13,116,652	200,789,422	3,992,209	101,083	3,757,433
1956	25,228,070	13,001,488	208,003,368	4,376,227	100,372	3,837,712
1957	25,726,950	12,837,282	208,396,798	4,434,105	97,402	3,882,488
1958	26,205,502	13,053,345	212,543,505	5,202,529	98,392	3,919,067
1959	26,810,081	12,907,720	217,655,338	5,820,659	92,948	4,031,140
1960	27,343,902	12,758,807	216,908,871	6,623,272	93,000	4,024,720

(†) See letterpress immediately preceding table. (a) Comprises special leases, leases of reserves, leases of residential lots and perpetual leases. (b) Comprises gold-mining leases, mineral leases and miners' homestead leases. (c) Predominantly sawmilling permits. Includes permits for cutting wandoos for tannin extraction but excludes permits and licences for cutting timber and firewood in Goldfields areas. (d) At 31st December. (e) Apparent decrease in area due mainly to revision in the records of the Lands Department.

Land which is shown as "absolutely alienated" consists mainly of farming areas, acquired originally as Conditional Purchase Leases and subsequently alienated under Crown grant. While held under lease prior to alienation they account for most of the land shown as "in process of alienation." These two sets of figures taken together consequently give a broad indication of the increased use of land for agricultural purposes during the period under review. Similarly, variations in the area occupied as sheep and cattle stations may be gauged by reference to the area of pastoral leases issued by the Lands Department.

The passing of the Homesteads Act in 1893 and of a comprehensive Land Act in 1898 provided the basis for a rapid increase in the settlement of agricultural land. Under the Homesteads Act, any man over the age of 18 years who did not already own an area of 100 acres or more in this State could apply for a free homestead farm of 160 acres, on condition that he resided on his land during at least six months of each of the first five years and carried out prescribed improvements. With a lower minimum age of 16 years, a similar provision is contained in the Land Act, 1933-1960, and this provision, operating in conjunction with the conditional purchase lease system, has also been a factor in the increase in land settlement, particularly in the wheat-growing areas.

About 1905 the Department of Lands and Surveys, by implementing a system of survey and subdivision before selection, partially checked the indiscriminate selection of land by inexperienced farmers. A further stabilizing influence on agricultural development was the introduction in 1909 of a system of grading Crown lands into classes, First, Second and Third according to suitability for farming.

The movement of population from the goldfields to the wheat belt contributed to the increase in the area of land in process of alienation from 3,156,798 acres in 1900 to 12,880,195 in 1910. The ultimate alienation of about one-third of this land by Crown grant is reflected in the greatly increased figures for "absolutely alienated" land in 1920. Settlement of the wheat belt developed rapidly during and after the period 1910 to 1920, in spite of serious droughts which occurred in 1911 and 1914. Although the increased totals at the 30th June, 1930 were principally due to this development, they resulted in part from the acquisition during the previous 10 years of farmland, mainly for dairying, in the south-west of the State under the Group Settlement Scheme. These holdings were individually much smaller than

those in the wheat-growing districts, because of the type of farming and the heavy clearing costs, but the numbers involved made the total area taken up under the Scheme of some significance.

Pastoral leases, which comprise the greatest proportion of Crown land held under lease or licence, increased threefold between 1900 and 1920 and continue to cover approximately one-third of the whole State. The aggregate area of gold-mining leases, mineral leases and miners' homestead leases, appearing in the table under the heading of Mines Department, shows comparatively little variation since 1900. However, in recent years very large areas have been included in tenures issued under the provisions of the Petroleum Act, 1936-1954 and in temporary reserves under the Mining Act, 1904-1957. At the 30th June, 1960 there were current, under the Petroleum Act, permits to explore covering 355,392,000 acres and licences to prospect covering 4,933,120 acres. The area relating to permits appearing under the heading of Forests Department shows a general increase from less than one million acres in 1900 to more than four million acres in 1960.

From 1930 the demand for land for agricultural purposes declined considerably, the principal reason being the lower farm commodity prices which prevailed for several years prior to the second World War. After 1945, however, the demand for land again increased, stimulated by the sharp rise in export prices, notably of wheat and wool, and later by the War Service Land Settlement Scheme mentioned in the following section *Government Land Settlement Schemes*. The area conditionally alienated in any one year reached a post-war peak of 1,707,894 acres in 1953 but had declined to 718,133 acres in 1960.

The following table gives details of areas of land for which applications were approved, during each of the years 1951 to 1960, by the Lands Department for conditional alienation or allocation under lease or licence. The figures shown for any year do not necessarily represent land allotted for the first time, as they may include land previously held under any of the several forms of land tenure.

CROWN LANDS—AREA OF ALLOCATIONS APPROVED BY LANDS DEPARTMENT (a)
(Figures revised since previous issue)

Year	Conditional Alienation					Leases and Licences			
	Con- ditional Pur- chases	Selections under Part VIII of Land Act	Town and Suburban Lots	Miscel- laneous (b)	Total	Pastoral Leases and Licences	Special Leases	Miscel- laneous Leases (c)	Total
	acres	acres	acres	acres	acres	acres	acres	acres	acres
1951	1,125,373	22,180	1,239	13,020	1,161,812	3,542,015	78,971	154,551	3,775,537
1952	1,193,981	20,741	1,707	30,133	1,246,562	3,045,945	99,388	206,539	3,351,872
1953	1,675,075	13,808	923	18,088	1,707,894	2,292,734	71,731	12,272	2,376,737
1954	1,042,643	4,956	675	4,795	1,053,069	5,427,698	224,870	102,398	5,754,966
1955	798,547	11,672	857	240	811,316	8,431,745	139,827	41,707	8,613,279
1956	704,053	182	328	1,311	705,874	3,523,487	152,217	204,959	3,880,663
1957	932,686	727	507	6,319	940,239	5,218,047	346,254	224,328	5,788,629
1958	796,865	1,255	285	4,051	802,456	3,175,303	536,222	182,740	3,894,265
1959	976,440	2,179	631	1,266	980,516	10,246,253	1,037,882	276,816	11,560,951
1960	712,410	4,779	266	678	718,133	4,164,358	912,046	251,361	5,327,765

(a) See letterpress immediately preceding table. (b) Comprises Free Homestead Farms and Reserves. (c) Comprises perpetual leases, leases of reserves and leases of town and suburban lots.

GOVERNMENT LAND SETTLEMENT SCHEMES

Although, generally, the method of land alienation and settlement in the agricultural areas of Western Australia has been by independent applications by individual settlers for conditional purchase leases, there has also been a series of government land settlement schemes. The more important of these are the Soldiers' Settlement Scheme following the 1914-18 war, the Group Settlement Scheme introduced in 1921, the War Service Land Settlement Scheme which was initiated in 1945 and other lesser schemes for the settlement of civilians.

Soldiers' Settlement Scheme

The Soldiers' Settlement Scheme was introduced after the first World War and was financed partly by the United Kingdom Government, which arranged free passages for ex-service personnel and their families, and partly by the Commonwealth and State Governments of Australia. Under joint financial

responsibility for the scheme the Commonwealth Government was to provide loan moneys to an average of £500 per settler as working capital for such essentials as initial improvements, implements and seed. Later this was increased to £625 and a further average loan of £375 towards the cost of land brought the Commonwealth commitment to £1,000 per settler. The State Agricultural Bank provided all extra funds for operations in Western Australia.

By 1940, when operations under the scheme virtually came to an end, 5,213 soldier settlers had been assisted in Western Australia and advances totalling £6,737,693 had been made. The ultimate cost of the scheme was greater than had been anticipated and the extension of settlement, which was one of its purposes, was frustrated to some degree by the war-caused disabilities of the settlers. Much of the land taken up eventually either reverted to the Crown or was acquired by other settlers.

Group Settlement Scheme

The Group Settlement Scheme was introduced in 1921, but its major development resulted from the passage of the Empire Settlement Act of 1922 by the British Parliament. The main purposes of the Act were to relieve the considerable degree of unemployment prevailing in Britain and to expand land settlement in the Dominions. Agreements were consequently negotiated between the Governments concerned and in the case of the Western Australian scheme it was agreed to establish 6,000 holdings in various "Groups" in the south-western portion of the State, with the farmers on each "Group" forming a loosely-knit community. The settlers were to be assisted British immigrants and dairying and pig raising were to be the main activities. As in the Soldiers' Settlement Scheme, the expenditure involved was shared by the British, Commonwealth and State Governments.

The scheme did not develop to the extent originally planned, the maximum number of holdings settled at any one time being 2,442. By amalgamation of properties and abandonments, this number became reduced to 1,700 and in 1942, just over twenty years after the scheme was launched, 530 of the holdings were unoccupied and available for resettlement while little more than one-quarter of the 500,000 acres initially taken up had been brought into production. Nevertheless, the scheme had an important influence on the settlement and development of several parts of the extreme south-western portion of the State.

War Service Land Settlement Scheme

The general purpose of the War Service Land Settlement Scheme has been to settle on the land ex-servicemen of the second World War, the Korean War and the Malayan operations. Every effort has been made to profit from the experience gained in previous land settlement schemes and to avoid the faults and deficiencies which were responsible for their very limited success.

In the early years of the scheme, certain privately-owned properties were acquired for resettlement, but subsequent policy has been to develop available areas of Crown land. Land chosen was closely examined as to accessibility, climate, types of soils, water supply, productive capacity and the possibilities of development, improvement and subdivision. In order to ensure, as far as possible, the success of each individual venture, care has been taken to assess the suitability of both the applicant and the land selected for the type of farming contemplated. Government policy has been to prepare the holdings by clearing, fencing and other improvements before allotment to applicants. These considerations, rather than the number of applicants wishing to obtain a holding, have determined the rate and extent of settlement.

In this State, expenditure of the funds of the scheme, which are provided by the Commonwealth Government, is administered by the Land Settlement Board under the direction of the Minister for Agriculture, and the State Government is responsible for Western Australia's share of any losses incurred. Settlers are required to invest in their holdings a proportion of their own financial or other resources. Guidance and technical advice are made available to settlers through the Department of Agriculture extension services.

Although holdings under the scheme were originally available only on perpetual lease, amending legislation passed in the State Parliament during 1954 continuing the relevant provisions of an earlier amendment of 1951, enabled War Service Land Settlement lessees to apply for a title in fee simple after occupying the land for not less than 10 years on a leasehold basis. By an amendment passed during 1960 freehold can now be obtained after such shorter period than 10 years as the Commonwealth and the State have determined or may determine where special circumstances exist.

The main developmental work, both in project areas and on repurchased estates, has been almost completed and War Service Land Settlement activities are now devoted mainly to consolidation of de-

velopment already carried out. Up to the 30th June, 1960 a total of 1,159 ex-servicemen had been placed on farms.

Other Schemes of Settlement

The 3,500 Farms Scheme in Western Australia was one of the projects proposed to be undertaken under an agreement in 1925 between the British and Australian Governments, whereby £34 million was to be made available for joint developmental projects during the following 10 years. The Commonwealth Government set up a Development and Migration Commission to examine the suitability of any suggested projects. The Commission ultimately reported adversely on the 3,500 Farms Scheme and it was abandoned, but not before some expenditure had been incurred on the preparatory work of surveys and public works. In fact, the £34 million agreement itself lapsed before any significant results by way of additional farms had been achieved in Western Australia.

PUBLIC PARKS AND RESERVES

Reference has been made earlier in this Chapter in the section *Methods of Land Alienation* to land set aside by the Government for public purposes. Some of this land is reserved for public recreation and amusement, national and other public parks, or flora and fauna sanctuaries and the reserves are controlled by statutory bodies, the more important of which are dealt with in this section.

The National Parks Board of Western Australia controls a number of parks and reserves, comprising a total area of approximately 320,000 acres. Those in the neighbourhood of Perth are Crawley Reserve, Yanchep Park, the John Forrest National Park near Glen Forrest and reserves at Lesmurdie Falls, Serpentine Falls, Yanchep Beach and Penguin Island. In the southern part of the State are the Stirling Range and the Porongorups National Parks. The Nornalup National Park is on the south coast and the Hamelin Bay Reserve on the west coast near Cape Leeuwin. Recreation and camping facilities are provided in most of these areas. Flora and fauna are protected in all of them. The Board is also responsible for the upkeep of the East Perth Cemetery, a disused burial ground containing the graves of many of the early pioneers.

The Emu Point (Albany) Reserve Board controls a reserve containing an area of approximately 1,000 acres at Emu Point near Albany, which is being developed for recreation, camping and residential purposes.

The King's Park Board administers an area of almost 1,000 acres close to the centre of Perth. Most of the area is retained in a bushland state and has undergone no development other than the construction of motor drives and footpaths. The most scenic portion of the Park, on a bluff overlooking Perth City and the Swan River, has been landscaped and contains the State War Memorial and several other public monuments, and tree avenues planted in honour of fallen servicemen and also in commemoration of the State's Centenary in 1929. Other features include a restaurant, a floral clock and a wishing well. Plans have recently been made to establish a Botanic Garden of Western Australian native plants in the Park. The State Government has agreed to allocate for the purpose a sum of £166,500 to be spent over a five-year period commencing with the financial year 1962-63.

Zoological Gardens Board (Acclimatisation Committee)—An area of 44 acres at South Perth is under the control of the Acclimatisation Committee. Animals, birds and reptiles are exhibited in the Zoological Gardens and picnic, sporting and recreational facilities are available to the public.

The Rottnest Island Board administers as a tourist and holiday resort a reserve comprising almost the whole of Rottnest Island, which is situated about 10 miles west of Fremantle.

Caves Reserves—Extensive limestone caves have been discovered at several places in the south-west part of the State. Some of them, between Cape Naturaliste and Cape Leeuwin and at Yanchep, have been developed for public inspection and certain areas of the surrounding land have been reserved, notably at Yanchep, Yallingup, Margaret River and Augusta.

Local Government Reserves—Many local authorities hold land for recreational purposes, the areas having been either vested in them by the Crown, acquired by way of purchase or received under private bequest. The reserves are frequently developed as public parks or to provide facilities for sports or for camping.

The National Fitness Council controls reserves, principally for youth activities, at Point Peron on the coast south of Fremantle, at Sorrento to the north, at Bickley in the Darling Range and at Pemberton in the forest country of the South-West.

CHAPTER VII—continued

PART 2—WATER CONSERVATION AND SUPPLY

The principal water supply systems of Western Australia are under the control of two State Government Departments, both of which are administered by the Minister for Works and Water Supplies. The Metropolitan Water Supply, Sewerage and Drainage Department has as its territory an area centred on Perth and extending southward to Kwinana and Serpentine, northward to Sorrento and eastward to Greenmount. The Public Works Department controls the Goldfields and Agricultural Water Supply and the Great Southern Towns Water Supply as well as 71 local water supplies. It also provides water for irrigation purposes in the South-West Irrigation Districts. Five independent town schemes are controlled by local Water Boards in country areas and individual water supplies serve railways, timber mill towns, isolated mines, pastoral properties, stock routes and agricultural areas, mainly from dams, tanks, wells and bores. In addition, water from subterranean sources is used for irrigation purposes at Carnarvon, and from the Fitzroy River for rice growing at Camballin. Supplies from the Ord River are used on a pilot farm near Kununurra operated by a private company under an agreement with the State Government and for experimental work being carried out by the Department of Agriculture and the Commonwealth Scientific and Industrial Research Organization at the Kimberley Research Station.

The principal water storages in Western Australia are shown in the list below. Canning Dam, with supplementary catchments at Churchman Brook Dam, Victoria Reservoir and Wungong Brook Diversion Weir, and Serpentine Dam with Serpentine Pipehead Dam serve the metropolitan area and environs. Mundaring Weir, which is the source for the Goldfields and Agricultural Water Supply, is linked to Kalgoorlie by pipeline and serves the more populous parts of the Eastern Goldfields as well as certain towns and farming areas north and south of the main pipeline. As occasion arises Mundaring Weir is drawn upon also for metropolitan supply. Stirling Dam, with a supplementary catchment at Harvey Weir, serves part of the irrigation area of the South-West. Drakes Brook Dam and Samson Brook Dam are also used for this purpose. Wellington Dam, on the Collic River, has now been enlarged to meet not only the needs of the southern parts of the irrigation area but also of those towns along the Great Southern Railway which are included in the Great Southern Towns Water Supply. Work has begun on an earth dam on Logue Brook which will augment the supply of water to the Harvey Irrigation District.

The storage capacity of the several dams and reservoirs at the 31st December, 1961 was as shown below.

	million gallons
Canning Dam	20,550
Wungong Brook Diversion Weir	(a)
Churchman Brook Dam	480
Victoria Reservoir	189
Serpentine Main Dam	39,000
Serpentine Pipehead Dam	850
Mundaring Weir	16,966
Drakes Brook Dam	504
Samson Brook Dam	2,021
Stirling Dam	12,552
Harvey Weir	2,275
Wellington Dam	40,790
Logue Brook Dam (b)	5,230

(a) No storage as only a diversion weir for Canning Dam.

(b) Under construction at 31st December, 1961.

METROPOLITAN WATER SUPPLY

The sources of the metropolitan water supply are Serpentine Dam and Serpentine Pipehead Dam, Canning Dam, Churchman Brook Dam, Victoria Reservoir and Wungong Brook Diversion Weir. The supply from these sources is supplemented as necessary from a pipeline link with Mundaring Weir and from a number of artesian bores. The amount of bore water used, however, is now low in proportion to total metropolitan consumption, being rarely more than 10 per cent. during a severe summer and usually considerably less.

Victoria Reservoir, which was completed in 1891 with a capacity of 189 million gallons, was the first of the existing water conservation projects to be completed in the Darling Range. In 1921 a 23-million

gallon reservoir, which is no longer used for water supply, was constructed at Bickley Brook to replace a pipehead dam, and in 1928 one with a capacity of 480 million gallons was completed at Churchman Brook. During the same period pipehead dams were built across the upper course of the Canning River and its tributary, Wungong Brook, preliminary to the construction of Canning Dam, which was begun in 1933 and completed in 1940. Canning Dam, with an estimated catchment area of 302 square miles, has a storage capacity of 20,550 million gallons retained by a concrete wall 218 feet high and 1,534 feet long at the crest.

In 1950 a departmental report on the development of water storage in the Darling Range was submitted to the Government and authority was given for a start to be made on investigation and design work for a pipehead dam and a main dam on the Serpentine River. The pipehead dam was completed in 1957 and construction of the main dam was commenced immediately afterwards. This dam, which was officially opened on the 20th October, 1961, is constructed of rolled earth fill and the embankment rises 171 feet above the stream bed, the length at the crest being 1,390 feet. Its capacity, which is slightly less than that of Wellington Dam on the Collic River, is 39,000 million gallons and the area of the catchment is 246 square miles.

Water from storages in the Darling Range is conveyed to service reservoirs at Mount Yokine, Mount Eliza, Thompson Lake, Mount Hawthorn, Richmond, Melville, Buckland Hill and Greenmount, which serve an area of approximately 1,270 square miles, including the whole of the metropolitan area. To meet the peak demand during the summer months, supplies from these sources are supplemented from a system of artesian bores which can provide a daily maximum of 11 million gallons. On the 31st December, 1960, the number of consumer services was 131,979. The following table shows the quantities of water which were drawn from the various sources during each of the five years ended 30th June, 1956 to 1960.

METROPOLITAN WATER SUPPLY—QUANTITIES OF WATER DRAWN (a)
(million gallons)

Source	1955-56	1956-57	1957-58	1958-59	1959-60
Canning Dam	9,279	8,865	10,226	10,418	4,085
Churchman Brook Dam	726	1,139	830	672	454
Victoria Reservoir	630	488	469	424	253
Wungong Brook Diversion Weir	1,194	1,441	1,403	1,228	1,246
Mundaring Weir	1,422	1,782	1,671	1,767	69
Serpentine Pipehead Dam	1,211	1,365	1,365	2,314	4,296
Metropolitan Bores	1,211	1,311	1,572	1,483	2,093
Total	14,402	15,026	17,536	18,306	(b) 12,496

(a) Including supplies to railways and shipping.
letterpress *Water Supplies* on pages 18 and 21.

(b) Reduction due to unusually severe water restrictions. See

COUNTRY WATER SUPPLIES

CONTROLLED BY PUBLIC WORKS DEPARTMENT

Comprehensive Water Supply Scheme

A proposal for a Comprehensive Water Supply Scheme was first submitted by the State Government to the Commonwealth in January, 1946 when applying for financial assistance in its construction. The initial plan was intended to supply water to towns and farms in the greater part of the mixed farming (cereal and sheep) areas of Western Australia as well as to increase the supply to the Eastern Goldfields, but because of its high estimated cost the project was greatly reduced in scope and a modified scheme, agreed to by both Governments, was adopted in October, 1947. Parliamentary approval of the scheme as amended was given by the Agricultural Areas, Great Southern Towns, and Goldfields Water Supply Act, 1947 (State), and Commonwealth financial aid was authorized by the Western Australia Grant (Water Supply) Act 1948 (Commonwealth) and later amendments. The extent of the scheme as originally proposed, and as modified, is shown on a map appearing in previous issues of the *Official Year Book of Western Australia* and a description of the boundary of the modified scheme is contained in a schedule to the State Act.

The modified scheme has now been completed and up to the 30th June, 1961 total expenditure was £9,915,280, shared equally between the Governments of the State and the Commonwealth. A request by the State Government for financial assistance on the same basis to extend the scheme to the

boundary as first proposed in 1946 has been rejected by the Commonwealth Government. Further development will therefore depend on the availability of State funds, the policy being to restrict extensions to major towns within the original area, serving also farm lands adjacent to pipelines.

The project in its present form consists of two main parts, a northern section, being an expansion of the Goldfields and Agricultural Water Supply, and a southern section which is known as the Great Southern Towns Water Supply.

Goldfields and Agricultural Water Supply

The original purpose of this undertaking, which was formerly known as the Goldfields Water Supply, was to supply water for the Coolgardie and the Kalgoorlie-Boulder areas. To provide conservation, the Helena River was dammed near Mundaring, and on completion of the reservoir in 1902 it had a capacity of 4,655 million gallons. Subsequently extensive branch reticulations to country towns and agricultural areas were made from several points along the 346-mile pipeline connecting Mundaring Weir with Kalgoorlie. Notable extensions linked Norseman, 101 miles south of the main pipeline, to the scheme and took water northward from a point west of Merredin to supplement local schemes at Waddouring-Barbalin-Knungajin. Other extensions north and south of the main pipeline were made to provide water for a number of towns and surrounding districts, including Toodyay, Goomalling, York, Beverley and Bullfinch. The increasing demand for water in the area served by the scheme made it necessary to augment supplies. This was achieved by raising the wall 32 feet to a new height of 132 feet and when the work was completed in 1951 the enlarged capacity of the reservoir was 15,154 million gallons. The capacity has since been further increased to 16,966 million gallons by the installation of adjustable steel crest gates, four feet in height. The water storage now provided is expected to meet the expanding requirements of the districts along the pipeline as well as on the goldfields, and the capacity of the mains and pumping stations has been raised to ensure adequate distribution of the increased supplies. Several of the steam pumps have been replaced by electric installations.

The undertaking is now known as the Goldfields and Agricultural Water Supply, and serves the northern section of the Comprehensive Water Supply Scheme to provide reticulated water to many country towns and farming areas. A pipeline southward from Merredin to serve Bruce Rock, Narembeen and Kondinin and surrounding districts has been linked to an extension south-west from Doodlakine and taken westward to supply Corrigin. Areas north-west of Burracoppin are served by an extension northward from a point east of Merredin, and districts north of Kellerberrin by a pipeline connecting Kellerberrin to the Waddouring-Barbalin-Knungajin system already mentioned. Water is taken northward from Cunderdin through Minnivale to a terminal reservoir near Kokardine. Extensions westward and eastward from this pipeline serve the towns of Dowerin, Wyalkatchem, Yelbeni and Koorda and surrounding farm lands.

At the 30th June, 1961 the Goldfields and Agricultural Water Supply was serving more than 80 towns and water was being reticulated to 3.8 million acres of mixed-farming lands. The total length of pipelines was 3,528 miles and the number of services was 23,728. Consumption, including supplies drawn from local schemes but excluding water drawn from Mundaring Weir for the Metropolitan Water Supply, was 2,528 million gallons during the year ended 30th June, 1961.

Great Southern Towns Water Supply

The Great Southern Towns Water Supply is the southern section of the Comprehensive Water Supply Scheme and serves towns on the Great Southern Railway from Brookton to Katanning. Water is drawn from Wellington Dam which also supplies the Collie River Irrigation District. Work on the raising of the wall of the Dam was completed in 1960 and, with a capacity of 40,790 million gallons, it is now the largest in the State. It is linked by 87 miles of main pipeline to Narrogin and, in addition to the pumping station at Wellington Dam, two stations are operated for the purposes of the Scheme, the first being 28 miles east of the Dam and the second at Narrogin. Pipelines extend from Narrogin 40 miles north to Brookton and 59 miles south to Katanning. At the 30th June, 1961 the Great Southern Towns Water Supply was serving 17 towns, the total length of pipelines was 340 miles and the number of services was 6,443. Consumption during the year ended 30th June, 1961 was 472 million gallons.

Other Schemes

Seventy-one local schemes supply water from stream flow, dams, tanks, wells and bores, mainly to country towns. Sixty-two of these schemes, as well as the Goldfields and Agricultural Water Supply and the Great Southern Towns Water Supply, are administered under the provisions of the Country Areas Water Supply Act, 1947-1960. The Minister also controls nine minor undertakings.

OTHER COUNTRY WATER SUPPLIES

As well as the schemes controlled by the Public Works Department, there are five local Water Boards operating under the Water Boards Act, 1904-1954 which also draw supplies from stream flow, dams, tanks, wells and bores. In addition, some local authorities exercise powers under the Local Government Act, 1960-1961 to supply water within their boundaries. There are still, however, a large number of individual farms and pastoral stations which are not connected to public schemes and are therefore obliged to provide their own supplies. The Forests Department and sawmilling companies operate schemes to supply water to their mill towns.

Railways of the Commonwealth and State Governments make independent provision for supplies of water for their own purposes, although considerable additional quantities are consumed by the railways from other sources, such as those controlled by the Public Works and Metropolitan Water Supply Departments.

SOUTH-WEST IRRIGATION SCHEMES

Irrigation schemes have been established by the State Government on the coastal plain south of Perth in the Waroona, Harvey and Collie River Irrigation Districts between Waroona and Dardanup, the water being channelled from dams in the adjacent Darling Range (see map on page 222).

Specialist advice on irrigation farming methods is available through the Department of Agriculture and the properties are watered on a rotational plan, according to the "Zone", or section of the District, within which the farms are situated. Two free waterings are given each season on all rated land. All other waterings are charged for and special waterings, out of rotation, are available at a higher fee.

Details of irrigation in each District in the years 1958-59 and 1959-60 are given in the following table.

IRRIGATION

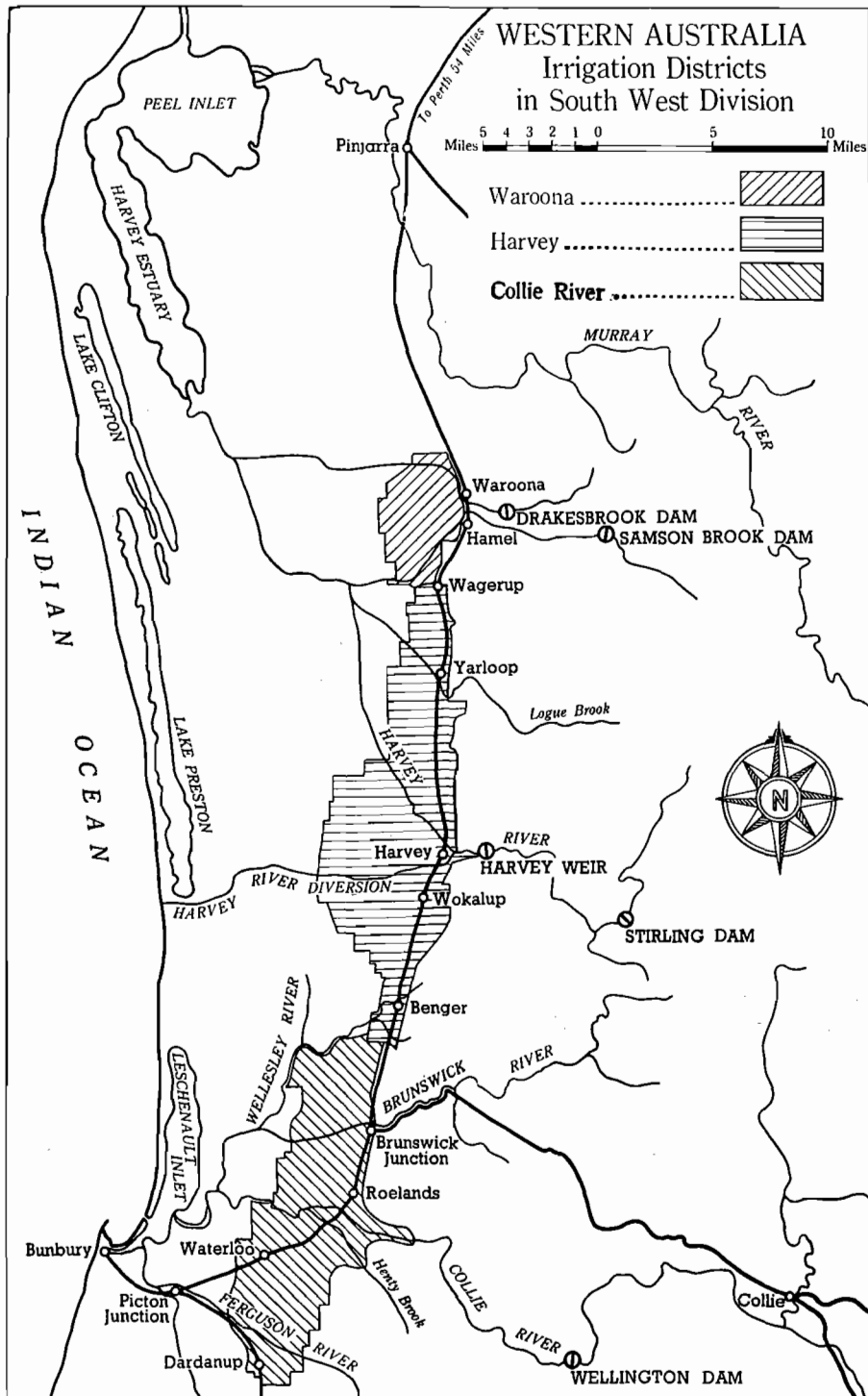
Particulars	Irrigation District						Total	
	Waroona		Harvey		Collie River			
	1958-59	1959-60	1958-59	1959-60	1958-59	1959-60	1958-59	1959-60
Area Watered—								
Pasture acres	2,314	3,233	11,713	10,033	8,253	8,706	22,280	21,972
Fodder Crops "	412	459	714	425	499	644	1,625	1,528
Potatoes "	141	158	233	44	250	273	624	475
Other Vegetables "	332	395	105	62	84	138	521	505
Orchards .... "	....	....	191	180	10	9	201	189
Other Crops .... "	....	....	....	....	1	13	1	13
Total "	3,199	4,245	12,956	10,744	9,097	9,783	25,252	24,772
Acre Waterings (a)	18,223	16,167	79,861	56,223	50,548	49,479	148,632	121,869
Average Number of Waterings	5.7	3.8	6.2	5.2	5.6	5.1	5.9	4.9
Total Water Gauged at Entry to District million gal.	(b)	2,772	13,871	7,693	8,361	8,465	(b)	18,930
Dam Capacity "	2,281	2,525	14,827	14,827	8,000	40,790	25,108	58,142
Length of Channels miles	46	46	151	151	106	106	303	303

(a) Number of acres watered multiplied by average number of waterings. not gauged.

(b) Water to Waroona Irrigation District

The Harvey Irrigation District, opened in 1916, was the first large-scale project. Harvey Weir, with a capacity of 520 million gallons, was constructed as the source of water supply and the service initially provided was for 3,000 acres of land for citrus growing.

The success of dairying and stock raising and to a lesser extent vegetable growing, which have replaced citrus culture, has led to gradual but substantial extensions of the South-West irrigation area. The damming of Drakes Brook in 1931 and Samson Brook in 1941 provided a storage capacity of 2,281 million gallons which, by alterations to Samson Brook Dam in 1960, has been increased to 2,525 million gallons and is used for the irrigation of 3,417 rated acres in the Waroona Irrigation District. In 1931 the capacity of Harvey Weir was enlarged to 2,275 million gallons and in 1948 Stirling Dam, with an original capacity of 12,060 million gallons (increased to 12,552 million gallons by alterations in 1958), was completed further upstream on the Harvey River. These works enabled the Harvey Irrigation District to be extended northward to link with the Waroona District and the irrigable area of the former to be increased to 14,369 rated acres. Work is in progress on the damming of Logue Brook to augment supplies to the Harvey Irrigation District.



Concurrently with developments in the Harvey and Waroona Irrigation Districts, action was taken to conserve water for the Collie River Irrigation District and Wellington Dam on the Collie River was completed in 1933. In view of its importance, not only to irrigation projects but also to the Great Southern Towns Water Supply, the wall of this reservoir has been raised and when work was completed in 1960 its capacity of 8,000 million gallons had been increased to 40,790 million gallons. It serves an irrigable area of 9,269 rated acres in the Collie River Irrigation District, which extends from Brunswick Junction to Dardanup.

NORTHERN IRRIGATION SCHEMES

Although not yet comparable in size with the South-West undertakings, the irrigation areas at Carnarvon and on the Ord and Fitzroy Rivers in the northern portion of the State are of increasing significance.

Carnarvon—During the past thirty years a centre of tropical agriculture has been developed at Carnarvon, near the mouth of the Gascoyne River. At first a number of tropical fruits were grown but, until recent years, production consisted mainly of bananas. A considerable quantity of early beans is now grown for the metropolitan market and for export interstate, and production of tomatoes and a variety of other vegetables has also increased in importance. This trend towards vegetable production has been accelerated by the damage caused to the banana plantations by cyclones and floods in recent years.

Agricultural development has been made possible only by irrigation, as the rainfall is extremely variable and averages little more than nine inches per annum. Each holding has its own irrigation plant and, wherever possible, the pumping unit is installed on a bank of the Gascoyne River. Usually the river bed is exposed, as surface flow does not occur regularly each year. Concrete-lined wells have been driven into the river sands and the water obtained is pumped either to storage tanks or direct to the plantation feeder channels, from which it is distributed among the plants by furrows. Some experiments have been carried out with overhead methods of irrigation, mainly at the tropical research station which is maintained at Carnarvon by the Department of Agriculture. To the early activities of this research station may be credited much of the success of the Carnarvon plantations, notably in the field of plant selection, and experimental work is being continued.

Ord River—The Ord River in the Kimberley Division traverses a tropical area served by monsoonal rains of irregular incidence and quantity, varying from an annual mean of 20 inches in the south to 30 inches in the north. The State Government has begun work on a plan to build a dam to conserve more than 3.5 million acre-feet (equivalent to more than 950,000 million gallons) of water for supply to an area of about 200,000 acres of land agriculturally and topographically suitable for irrigation. Investigations at the Kimberley Research Station, established in 1945 and operated by the Department of Agriculture in conjunction with the Commonwealth Scientific and Industrial Research Organization, have shown that the climate and soil conditions are favourable for the cultivation of sugar-cane, rice, cotton, safflower and various oil seeds. The economic production of these and other crops, as well as the possible use of such irrigation areas for fattening cattle, is now being examined also at a pilot farm on the Ord River operated by a private company under an agreement with the State Government. Details of this agreement are incorporated in the Northern Developments (Ord River) Pty. Ltd. Agreement Act, 1960, to which reference is made on page 95.

Construction of a diversion dam, now in progress about 60 miles south-east of Wyndham and some 30 miles downstream from the main dam site, will enable the first of a number of irrigation farms to be established. The Commonwealth Government has accepted the Ord River diversion dam as an approved project within the meaning of the Western Australia Grant (Northern Development) Act 1958-1959.

Fitzroy River—On the Liveringa flood plain, rice is being produced in commercial quantities at Camballin, 65 miles south-east of Derby. Irrigation water from the Fitzroy River is diverted through Uralla Creek, an anabranch, for 25 miles to the rice-growing area where there is a natural storage of about 326 million gallons capacity. The supply of water to the irrigation area is augmented by pumping during periods of low flow in the Fitzroy River. Further storage with a capacity of 1,250 million gallons has been provided by the construction of a dam on Uralla Creek, 17 miles from the river. A weir has been constructed across the river to provide gravity flow to Uralla Creek during periods when the river is running. Later it will be necessary to construct a storage dam on the upper reaches of the Fitzroy River for the large-scale developments envisaged for this area.

CHAPTER VIII – PRODUCTION

Although secondary industry in Western Australia has become increasingly important in recent years, the State's economy is still predominantly dependent on primary production and in particular on the pastoral, agricultural and mining sectors.

Farming has been carried on from the earliest years of settlement but its development was originally restricted by inadequate transport, shortage of labour and a limited local consumption. These difficulties were partly overcome by the introduction of convict labour during the period from 1850 to 1868, but the Colony was still dependent on the importation of many items of foodstuffs when the position was aggravated by a great influx of people attracted by the discovery of gold in the Kimberley in 1885 and by the spectacular finds in the 1890's at Coolgardie and Kalgoorlie and at other places on the eastern goldfields. Between 1890 and 1905 the population increased from 48,502 to 250,138 and, despite an increase in the area under crop from 69,700 acres to 364,700 acres during these years, agricultural production remained insufficient to meet local demands.

A decline in gold mining which began after 1903 caused a growing interest in farming as an alternative pursuit and by 1911 the area under crop had increased to more than one million acres, of which 612,000 were sown to wheat for grain. Since that time, although there have been some fluctuations in agricultural activity, the area under crop has risen to more than six and a quarter million acres of which almost three and three quarter million are sown to wheat for grain.

Circumstances similar to those applying to agriculture stimulated the growth of the pastoral industry and large cattle and sheep stations were established on land leased from the Crown, mainly in the northern and north-western areas and in parts of the eastern goldfields. The number of cattle in the State increased from 131,000 to 825,000 and of sheep from 2,525,000 to 5,159,000 between 1890 and 1910, when nearly three-fifths of the sheep were in the pastoral areas and little more than two-fifths in the agricultural areas as defined on page 245. With the development of mixed wheat and sheep farming the total number of sheep has risen and in 1960 was 16.4 million, but less than one-fifth are now in the pastoral areas and more than four-fifths in the agricultural areas. Although there has been notable progress in beef production in the south-west, the Kimberley Division continues to be the principal producer, having almost two-thirds of the 813,961 head of beef cattle in the State in 1960.

The contribution of gold mining to the Western Australian economy has diminished greatly since the peak production of 1903. It is nevertheless of considerable importance and is still the major mining activity, followed in order by the mining of coal, asbestos, iron, manganese, ilmenite and pyritic ore.

Dairying, with an annual milk production of about 56 million gallons, has become a significant factor in primary industry and in 1959-60 the output of butter was 15,955,139 lb. and of cheese 3,177,292 lb.

The demand for jarrah and karri hardwoods has long been a feature of the State's economy. Indiscriminate cutting in earlier years and disregard of the need for preservation and regeneration threatened the survival of the timber industry. However, governmental controls over forestry operations and a policy of reforestation introduced in 1918 have proved to be effective and the industry is now established on a firm basis, timber forming an important component of primary production.

The overseas demand for crayfish, which has developed in post-war years, has given great impetus to the fishing industry, the total value of the take of fish having increased almost tenfold between 1947 and 1959-60. Interest in whaling was evident in the first years of colonization, exports of oil and whale-bone being recorded in the earliest of the colonial Blue Books. Whaling activity since then has fluctuated widely and at times ceased altogether. The latest large-scale revival of the industry began in 1949 when a station at Point Cloates on the north-west coast was reopened after a lapse of more than twenty years.

Remoteness from the resources and markets of the more populous States has been an important factor in retarding manufacturing development, secondary industries being largely dependent on the limited local demand. In recent years the establishment of a major oil refinery and a steel-rolling mill, together with the dredging of a deep-water channel and the construction of harbour facilities to serve them, has introduced a new concept of the manufacturing potential of the State and future development may be more rapid than in the past.

The following table shows net values of production of the various primary industries and of secondary industry during the five years 1955-56 to 1959-60. An effective comparison of their relative importance is provided by the five-yearly averages also quoted as these minimize the effect of unusual seasonal or other conditions occurring in individual years.

NET VALUE OF RECORDED PRODUCTION

Industry	1955-56	1956-57	1957-58	1958-59	1959-60	Average of five years
VALUE (£'000)						
Agriculture	37,350	24,640	27,338	42,747	44,044	35,224
Pastoral	36,578	47,343	36,947	30,581	39,659	38,222
Dairying	3,867	3,645	3,436	2,829	3,933	3,542
Poultry Farming	816	697	524	502	470	602
Bee Keeping	202	268	243	218	161	218
Trapping	156	111	60	47	101	95
Forestry	4,877	4,779	5,112	5,067	5,085	4,984
Fishing and Whaling	2,225	2,542	2,989	3,550	3,729	3,007
Mining and Quarrying	14,143	14,350	14,889	14,454	14,765	14,520
Total, Primary	100,214	98,375	91,538	99,995	111,947	100,414
Manufacturing	69,733	73,442	75,312	78,762	86,373	76,724
Total, Primary and Manufacturing	169,947	171,817	166,850	178,757	198,320	177,138

PROPORTION OF TOTAL (PER CENT.)

Agriculture	21.98	14.34	16.39	23.91	22.21	19.89
Pastoral	21.52	27.55	22.14	17.11	20.00	21.58
Dairying	2.28	2.12	2.06	1.58	1.98	2.00
Poultry Farming	0.48	0.41	0.31	0.28	0.24	0.34
Bee Keeping	0.12	0.16	0.15	0.12	0.08	0.12
Trapping	0.09	0.07	0.04	0.03	0.05	0.05
Forestry	2.87	2.78	3.06	2.83	2.56	2.81
Fishing and Whaling	1.31	1.48	1.79	1.99	1.88	1.70
Mining and Quarrying	8.32	8.35	8.92	8.09	7.45	8.20
Total, Primary	58.97	57.26	54.86	55.94	56.45	56.89
Manufacturing	41.03	42.74	45.14	44.06	43.55	43.31
Total, Primary and Manufacturing	100.00	100.00	100.00	100.00	100.00	100.00

The *Net Value* quoted in the above table represents the return to the producer, after deducting from the gross value the cost of all goods consumed in the process of production and costs of marketing the product. It is the sum available for payment of wages, interest, rent, depreciation, other overhead costs and for the producer's own income.

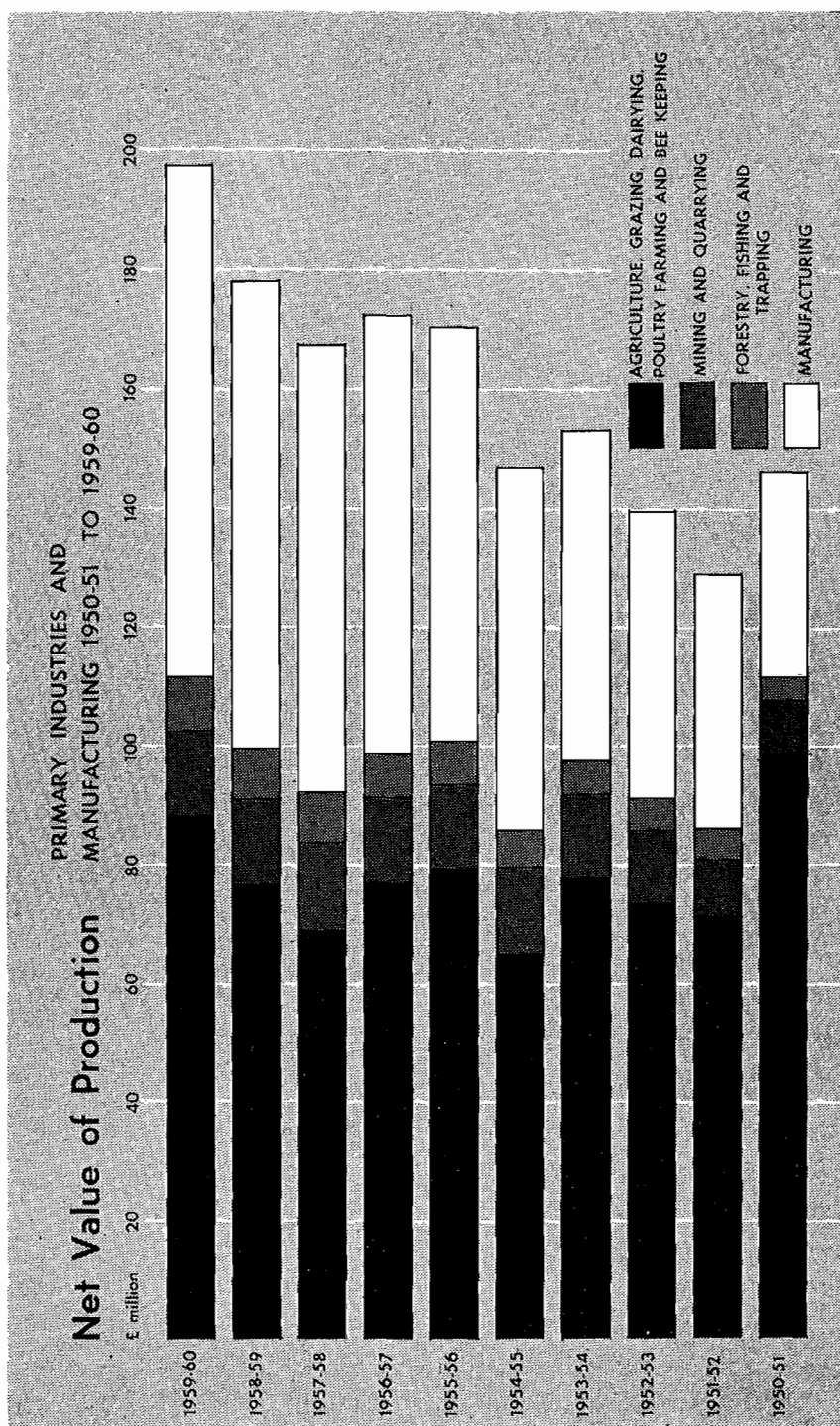
GEOGRAPHICAL DISTRIBUTION OF INDUSTRY

The following brief survey of production in the Statistical Divisions of the State should be read in conjunction with the map appearing at the back of the Year Book. Reference should also be made to the *Note on Statistical Divisions*.

The Metropolitan Division (192 square miles), with a population of 420,000 or more than one-half of the State total, is the principal centre of manufacturing activity and its industrial establishments, which employ 36,200 or about three-quarters of the factory workers of the State, are responsible for more than three-fifths of the total net value of factory production. There are some small farms but their production is almost entirely confined to eggs, poultry and vegetables for consumption in the metropolitan area. A well-established fishing industry operates from the port of Fremantle, the main catch being crayfish.

The Swan Division (1,885 square miles) is becoming increasingly important in the manufacturing field and its industries, which include an oil refinery, a cement works, a steel-rolling mill, meat works and a large bacon factory, provide employment for 3,550 factory workers. Most of the State's viticultural production occurs in the area. It comprises table grapes for the local market and for export, dried currants, sultanas and raisins, and wine-making grapes for processing at local wineries and distilleries. Citrus and stone fruit, eggs, poultry, vegetables and whole milk are important products of the Division.

The South-West Division (11,025 square miles) is the main dairying area of the State and produces a large proportion of the total output of whole milk and of butter, cheese and condensery products. Pig raising is carried on as an ancillary activity to dairying and, in recent years, beef cattle have increased in importance. Apples, pears, stone fruits, potatoes and other vegetables are grown extensively. Tobacco leaf is produced in the Shire of Manjimup and flax in the Shire of Upper Blackwood. Timber is a major product, being milled over a wide area, and coal and ilmenite are the principal minerals pro-



duced. Commercial fishing is centred on Mandurah, Bunbury and Busselton. The factories of the Division, which include sawmills, butter, cheese and milk-processing plants, a superphosphate works and a flax mill, employ about 4,600 workers.

The Southern Agricultural, Central Agricultural and Northern Agricultural Divisions, which together cover 87,967 square miles, comprise the principal cereal-growing districts and produce the bulk of the State's wheat, oats and barley crops. The development of clover ley farming over a wide area since the war has led to a remarkable increase in the number of sheep carried on farms in these Divisions and the total, more than 12 million, is now almost 75 per cent. of the State's sheep population. There has been a corresponding rise in wool production which now represents 76 per cent. of the State's clip. The raising of beef cattle has also increased in importance and the number, 112,000, in these Divisions is now about 14 per cent. of the State total. Tomatoes are grown around Geraldton and citrus fruits in the Chittering area. Dairying, apple and pear growing and potato cultivation are important in the districts around Denmark, Albany and Mount Barker. Whaling and fishing are carried on from Albany, on the south coast, and an important crayfishing industry based on the Abrolhos Islands, Geraldton, Dongara, Jurien Bay and Lancelin Island has been established on the west coast. The only mineral of importance is lead which is mined near Northampton. Factories, which include flour-mills, superphosphate works, butter factories, sawmills, a woollen mill, a charcoal iron and wood-distillation plant, fish canneries and a meat works, provide employment for about 4,000 workers.

The North-West Division (75,732 square miles) has almost a million sheep, representing about six per cent. of the State total, and almost nine thousand beef cattle. Tropical agriculture has been developed on the Gascoyne River at Carnarvon where bananas and beans and other vegetables are grown. Carnarvon is also a base for whaling operations along the west coast and commercial fishermen operate from Shark Bay.

The Kimberley Division (162,363 square miles), with over half a million beef cattle, or 64 per cent. of the State total, and meat works at Wyndham, Derby, Broome and Glenroy, is the principal source of beef for export from Western Australia to overseas markets. Broome is also the centre of an important pearl-shell fishing industry and at Kuri Bay in Brecknock Harbour, 130 miles north-east of Derby, culture pearls are being successfully produced. Iron ore is mined at Cockatoo Island in Yampi Sound.

The Eastern Goldfields, Central and Pilbara Divisions covering a total area of 636,756 square miles contain the principal gold and mineral fields of the State and almost all the gold produced in Western Australia comes from this area. An important asbestos mining industry is established at Wittenoom and other minerals and ores produced elsewhere in these Divisions include beryl, felspar, gypsum, pyrite and ores of copper, iron, manganese, silver, tin and tanto-columbite. Although mining is the main industry, these Divisions contribute also to pastoral output, the area containing about 14 per cent. of the sheep and seven per cent. of the beef cattle of the State.

PART 1—PRIMARY PRODUCTION

LAND UTILIZATION ON RURAL HOLDINGS

In 1959-60 there were 21,832 rural holdings in the State, comprising 244,618,596 acres of land or 39 per cent. of the total area of Western Australia.

The total area of rural holdings consisted of 24,620,679 acres of cleared land and 219,997,917 acres uncleared. Of the cleared land, 6,382,121 acres were used for crop, 7,358,662 acres were under established pastures, 726,382 acres were newly cleared during the season and 1,921,417 acres were in fallow. The balance of the cleared area, 8,232,097 acres, comprised land which was used for grazing or was resting during the season. The uncleared land is mainly pastoral leases held by sheep and cattle stations.

Land development in the post-war period has been stimulated by favourable prices for agricultural and pastoral commodities. Special concessions to primary producers under the provisions of the taxation legislation have also contributed to the increased capital investment in primary industry. This development, which has been undertaken principally by established farmers and by the War Service Land Settlement Board, has been aided by the introduction of modern mechanical methods of land clearing. As a result, the area of cleared land on rural holdings has risen from 14,621,424 acres in 1946-47 to 24,620,679 acres in 1959-60, an increase of 68 per cent. In the same period land used for crops has increased from 3,532,445 acres to 6,382,121 acres and the area under established pastures from 2,092,279 to 7,358,662 acres. Probably as a result of the increased practice of rotational ley farming as an alternative to fallowing, the area in fallow has decreased from 2,070,076 to 1,921,417 acres.

LAND UTILIZATION

Season	Land Cropped, Cleared, etc.						Rural Holdings	
	Used for Crop (a)	Under Established Pasture	Newly Cleared, prepared for next Season	In Fallow	Other Cleared Land used for Grazing or Resting	Total	Number	Area
	acres	acres	acres	acres	acres	acres		acres
1950-51	4,532,756	3,589,508	535,483	2,234,854	5,966,858	16,859,340	19,289	213,361,605
1951-52	4,507,924	4,011,469	582,004	2,041,470	6,545,139	17,688,006	19,515	215,386,015
1952-53	4,636,654	4,266,019	630,110	1,906,285	7,202,797	18,642,765	19,655	215,939,156
1953-54	4,477,102	4,527,188	730,291	1,912,794	8,132,113	19,779,488	20,132	221,805,578
1954-55	5,042,856	4,747,383	634,744	1,815,005	8,439,051	20,679,129	20,876	228,883,394
1955-56	5,233,501	5,384,321	743,565	1,711,361	8,391,593	21,464,341	21,323	229,734,380
1956-57	5,139,098	6,065,737	663,317	1,682,291	8,579,474	22,109,917	21,385	232,689,218
1957-58	5,510,867	6,425,664	616,412	1,459,894	8,806,806	22,819,643	21,593	236,666,717
1958-59	6,015,887	6,960,243	710,207	1,988,440	8,038,696	23,712,973	21,563	238,263,581
1959-60	6,382,121	7,358,662	726,382	1,921,417	8,232,097	24,620,679	21,832	244,618,596

(a) Excluding meadow hay.

EMPLOYMENT AND POPULATION

The permanent male work force on rural holdings in the State has remained almost stationary during the past ten years. This has been due largely to the rapid development of power farming, which is indicated by the rise in the number of farm tractors from 14,554 in 1951 to 25,612 in 1960. The result has been that, in spite of greatly increased production, there has been little change in the permanent male work force which has fallen from 30,821 in 1951 to 30,580 in 1960. Permanent male workers in 1960 consisted of 20,231 owners, lessees, tenants and share-farmers, 1,433 farmers' relatives who were not receiving wages and 8,916 paid employees. The number of males who were temporarily employed, including contractors and their employees, was 4,713. Full information is not available regarding casual or seasonal employment, as figures relate only to the 31st March in each year. When considering the details which appear in the following table, due allowance should be made for this and for the fact that female employment is excluded because of the difficulty in separating domestic from farm activities.

Population on rural holdings at the 31st March, 1960, totalled 86,903 or 12.1 per cent. of the State population.

MALE EMPLOYMENT, POPULATION AND TRACTORS ON RURAL HOLDINGS

As at 31st March—	Males Working Permanently Full-time on Holdings				Temporary Employees including Contractors and their Employees	Population of Rural Holdings			Farm Tractors
	Owners, Lessees, Tenants and Share-farmers	Relatives not Receiving Wages	Employees, including Paid Relatives	Total		Males	Females	Total	
1951	19,747	2,410	8,664	30,821	4,290	44,715	34,641	79,356	14,554
1952	20,016	2,157	8,062	30,235	3,258	(a)	(a)	(a)	17,077
1953	20,398	2,043	7,842	30,283	4,232	(a)	(a)	(a)	18,313
1954	19,726	1,796	8,281	29,803	4,147	48,222	37,221	85,443	19,670
1955	20,000	1,605	7,978	29,583	4,101	48,036	37,599	86,235	21,166
1956	20,053	1,546	7,861	29,460	5,321	47,317	37,210	84,527	22,191
1957	20,084	1,512	8,702	30,298	4,467	47,545	37,881	85,426	22,908
1958	20,087	1,530	8,936	30,553	5,037	47,874	38,496	86,370	23,063
1959	19,974	1,530	8,852	30,356	4,424	47,228	38,364	85,592	24,985
1960	20,231	1,433	8,916	30,580	4,713	47,878	39,025	86,903	25,612

(a) Not available.

VALUE OF PRODUCTION

For primary production the *gross value* is based on the wholesale price realized "at the principal market." Where primary products are consumed at the place of production or where they become raw material for secondary industry within the State, these points of consumption are taken as the "principal market."

Net value represents the return to the producer after the cost of all goods consumed in the process of production and the costs of marketing the product have been deducted from the gross value. It is consequently the sum available for payment of wages, interest, rent, depreciation, other overhead costs and for the producer's own income.

The following table shows the net values of production of the various primary industries in 1959-60. The "*local value*" which is quoted is the value at the source of production and is obtained by deducting marketing costs, such as freight, cost of containers, commission and other handling charges, from the gross value.

PRIMARY INDUSTRIES—VALUE OF PRODUCTION: 1959-60

Industry	GROSS VALUE (based on Prin- cipal Market Prices)	Marketing Costs	LOCAL VALUE (as at source of Production)	Cost of Goods Consumed in Process of Production	NET VALUE
	£	£	£	£	£
Agriculture	65,525,778	8,840,590	56,685,188	12,641,658	44,043,530
Pastoral (a)	50,127,590	3,641,674	46,485,916	6,826,551	39,659,365
Dairying	9,598,923	443,397	9,155,526	5,222,564	3,932,962
Poultry Farming	2,574,118	335,005	2,239,113	1,768,595	470,518
Bee Keeping	174,799	13,419	161,380	(b)	161,380
Trapping	144,157	43,339	100,818	(b)	100,818
Forestry	5,459,529	374,624	5,084,905	(b)	5,084,905
Fishing and Whaling	4,310,626	34,462	4,276,164	547,250	3,728,914
Mining and Quarrying	23,243,700	1,456,589	21,787,161	7,022,080	14,765,081
Total, Primary (a)	161,159,220	15,183,049	145,976,171	34,028,698	111,947,473

(a) Excludes amount paid as distribution of profits from Wool Disposal Plan.

(b) Not available.

Gross values of the principal items are shown in the next table for each of the years 1955-56 to 1959-60.

PRIMARY PRODUCTION—GROSS VALUES OF PRINCIPAL ITEMS

Industry and Commodity	1955-56	1956-57	1957-58	1958-59	1959-60
	£'000	£'000	£'000	£'000	£'000
Agriculture—					
Wheat	34,420	22,027	22,956	38,820	41,181
Oats	5,350	3,695	6,137	8,028	7,965
Barley	2,135	1,853	1,879	2,781	3,380
Hay	3,076	2,626	3,733	4,424	3,877
Pasture Seed (a)	388	241	315	281	365
Tobacco	380	413	527	572	453
Vegetables	3,982	4,237	3,279	3,596	3,910
Fruit, Orchard (b)	4,074	3,974	3,720	3,851	3,291
Vine Fruits	623	621	672	481	559
Nursery Products (c)	289	316	322	352	389
Pastoral—					
Wool (Shorn and Dead) (d)	34,384	44,716	37,383	29,338	37,193
Livestock Slaughtered (e)	10,253	11,680	9,660	11,460	12,907
Dairying—					
Whole Milk (f)	6,192	6,401	6,341	6,101	6,724
Livestock Slaughtered (g)	2,243	2,483	2,701	2,589	2,875
Poultry Farming—					
Eggs (h)	1,473	1,624	1,597	1,614	1,351
Poultry	537	(i) 255	351	359	439
Bee Keeping	217	285	264	(j) 237	(j) 175
Trapping	180	139	88	83	144
Forestry	5,237	5,153	5,523	5,451	5,460
Fishing—					
Crayfish	1,228	1,355	1,721	2,299	3,013
Other Fish (k)	601	605	658	699	650
Pearls and Pearl-shell (l)	416	591	615	369	294
Mining and Quarrying—					
Gold (m)	13,375	13,202	13,817	14,298	14,106
Asbestos	502	826	1,238	1,343	1,629
Coal	3,089	2,724	2,553	2,281	2,357
Copper Ore (n)	1	13	60	56	234
Ilmenite Concentrates ....	....	15	412	358	346
Iron Ore	540	338	429	591	756
Manganese Ore	498	738	1,102	694	1,056
Pyritic Ore and Concentrates	397	420	393	352	372
Quarry Products	1,606	1,600	1,275	1,223	1,594

(a) Comprises clover, lupins, winnamera ryegrass and other pasture seeds. (b) Includes plantation and berry fruits.
 (c) Value of seedlings, cut flowers, bulbs, trees, etc. produced. (d) The value of fellmongered wool and wool exported on skins is included in the value of livestock slaughtered which has been computed from prices of livestock "on hoof" and therefore includes a value for wool on skins. (e) Comprises cattle, sheep and lambs. (f) Includes Commonwealth Government subsidy. (g) Comprises calves and pigs. (h) Excludes value of non-commercial production. (i) Decrease due to alteration in method of valuation. (j) Excludes value of production of bee keepers with less than five hives. (k) Includes crabs, prawns, oysters, etc. (l) Excludes culture pearls. (m) Includes net subsidy payments by the Commonwealth Government and amounts distributed by the Gold Producers' Association Ltd. from premiums on sales of Western Australian gold. (n) Excludes cupreous ore for fertilizer.

It should be noted that both gross values and local values of primary production involve some duplication as they include the products of certain primary industries which are consumed as raw materials by other industries in the group, for example grain and hay consumed by livestock. Furthermore, many of the materials consumed by primary industries are the products of secondary industry, for example artificial fertilizers. However, duplication has been eliminated in calculating net values of primary production by deducting the value of both primary and secondary products consumed by primary industries. Therefore net value of primary production should be used when comparing or combining values for primary industries with those for secondary industry. Gross values do, however, provide a reliable measure of the value of production of any particular item or industry.

SEASONAL CALENDAR

The following calendar is intended to show the main periods when principal agricultural and pastoral activities are carried out in Western Australia. Operations are generally confined to the periods shown but are subject to variation according to such factors as geographical location within the State, the variety of seed sown (or trees and vines planted) and exceptional seasonal conditions.

Crop	Period	
	Sowing or Planting	Harvesting
Grain—		
Wheat	May to June	November to January
Oats	April to June	November to December
Barley	April to June	November to December
Rye	April to June	November to December
Hay—		
Wheaten	May to June	October to November
Oaten	April to June	October to November
Tobacco	October to November	January to March
Flax	May to June	November to December
Potatoes—		
Winter Planting :		
Metropolitan, Swan and South-West	June to September	October to January
Summer Planting :		
Southern Agricultural	October to December	February to April
South-West	December to February	April to May
Onions	June to August	December to March
Tomatoes—		
Geraldton Area	February to April	May to November
Other Areas	June to December	October to May
Fruit—		
Apples	June to August	February to May
Apricots	July	December to January
Bananas	September	September to May
Lemons	July to August	July to June
Nectarines	July	January to February
Oranges, Navel	July to August	May to September
„ Valencia	July to August	August to February
Peaches	July	December to February
Pears	June to July	January to March
Plums	June to July	December to March
Grapes—		
For Table Use	June to July	January to March
For Wine Making	June to July	February to March
For Drying	June to July	February to March
Shearing and Lambing—		
Shearing :		
Pastoral Areas	March to August	
Agricultural Areas	July to November	
Lambing :		
Whole State	April to July	

BUSHEL WEIGHTS

The production of cereals, fruit and certain other commodities is generally recorded in bushels. While the weight of a bushel varies according to the nature of the product, it is also subject to considerable variation on account of such factors as method of packing and size and variety within each kind of product. The average bushel equivalent weights set out below may be used to convert production to pounds weight avoirdupois.

Product	Weight per bushel	Product	Weight per bushel	Product	Weight per bushel
	lb.		lb.		lb.
Apples	42	Loquats	45	Pears	45
Apricots	48	Maize	56	Peas, Field	60
Bananas	56	Mandarins	48	Plums	58
Barley	50	Nectarines	50	Quinces	42
Cherries	48	Oats	40	Rye	60
Figs	44	Oranges	48	Tomatoes	44
Grapefruit	42	Passion Fruit	34	Wheat	60
Lemons	48	Peaches	45		

AGRICULTURE

Wheat

Although wheat has been grown from the earliest years of settlement, cultivation was confined to limited areas as late as 1890 when, of a total area of 33,820 acres, about one-third was located in the Toodyay-Northam area of the Avon Valley, about one-quarter in the Geraldton-Greenough district and a similar area in the York-Beverley region, with lesser areas at Williams and at places in what is now the South-West Statistical Division. During the 1890's, however, substantial development took place as a result of extensions to the Great Southern and Eastern Railways and the completion of the line from Midland Junction to Walkaway, and by 1910 wheat farming was being carried out in wide-spread areas in the southern part of the State and as far east as the Merredin district, an area with an average annual rainfall of only 13 inches. An outstanding factor in this development was the introduction and increasing use of phosphate fertilizer (superphosphate) to correct the widespread phosphorus deficiency of the wheat belt soils of Western Australia.

The decline in gold production which began in 1904 reduced employment in mining and caused people in increasing numbers to take up agricultural land. This contributed to a spectacular growth in wheat farming and 1,734,117 acres were sown to wheat for grain in 1915 compared with 195,071 acres ten years earlier. The first World War caused a serious reduction in acreage but recovery was fairly rapid from 1920, and by 1925 the area sown for grain had risen to more than two million acres.

Following the war, a policy of expanding land settlement was resumed. A soldiers' settlement scheme was initiated and a large-scale programme of assisted immigration, with financial aid provided by the British, Commonwealth and State Governments, was inaugurated. With adequate finance available, greater technical efficiency and a buoyant market for wheat, the area sown for grain increased threefold between 1920 and 1930. Among the technical advances contributing to the increase were the introduction of tractors and the development by the Department of Agriculture of early-maturing and drought and disease resistant wheat varieties.

Because of the relatively low yield per acre, mechanization was of great significance in the growth of wheat farming in Western Australia, but other aspects of the industry received early consideration and experimental farms were established by the Department of Agriculture in areas where particular difficulties were encountered. As a result, special wheat strains have been developed and farming techniques improved. An extensive programme of soil research and classification has been carried out by the Department and has revealed several mineral deficiencies which it has been possible to correct by the addition of trace elements, notably copper and zinc, to standard fertilizers. Experiments have also been made on methods of soil conservation in those areas which are subject to wind or water erosion, and some success has been achieved by the planting of certain grasses and fodder crops and by contour ploughing and the use of contour banks.

In 1930, an area of 3,955,763 acres was sown for grain and produced a previously unsurpassed total harvest of 53,504,149 bushels, which was not exceeded until 1958. Low prices subsequently caused a decline in acreage to 2,540,696 acres in 1935, but by 1938 the total had risen to 3,412,818 for a yield of 36,843,600 bushels. The sowing of wheat was reduced during the second World War to one-half of the pre-war level, only 1,515,800 acres being sown in 1944. In the immediate post-war years it steadily increased and by 1950 had again risen above three million acres. Over the next six years it declined slightly, the smallest area sown in that period being 2,764,486 acres in 1956. Significant increases occurred in each of the following three years and in 1959 the area sown was 3,718,596 acres. Except in 1946, when the average yield per acre was only 9.8 bushels, seasonal conditions in the post-war years have generally been favourable and good yields have been maintained. In 1955 a record average yield of 18.4 bushels was obtained from 2,889,585 acres, the total production being 53,250,000 bushels or only a quarter of a million bushels less than the 1930 harvest which was produced from an area one million acres greater in extent. In 1956 and 1957, when seasonal conditions were less favourable than in 1955, average yields were 11.6 and 11.2 bushels per acre and only 32.1 and 33.1 million bushels were harvested, but in 1958 and 1959, although average yields were not higher than the record of 1955, total production of 57.7 and 58.7 million bushels exceeded the 1930 harvest, which was the previous highest.

Most of Western Australia's wheat production is exported as grain and flour and in the following table the fluctuations which have occurred in exports since 1910 are shown, together with figures giving the estimated total wheat equivalent. In recent years the United Kingdom has been the most important and consistent purchaser of the State's wheat. Other important buyers in 1959-60 were Japan, India, Iraq, Pakistan and Hong Kong. In the same year principal customers for flour were the Arabian States, Malaya, Singapore, Aden and Mauritius. Fuller details of exports appear in Chapter IX, Part 1.

The rapid increase in the production and export of wheat between 1910 and 1920 caused problems of transport and storage, and proposals for the bulk handling of the grain led to the formation of a company for this purpose in 1920. This original undertaking was wound up before commencing operations because the technical difficulties then appeared too great and the saving in handling costs problematical. In 1930, however, the project was revived and a cheaper method was tested with storage bins at five railway sidings in the Wyalkatchem area during the 1931-32 season. The experiment was successful and all wheat produced in Western Australia for marketing is now handled in bulk.

EXPORTS OF WHEAT AND FLOUR

(Including Ships' Stores)

Year	Wheat	Flour	Estimated Total Wheat Equivalent
	bushels	tons (a)	bushels
1910	2,014,552	3,082	*2,159,406
1919-20	9,151,125	129,491	15,237,202
1929-30	24,953,238	69,274	28,209,116
1939-40	15,330,423	91,843	*19,647,044
1949-50	21,510,390	116,199	26,971,743
1950-51	30,510,360	160,228	*38,041,076
1951-52	26,822,885	161,974	34,435,663
1952-53	23,318,935	176,630	31,620,645
1953-54	6,800,140	148,467	13,778,089
1954-55	19,334,742	120,711	25,008,159
1955-56	22,773,235	130,519	28,907,628
1956-57	46,796,487	127,712	52,798,931
1957-58	26,643,941	111,946	31,905,403
1958-59	23,503,275	104,754	28,426,713
1959-60	36,713,316	(b) 87,789	40,839,399

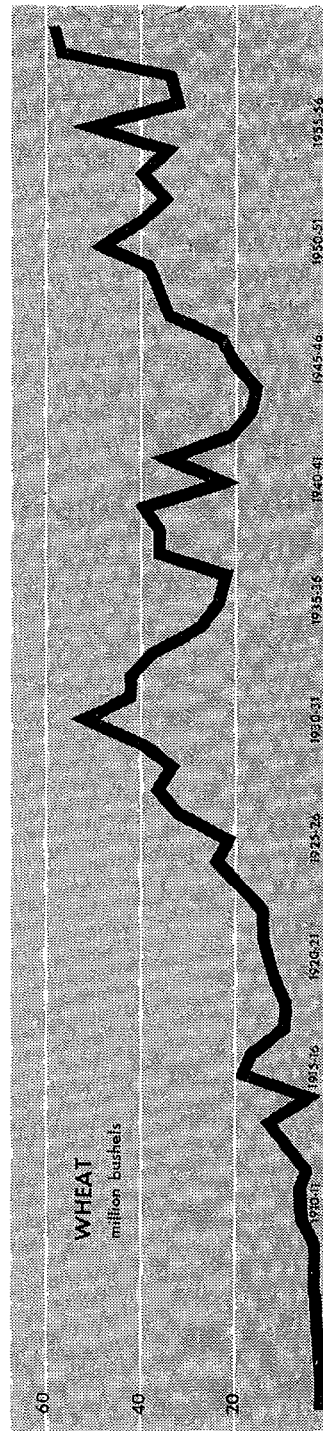
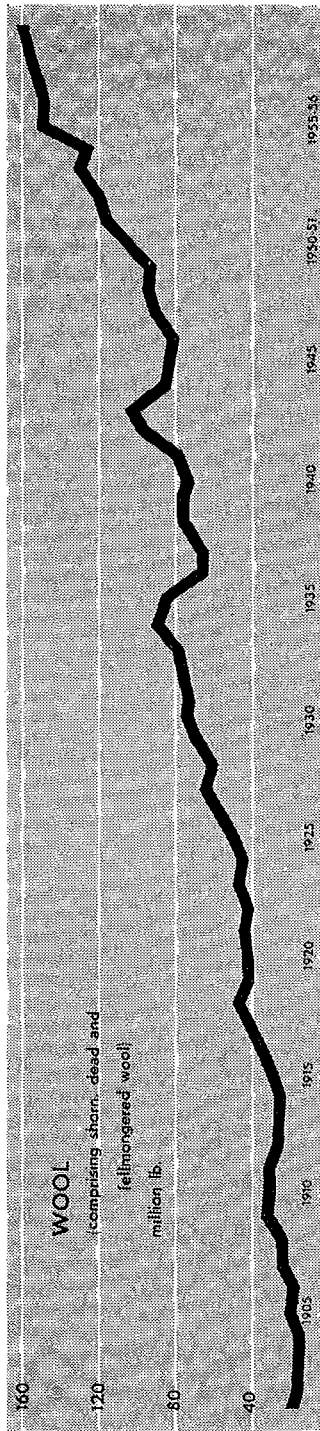
(a) Short ton = 2,000 lb.

(b) Excludes ships' stores.

* Revised.

The Australian Wheat Board is the sole authority for the marketing of wheat within Australia and of wheat and flour for export. It derives its authority from the provisions of the Wheat Stabilization

Wool and Wheat - Annual Production, 1901 to 1959-60



Plan 1958-59 to 1962-63, established under joint Commonwealth and State legislation to replace similar legislation which expired after the marketing of the 1957-58 crop. The principal object of the Plan is to ensure that, in the event of falling prices, growers receive a return for their wheat at least equal to the cost of production, and for this purpose a fund is established by levying a tax on exports for which a price in excess of the cost of production is received. Should the price obtained fall below that cost it is provided that the difference shall be paid from the fund or, if that source is exhausted, by the Commonwealth Government. A further provision with a stabilizing effect on the industry fixes the price at which wheat for home consumption may be sold and again provides that this must not be less than the cost of production.

In 1957 the Commonwealth Parliament passed the Wheat Tax Act providing for a levy of $\frac{1}{4}$ d. per bushel on wheat delivered to the Australian Wheat Board. This money, contributed by the growers, is to be spent by the Wheat Industry Research Council and State Wheat Research Committees set up under the provisions of the Wheat Research Act 1957. The Commonwealth Government has undertaken to supply additional funds, with a maximum of £1 for every £1 of growers' contributions and, in addition, the amount available for research work has been increased by £284,000 made available, under the provisions of the Wheat Acquisition (Undistributed Moneys) Act 1958, from funds held by the Australian Wheat Board.

The following table gives details of areas sown and of wheat production since 1900.

WHEAT FOR GRAIN—AREA AND PRODUCTION

Season	Area Sown	Production		
		Total	Average Yield per acre	Gross Value
1900-01	acres 74,308	bushels 774,653	bushels 10.4	£ 154,931
1905-06	195,071	2,308,305	11.8	425,594
1910-11	581,862	5,897,540	10.1	1,081,216
1915-16	1,734,117	18,236,355	10.5	3,267,347
1920-21	1,275,675	12,248,080	9.6	5,511,636
1925-26	2,112,032	20,471,177	9.7	6,418,567
1930-31	3,955,763	53,504,149	13.5	6,100,588
1935-36	2,540,696	23,315,417	9.2	4,873,641
1940-41	2,625,401	21,060,000	8.0	4,323,953
1945-46	1,835,780	20,929,000	11.4	7,935,371
1950-51	3,185,389	49,900,000	15.7	32,664,123
1951-52	3,094,536	40,000,000	12.9	29,492,155
1952-53	2,999,475	35,458,000	11.8	27,596,965
1953-54	2,885,114	39,700,000	13.8	27,711,647
1954-55	2,979,161	34,300,000	11.5	21,827,313
1955-56	2,889,585	53,250,000	18.4	34,410,861
1956-57	2,764,486	32,100,000	11.6	22,027,312
1957-58	2,957,206	33,100,000	11.2	22,956,217
1958-59	3,291,858	67,650,000	17.5	38,819,613
1959-60	3,718,596	58,670,000	15.8	41,180,693

In the following tables, holdings growing wheat for grain and the acreages sown are classified in area groups according to the total acreage of the holding and to the acreage sown to wheat for grain during 1955-56. Of the 21,323 rural holdings of all types, wheat for grain was grown on 8,295. Holdings of between 1,000 and 5,000 acres accounted for 79 per cent. of this number and for 72 per cent. of the total area sown, and those which sowed between 200 and 1,000 acres for 66 per cent. of the number and 79 per cent. of the area.

HOLDINGS GROWING WHEAT FOR GRAIN, CLASSIFIED ACCORDING TO ACREAGE SOWN AND SIZE OF HOLDING—SEASON 1955-56

Area Series—Total Area of Holding (Acres)		Area Series—Area Under Wheat for Grain (Acres)													Total All Rural Holdings	
Under 10	10-19	20-29	30-49	50-69	70-99	100-149	150-199	200-299	300-399	400-499	500-699	700-999	1,000-1,999	2,000 and over	Total	
NUMBER OF HOLDINGS																
1-49	4	5	3	4	...	...	...	...	...	...	...	...	...	...	7	4,505
50-99	...	1	3	1	...	...	...	...	...	...	...	...	...	...	12	688
100-149	1	1	4	1	3	3	1	...	...	...	...	...	...	...	10	758
150-199	3	4	5	5	2	7	2	1	...	...	...	...	...	...	19	729
200-299	3	1	3	6	6	1	1	...	...	...	...	...	...	...	24	1,156
300-399	4	5	3	4	2	13	2	...	...	...	...	...	...	...	32	804
400-499	3	3	9	5	9	13	4	...	...	...	...	...	...	...	45	588
500-599	4	6	3	5	6	23	11	6	...	...	...	...	...	...	42	577
600-699	4	6	5	5	5	23	11	10	...	...	...	...	...	...	57	596
700-799	6	5	6	10	9	11	12	10	3	1	...	...	...	...	84	333
800-899	7	11	13	10	11	22	29	30	...	...	...	...	...	...	149	357
900-999	10	9	12	12	9	28	30	27	...	...	...	...	...	...	232	392
1,000-1,999	25	30	23	51	61	123	121	271	129	8	...	...	...	...	937	1,535
2,000-2,999	26	30	35	54	58	138	99	330	353	10	...	...	...	...	1,470	1,976
3,000-3,999	30	29	35	60	60	135	147	374	423	196	92	76	5	...	2,188	2,679
4,000-4,999	14	18	11	19	33	60	59	164	218	173	359	122	16	...	1,203	1,458
5,000-5,999	4	9	3	7	10	13	41	88	115	105	151	126	25	...	23	849
6,000-6,999	4	7	6	8	7	28	18	76	83	92	164	190	87	...	847	976
7,000-7,999	1	1	3	2	1	2	6	12	16	10	23	35	39	...	151	722
10,000 and over	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21,323
Total	151	182	162	271	278	288	648	568	1,447	1,380	1,011	1,082	558	238	31	8,295

AREAS UNDER WHEAT FOR GRAIN, CLASSIFIED ACCORDING TO ACREAGE SOWN AND SIZE OF HOLDING—SEASON 1955-56

Area Series— Total Area of Holding (Acres)	Area Series—Area Under Wheat for Grain (Acres)															Total
	Under 10	10-19	20-29	30-49	50-69	70-99	100-149	150-199	200-299	300-399	400-499	500-699	700-999	1,000- 1,999	2,000 and over	
AREA OF WHEAT FOR GRAIN																
1-49	18	....	66	....	....	....	....	....	....	....	....	....	....	....	....	84
50-99	....	70	65	140	....	....	....	....	....	....	....	....	....	....	....	275
100-149	4	10	80	45	110	....	....	....	....	....	....	....	....	....	....	322
150-199	8	58	174	174	116	....	....	150	....	....	....	....	....	....	....	954
200-299	14	63	194	146	332	180	147	100	330	270	....	....	....	....	....	1,301
300-399	22	15	325	194	325	235	180	847	190	200	....	....	....	....	....	2,345
400-499	21	77	325	325	515	557	1,448	310	645	....	....	....	....	....	....	3,231
500-599	24	82	70	195	315	557	1,448	310	645	1,401	....	....	....	....	....	4,499
600-699	20	72	125	194	287	556	2,549	1,825	2,019	2,035	....	....	....	....	....	7,463
700-799	26	64	125	378	532	726	1,258	2,019	4,771	6,601	400	500	970	....	....	10,238
800-899	37	143	124	521	606	803	2,525	4,771	6,601	2,845	....	....	....	....	....	20,246
900-999	53	98	257	420	502	864	3,360	5,130	17,938	3,270	....	....	....	....	....	40,830
1,000-1,999	151	412	511	1,954	3,389	4,605	14,469	20,555	64,030	8,988	3,270	5,298	....	....	....	172,626
2,000-2,999	158	373	668	2,055	3,285	4,755	16,095	16,705	78,963	83,726	14,989	50,190	4,288	....	....	378,422
3,000-3,999	154	364	742	2,238	3,325	5,226	15,676	25,019	89,417	117,161	187,643	199,967	57,400	5,362	....	713,453
4,000-4,999	283	233	246	528	1,030	2,673	6,886	9,783	39,421	104,920	107,643	159,718	95,978	19,275	....	483,841
5,000-5,999	68	28	65	255	550	1,070	4,540	4,332	21,434	73,155	74,852	159,718	100,777	26,166	....	329,155
6,000-6,999	28	109	139	328	370	714	3,203	2,986	18,223	38,337	44,771	86,775	152,329	182,325	....	525,418
7,000-7,999	20	93	139	328	370	714	3,203	2,986	18,223	38,337	44,771	86,775	152,329	182,325	....	525,418
8,000-8,999	8	10	60	68	50	90	220	1,048	2,695	5,372	4,349	13,273	27,536	51,138	....	87,760
10,000 & over	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	829	2,346	3,573	10,158	15,498	23,274	75,036	95,793	344,968	467,907	433,661	609,603	440,913	284,256	91,760	2,889,585

AREA OF WHEAT FOR GRAIN

WHEAT FOR GRAIN—AREA AND PRODUCTION: AUSTRALIAN STATES

Season	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Australian Capital Territory	Australia
AREA SOWN TO WHEAT FOR GRAIN ('000 ACRES)								
1955-56	2,937	2,141	582	1,609	2,890	6	1	10,166
1956-57	1,742	1,665	360	1,438	2,765	4	....	7,874
1957-58	2,257	1,835	461	1,331	2,957	6	1	8,848
1958-59	3,178	1,810	704	1,408	3,292	6	1	10,399
1959-60	3,950	2,261	683	1,549	3,719	8	2	12,172
PRODUCTION OF WHEAT ('000 BUSHELS)								
1955-56	57,149	41,083	14,922	28,892	53,250	129	19	195,444
1956-57	28,490	35,282	7,061	31,432	32,100	89	1	134,455
1957-58	10,603	32,134	6,657	14,914	33,100	153	5	97,566
1958-59	66,441	42,697	16,097	32,032	57,650	164	40	215,121
1959-60	75,358	38,793	13,523	11,929	58,670	181	47	198,501
YIELD PER ACRE (BUSHELS)								
1955-56	19.5	19.2	25.7	18.0	18.4	20.7	25.5	19.2
1956-57	16.4	22.5	19.6	21.9	11.6	22.7	11.1	17.1
1957-58	4.7	17.5	14.5	11.2	11.2	26.1	8.9	11.0
1958-59	20.9	23.6	22.9	22.8	17.5	25.4	28.1	20.7
1959-60	19.1	17.2	19.8	7.7	15.8	22.0	26.8	16.3

Oats

Although oats have been grown in Western Australia since the early development of wheat farming, cultivation was somewhat limited until stimulated by the introduction of large-scale sheep raising in the agricultural areas, when their high nutritional worth as stock feed made them a very valuable crop. The area sown to oats for grain increased from 193,486 acres in 1920 to 274,874 in 1930, to 429,177 in 1940, to 585,701 in 1950 and 1,240,357 in 1959.

In addition to their importance as local stock feed, oats are exported in substantial quantities. In 1959-60 the total sold to other Australian States and overseas was 6,496,385 bushels, the principal buyers being the Federal Republic of Germany, the Netherlands and the United Kingdom. A small amount is processed locally into breakfast food.

Although growers are free to market oats in any way they wish, in practice a large proportion of all sales, whether for export or the local market, is effected through the Western Australian State Voluntary Oats Pool, which is conducted by the Trustees of the Wheat Pool of Western Australia under the control of the Minister for Agriculture.

OATS FOR GRAIN—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	bushels	bushels	£
1955-56	1,090,901	16,515,679	15.1	5,350,339
1956-57	1,051,486	10,441,534	9.9	3,694,598
1957-58	1,153,492	13,793,026	12.0	6,136,579
1958-59	1,329,742	22,585,050	17.0	8,027,786
1959-60	1,240,357	19,598,605	15.8	7,964,975

Barley

Barley grows well on the lighter soils of the wheat belt. It is also successful as a first crop on newly-developed land, and the opening up of new areas for farming accounts partly for the remarkable increase in the area sown for grain from 64,205 acres in 1948-49 to 421,293 acres in 1959-60. Both "two-row" and "six-row" barley is grown and, while a large amount of the grain produced is retained on farms for stock feed, a substantial surplus is available for export. In 1959-60 the quantity exported interstate

and overseas was 4,912,352 bushels, the principal buyers being Italy, the United Kingdom, the Federal Republic of Germany, and Denmark. Most "six-row" barley marketed is shipped overseas, while sales of "two-row" barley are mainly to local maltsters.

The marketing of barley, both for export and for local consumption, is controlled by the Western Australian Barley Marketing Board.

BARLEY FOR GRAIN—AREA AND PRODUCTION

Season	Two-Row				Six-Row			
	Area	Production			Area	Production		
		Total	Average Yield per acre	Gross Value		Total	Average Yield per acre	Gross Value
	acres	bushels	bushels	£	acres	bushels	bushels	£
1955-56	70,300	993,907	14.1	642,617	266,666	3,659,143	13.7	1,492,193
1956-57	78,764	936,067	11.9	579,005	264,826	2,314,444	10.6	1,274,268
1957-58	63,180	757,615	12.0	465,355	244,224	2,798,426	11.5	1,413,539
1958-59	50,412	808,701	16.0	544,189	271,081	4,601,516	17.0	2,236,533
1959-60	52,700	1,025,815	19.4	578,527	368,533	6,054,013	16.4	2,801,383

Other Grain and Pulse Crops

Rye and field peas are the only other grain or pulse crops which are cultivated to any appreciable extent. Some maize is grown but not in significant quantities.

RYE AND FIELD PEAS FOR GRAIN—AREA AND PRODUCTION

Season	Rye				Field Peas			
	Area	Production			Area	Production		
		Total	Average Yield per acre	Gross Value		Total	Average Yield per acre	Gross Value
	acres	bushels	bushels	£	acres	bushels	bushels	£
1955-56	6,662	54,396	8.2	18,359	5,358	54,573	10.2	81,860
1956-57	5,267	30,099	5.7	13,274	4,136	20,397	4.9	28,556
1957-58	8,868	62,583	7.1	35,801	3,855	15,444	4.0	26,483
1958-59	10,577	74,202	7.0	34,096	3,374	26,388	7.8	31,446
1959-60	9,118	77,151	8.5	37,028	3,938	31,764	8.1	44,999

Hay

The principal hay crop is oats and 229,164 tons were cut in 1959-60 from 176,565 acres. Wheat is the only other cereal crop which is used extensively for this purpose and in 1959-60 the production was 66,276 tons from 53,399 acres. Large quantities of meadow hay are cut from clover and grass pastures, production in 1959-60 being 129,874 tons from 83,676 acres. Barley, rye, lucerne and field peas are also used for hay making but they are of minor importance only.

HAY—AREA AND PRODUCTION

Season	Oaten		Wheaten		Meadow		Other (a)		Total	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
	acres	tons	acres	tons	acres	tons	acres	tons	acres	tons
1955-56	133,082	178,520	58,005	82,316	75,711	119,386	2,641	3,562	269,439	383,784
1956-57	119,899	121,311	49,782	52,319	68,689	110,507	3,847	4,342	242,217	288,479
1957-58	179,607	193,440	73,947	73,393	76,375	109,302	9,054	9,857	338,983	385,992
1958-59	187,730	248,690	47,314	62,393	91,895	136,154	5,674	7,923	332,613	455,160
1959-60	176,565	229,164	53,399	66,276	83,676	129,874	5,846	7,887	319,486	433,201

(a) Includes barley, rye, lucerne and field pea hay.

Green Feed

Large areas of oats are grown for use as green feed for stock. Other crops which are cultivated for this purpose, but to a far lesser extent, are barley, wheat, rye, peas, beans and maize. In 1959-60 the total area of crops used as green feed was 708,920 acres, of which 602,537 acres were under oats.

GREEN FEED—AREA GRAZED AND CUT

Season	Oats	Barley	Wheat	Peas and Beans	Rye	Maize	All Other Kinds (a)	Total
	acres	acres	acres	acres	acres	acres	acres	acres
1955-56	557,664	65,842	16,677	6,502	11,522	773	7,578	666,458
1956-57	639,442	66,742	17,974	9,684	9,677	737	7,895	752,151
1957-58	657,288	66,524	20,151	7,314	10,566	690	8,283	770,816
1958-59	670,136	59,017	13,731	6,344	10,211	732	9,151	769,322
1959-60	602,537	53,782	22,685	7,196	8,991	1,021	12,708	708,920

(a) Mainly sudan grass, lucerne, millet, rape, sorghum and elephant grass.

Pastures

The first established pastures in the State were cultivated to provide grazing for dairy cattle but, with the rapid increase in the number of sheep carried on wheat farms, by far the greater area is now located in the wheat-growing districts.

Subterranean clover was one of the first pasture species sown and it is still the most important, although other clovers and a variety of grasses including Wimmera ryegrass and perennial ryegrass are also grown extensively. The present practice is to sow a mixture of two or more species, selected for their suitability to the type of soil and rainfall, to give a pasture of about equal parts of clover and grass.

The area under established pasture has increased remarkably from 1.9 million acres in 1945-46 to 7.4 million acres in 1959-60. More than three-quarters of the present acreage occurs in mixed cereal and sheep farming areas.

The top-dressing of pastures with superphosphate has developed to such an extent that this treatment is now general practice.

Considerable quantities of pasture seed are harvested and the total in 1959-60 exceeded 5 million lb., comprising subterranean clover, 4,216,000 lb., lupins, 663,000 lb., Wimmera ryegrass, 146,000 lb., and 21,000 lb. of other clover and other pasture seed. There is an important export trade in subterranean clover seed and in 1959-60 the total was 1,212,061 lb., almost all of which went to the other Australian States.

Tobacco

Although there were several earlier experiments in the cultivation of tobacco, the planting of exploratory plots at Manjimup in 1923 first revealed that leaf of a satisfactory quality could be produced in Western Australia and commercial production began in 1930, when 25 acres were planted for a yield of 12,500 lb. of cured leaf. Production rose gradually until wartime shortages of oversea supplies caused a rapid increase, and in 1942-43 there were 1,347 acres planted to tobacco for a yield of 1,336,832 lb. of leaf. Production then declined because of labour shortages and the demands of more essential forms of agriculture for service and civilian requirements, the acreage cropped in 1945-46 being only 296 acres.

Post-war recovery was slow, but by 1952-53 the area planted had risen to 1,525 acres. Subsequently it declined and in 1956-57 only 1,176 acres were planted. The area increased in each of the three following seasons and in 1959-60 had grown to 1,561 acres, which produced 1,369,810 lb. of leaf. Of this total 289,190 lb. remained unsold because it did not meet the requirements of manufacturers.

TOBACCO—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	lb.	lb.	£
1955-56	1,235	721,426	584.2	379,618
1956-57	1,176	819,268	696.7	413,212
1957-58	1,266	1,030,588	814.1	526,651
1958-59	1,444	1,198,275	829.8	572,141
1959-60	1,561	(a) 1,369,810	877.5	453,178

(a) Includes 289,190 lb. of leaf which was unsold.

Flax for Fibre

Although flax had previously been grown for fibre on a small scale, the first commercial production in Western Australia was begun in 1940, as a wartime measure, under the control of the Commonwealth Flax Production Committee. During that year 996 acres were cropped in the Shires of Waroona and Harvey and a mill was established at Yarloop. The area was rapidly extended to 6,206 acres in 1941-42 and two additional mills were installed, one at Beelerup in the Shire of Donnybrook and the other at Boyup Brook in the Shire of Upper Blackwood. In 1942-43, 8,775 acres were sown for a yield of 6,160 tons of straw and cultivation was maintained at about the same level throughout the remaining war years.

Production declined after the war and is now centralized in the vicinity of Boyup Brook, where the only remaining mill is operated by a co-operative company which acquired it from the Commonwealth Government in 1949. Flax is grown as a rotational crop on mixed farms in the district and farmers own shares in the mill, at which all flax straw is retted and scutched before being sent to Victoria for spinning and weaving. Part of the seed which is produced each year as a by-product of fibre production is retained for the next season's planting and the remainder is sold for milling into linseed oil and meal.

Although diseases and insect pests have limited the yield per acre, the Western Australian Department of Agriculture has achieved considerable success in breeding rust-resistant varieties and these, used in conjunction with newly-developed insecticides, have resulted in a significant improvement in recent years.

FLAX FOR FIBRE—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	tons	tons	£
1955-56	1,594	1,875	1.2	26,813
1956-57	1,757	2,051	1.2	28,227
1957-58	1,002	1,246	1.2	18,233
1958-59	2,015	3,665	1.8	60,182
1959-60	1,307	2,723	2.1	39,030

Flax for Linseed

During the war, attempts were made to cultivate those varieties of flax which yield linseed as the principal product, but they were largely unsuccessful and were abandoned. Efforts were renewed in 1947-48 but once again were short-lived, being discontinued after five years. Production recommenced in 1957-58 when 2,700 bushels were harvested from 549 acres, but in 1959-60 only 186 acres were sown, from which 1,930 bushels were produced.

Potatoes

The cultivation of potatoes, the State's principal vegetable crop, is largely confined to the higher rainfall areas of the south-west. Winter crops are planted during June and early July on the frost-free hillsides and drained flats of the coastal areas between Harvey and Donnybrook. Mid-season plantings are made from the middle of July to November on market garden land in the Metropolitan and Swan Divisions, irrigation land in the Shires of Waroona, Harvey and Dardanup and summer-moist areas in the Shires of Donnybrook, Busselton, Manjimup and Albany. Late crops are planted between mid-November and the end of April in approximately the same districts as the mid-season crops.

The average yield of potatoes per acre in Western Australia is consistently very much greater than that for Australia as a whole, and in 1959-60 comparative yields were 8.0 tons and 5.3 tons per acre. This is due mainly to the favourable climatic conditions in Western Australia but an important factor is the reliability, under a wide range of conditions, of the Delaware variety which is grown almost exclusively. There is a substantial export surplus, the bulk of which goes to the other Australian States with smaller but regular consignments being sent overseas, principally to Singapore and Mauritius.

Potato production in Western Australia is controlled, under the provisions of the Marketing of Potatoes Act, 1946-1957, by the Western Australian Potato Marketing Board, which is the sole marketing authority for potatoes produced for local consumption. The object of this provision is to ensure adequate supplies for local consumption and effective marketing of crops.

POTATOES—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	tons	tons	£
1955-56	6,826	42,079	6.2	1,407,351
1956-57	8,558	53,741	6.3	1,981,504
1957-58	8,322	49,229	5.9	1,385,632
1958-59	7,213	47,103	6.5	1,565,088
1959-60	6,964	56,000	8.0	1,739,465

Onions

The production of onions is largely confined to the metropolitan and adjacent areas, Osborne Park and Spearwood being the main centres. In these districts onions are usually grown on light sandy soils and yields of up to 20 tons per acre are obtained. In addition, small areas of onions are planted in the South-West and in the Shires of York and Kalgoorlie. The total area planted has declined from the post-war peak figure of 499 acres in 1948-49. In 1959-60 the area was 392 acres for a production of 4,830 tons, or an average of 12.3 tons per acre.

Onions are imported annually into Western Australia during the months of May to October but a surplus is produced locally during the summer months and is exported overseas, mainly to Singapore, as well as to the other Australian States. Sales are controlled by the Western Australian Onion Marketing Board under the provisions of the Marketing of Onions Act, 1938-1960, which was passed by the State Parliament in order to stabilize prices.

ONIONS—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	tons	tons	£
1955-56	321	3,548	11.1	174,488
1956-57	428	4,606	10.8	144,283
1957-58	415	4,149	10.0	100,170
1958-59	397	5,043	12.7	162,385
1959-60	392	4,830	12.3	228,930

Tomatoes

The main centres of production of tomatoes are at Geraldton and in the districts around Perth. At Geraldton, because of the warm winter climate, growers are able to produce early crops and take advantage of the high prices ruling on the Melbourne market during the winter and spring. They also supply substantial quantities to the Perth market and there is a consistent export trade with Singapore. Production of early tomatoes has also become important at Carnarvon, which is further north.

Supplies to the Perth market from December to June are grown in and near the metropolitan area, principally in the Wanneroo and Osborne Park districts. Tomatoes are also grown in a number of districts in the South-West and at Kalgoorlie but production is comparatively small.

The total area under tomatoes reached a peak of 1,555 acres in 1944-45 but the yield per acre in that year was low and total production was only 7,424 tons. Since then, although the area has declined, yields per acre have improved and production in 1959-60 was 7,945 tons from 892 acres, an average of 8.9 tons per acre.

TOMATOES—AREA AND PRODUCTION

Season	Area	Production		
		Total	Average Yield per acre	Gross Value
	acres	tons	tons	£
1955-56	1,047	7,812	7.5	753,854
1956-57	1,135	8,128	7.2	574,192
1957-58	1,007	7,979	7.9	419,324
1958-59	990	8,379	8.5	486,082
1959-60	892	7,945	8.9	507,045



Above—Harvesting a wheat crop

Below—Yarding sheep



Other Vegetables

In addition to the cultivation of potatoes, onions and tomatoes, previously mentioned, many other vegetables are produced, the bulk of them in or near the metropolitan area where growers benefit not only from close proximity to the principal market but also from an abundant supply of water at relatively shallow depths. Small quantities are also produced in many country districts. An important early crop of beans is grown at Carnarvon and transported by road to Perth. If the price available is sufficient to compensate for the added cost, portion of this crop is railed or airfreighted to Adelaide and Melbourne.

Details of production of the principal varieties in the seasons 1955-56 to 1959-60 appear in the following tables.

TURNIPS, CARROTS, PARSNIPS, BEETROOT—AREA AND PRODUCTION

Season	Turnips			Carrots			Parsnips			Beetroot		
	Area	Production		Area	Production		Area	Production		Area	Production	
		Quantity	Gross Value		Quantity	Gross Value		Quantity	Gross Value		Quantity	Gross Value
1955-56	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£
1955-56	311	24,708	45,066	363	66,574	141,192	172	22,469	79,578	151	21,892	36,240
1956-57	262	24,209	28,004	364	69,173	89,925	154	18,035	52,076	163	21,708	38,712
1957-58	238	20,244	31,960	342	64,459	116,295	162	19,857	60,150	153	20,978	44,403
1958-59	177	16,458	20,308	313	60,488	94,513	141	17,867	54,122	139	19,272	38,142
1959-60	187	16,689	24,846	331	67,492	120,361	145	20,093	61,200	136	19,921	24,320

PUMPKINS, BEANS, GREEN PEAS—AREA AND PRODUCTION

Season	Pumpkins			Beans						Green Peas		
	Area	Production		Runner			French			Area	Production	
		Quantity	Gross Value	Area	Quantity	Gross Value	Area	Quantity	Gross Value		Quantity	Gross Value
1955-56	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£
1955-56	1,222	65,305	82,529	707	46,262	313,040	73	2,798	16,322	964	19,317	153,248
1956-57	1,055	91,221	122,388	840	61,463	370,007	93	3,595	18,454	1,133	21,877	147,013
1957-58	935	58,129	49,410	793	60,011	280,051	69	2,861	12,016	1,121	19,659	155,961
1958-59	788	56,680	64,496	786	68,443	351,341	55	3,528	31,282	1,022	21,156	118,474
1959-60	909	75,474	104,720	895	80,939	339,944	51	2,904	14,907	1,008	20,976	137,043

CABBAGES, CAULIFLOWERS, LETTUCE—AREA AND PRODUCTION

Season	Cabbages			Cauliflowers			Lettuce		
	Area	Production		Area	Production		Area	Production	
		Quantity	Gross Value		Quantity	Gross Value		Quantity	Gross Value
1955-56	acres	cwt.	£	acres	cwt.	£	acres	cwt.	£
1955-56	403	75,295	119,468	612	97,660	201,424	404	58,250	178,958
1956-57	380	72,951	69,303	628	103,713	180,860	430	64,602	162,193
1957-58	366	76,551	80,735	611	98,020	137,768	418	66,753	171,332
1958-59	333	66,113	60,471	588	104,352	167,290	403	66,223	146,794
1959-60	337	70,278	54,442	589	98,568	162,637	389	64,565	151,907

Orchards

Fruit production is largely confined to the temperate regions between Gingin to the north of Perth and Albany on the south coast. The cool, wet winters and warm, dry summers of this area permit the successful cultivation of a wide variety of fruits. In the southern and south-western sections, apples,

pears and stone fruits are grown extensively while in the districts around Perth the principal crops are stone fruits, citrus fruits and grapes. Outside this main fruit-growing area, banana plantations have been established at Carnarvon in the North-West.

The following table shows details of production of the principal groups of orchard fruit during the years 1955-56 to 1959-60.

FRUIT (†)—AREA AND GROSS VALUE OF PRODUCTION

Season	Pome (a)		Citrus (b)		Stone (c)		Other (d)		Total Fruit (†)	
	Area (e)	Gross Value of Production	Area (e)	Gross Value of Production	Area (e)	Gross Value of Production	Area (e)	Gross Value of Production	Area (e)	Gross Value of Production
	acres	£	acres	£	acres	£	acres	£	acres	£
1955-56	13,512	2,558,388	4,043	700,039	2,484	461,338	1,004	203,785	21,943	4,073,550
1956-57	13,752	2,700,811	4,944	634,498	2,520	396,644	824	182,216	22,040	3,974,189
1957-58	13,913	2,540,925	4,988	592,033	2,458	358,850	833	223,272	22,192	3,720,080
1958-59	14,486	2,569,947	5,064	678,126	2,464	361,255	889	241,921	22,903	3,851,249
1959-60	15,061	1,955,813	5,200	645,445	2,485	335,943	951	353,908	23,757	3,291,109

(†) Excluding grapes. (a) Apples, pears and quinces. (b) Oranges, mandarins, lemons and grapefruit.
(c) Apricots, peaches, nectarines, plums and cherries. (d) Bananas, loquats, figs, passion fruit, almonds and other minor fruits.
(e) Includes area under young non-bearing trees.

Apples

Apples, which are the principal fruit crop, account for more than half the total orchard area. Bridgetown, Mount Barker, Donnybrook and Manjimup are the most important centres but other districts in the south-west and in the Darling Range near Perth produce large quantities. In 1959-60 the total area of bearing trees was 10,812 acres which produced 1,150,012 bushels, the principal varieties being Granny Smith, Cleopatra, Jonathan, Delicious, Yates, Dougherty and Dunns.

There is a valuable export trade and oversea shipments average about one million bushels annually. The United Kingdom is the most important market while Sweden and Singapore are also consistent buyers.

APPLES—AREA AND PRODUCTION

Season	Area		Production		
	Trees of Bearing Age	Young Trees not Bearing	Total	Average Yield per acre (a)	Gross Value
	acres	acres	bushels	bushels	£
1955-56	11,252	1,213	1,516,231	134.8	2,348,179
1956-57	11,251	1,469	1,637,658	150.0	2,542,924
1957-58	11,018	1,874	1,369,458	123.4	2,336,583
1958-59	10,926	2,533	1,550,341	141.9	2,319,647
1959-60	10,812	3,222	1,150,012	106.4	1,728,541

(a) Calculated on the area of bearing trees only.

Pears

Pears are usually grown in conjunction with apples but the area planted and the quantity produced are much less, the total area of bearing trees in 1959-60 being 823 acres and the production 138,380 bushels.

The bulk of the crop is consumed locally but small quantities are exported, principally to the United Kingdom and Singapore.

PEARS—AREA AND PRODUCTION

Season	Area		Production		
	Trees of Bearing Age	Young Trees not Bearing	Total	Average Yield per acre	Gross Value
	acres	acres	bushels	bushels	£
1955-56	855	158	99,443	116.3	206,308
1956-57	861	139	151,450	175.9	214,688
1957-58	852	139	98,672	115.8	200,619
1958-59	842	157	169,444	201.2	247,841
1959-60	823	177	138,380	163.1	225,134

Citrus Fruit

While the Shire of Chittering is the chief citrus fruit producer, there are other important areas in the Darling Range near Perth and in the Shires of Swan-Guildford, Murray, Harvey, Capel and Donnybrook. Although oranges are by far the most important crop and account for about four-fifths of the total area, substantial quantities of lemons, grapefruit and mandarins are also produced.

Production is largely for local consumption but there is some export trade, mainly with Singapore and Malaya.

The following tables give details of production of each type for the years 1955-56 to 1959-60.

ORANGES AND MANDARINS—AREA AND PRODUCTION

Season	Oranges				Mandarins			
	Area		Production		Area		Production	
	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value
	acres	acres	bushels	£	acres	acres	bushels	£
1955-56	3,357	614	424,456	603,998	183	56	19,719	40,188
1956-57	3,362	611	356,778	510,881	181	65	15,145	35,073
1957-58	3,358	658	439,939	477,004	179	78	22,266	40,342
1958-59	3,370	694	336,836	550,186	179	92	16,146	38,416
1959-60	3,478	737	348,376	510,589	184	107	21,208	44,537

LEMONS AND OTHER CITRUS FRUIT—AREA AND PRODUCTION

Season	Lemons				Other Citrus (a)			
	Area		Production		Area		Production	
	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value
	acres	acres	bushels	£	acres	acres	bushels	£
1955-56	495	88	87,735	94,008	141	9	27,326	21,845
1956-57	497	83	87,498	69,950	139	6	20,904	18,594
1957-58	488	91	128,496	58,688	129	7	23,374	15,399
1958-59	483	110	99,054	74,449	129	7	20,322	15,075
1959-60	501	117	108,276	72,398	129	7	20,137	17,921

(a) Principally grapefruit.

Stone Fruits

Plums, peaches, apricots, nectarines and cherries are grown in the hills districts in the Darling Range near Perth, in the Swan Valley and in many districts in the South-West. The total area under stone fruit in 1959-60 was 2,485 acres, comprising 1,058 acres of plums, 829 of peaches, 374 of apricots, 183 of nectarines and 41 of cherries. The bulk of the stone fruit crop is consumed locally but shipments of plums are sent overseas, mainly to Singapore.

The following tables give details of production of the principal stone fruits for the five years 1955-56 to 1959-60.

PLUMS AND PEACHES—AREA AND PRODUCTION

Season	Plums (a)				Peaches			
	Area		Production		Area		Production	
	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value
	acres	acres	bushels	£	acres	acres	bushels	£
1955-56	735	233	72,974	150,125	602	183	65,100	143,220
1956-57	747	264	88,037	146,986	679	171	79,664	103,564
1957-58	749	261	80,589	142,100	659	156	77,393	101,471
1958-59	758	273	85,547	134,992	658	160	85,950	111,735
1959-60	768	290	54,707	131,150	647	182	50,064	98,181

(a) Includes prunes.

APRICOTS AND NECTARINES—AREA AND PRODUCTION

Season	Apricots				Nectarines			
	Area		Production		Area		Production	
	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value	Trees of Bearing Age	Young Trees not Bearing	Quantity	Gross Value
	acres	acres	bushels	£	acres	acres	bushels	£
1955-56	372	51	42,408	98,716	185	26	20,690	47,817
1956-57	366	50	53,716	96,092	180	23	20,349	34,028
1957-58	351	48	41,172	79,599	165	29	19,300	30,237
1958-59	342	46	39,948	80,118	156	30	18,018	28,829
1959-60	327	47	29,061	74,761	154	29	14,201	29,507

Bananas

Production of bananas is confined almost entirely to a narrow strip of land along the Gascoyne River at Carnarvon. The plantations are dependent on water pumped from bores which tap a subterranean flow in the sands of the usually dry river bed. As a surface flow in the river channel results only from heavy rains, which do not occur every year, a problem is presented in the falling-off of water supplies and in the increase in the salt content of the underground water during long dry periods. During 1956-57 these conditions forced many growers to curtail activities and in some instances to abandon the whole or part of their plantations. During the same season, cyclonic winds caused considerable damage.

The crop is transported by road to Perth and sold locally in competition with bananas imported from other Australian States.

BANANAS—AREA AND PRODUCTION

Season	Area		Production		
	Plants of Bearing Age	Young Plants not Bearing	Total	Average Yield per acre (a)	Gross Value
	acres	acres	bushels	bushels	£
1955-56	401	89	68,538	170.9	248,448
1956-57	245	86	34,138	139.3	136,550
1957-58	224	133	43,756	195.3	173,566
1958-59	256	152	70,816	276.6	198,286
1959-60	282	116	107,904	382.6	302,131

(a) Calculated on the area of bearing plants only.

Vineyards

Almost three-quarters of the State's 9,000 acres of grape vines are in the Shire of Swan-Guildford, other important centres being Chittering, Wanneroo, Gosnells, Mundaring, Northam and Toodyay.

The area of vines for the production of dried currants, sultanas and table raisins has declined from a post-war peak of 5,830 acres in 1947-48 to 3,853 acres in 1959-60 but it still represents more than two-fifths of the total area under grapes. Currants are the main item of production and a high proportion of the crop is exported to the other Australian States and overseas, the United Kingdom being the principal buyer. Production of sultanas and table raisins is of minor importance and exports are negligible.

Table grapes are grown for the local market and for export overseas, mainly to Singapore, Ceylon and Malaya. More than half a million gallons of beverage wine have also been produced annually for the past five years, mostly for local consumption although small amounts are exported to the other Australian States and overseas.

GRAPES—AREA AND PRODUCTION

Season	Fresh Grapes for Table Use and Wine Making				Dried Vine Fruits				Production of Beverage Wine
	Area		Production		Area		Production		
	Vines of Bearing Age	Young Vines not Bearing	Quantity	Gross Value	Vines of Bearing Age	Young Vines not Bearing	Quantity (a)	Gross Value	
	acres	acres	tons	£	acres	acres	tons	£	gallons
1955-56	3,923	484	6,750	364,374	4,346	354	2,558	258,353	539,712
1956-57	3,988	483	7,592	387,939	4,246	279	2,196	233,075	654,011
1957-58	4,045	493	6,981	411,069	4,223	262	2,247	260,607	526,082
1958-59	4,040	571	6,258	351,121	4,088	182	1,149	129,939	520,595
1959-60	4,397	701	7,597	390,235	3,709	144	1,475	169,187	649,647

(a) Packed weight.

PASTORAL

Throughout this section, where mention is made of the "pastoral areas" the portion of the State referred to comprises the Kimberley, Pilbara, North-West and Central Statistical Divisions together with the Shires of Coolgardie, Kalgoorlie, Laverton, Leonora and Menzies, which form part of the Eastern Goldfields Division. The balance of the State, referred to as the "agricultural areas," comprises the Metropolitan, Swan, South-West, Southern Agricultural, Central Agricultural and Northern Agricultural Divisions together with the Shires of Dundas, Esperance, Ravensthorpe and Yilgarn in the Eastern Goldfields Division.

In the early days of settlement, pastoral activities in Western Australia were largely confined to what are now the agricultural areas and were usually associated with the cultivation of crops. However, beginning with Captain George Grey's visit in 1838 to the area now known as the West Kimberley, explorers increasingly drew attention to the pastoral possibilities of large sections of the present Kimberley, Pilbara, North-West and Central Statistical Divisions.

In 1857 and 1858, F. T. Gregory noted the existence of good pastoral country in the Murchison and the Gascoyne districts and in the course of a journey further to the north in 1861 he discovered the Ashburton, Fortescue, De Grey and Oakover Rivers. His reports of good grazing lands in the area led to the establishment of sheep stations by pastoralists from the south, the first of such ventures, in 1863, being in the De Grey district of what is now the Pilbara Statistical Division. Graziers were also turning their attention to the south-east and in the 1870's pastoral lands were being taken up in the coastal areas to the south of the Nullarbor Plain. Another development in the extension of pastoral activity began with Alexander Forrest's journey through the Kimberley in 1879 and his favourable reports on the suitability of the country for grazing. Leases along the Fitzroy and the Ord Rivers were stocked not only with livestock shipped from the south and from the other Australian Colonies but also with cattle brought overland to the area, principally from Queensland and New South Wales, by remarkable feats of droving.

Pastoral production, comprising the production of meat as well as wool, now contributes more than one-third of the total net value of Western Australian primary production. It is no longer confined mainly to the pastoral areas but extends also to most of the agricultural areas of the State.

Sheep

The present distribution of sheep in the State is the result of two opposite trends operating over many years. In the pastoral, or station, areas where the industry is based on long-term pastoral leases, severe droughts have led to a decline in the number of sheep, although a slight recovery has taken place in recent years. In the agricultural, or farming, areas however the sheep population has steadily risen. Factors contributing to this rise, particularly since the war, have been the increasing use of subterranean clover in the wheat belt, the provision in many areas of more assured water supplies, a taxation policy which, by the provision of special concessions to primary producers, has encouraged farmers to clear and develop new land, the War Service Land Settlement Scheme which has developed new areas and the stimulating effect of buoyant wool prices in the post-war period.

The overall result has been a marked upward trend in sheep numbers since the war, and at the 31st March, 1960, the State total was 16·4 million or 6·6 million more than the total at the same date in 1946. Numbers in the agricultural areas increased from 7 million, or 72 per cent. of the State total, to more than 13 million or almost 82 per cent. They also increased in the pastoral areas from 2·7 million to 3·0 million, but as a percentage of the State total this represents a decline from 28 per cent. to 18 per cent.

SHEEP NUMBERS AND DISTRIBUTION

As at 31st March—	In Agricultural Areas		In Pastoral Areas		State Total
	Number	Proportion of State Total (per cent.)	Number	Proportion of State Total (per cent.)	
1946	7,029,761	72·0	2,736,222	28·0	9,765,983
1947	6,990,756	71·4	2,796,246	28·6	9,787,002
1948	7,417,053	71·0	3,026,745	29·0	10,443,798
1949	7,509,710	69·1	3,362,830	30·9	10,872,540
1950	7,518,456	68·8	3,404,711	31·2	10,923,167
1951	8,269,814	72·8	3,092,094	27·2	11,361,908
1952	9,174,640	75·3	3,013,112	24·7	12,187,752
1953	9,304,681	74·6	3,169,991	25·4	12,474,672
1954	9,921,867	75·8	3,165,241	24·2	13,087,108
1955	10,273,780	76·6	3,137,502	23·4	13,411,282
1956	10,976,121	77·7	3,152,047	22·3	14,128,168
1957	11,845,409	79·6	3,041,140	20·4	14,886,549
1958	12,704,210	80·8	3,019,753	19·2	15,723,963
1959	13,070,754	80·6	3,144,490	19·4	16,215,244
1960	13,395,527	81·6	3,016,062	18·4	16,411,589

An analysis of collected data relating to breeds of sheep as at the 31st March, 1959 showed that Merinos accounted for 92 per cent. of the total. Corriedales, Polwarths and British breeds, the most important of which are Romney Marsh, South Down, Dorset Horn, Border Leicester and English Leicester, comprised 3 per cent. and the remaining 5 per cent. was made up of Crossbreds, including Merino Comebacks. With low wool prices operating during the ten years prior to the war, some farmers turned to the production of fat lamb carcasses for export, mainly to the United Kingdom. The industry which developed as a result was based on the use of Corriedale and British breeds of rams, which in 1959 comprised about 17 per cent. of the rams in the State. As a result of the high wool prices offering after the war the "fat lamb" industry declined sharply in 1950-51 and 1951-52. In recent years, however, farmers have shown renewed interest and the quantity of lamb exported overseas has risen appreciably.

The following table shows the numbers of each breed of sheep in the State at the 31st March, 1959, the latest date for which this information is available.

BREEDS OF SHEEP AT 31st MARCH, 1959

Breed	Rams (One Year and Over)	Other Sheep	Total
Merino	179,601	14,741,767	14,921,368
Other Recognized Breeds—			
Corriedale	9,911	381,772	391,683
Romney Marsh	5,180	42,524	47,704
South Down	8,662	24,813	33,475
Dorset Horn	7,035	19,216	26,251
Border Leicester	2,874	19,666	22,540
English Leicester	763	4,500	5,263
Polwarth	216	6,606	6,822
Suffolk	969	1,747	2,716
Shropshire	601	1,143	1,744
Ryeland	333	2,007	2,340
Other	328	797	1,125
Total : Other Recognized Breeds	36,872	504,791	541,663
Merino Comeback (a)	47	145,901	145,948
Crossbreds (b) and Other Mixed Breeds	1,091	605,174	606,265
Total : All Sheep	217,611	15,997,633	16,215,244

(a) Finer than half-bred.

(b) Half-bred Merino and coarser.

SHEEP FLOCKS AS AT 31st MARCH, 1956, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF FLOCK

Area Series— Total Area of Holding (Acres)	Size of Sheep Flock (Numbers)															Total All Hold- ings		
	1-49	50-99	100-199	200-299	300-399	400-499	500-699	700-999	1,000- 1,399	1,400- 1,999	2,000- 2,999	3,000- 4,999	5,000- 9,999	10,000- 19,999	20,000- 49,999		50,000 and over	Total Flocks
NUMBER OF FLOCKS																		
1-99	206	44	28	3	11	1	1	1	1	1	1	1	1	1	1	1	282	
100-199	81	46	67	22	38	7	6	3	1	1	1	1	1	1	1	1	231	
200-299	80	38	57	38	12	7	10	6	3	1	1	1	1	1	1	1	240	
300-399	68	28	47	33	25	18	19	10	4	4	4	4	4	4	4	4	234	
400-499	56	22	33	41	30	33	31	16	6	2	2	2	2	2	2	2	229	
500-599	32	14	25	31	25	31	25	13	5	5	5	5	5	5	5	5	210	
600-799	35	28	47	52	71	53	68	59	13	13	13	13	13	13	13	13	424	
800-999	33	11	30	50	86	87	159	99	29	29	29	29	29	29	29	29	729	
1,000-1,399	28	25	38	71	109	170	348	307	144	144	144	144	144	144	144	144	592	
1,400-1,999	20	12	35	37	80	102	379	595	365	134	25	20	20	20	20	20	1,535	
2,000-2,999	15	11	27	54	67	83	265	712	747	333	112	54	54	54	54	54	1,784	
3,000-4,999	12	7	22	43	33	52	160	404	590	486	204	101	19	19	19	19	2,679	
5,000-9,999	6	3	7	10	12	17	35	84	184	237	206	38	33	33	33	33	2,907	
10,000-19,999	...	1	2	2	4	1	7	7	15	40	40	16	9	9	9	9	976	
20,000-49,999	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	185
50,000 and over	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	63
Total	674	292	487	489	566	647	1,492	2,293	2,102	1,314	631	290	201	97	25	2	11,602	
																	21,323	

SHEEP AS AT 31st MARCH, 1956, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF FLOCK

Area Series— Total Area of Holding (Acres)		Size of Sheep Flock (Numbers)															Total
		1-49	50-99	100-199	200-299	300-399	400-499	500-699	700-999	1,000- 1,399	1,400- 1,999	2,000- 2,999	3,000- 4,999	5,000- 9,999	10,000- 19,999	20,000- 49,999		50,000 and over
NUMBER OF SHEEP																	
1-99	2,899	3,151	3,478	680	3,703	452	500	800	1,045	1,045	1,045	1,045	1,045	1,045	1,045	1,045	10,660
100-199	1,874	3,170	3,575	5,379	8,133	1,256	3,285	2,448	4,339	4,339	4,339	4,339	4,339	4,339	4,339	4,339	23,127
200-299	1,294	2,740	4,867	9,703	8,006	8,006	6,272	4,462	4,339	4,339	4,339	4,339	4,339	4,339	4,339	4,339	33,994
300-399	1,087	2,058	4,617	9,094	18,535	18,519	17,198	13,400	14,245	14,245	14,245	14,245	14,245	14,245	14,245	14,245	45,293
400-499	905	1,579	3,688	7,860	24,359	24,358	24,358	24,358	24,358	24,358	24,358	24,358	24,358	24,358	24,358	24,358	85,014
500-599	615	1,079	3,988	12,757	29,409	29,466	30,498	42,092	14,813	7,730	16,109	16,109	16,109	16,109	16,109	16,109	174,569
600-799	702	2,113	7,060	12,757	29,409	29,466	30,498	42,092	14,813	7,730	16,109	16,109	16,109	16,109	16,109	16,109	306,067
800-999	691	817	4,921	12,415	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	33,333	862,591
1,000-1,399	700	1,885	8,679	17,811	37,843	73,901	208,063	250,174	163,804	83,849	16,109	16,109	16,109	16,109	16,109	16,109	1,503,511
1,400-1,999	460	872	5,528	9,318	27,378	48,302	229,286	488,920	417,985	215,383	57,592	57,592	57,592	57,592	57,592	57,592	2,504,095
2,000-2,999	441	785	4,992	13,438	23,330	36,759	159,661	597,505	868,196	538,682	955,157	955,157	955,157	955,157	955,157	955,157	2,876,401
3,000-4,999	299	571	3,211	10,658	11,519	22,748	95,245	345,605	694,074	797,117	430,411	430,411	430,411	430,411	430,411	430,411	2,702,577
5,000-9,999	215	252	1,004	2,563	4,070	7,506	20,533	71,142	215,093	393,430	492,523	492,523	492,523	492,523	492,523	492,523	1,702,577
10,000-19,999	...	143	297	463	1,378	7,429	4,174	6,003	16,837	68,073	93,301	93,301	93,301	93,301	93,301	93,301	543,208
20,000-49,999	...	65	...	...	...	480	4,174	7,290	3,838	33,718	33,718	33,718	33,718	33,718	33,718	33,718	206,218
50,000 and over	...	...	...	...	...	440	1,733	2,523	4,731	30,178	61,704	282,243	966,939	1,219,219	677,416	121,991	3,350,063
Total	12,687	21,166	71,734	121,085	194,986	287,212	886,439	1,913,939	2,441,498	2,143,593	1,490,515	1,094,167	1,379,585	1,265,155	677,416	121,991	14,128,168

In the preceding tables, sheep flocks and sheep numbers are classified according to the total area of the holding and the size of the flock at the 31st March, 1956. Of the 21,323 rural holdings of all types, sheep were carried on 11,602. Holdings of between 1,000 and 5,000 acres accounted for 66 per cent. of the flocks and for 54 per cent. of all sheep, and those which carried between 500 and 2,000 sheep for 62 per cent. of the flocks and for 52 per cent. of all sheep.

Wool

During the ten years from 1950-51 to 1959-60 the total wool production rose from 107.3 million lb. to 170.4 million lb. Shorn wool in 1959-60 amounted to 157.9 million lb. and was a record for the State. It was shorn from 18.0 million sheep and lambs, the average weight per fleece being 8.8 lb. The balance of the 1959-60 production consisted of 116,000 lb. of dead wool, 2,847,000 lb. of fellmongered wool and 9,550,000 lb. of wool exported on skins.

During the war years wool was compulsorily acquired by the Commonwealth Government in accordance with an agreement with the United Kingdom. The scheme was administered by the Central Wool Committee and the price paid was determined by a system of appraisalment which, however, operated within limits agreed upon by the two Governments. During this period large stocks of wool were accumulated and after the war an organization was formed with the object of selling this surplus with the least possible disturbance to ruling prices. Government control of wool ceased after the war and wool auctions operated by members of the National Council of Wool Selling Brokers were resumed in Perth in 1946. These sales, which are attended by Australian and oversea buyers who bid for individual lots, are now firmly re-established but a portion of the clip is purchased on farms by wool buyers who deal direct with producers. In September, 1957, auctions were held at Albany for the first time. Sales in Perth were discontinued in 1960 and the selling centre was transferred to Fremantle.

SHEEP SHORN AND WOOL PRODUCTION

Year	Sheep Shorn (a)			Average Weight per Fleece (a)	Wool Production (in the grease)				
	Sheep	Lambs	Total		Shorn (a)	Dead Wool (a)	Fell-mongered (b)	Exported on Skins (b)	Total (d)
	'000	'000	'000	lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
1951	9,867	2,264	12,131	8.3	100,968	132	1,811	(c) 4,430	107,341
1952	10,403	2,513	12,916	8.8	114,106	182	1,854	4,259	120,401
1953	10,929	2,539	13,468	8.8	118,138	158	2,430	7,422	128,148
1954	11,312	2,655	13,967	9.1	126,513	134	2,317	5,478	134,442
1955	11,724	2,643	14,367	8.4	121,000	125	3,048	5,489	129,602
1956	12,232	2,661	14,893	9.8	146,196	93	3,475	6,690	156,454
1957	12,768	3,158	15,926	9.2	145,797	115	2,462	8,028	156,402
1958	13,317	3,182	16,499	9.0	149,125	108	1,793	7,255	158,281
1959	13,916	3,349	17,265	9.0	154,661	80	2,617	9,164	166,522
1960	14,423	3,541	17,964	8.8	157,929	116	2,847	9,550	170,442

(a) Year ended 31st March.
notes (a), (b) and (c).

(b) Year ended 30th June.

(c) Year ended 31st December, 1950.

(d) See

GROSS VALUES OF WOOL PRODUCTION

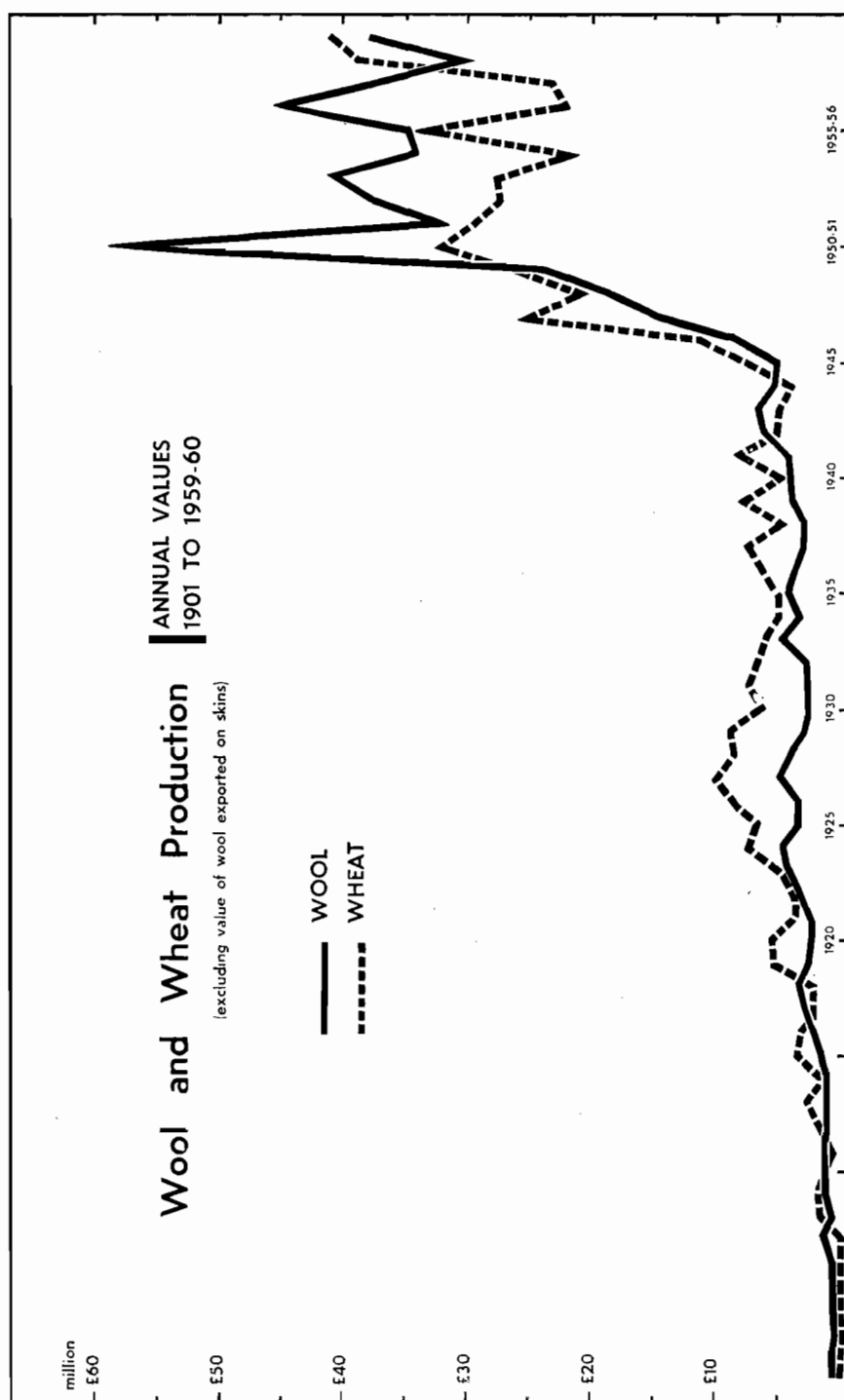
Year					Shorn and Dead Wool (a)	Fellmongered Wool (b)	Wool Exported on Skins (b)	Total (d)
					£	£	£	£
1951 .....	.....	.....	.....	.....	57,995,339	1,038,598	(c) 2,541,239	61,575,176
1952 .....	.....	.....	.....	.....	31,502,291	511,235	1,173,952	33,187,478
1953 .....	.....	.....	.....	.....	37,115,080	445,641	1,603,847	39,164,568
1954 .....	.....	.....	.....	.....	40,739,053	544,284	1,239,515	42,522,852
1955 .....	.....	.....	.....	.....	33,528,921	463,643	1,020,168	35,012,732
1956 .....	.....	.....	.....	.....	34,383,966	436,981	1,059,795	35,880,742
1957 .....	.....	.....	.....	.....	44,716,312	425,311	1,823,357	46,964,980
1958 .....	.....	.....	.....	.....	37,382,713	231,372	1,595,142	39,209,227
1959 .....	.....	.....	.....	.....	29,387,844	365,835	1,210,987	30,914,666
1960 .....	.....	.....	.....	.....	37,193,254	457,537	1,682,859	39,333,650

(a) Year ended 31st March.
notes (a), (b) and (c).

(b) Year ended 30th June.

(c) Year ended 31st December, 1950.

(d) See



Although the greater proportion of the woolclip is exported in the grease, scouring is done in the State and scoured wool is an appreciable item in the external wool trade. During 1959-60 exports of greasy and sooured wool were 111.1 million lb. and 27.4 million lb. respectively. The United Kingdom was the most important buyer but Japan, France, Italy, the Federal Republic of Germany, the Republic of China (Mainland), the United States of America, Poland, Czechoslovakia and Belgium provided valuable markets. Exports to the Australian States are not of major importance and in 1959-60 shipments were only 3.9 million lb.

Beef Cattle

The main centres of beef production are in the Kimberley Statistical Division, which in 1960 carried 519,775 head of beef cattle or 64 per cent. of the State total. Other pastoral areas carried 57,001 head and agricultural areas 237,185.

The cattle which were originally shipped or driven overland from the other Australian Colonies to start the industry in the northern pastoral areas were preponderantly shorthorn breeds, and these still form the great bulk of all beef cattle. Carcass weights, however, have been increased by importing better-type bulls and by improving watering facilities, both on the cattle stations and on the stock routes.

Killing and freezing works operate at the ports of Wyndham and Broome. To minimize loss of weight sustained in droving to ports some cattle are slaughtered inland at Glenroy Station and the carcasses transported by air to the freezing works at Derby. Frozen and chilled beef from Wyndham, Derby and Broome is mainly exported overseas, either direct or by trans-shipment at Fremantle, but some is shipped south for consumption in the metropolitan area. In recent years there have also been some shipments of live cattle from Derby to overseas markets and in 1959-60 exports to Hong Kong totalled 2,464 head.

Although some beef cattle are shipped from northern ports for slaughtering and consumption in the metropolitan area, by far the greater proportion of the local demand in the southern part of the State is supplied from the agricultural areas. Much of this beef comes from culled stock from dairy herds. As indicated in the following table, the agricultural areas have become increasingly important in recent years as a source of beef supply.

BEEF CATTLE—NUMBERS AND DISTRIBUTION

As at 31st March—	In Agricultural Areas		In Pastoral Areas		State Total
	Number	Proportion of State Total (per cent.)	Number	Proportion of State Total (per cent.)	
1951	100,049	10.2	518,280	83.8	618,329
1952	113,842	18.3	507,223	81.7	621,065
1953	125,310	20.5	487,082	79.5	612,392
1954	133,990	22.3	466,188	77.7	600,178
1955	136,904	21.7	495,335	78.3	632,329
1956	158,248	23.5	515,065	76.5	673,313
1957	183,760	25.1	549,354	74.9	733,114
1958	205,372	26.6	566,150	73.4	771,522
1959	217,220	27.7	567,243	72.3	784,463
1960	237,185	29.1	576,776	70.9	813,961

In the tables on page 251, beef cattle herds and cattle numbers are classified according to the total area of the holding and the size of the herd as at the 31st March, 1956. Of the 21,323 rural holdings of all types, beef cattle were carried on 4,735. Holdings of between 1,000 and 5,000 acres accounted for 45 per cent. of the herds but for only 11 per cent. of all beef cattle, and those which carried less than 50 head for 79 per cent. of the herds but for only 7 per cent. of all beef cattle. The largest holdings classified, those of 50,000 acres and over, while constituting less than 6 per cent. of the holdings which carried beef cattle, accounted for almost 77 per cent. of the total number carried.

Slaughtering

Beef cattle are slaughtered for export at Wyndham, Broome and Glenroy in the Kimberley Division and sheep and fat lambs for export at Fremantle and Albany. The local market is supplied mainly from abattoirs at Midland, Fremantle and Kalgoorlie. The many small establishments which operate in country towns also contribute substantially to total production, and farms and stations commonly slaughter sufficient for their own requirements.

The table on page 252 gives details of slaughtering both in abattoirs and on stations and farms.

BEEF CATTLE HERDS AS AT 31st MARCH, 1956, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Area Series— Total Area of Holding	Size of Beef Cattle Herd (Numbers)												Total All Rural Holdings				
	NUMBER OF HERDS																
	1-9	10-19	20-29	30-49	50-69	70-99	100-149	150-199	200-299	300-499	500-999	1,000-1,999		2,000-4,999	5,000-9,999	10,000 & over	Total Herds
Acres																	
1-99	149	57	18	8	4	1	1	1	1	...	...	...	...	...	...	...	239
100-199	155	66	39	39	14	13	6	2	2	...	...	...	...	...	...	...	321
200-299	119	55	35	32	15	13	6	2	2	...	...	...	...	...	...	...	1,457
300-399	91	43	27	36	10	20	7	2	3	...	...	...	...	...	...	...	277
400-499	78	34	16	23	18	15	9	2	3	...	...	...	...	...	...	...	804
500-599	58	38	24	21	16	11	11	6	2	2	...	...	...	...	...	...	588
600-699	90	46	38	26	26	19	19	5	2	2	...	...	...	...	...	...	729
700-799	81	41	22	28	20	19	15	6	5	5	...	...	...	...	...	...	189
800-999	164	84	51	48	30	19	12	6	3	3	...	...	...	...	...	...	237
1,000-1,399	164	84	51	48	30	19	12	6	12	4	...	...	...	...	...	...	431
1,400-1,999	229	86	48	49	27	25	13	6	5	6	...	...	...	...	...	...	1,585
2,000-2,999	326	110	78	56	30	21	24	6	15	6	6	...	...	...	...	...	500
3,000-3,999	254	80	36	55	41	20	16	6	9	7	2	...	...	...	...	...	1,976
4,000-4,999	254	80	36	55	41	20	16	6	9	7	2	...	...	...	...	...	2,879
5,000-9,999	101	53	16	31	10	19	14	6	11	9	2	...	...	...	...	...	531
10,000-19,999	21	6	6	10	4	6	5	4	1	1	...	...	...	...	...	...	2,307
20,000-49,999	6	3	1	2	...	3	2	1	1	5	...	...	...	...	...	...	976
50,000 and over	25	32	19	23	10	13	16	10	13	10	21	...	...	...	...	...	198
Total	1,947	834	474	487	275	230	172	72	79	59	39	14	16	23	14	253	461
Total ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21,323

BEEF CATTLE AS AT 31st MARCH, 1956, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Area Series— Total Area of Holding	Size of Beef Cattle Herd (Numbers)													Total		
	NUMBER OF BEEF CATTLE															
	1-9	10-19	20-29	30-49	50-69	70-99	100-149	150-199	200-299	300-499	500-999	1,000-1,999	2,000-4,999		5,000-9,999	10,000 & over
Acres																
1-99	565	769	400	286	220	80	103	151	...	...	...	...	...	...	...	2,574
100-199	597	904	939	1,486	803	451	243	310	...	...	...	...	...	...	...	5,423
200-299	457	769	815	1,187	877	1,065	767	826	...	...	...	...	...	...	...	6,247
300-399	345	590	648	1,424	597	1,695	826	331	...	...	...	...	...	...	...	6,882
400-499	303	462	383	876	1,051	1,202	1,040	512	...	...	...	...	...	...	...	6,945
500-599	196	518	571	840	890	893	1,331	1,026	...	...	...	...	...	...	...	7,519
600-799	331	665	924	1,029	1,495	1,538	2,419	816	...	...	...	...	...	...	...	10,718
800-999	285	538	538	1,042	1,133	1,577	1,728	480	...	...	...	...	...	...	...	10,105
1,000-1,399	642	1,177	1,259	1,867	1,778	1,513	1,376	1,016	...	...	...	...	...	...	...	15,548
1,400-1,999	861	1,234	1,157	1,825	1,532	2,048	1,622	1,092	...	...	...	...	...	...	...	18,766
2,000-2,999	1,264	1,521	1,879	2,100	1,684	1,742	2,831	975	...	...	...	...	...	...	...	20,814
3,000-4,999	1,965	1,984	886	2,000	2,383	1,720	1,961	1,876	...	...	...	...	...	...	...	19,276
5,000-9,999	426	703	386	1,210	604	1,583	1,581	1,008	...	...	...	...	...	...	...	13,246
10,000-19,999	102	85	146	385	241	513	621	668	...	...	...	...	...	...	...	8,394
20,000-49,999	95	49	21	77	282	282	243	180	...	...	...	...	...	...	...	8,524
50,000 and over	139	457	468	841	594	1,092	1,881	1,679	...	...	...	...	...	...	...	517,582
Total	7,503	11,525	11,374	18,475	15,862	18,974	20,590	12,120	19,218	22,347	25,593	19,004	55,748	165,847	249,133	673,313

LIVESTOCK SLAUGHTERED (a)
(Numbers revised since previous issue)

Year ended 30th June—	Sheep		Lambs		Cattle		Calves	
	Number	Gross Value (b)	Number	Gross Value (b)	Number	Gross Value (b)	Number	Gross Value (b)
		£		£		£		£
1956	1,157,058	2,915,226	641,795	2,105,931	174,957	5,376,944	17,144	115,742
1957	1,236,911	3,683,930	676,779	2,400,572	176,088	5,585,854	17,536	130,491
1958	1,167,164	2,453,418	698,747	2,369,573	187,614	5,266,382	30,828	344,783
1959	1,611,892	2,564,250	817,389	2,215,710	221,722	6,855,520	31,345	363,450
1960	1,816,021	3,172,684	849,825	2,154,941	218,444	7,722,699	26,145	368,362

(a) Mainly slaughterings for human consumption but also includes small numbers of livestock slaughtered for boiling down. Details of pigs slaughtered are shown on page 256. (b) Value "on hoof" at principal market.

DAIRYING

Compared with the wheat, wool and meat producing industries, dairying as a major well-organized rural activity is of fairly recent origin. Its growth was retarded initially by the difficulty of clearing heavily timbered country in the South-West and the need for special methods of pasture establishment, but these problems have been progressively overcome and dairying is now a significant feature of primary production, although only limited development has taken place in recent years.

Until the establishment of the first butter factory at Busselton in 1898, dairy farming in Western Australia was essentially for the production of whole milk, although small quantities of farm butter were marketed. As more factories commenced processing, the industry steadily developed and its growth was further stimulated by the establishment of irrigation areas, the first at Harvey in 1916, and by the introduction of the Group Settlement Scheme in 1921. Another important factor in increasing production was the successful establishment of subterranean clover which resulted in a marked improvement in pastures. This expansion continued until after the war but since then production has remained at about the same level.

The industry has been assisted by the extensive experimental work carried out by the Department of Agriculture and the advisory service which it provides on all aspects of dairy farming. The Department also established in May, 1956 an artificial insemination centre at its Wokalup Research Station and dairy herds, which consist mainly of Australian Illawarra Shorthorn, Jersey, Guernsey and Friesian breeds, are now being served from eight distributing centres.

Price instability has been one of the major difficulties of the industry and in 1926 the "Paterson Plan," which was a voluntary scheme of price stabilization, was introduced. It met with considerable success but weaknesses finally became apparent and it was abandoned in 1934 in favour of the Dairy Products Marketing Regulation Act passed by the State Parliament. On the 1st April, 1946, Western Australia entered the voluntary butter price equalization scheme, operated since 1936 by the Commonwealth Dairy Produce Equalization Committee Ltd., and in January, 1947 the State extended its participation to include cheese. The Committee, which comprises certain members of the State Dairy Products Boards and other persons representing the industry, enters into agreements with manufacturers to secure to them equal rates from sales of butter and also of cheese, and for this purpose may fix basic prices at which these products sold in Australia or abroad are to be taken into account. The effect is that local and export trade are distributed among manufacturers in equitable proportions. The Committee fixes basic prices and equalizes returns to factories through an Equalization Fund. In addition, subsidies provided by the Commonwealth Government are distributed by the Committee, through factories to dairy farmers, by payments on butter and cheese manufactured. The second five-year stabilization plan, which came into operation on the 1st July, 1957, provided that any subsidy made available under the scheme would be determined before the commencement of each season and would be on the basis of a fixed amount in any dairying season. In 1959-60 an amount of £13,500,000 was provided for the Australian industry, the average subsidy rates per cwt. being 63s. 6d. on butter and 29s. 1d. on cheese.

DAIRY CATTLE HERDS AS AT 31st MARCH, 1956, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Area Series— Total Area of Holding	Size of Dairy Cattle Herd (Numbers)															Total All Rural Hold- ings
	NUMBER OF HERDS															
	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-149	150-199	200 and over		Total Herds
Acres																
1-19	546	53	16	2	2	2	2	1	1	1	1	1	1	1	1	619
20-29	159	39	16	4	11	11	4	1	1	1	1	1	1	1	1	224
30-49	138	46	23	10	16	16	9	7	5	2	2	2	2	2	2	239
50-69	63	38	24	14	23	23	13	32	1	1	1	1	1	1	1	371
70-99	78	34	18	22	25	25	18	42	7	8	1	1	1	1	1	521
100-149	130	61	36	33	79	65	42	32	14	16	16	15	2	2	2	513
150-199	88	37	27	37	77	79	72	90	40	47	51	24	9	9	9	506
200-299	112	54	39	35	111	134	137	99	69	87	85	15	17	17	17	898
300-399	76	28	29	22	63	76	101	69	51	35	26	15	32	32	32	1,136
400-499	75	25	17	6	28	47	54	44	32	30	21	14	49	49	49	898
500-599	127	62	22	12	30	50	49	44	28	31	22	11	65	65	65	988
600-699	291	130	35	13	22	20	18	18	20	10	18	11	35	35	35	868
700-1,000	497	167	35	21	21	16	11	13	8	7	3	3	17	17	17	1,082
1,000-1,999	699	284	57	24	9	6	4	5	3	2	4	5	8	8	8	1,535
2,000-4,999	1,742	785	181	53	40	15	7	2	5	6	3	1	12	12	12	1,975
5,000 and over	358	246	80	23	28	9	4	2	1	1	1	1	1	1	1	2,852
Total	5,188	2,089	643	331	560	550	517	367	245	202	134	106	248	72	62	11,314
																21,323

DAIRY CATTLE AS AT 31st MARCH, 1956, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Area Series— Total Area of Holding		Size of Dairy Cattle Herd (Numbers)															Total
		NUMBER OF DAIRY CATTLE															
		1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100-149	150-199	200 and over	
Acres	990	320	180	33	67	143	74	41	55	68	72	41	188	123	123	123	1,715
1-19	320	259	187	180	33	67	143	74	41	55	68	72	41	188	123	123	1,715
20-29	291	249	320	187	163	252	143	169	306	306	306	306	306	306	306	306	1,097
30-49	142	236	249	231	358	309	309	367	1,706	1,706	1,706	1,706	1,706	1,706	1,706	1,706	1,586
50-69	170	249	287	214	595	1,827	1,827	1,827	3,719	3,719	3,719	3,719	3,719	3,719	3,719	3,719	3,518
70-99	153	232	322	332	633	2,706	2,706	2,706	4,280	4,280	4,280	4,280	4,280	4,280	4,280	4,280	11,382
100-149	163	187	343	379	607	4,683	4,683	4,683	6,050	6,050	6,050	6,050	6,050	6,050	6,050	6,050	34,476
200-299	242	365	465	607	607	2,764	2,764	2,764	3,719	3,719	3,719	3,719	3,719	3,719	3,719	3,719	21,882
300-399	163	187	343	379	607	2,764	2,764	2,764	3,719	3,719	3,719	3,719	3,719	3,719	3,719	3,719	21,882
400-499	171	160	190	101	709	1,709	1,709	1,709	2,386	2,386	2,386	2,386	2,386	2,386	2,386	2,386	28,782
500-599	283	399	252	201	737	1,737	1,737	1,737	2,386	2,386	2,386	2,386	2,386	2,386	2,386	2,386	28,782
600-699	666	843	443	216	544	672	672	672	964	964	964	964	964	964	964	964	28,782
700-999	1,227	1,041	401	388	503	551	551	551	709	709	709	709	709	709	709	709	20,429
1,000-1,999	1,726	1,787	659	393	226	212	212	212	286	286	286	286	286	286	286	286	20,429
2,000-4,999	4,471	5,030	1,847	833	970	510	307	307	271	314	456	456	456	456	456	456	11,384
5,000 and over	898	1,591	929	381	647	307	307	174	109	68	74	74	74	74	74	74	2,671
Total	12,276	13,408	7,471	5,486	13,668	18,891	22,870	19,874	19,874	15,619	14,961	11,247	10,006	29,690	12,118	15,999	223,584

In the tables on page 253, dairy herds and dairy cattle numbers are classified according to the total area of the holding and the size of the herd as at the 31st March, 1956. Of the 21,323 rural holdings of all types, dairy cattle were carried on 11,314. Holdings of between 1,000 and 5,000 acres accounted for 43 per cent. of the herds but for less than 21 per cent. of all dairy cattle and those which carried less than 10 head for 64 per cent. of the herds but only 11 per cent. of all dairy cattle. Herds of 100 head or more, although they comprised less than 3½ per cent. of the holdings carrying dairy cattle, accounted for over 25 per cent. of the total number carried.

DAIRY CATTLE AND MILK PRODUCTION (a)

As at 31st March	Dairy Cattle							Milk Production (b)	
	Dairy Cows		Heifers one year and over	Heifer Calves under one year	Other Calves under one year	Bulls one year and over	Total Dairy Cattle	Quantity	Gross Value (c)
	In Milk	Dry							
	No.	No.	No.	No.	No.	No.	No.	gallons	£
1951	60,873	66,671	41,365	35,633	12,464	5,869	222,875	50,807,056	3,858,172
1952	60,092	70,533	40,292	38,408	15,148	5,996	230,469	49,970,868	4,956,758
1953	57,805	76,118	42,379	37,594	13,800	6,173	233,869	49,769,166	5,591,320
1954	58,621	75,508	41,836	35,069	12,426	6,056	229,516	49,173,673	5,795,994
1955	60,432	74,264	39,708	35,302	12,689	5,850	228,245	52,918,308	6,049,881
1956	59,176	75,341	38,894	33,489	11,215	5,469	223,584	55,373,097	6,192,400
1957	58,851	75,627	37,924	34,246	12,025	5,388	224,061	56,934,772	6,400,575
1958	57,614	76,625	38,135	35,126	12,973	5,178	225,651	54,729,735	6,340,969
1959	55,795	74,185	37,290	33,003	10,352	4,744	215,369	50,966,678	6,101,159
1960	54,698	70,218	43,198	30,011	13,903	4,480	216,508	55,669,001	6,723,668

(a) Details of butter and cheese production appear in Part 2 of this Chapter. Includes milk used for processing into butter, cheese and condensery products.

(b) For year ended 31st March and (c) Includes subsidy paid by Commonwealth Government.

Pig Raising

For many years the rearing of pigs has been carried on in conjunction with the production of butter-fat as cream, thus providing a practical means of utilizing the skim milk obtained. They are also raised on grain-growing holdings and in 1959-60 more than two-thirds of the pigs in the State were in the wheat belt. There are also a number of farmers in the districts around Perth who specialize in pig raising but in recent years the importance of the industry in this area has declined.

The principal breeds in Western Australia are the Large White, Berkshire, Landrace and Tamworth and crosses of these breeds. Pigs are reared for bacon and ham as well as pork and, although the greater proportion of production is consumed locally, there is also a considerable export trade, particularly to the other Australian States. In 1959-60 interstate exports of bacon and ham were 397,350 lb. and oversea exports totalled 39,160 lb., the principal buyer being Singapore. In the same year 2,427,366 lb. of pork were shipped interstate and 190,612 lb. overseas, mainly to Singapore.

PIGS

As at 31st March	Boars	Breeding Sows	Baconers and Porkers	Suckers, Weaners, Slips	Other Pigs	Total
1951	2,541	12,434	29,340	37,173	8,422	89,910
1952	2,171	11,072	29,706	34,563	8,712	86,224
1953	2,158	10,751	23,705	32,069	7,512	78,195
1954	2,669	15,846	29,620	40,665	12,112	100,912
1955	2,508	14,222	32,332	45,506	12,381	107,039
1956	2,462	13,957	29,707	41,649	11,322	99,097
1957	3,311	20,059	41,130	60,340	15,142	139,982
1958	3,322	18,600	50,818	59,118	18,925	150,783
1959	2,673	14,684	38,917	45,478	13,744	115,446
1960	2,984	18,814	42,307	53,054	13,774	130,933

PIG HERDS AS AT 31st MARCH, 1956, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Area Series— Total Area of Holding	Size of Pig Herd (Numbers)										Total All Rural Holdings	
	NUMBER OF HERDS											
	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-99	70-99	100-199		200 and over
Acres												
1-19	45	12	12	10	6	5	6	13	6	5	6	126
20-29	18	10	5	1	4	3	3	4	3	3	....	59
30-49	19	9	5	4	5	3	2	4	3	2	4	65
50-69	15	6	3	1	2	4	2	2	2	1	....	324
70-99	18	7	9	4	8	6	2	3	2	1	....	54
100-149	53	25	16	12	21	12	15	9	2	3	2	150
150-199	66	34	24	10	15	10	1	4	6	3	2	175
200-299	108	62	58	37	40	21	15	9	7	3	2	281
300-399	72	42	33	19	32	15	7	10	5	3	....	238
400-499	47	39	25	18	26	15	7	6	3	1	....	178
500-699	48	26	31	18	29	16	10	11	3	1	....	195
700-999	46	38	28	24	28	16	11	18	3	1	....	216
1,000-1,999	64	43	44	24	40	29	17	20	10	4	....	295
2,000-4,999	71	55	56	34	59	38	23	32	16	7	....	393
5,000-9,999	153	129	121	106	173	113	61	84	49	43	6	1,038
10,000 and over	48	36	31	18	25	35	22	29	17	18	4	283
Total	891	573	501	340	513	326	191	251	140	107	31	3,864
Total	....	....	....	....	....	....	....	....	....	....	....	21,323

PIGS AS AT 31st MARCH, 1956, CLASSIFIED ACCORDING TO SIZE OF HOLDING AND SIZE OF HERD

Area Series— Total Area of Holding	Size of Pig Herd (Numbers)											Total
	NUMBER OF PIGS											
	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-49	70-99	100-199	200 and over	
Acres												
1- 19	86	81	139	165	148	160	266	766	512	789	1,596	4,708
20- 29	41	62	56	19	102	101	140	240	229	1,043	.....	2,033
30- 49	39	59	64	69	114	105	92	220	682	272	1,346	3,062
50- 69	28	44	33	16	45	133	95	123	144	111	.....	1,772
70- 99	38	50	112	67	183	64	83	110	.....	115	313	1,135
100- 149	123	171	183	204	511	402	89	167	.....	115	200	2,863
150- 199	159	215	279	176	362	328	49	226	178	435	1,531	504
200- 299	237	429	659	622	936	705	648	525	582	344	441	4,173
300- 399	169	290	383	311	740	514	300	557	582	314	.....	6,064
400- 499	109	252	297	306	601	166	305	376	252	181	.....	3,996
500- 699	127	196	373	301	718	511	435	668	244	456	217	3,426
700- 999	98	247	354	413	680	554	474	1,044	253	419	210	4,716
1,000-1,999	150	295	533	413	969	984	749	1,177	789	453	.....	6,512
2,000-4,999	189	380	666	559	1,410	1,288	1,016	1,866	1,280	896	509	10,059
5,000 and over	399	884	1,413	1,813	4,200	3,902	2,658	4,868	3,971	5,599	1,669	31,376
	115	252	370	302	591	1,190	974	1,680	1,398	2,262	1,022	10,156
Total	2,107	3,937	5,914	5,756	12,310	11,107	8,373	14,613	11,436	13,939	9,605	99,097

In the tables on page 255, pig herds and pig numbers are classified according to total area of the holding and the size of the herd as at the 31st March, 1956. Of the 21,323 rural holdings of all types, pigs were raised on 3,864. Holdings of between 1,000 and 5,000 acres accounted for 45 per cent. of the herds and for 48 per cent. of all pigs carried, and those which carried less than 15 head for 51 per cent. of the herds but for only 12 per cent. of the total number carried.

PIGS SLAUGHTERED; BACON AND HAM

Year ended 30th June:	Pigs Slaughtered		Bacon and Ham	
	Number	Value (a)	Production	Exports (including Ships' Stores)
		£	lb.	lb.
1951	(b) 108,009	(b) 1,109,456	7,969,883	1,357,555
1952	* (b) 127,688	(b) 1,722,516	8,243,124	2,506,965
1953	* (b) 129,524	(b) 1,939,832	8,272,455	1,817,247
1954	* 114,873	2,058,735	7,722,949	1,860,171
1955	* 182,531	1,993,541	7,427,758	1,072,469
1956	* 160,815	2,109,552	7,237,217	1,283,473
1957	* 157,534	2,336,675	6,839,975	1,605,539
1958	* 219,712	2,340,241	6,612,477	849,964
1959	137,095	2,217,763	6,619,106	550,705
1960	168,563	2,506,135	7,117,467	584,482

(a) Value "on hoof" at principal market or at factory door.
* Revised.

(b) For year ended 31st December of preceding year.

LIVESTOCK IN AUSTRALIA

The following table gives details of livestock numbers in each State and Territory at the 31st March, 1960, together with Australian totals.

LIVESTOCK NUMBERS AT 31ST MARCH, 1960—AUSTRALIAN STATES
(Thousands)

State or Territory	Horses	Cattle			Sheep	Pigs
		Dairy	Beef	Total		
New South Wales	204	1,278	2,563	3,841	71,000	399
Victoria	81	1,678	946	2,624	26,597	285
Queensland	234	1,255	5,757	7,012	23,332	429
South Australia	30	240	200	500	14,025	109
Western Australia	41	216	814	1,030	16,412	131
Tasmania	11	207	168	375	3,494	67
Northern Territory (a) ..	38	....	1,110	1,110	15	4
Australian Capital Territory ..	1	3	8	11	299	....
Australia	640	4,877	11,626	16,503	155,174	1,424

(a) As at end of June.

POULTRY FARMING

Poultry farming in Western Australia is now mainly a specialist industry and a large proportion of the egg production is on holdings which carry sufficient birds to make the activity the sole or predominant source of income. Most of the commercial poultry farms are situated in the Metropolitan and Swan Statistical Divisions, within a 30-mile radius of Perth, but a substantial number of birds are also kept for commercial production on orchards, dairy farms and wheat farms throughout the agricultural areas.

On specialist poultry farms modern developments in breeding, sexing and nutrition have resulted in considerably higher egg production per bird. Egg-producing birds are largely first-cross hens, bred mainly from White Leghorn cocks and Australorp hens. Various crosses are used for the production of poultry meat, which has increased considerably in recent years.

Under the Marketing of Eggs Act, 1945-1960, all producers are required to market their eggs either through the Western Australian Egg Marketing Board or under the permit system which is administered by the Board. The principal purpose of this legislation is to ensure satisfactory disposal of eggs, including that surplus over local requirements which is consistently produced and which must be sold



Above—Experimental rice plots at Kimberley Research Station

Below—Beef cattle at Myall's Bore near Derby



overseas at prices which usually do not offer a reasonable return to the producer. In order to provide a fund with which to equalize returns from local and export sales the Board makes a charge on all eggs sold locally, the amount of the charge varying with the proportion of eggs being exported and the export price obtained.

Saudi Arabia and Singapore are now the most important oversea markets for eggs in the shell. The United Kingdom is the principal buyer of egg pulp.

POULTRY

As at 31st March—	Fowls	Ducks	Turkeys	Geese
1951	1,012,338	34,734	12,747	1,780
1952	1,026,893	36,423	12,210	1,107
1953	971,583	31,722	10,086	1,189
1954	1,009,931	14,827	8,455	748
1955	909,389	13,009	7,421	697
1956	864,956	11,873	9,598	712
1957	955,069	11,845	11,671	1,557
1958	901,659	12,129	7,453	1,079
1959	872,258	11,560	5,891	1,416
1960	951,284	12,785	8,740	1,079

EGG PRODUCTION AND POULTRY SLAUGHTERED FOR TABLE PURPOSES

Year ended 31st March—	Egg Production (a)		Poultry Slaughtered for Table Purposes
	Quantity	Gross Value	Gross Value
	doz.	£	£
1951	6,875,598	987,236	573,267
1952	7,219,560	1,321,791	598,886
1953	7,577,620	1,605,268	617,179
1954	8,113,717	1,788,625	593,378
1955	7,802,232	1,544,668	551,326
1956	7,093,451	1,472,560	537,497
1957	7,443,878	1,623,667	(b) 254,871
1958	7,810,668	1,597,324	(b) 350,907
1959	7,563,740	1,614,077	(b) 359,469
1960	7,165,979	1,351,075	(b) 488,625

(a) Excludes non-commercial production.
due to alteration in method of valuation.

(b) Figures not comparable with those for 1955-56 and earlier years

BEE KEEPING

Commercial producers of honey in Western Australia may be divided into three categories. There are a comparatively small number of specialist apiarists who are engaged solely or mainly in honey production; these operate on a large scale and transport their hives from district to district. There are also some substantial producers who are engaged in agricultural activities and use their farms as a central site from which they may transport their hives to other areas as necessary. Finally there are the many farmers and orchardists who keep a few hives and produce honey as a minor supplementary activity. This pattern of production is illustrated by the following table.

CLASSIFICATION OF BEE KEEPERS, BEEHIVES AND HONEY PRODUCTION(†)—1959-60

Classification of Hives(†)	Bee Keepers		Productive Beehives (a)		Honey Production	
	Number	Proportion of Total (per cent.)	Number	Proportion of Total (per cent.)	Quantity	Proportion of Total (per cent.)
					lb.	
5-25	231	52.0	1,290	3.4	64,266	1.2
26-50	65	14.6	1,704	4.4	110,987	2.0
51-100	42	9.5	2,144	5.6	175,906	3.2
101-200	35	7.9	3,539	9.2	390,948	7.0
201-300	25	5.6	5,821	15.2	896,134	16.1
301-500	27	6.1	10,063	26.2	1,770,673	31.9
501-900	13	2.9	7,034	18.3	1,108,227	20.0
Over 900	6	1.4	6,803	17.7	1,032,347	18.6
Total	444	100.0	38,398	100.0	5,549,488	100.0

(†) Excludes details of bee keepers with less than five hives, from which honey was taken during the year and excludes hives kept for production but from which no honey was taken, young hives and nuclei.

(a) Represents the number of hives at 30th June, 1960

Substantial quantities of honey are exported, the principal buyers in 1959-60 being the United Kingdom and the Federal Republic of Germany.

BEEHIVES AND HONEY AND BEES-WAX PRODUCTION

Year	Beehives (a)		Honey Production		Bees-wax Production	
	Productive (b)	Unproductive (c)	Quantity	Gross Value	Quantity	Gross Value
	No.	No.	lb.	£	lb.	£
1955-56	28,073	6,268	4,482,125	203,115	57,111	13,571
1956-57	31,650	6,137	5,658,866	265,770	70,457	18,890
1957-58 (d)	34,915	5,806	7,313,277	246,427	86,516	17,241
1958-59 (d)	37,670	7,016	6,680,371	220,842	83,871	16,544
1959-60 (d)	38,398	8,575	5,549,488	162,114	67,520	12,685

(a) Number at 30th June. (b) Hives from which honey was taken. (c) Includes hives kept for production but from which no honey was taken, young hives and nuclei. (d) Excludes particulars of bee keepers with less than five hives.

THE DEPARTMENT OF AGRICULTURE

Brief references have been made earlier in this Chapter to the important services rendered to rural producers by the Department of Agriculture. The Department is the branch of the State Government Service responsible for bringing scientific advice to farmers and pastoralists, for carrying out research into a wide range of technical problems and for administering Acts of Parliament dealing with agricultural and pastoral matters. Its activities can be classified under the four headings: investigation or research; advisory, now more commonly called "extension" functions; provision of certain services for the assistance of the man on the land; and regulatory work which consists of carrying out the provisions of some of the numerous laws relating to agriculture.

The operations of the Department are organized under a series of Divisions and Branches, the heads of which are responsible to the Director of Agriculture. The Divisions are Animal (including Animal Health and Nutrition Laboratory and sections for Veterinary Services, Poultry and Brands), Wheat and Sheep (including the Cereal Products Laboratory), Dairying, Horticultural (covering Fruit, Vegetables, Tobacco and Apiculture), Soils (including Soil Conservation and Irrigation), Plant Research, Biological Services (including Plant Pathology, Entomology, Botany, Seed Certification and Weed Control), and North-West. In addition there are Branches for Vermin Control and Abattoirs and separate sections covering Rural Economics and Marketing, Publications and Library. Muresk Agricultural College is also controlled and staffed by the Department.

Sections of government administration known as Departments of Agriculture usually originated in the demands of farmers for government assistance in coping with their technical problems. The Western Australian Department of Agriculture had its origin in a Bureau of Agriculture which was formed in 1894. In 1898 the Department of Agriculture was established and absorbed the staff of the Bureau. Up to this time, some 70 years after the first settlement, agriculture in Western Australia had made little progress. The area of cleared arable land was only about two per cent. of the present area. Superphosphate had not been used on Western Australian farms and wheat varieties suitable for the drier districts to the east of Northam were not then available. There was little comprehension of the many problems associated with land development and not much public appreciation of the part that science might play in solving them.

From small beginnings the Department's responsibilities and activities extended as agriculture developed. In the first quarter of a century of its existence, expansion and consolidation of farming in the wheat belt overshadowed other activities. That was only natural, as the acreage of wheat for grain expanded from 200,000 in 1905 to nearly four million acres in 1930, and for much of that time the State's development was synonymous with wheat belt expansion.

State Farms and Research Stations

Perhaps the most important work in the Department's first ten or fifteen years was that concerned with the establishment of experiment farms, or "State farms" as they were at first called. The first of these had its origin in plots which were established at Hamel in 1896. Valuable work was carried on at this centre for nearly twenty years in connexion with the growing of potatoes, fruit, cereals, hops, fodder crops and pasture, and some success was achieved with wheat breeding.

Government farms were opened at Narrogin in 1901 and at Nabawa, 25 miles north of Geraldton, in 1902. In 1907 a farm at Nangeenan, near Merredin, was taken over from the Lands Department and is now the Merredin Research Station. In the same year a farm was established in the South-West at Brunswick in order to provide object lessons in dairying, as it was felt that there were great possibilities of expanding the dairying industry. After functioning for several years this farm was closed and the land was subsequently used for closer settlement purposes.

In 1911 a change was made in the policy of the government farms in the wheat belt and their character changed from "experimental" to "experiment" farms. Instead of being conducted mainly with the object of producing revenue they were to be used primarily for collecting information concerning local conditions that would be of value to the district. In addition, pure pedigree seed wheat and oats were bred. It would be difficult to over-estimate the subsequent value of the farms in this new role, which is still one of their most important functions. In later years more "research stations," as the experiment farms came to be called, were established and they now number 19.

Research Stations at Nabawa, Badgingarra, Wongan Hills, Merredin, Beverley, Newdegate, Salmon Gums and Esperance deal with agriculture in the cereal-growing and sheep-raising districts. Stations at Denmark, Bramley and Wokalup serve the dairying districts, and one at Manjimup is concerned with tobacco. Stations at Herdsman Lake in the metropolitan area assist the poultry and vegetable-growing industries. A viticultural research station has been established at Upper Swan and a horticultural research station is being developed at Stoneville in the Darling Range to the east of Perth. At Boyanup, near Bunbury, an experimental block has been established to investigate the suitability for irrigation of certain soils in the Capel-Boyanup area in connexion with a proposed extension of irrigation services.

The Kimberley Research Station, operated in conjunction with the Commonwealth Scientific and Industrial Research Organization, is concerned with problems of irrigation in relation to agriculture in the tropics. At Abydos, near Port Hedland, regeneration of overgrazed pastoral country is the main concern. At the Gascoyne Research Station at Carnarvon, problems of growing tropical fruits and winter vegetables are being investigated.

Advisory Services

Extension work is perhaps the Department's most important function and it has undoubtedly exercised a powerful influence in publicizing and accelerating the adoption of better methods. It is difficult to assess the results of any educational undertaking in terms of money, but the desirability of having a well-informed farming community, receptive to new ideas, is obvious. Although the best method of taking advice to farmers is for the technical officer to visit farms for discussion with the farmer on his own property, this is unfortunately not always possible as an officer may have between 500 and 1,000 farms in his district. Individual visits often have to be restricted to cases where a specific request has been made or where some urgent action is required.

Extension officers support and foster the formation of farmers' organizations such as Pasture Groups and attend meetings and field days where talks can be given to groups of farmers. It is estimated that in the past year over 4,000 farmers attended nearly 150 field days with which the Department was associated. Film evenings provided by the Department's mobile film units are of great assistance in this respect. Field experiments, both at the stations and on farmers' properties, form an excellent basis for demonstrations and talks. The various competitions in which extension officers act as judges provide another means of bringing farmers together for discussion. These competitions are generally concerned with crops and pastures but may include other types such as those conducted by Junior Farmers' Clubs for show exhibits and for debates. Extensive use is made of the radio, which in Western Australia, probably reaches more people than does any other medium. Between 200 and 300 broadcasts are given by departmental officers each year. A *Journal of Agriculture* is published every month and has a circulation of about 17,500. Bulletins dealing with a wide variety of subjects are available.

Advisory work is not concentrated in a single Division, as is the case in some Departments of Agriculture, but is carried out by several Divisions and Branches of the Department. In recent years a move has been made to decentralize the Department's work and groups of officers have been stationed at Albany, Bridgetown, Bunbury, Busselton, Denmark, Derby, Esperance, Geraldton, Harvey, Katanning, Manjimup, Merredin, Moora, Mount Barker, Narrogin, Northam, Wiluna and at the Kimberley and the Gascoyne Research Stations. An officer is also stationed at each of the following places: Armadale, Broome, Camballin, Gosnells, Kalamunda, Kalgoorlie, Kellerberrin, Kununurra, Mundaring, Pinjarra and Port Hedland.

Research Activities

In the field of investigation and research, problems which have been dealt with would comprise a lengthy list and only a few of the more important can be mentioned here. The value to the State of cereal-breeding activities is well known. Two wheat varieties, Nabawa and Bencubbin, which were respectively selected and bred in Western Australia, became in turn the leading varieties in Australia. These, with other cereal varieties produced by the Department, have increased the income of farmers by many millions of pounds over the years in which they have been grown. The introduction of new plant species and varieties, the evaluation of their suitability for local conditions and the determination of rotations for improving yields and maintaining soil fertility are important features of the work in cereal-growing districts.

Research into plant diseases and deficiencies forms another important section of the Department's investigational work. Considerable success has been achieved in the recognition and remedying of deficiencies of trace elements in soils, notably of copper, zinc and molybdenum. As a result of this work, fertilizers containing trace elements have been applied in recent years to about a quarter of the State's farming land. These investigations, together with allied work on superphosphate and the establishment of subterranean clover pastures, constitute the technical factors which have made possible the rapid post-war expansion of light land development.

In the pastoral areas of the north-west the sheep-carrying capacity of large tracts of country has been seriously reduced by drought and overgrazing. Recent work by officers of the Department has shown that much of this country can be reclaimed by adopting systems of grazing management different from those employed in the past.

Nutritional disorders and diseases of farm animals cause considerable loss to farmers and pastoralists. Some of the Department's most notable successes have been achieved when dealing with problems in this field, which include enzootic ataxia, enterotoxaemia, toxic paralysis, and clover disease in sheep, copper and cobalt deficiencies in cattle, Kimberley horse disease, plant poisoning of stock and infertility in dairy cows.

A soil conservation service was established in the Department in 1947. Since then a great deal of information about the incidence and nature of erosion has been collected and many farmers have been assisted with their erosion problems. Considerable attention has also been given to the salt problem in the agricultural districts.

In somewhat more restricted fields the use of a hormone spray instead of cincturing, for currant vines, is a noteworthy change in agricultural practice resulting from investigations by the Department. The selection of the rust-resistant runner bean variety, "Westralia," has greatly reduced one of the hazards with which the bean grower has to contend.

Agriculture Protection

For the control, prevention and eradication of noxious weeds and vermin, there is an Agriculture Protection Board which operates in collaboration with the Department of Agriculture.

The Board, which was established in 1951 following recommendations by a Royal Commission, is constituted under the provisions of the Agriculture Protection Board Act, 1950-1960, and comprises the Director of Agriculture or his deputy, as Chairman; the Chief Vermin Control Officer of the Department of Agriculture; an officer of the State Treasury; two representatives of the agricultural industry; one representative of the pastoral industry; and five representatives of local government authorities.

The income of the Board consists of appropriations from the Consolidated Revenue Fund and other moneys as prescribed by the Agriculture Protection Board Act.

For the purposes of the Agriculture Protection Board Act, the term "noxious weeds" means those plants which are so proclaimed or declared under the Noxious Weeds Act, 1950-1960. "Vermin" means any animal, bird or insect proclaimed to be vermin as provided by the Vermin Act, 1918-1960, and includes rabbits, foxes, dingoes, sparrows, starlings and grasshoppers.

The Board formulates policies for the control, prevention and eradication of noxious weeds and vermin, advises on methods, directs and assists in general operations, provides services to help local government authorities and landholders in destruction work and conducts scientific research and investigations for the improvement of control techniques and policies. Control work extends to Crown lands, including reserves, for the benefit of adjoining landholders.

Improvements in the control of both noxious weeds and vermin have resulted from the activities of the Agriculture Protection Board and there have been some notable successes, including a great reduc-

tion in rabbit numbers effected by the use of myxomatosis virus and by organized drives for their destruction, mainly by poisoning.

Other Services

The Department operates certain services which assist the producer to increase his efficiency. Probably the best known is the production of pure pedigree varieties of seed wheat, oats and barley. These are of value to the cereal grower, who is able to obtain his requirements at moderate cost. Sponsoring and supervising the production of approved lines of seed, notably potatoes and beans, has led to the wide use of these specialized lines with a resulting increased yield, and certification of pure lines of pasture seed gives farmers a guarantee of quality in the seed they buy. Assistance to dairy farmers to form herd-testing units, thus enabling them to gauge the performance of their herds, is another service of similar nature. Assistance and technical advice is given to farmers concerned with the installation of irrigation schemes and the preparation of land for irrigation. An artificial insemination centre for dairy stock has been established at the Wokalup Research Station.

The producers who benefit from these services pay something for them, but not necessarily the full amount of the cost of providing them.

Administration of Acts

The Department of Agriculture is responsible for administering some fifty Acts concerning a wide range of subjects. Some of the more important relate to animal and plant diseases and insect pests, industry trust funds, soil conservation, vermin control, marketing of agricultural products and registration of feeding stuffs, fertilizers and stock brands.

TRAPPING

Although trapping has been carried on from the first years of settlement, it has never been an important industry. In 1959-60 the recorded gross value was only £144,157 but reliable and complete information is difficult to obtain and this amount could therefore be deficient.

Kangaroos have been destroyed in great numbers from the earliest days, the principal reason for the organized destruction being the damage done to pastures and fencing. As early as 1849 the export of skins for the year was no less than 12,387. In 1959-60 the number of skins exported or used in local factories was estimated at 55,000 valued at £17,099.

The earliest recorded export of rabbit skins relates to the year 1900 and the meat and skins of these animals have been a source of income to trappers ever since. In an attempt to reduce the damage done to crops and pastures, various methods of control have been adopted and since the second World War an intensive campaign, using myxomatosis virus, poisons and warren ripping, has met with considerable success. As a result, the quantity of rabbit meat produced and the number of skins exported and treated locally have declined greatly and in 1959-60 the total value was estimated at only £124,492.

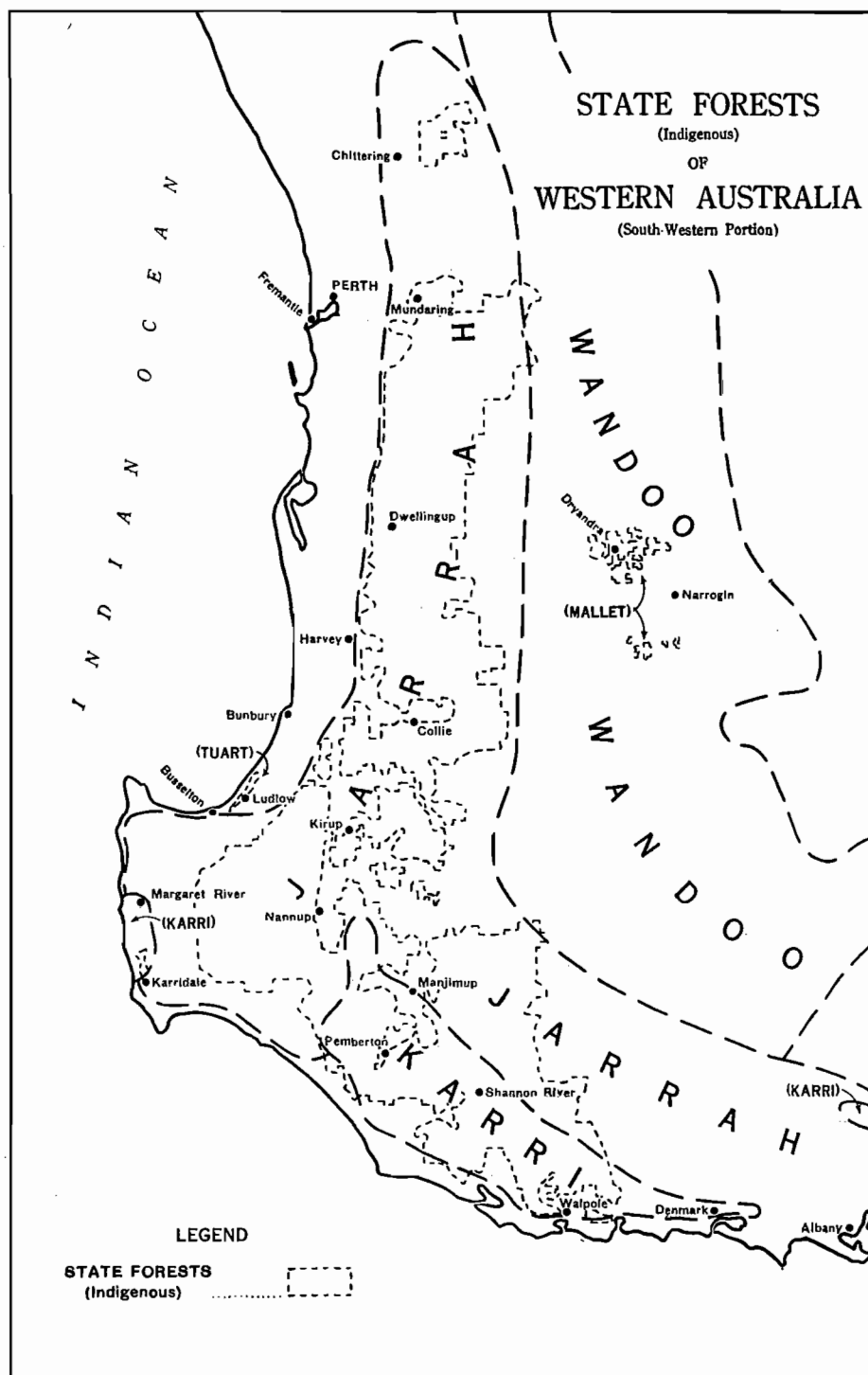
The skins of animals other than kangaroos and rabbits, amounting in value to £979, and exports of Western Australian fauna valued at £1,587 account for the balance of the value of the trapping industry in 1959-60.

FORESTRY

The Prime Indigenous Forests

Although the prime indigenous forests of Western Australia cover only a small percentage of the area of the State, they are of considerable economic importance. This is not only on account of the durability, strength and general purpose nature of their hardwood timbers, but also because of their occurrence on the water catchment areas in the high-rainfall and closely-populated section of the State. Being easy to regenerate after cutting, they form a natural and effective protection against soil erosion. More than four million acres have been permanently dedicated as State Forests and approximately 2.5 million acres have been established as Timber Reserves under the Forests Act and the Land Act.

Jarrah (*Eucalyptus marginata*) is the State's principal timber and the prime forest covers over three million acres of the State Forests. Karri (*E. diversicolor*) is next in importance but is distributed over only about 250,000 acres. Wandoo (*E. redunca*) accounts for a smaller portion of the dedicated area and Tuart (*E. gomphocephala*), another valuable timber, has a restricted area of about 4,000 acres. Marri (*E. calophylla*) and Blackbutt (*E. patens*), which occur through the jarrah and karri forests, are important milling timbers, but the present output is comparatively small.



Other eucalypts and many trees of different genera occur within the prime forest belt but they are not of major economic importance. The main distribution of the prime forests, which are practically confined to the south-western portion of the State, is shown on the accompanying map.

The Inland Forests

Beyond the area of prime forest is an inland forest of sclerophyllous woodland, within which are a number of eucalypts (both tree and mallee form), as well as several types of *Acacia*, such as the wattles and mulgas, tea tree (*Melaleuca spp.*) and casuarinas. Sandalwood (*Santalum cygnorum*), indigenous to the wheat belt and semi-arid areas of the State, is still exported to Asian countries but is now obtained only from the semi-arid regions.

While none of the inland forest can be classed as suitable for sawmilling in the ordinary sense, it forms an important source of timber for mining and agricultural purposes. During recent years, soil conservation in the regions of low rainfall has received increasing attention and the importance of controlling clearing, grazing and firewood cutting has been recognized. The Forests Department maintains a staff to exercise these controls and to advise on tree planting.

Forestry Administration

Scientific forestry was given considerable impetus in Western Australia with the passing of the Forests Act in 1918. Extensive cutting over the previous fifty years had seriously depleted the State's timber resources and adequate provision had not been made for protection and regeneration. Under the Act, however, wide powers are conferred on the Forests Department, which is granted nine-tenths of the net annual government revenue from forestry sources. The sum received, together with various other grants, is used for regeneration, fire control and associated purposes.

The forests are now managed on a long-range working plan to ensure continuity of the industry, trees being approved for cutting and marked accordingly by trained foresters, who work under the direction of the Conservator of Forests and closely control both the indigenous forest and the mallet and pine plantations. The future productivity of the forests is also safeguarded by ensuring that cutting is carried out in such a way as to protect immature growth and to encourage natural regeneration, which is a very important feature of the Department's policy.

Brown Mallet (*Eucalyptus astringens*), the bark of which is an important source of tannin, once covered large areas on the fringe of the inland forests but was practically exterminated by clearing for farms and by excessive exploitation. It is now being regenerated and the area of Mallet plantations now totals 19,048 acres.

Plantation methods are being employed to grow pines, principally *Pinus pinaster* and *Pinus radiata*, as the State has no indigenous softwoods of commercial significance. Thirteen plantations, with a planted area of 29,318 acres, have been established and a planting programme of 2,500 acres per annum currently being carried out is planned to provide, ultimately, 200,000 acres of pine forest. The land selected for the purpose is of limited value for agriculture but when used for pines it constitutes a valuable long-term investment, with the prospective development of industries for the manufacture of paper, wallboard and similar products.

Because of the hot, dry summer experienced in most of the areas covered by State Forests, there is a considerable risk of damage by fire and intensive precautions are taken by the Department to minimize this danger. Look-out towers, provided with wireless or telephone communication, are manned at strategic points and controlled burning is carried out when conditions are suitable. Restrictions are placed on all burning operations by farmers and other persons when the fire hazard is high and at such times warnings are issued emphasizing the danger.

In association with the system of cutting control, various royalties, licence and permit fees are collected as part of the Consolidated Revenue of the State.

Information concerning forest tenures, the issuing of licences and permits, etc. is given under the heading "Forests Department" in the section *Methods of Leasing* in Chapter VII, Part 1.

Principal Forest Products

Sawn and hewn timber are the principal forms of forest production, but there has been a rapid increase in the use of logs for plywood manufacture during recent years. Karri and, to a lesser extent, locally-grown pine logs are used for this purpose, together with imported logs.

In addition to these major products, the State's forest wealth includes wandoo (the whole tree) and mallet bark for tanning extract, sandalwood for export and as a source of sandalwood oil, firewood

for general purposes, sheoak (*Casuarina spp.*) for barrel staves, manna gum (from *Acacia sp.*) and various seeds and plants for propagation both in Australia and abroad. Wandoo, jarrah and marri are used as a source of charcoal for the high-grade charcoal pig-iron produced at Wundowie. The karri, wandoo, marri and some inland species are important nectar producers for apiarists, who move their bees to various forest sites in following the nectar flow.

The following table gives details of sawn and hewn timber production from 1950-51 to 1959-60. It shows that sawn timber production increased steadily up to 1954-55 when output totalled 225.8 million super. feet. A slight recession in 1955-56, when 222.4 million super. feet were cut, was followed by a sharp decline to 204.5 million super. feet in 1956-57 and a further decrease in 1957-58 when 201.7 million super. feet were produced. In 1958-59 production increased to 211.8 million super. feet but in 1959-60 it again declined sharply and the total of 198.9 million super. feet was the lowest since 1951-52. Hewn timber, which consists mainly of mining timber, piles, poles, fencing posts and rails, increased from 19.4 to 26.6 million super. feet between 1950-51 and 1959-60.

TIMBER PRODUCTION (a)
(Thousand super. feet)

Item	1950-51	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60
Timber—Sawn	156,811	178,290	203,314	216,021	225,795	222,398	204,475	201,664	211,832	198,903
Timber—Hewn	19,396	21,157	20,011	24,990	25,698	22,740	23,952	31,509	25,947	26,558

(a) From local logs and includes plywood veneers in terms of super. feet.

Sawmilling is dealt with in greater detail under *Secondary Industry* in Part 2 of this Chapter.

In 1959-60 exports of railway sleepers totalled 33.7 million super. feet, of which 6.7 million went to other Australian States and 27 million to overseas markets, principally India, the United Kingdom, Pakistan and New Zealand. In the same year 31.8 million super. feet of other timber was exported to other Australian States and 8.1 million was shipped overseas, the principal markets being the United Kingdom, New Zealand, India and South Africa.

FISHERIES (INCLUDING WHALING AND PEARLING)

The fishing industry in Western Australia consists of three distinct activities, the catching of edible species, whaling and pearl-shell production. In addition, pearl culture has been successfully established in recent years.

General Fisheries

The principal species of edible fish are shown in the following table with the quantities of each species caught in the years 1955-56 to 1959-60.

Since the end of the second World War, crayfish has become the most important item of production of that section of the industry which is concerned with the catching of edible species. Prior to the war there was a small local market for fresh crayfish, but in 1941 production was stimulated by canning for the armed forces. Although canning continued until 1950, it had become far less important by 1947 than another development, the freezing of crayfish tails for export, mainly to the United States of America. The overseas demand, which developed rapidly in post-war years, gave great impetus to the industry and the take increased more than eightfold between 1947 and 1959-60, when total production of live crayfish was 19.5 million lb., valued at £3,013,255 to the fishermen. In 1959-60 the overseas export of crayfish tails totalled 6.5 million lb., the f.o.b. value being £3.2 million. In addition, consignments of cooked whole crayfish were sent overseas.

The most important commercial species of crayfish in Western Australian waters is *Panulirus longipes*, which occurs in the vicinity of the Abrolhos Islands, Geraldton, Dongara, Jurien Bay, Lancelin and Fremantle, and is protected from overfishing by the declaration of closed seasons as necessary and the prohibition of the taking of fish of less than a prescribed size. The catch is processed either on specially-equipped freezer boats or at shore stations.

PRODUCTION OF FISH (a)

Species—Common Name	1955-56	1956-57	1957-58	1958-59	1959-60
Crustaceans—	lb.	lb.	lb.	lb.	lb.
Crabs	21,276	11,415	34,826	37,893	74,730
Crayfish	10,529,539	10,763,104	13,327,286	17,516,853	19,545,439
Prawns	74,600	189,218	147,192	85,851	131,773
Total	10,625,415	10,963,737	13,509,304	17,640,597	19,751,942
Other—					
Bream, Black	12,867	13,875	18,187	15,323	10,328
Bream, Buffalo	...	4,088	14,958	51,377	41,774
Bream, Yellow-fin	28,444	43,709	44,498	35,279	53,586
Bream, Silver or Tarwhine	5,880	5,225	8,226	2,867	7,851
Cobbler	550,235	331,224	553,115	310,690	446,718
Cod	16,113	13,370	20,101	16,829	18,311
Flathead	66,116	24,920	24,601	29,966	24,454
Garfish	51,025	50,237	48,241	47,173	78,898
Groper	10,475	14,224	15,084	15,280	24,571
Herring, Perth	20,494	29,874	59,702	28,791	80,536
Jewfish, Westralian	214,869	221,252	252,675	281,809	396,721
Kingfish, Sea (Samson Fish)	28,277	77,299	86,051	92,779	108,513
Leatherjacket	16,658	21,392	34,272	53,277	61,581
Mackerel, Spanish	35,761	42,570	70,236	61,547	82,247
Mullet, Sea	495,218	828,548	857,003	758,362	787,822
Mullet, Yellow-eye	376,000	302,174	465,296	504,095	432,264
Mulloway (River Kingfish)	4,121	7,659	21,293	10,771	17,543
Pike	17,092	21,358	20,803	15,466	21,632
Ruff (Sea Herring)	715,124	1,015,124	870,005	1,375,819	1,078,925
Salmon, Australian	4,771,027	4,313,719	4,131,270	4,028,284	2,741,387
Shark	248,132	358,996	400,460	423,207	487,032
Snapper	1,476,909	1,035,330	864,436	1,060,073	2,340,263
Tailor	97,668	147,818	139,153	137,292	150,088
Trevally, Silver (Skipjack)	68,694	105,079	123,913	194,098	82,096
Whiting, Sand and School	355,795	404,784	453,269	396,663	460,667
Whiting, King George	30,376	57,541	131,777	91,330	66,867
Other Species	71,395	74,084	87,010	259,039	423,532
Total	9,784,765	9,565,473	9,815,635	10,297,486	10,526,257
GRAND TOTAL	20,410,180	20,529,210	23,324,939	27,938,083	30,278,199

(a) Estimated live weight.

The large catches of Australian salmon (*Arripis trutta*), which school in the bays on the south and lower south-western coasts, yield a large proportion of the production of inshore and beach fishing and are used almost exclusively for canning. The remainder of the catch from this type of fishing comprises chiefly tailor (*Pomatomus pedica*), sea herring or ruff (*Arripis georgianus*), transparent whiting (*Sillago bassensis*), sand whiting (*Sillago schomburgkii*), sea mullet (*Mugil cephalus*) and trevally or skipjack (*Usacaranx georgianus*). This is sold mainly as wet fish on the local market, but large quantities of sea herring are canned and there are some exports, principally of whiting, to the other Australian States.

Hand-lines and traps are used to catch snapper (*Chrysophrys unicolor*) during the northern schooling season, from May to August, in the coastal waters from the Murchison River to North West Cape. The same area also yields heavy catches of Westralian jewfish (*Glaucosoma hebraicum*) and smaller quantities of cod and groper. Other areas as far south as Cape Naturaliste are fished by hand-line, jewfish being the principal catch.

The first fishing grounds to be exploited were the estuaries and rivers and, although they are not now as important as other grounds, they still provide substantial quantities of fish of a fairly wide variety. The principal species are cobbler (*Cnidogobius macrocephalus*) and yellow-eye mullet (*Aldrichetta forsteri*), most of which are caught in the estuaries of the Murray, Serpentine, Harvey and Swan Rivers. Other species include garfish (*Reporhamphus regularis* and *R. melanochir*), Perth herring or gizzard shad (*Fluvialosa vlamingi*), sea mullet, tailor, sand whiting, King George whiting (*Sillaginodes punctatus*), and flathead. Crabs (*Portunus pelagicus*), king prawns (*Penaeus latisulcatus*) and other prawns are also caught commercially.

There are no indigenous inland or freshwater fish of commercial value. A small crustacean, the marron (*Cherax tenuimanus*), occurs in the streams of the lower south-west. Brown trout, rainbow trout and English perch have been introduced into the streams of the southern districts.

Research work on crayfish, Australian salmon, prawns, tuna and whales in Western Australian marine waters is being carried out by the Commonwealth Scientific and Industrial Research Organization in association with other Commonwealth and State Government authorities. Reference to these activities is made in Chapter V, Part 2.

GENERAL FISHERIES

Year ended 30th June	Boats Licensed	Value of Boats and Equipment	Fishermen Licensed (a)	Production			
				Crayfish (b)		Other Fish (c)	
				Quantity	Value	Quantity	Value
1950 (d)	No. 550	£ 484,500	No. 912	cwt. 58,481	£ 392,777	cwt. 68,383	£ 226,133
1951 (d)	531	686,570	925	60,598	584,620	72,223	290,083
1952 (d)	544	795,497	996	75,138	841,543	65,795	412,938
1954	600	1,055,232	1,125	82,353	922,353	90,002	473,551
1955	616	1,245,461	1,069	97,380	1,090,656	(e) 83,942	510,200
1956	687	1,413,573	1,150	94,014	1,228,446	(e) 87,268	580,904
1957	706	1,562,130	1,285	96,099	1,355,388	(e) 85,347	577,512
1958	812	1,858,545	1,348	118,994	1,721,441	(e) 87,459	632,619
1959	871	2,155,648	1,503	156,400	2,299,087	(e) 90,302	667,919
1960	960	2,601,462	1,673	174,513	3,013,255	(e) 72,206	609,907

(a) Comprises employees and working proprietors. (b) Live weight of whole crayfish. (c) Excludes oysters, crabs, prawns and scallops. (d) Year ended 31st December. (e) Estimated live weight; in previous years "reported" weight.

Whaling

Whaling has been conducted along the Western Australian coast from the first years of settlement and whale oil and whale bone were among the earliest exports from the Colony. Activity since then has fluctuated widely and at times ceased altogether. The latest large-scale revival of the industry began in 1949 and stations are now operated at Carnarvon and Albany.

The whales which pass northward along the western coast from about May and return south by the end of October are predominantly humpbacks. These are protected from undue depletion of numbers by the fixing of an annual quota of kills for each organization, under the procedure laid down by the International Whaling Commission. Since 1955 the company operating from Albany has extended its activities to include the taking of sperm whales, which are not subject to restriction.

The information shown in the following table, which covers each of the years from 1951 to 1960, has been supplied by the State Fisheries Department. It does not include particulars of sperm whales taken by the company operating from Albany.

WHALING

Season	Whales Taken			Whale Products			
	Number	Average Length		Oil (a)		Meal	Solubles
		Males	Females	Total	Average per Whale		
1951	1,224	feet (b)	feet (b)	barrels 62,046	barrels 50·6	tons (b)	tons (b)
1952	1,187	(b)	(b)	62,406	52·6	2,200	3,205
1953	1,300	39·1	40·7	66,000	50·7	3,200	1,811
1954	1,320	38·8	40·5	62,995	47·7	3,312	1,497
1955	1,120	39·9	41·8	54,532	48·7	2,708	1,002
1956 (c)	1,120	40·3	42·3	55,996	50·0	3,193	1,952
1957	1,120	39·8	41·6	56,534	50·5	3,008	1,910
1958 (c)	967	39·3	41·1	48,885	50·3	2,877	1,908
1959 (c)	700	37·9	39·8	32,884	46·1	1,916	1,150
1960 (c)	545	38·0	39·7	25,754	47·2	1,432	1,128

(a) 6 barrels = 1 ton (approx.). (b) Not available. (c) Number Taken and Whale Products include one fin whale in 1956, two blue and three bryde whales in 1958, one fin, one sperm and 12 blue whales in 1959 and two blue whales in 1960, which have not been taken into account in calculating average lengths and average oil production.

Pearl-shell Fishing

Pearl and pearl-shell fishing has been a valuable industry for many years, the main centre being Broome. The pearls obtained were once an important feature of production but the success of the industry now depends almost entirely on the shell produced and the price obtainable for it. Activities

were suspended after the outbreak of war with Japan, when valuable luggers and equipment were lost. Following the war recovery was slow, because of a shortage of suitable boats and of experienced divers, until 1953 when the rate of progress quickened after the services of trained Japanese divers again became available. By 1957 production of shell had reached the pre-war level of about 1,000 tons but with a depressed market in 1958 it fell to 753 tons. There was a further large decline, to 508 tons, in 1959 and production in 1960 amounted to 567 tons.

PEARL AND PEARL-SHELL FISHERIES

(Excluding Culture Pearls)

Year	Vessels			Number of Persons Employed										Pearl-shell Produced		Value of Pearls	
	No.	Total Tonnage	Value (including Equipment)	Europeans	Australian Aborigines	Asians							Total	Quantity	Value		
						Chinese	Japanese	Koepangers	Malays	Philipinos	Others	Total Asians					
			£											tons	£	£	
1951	24	378	102,600	9	34	25	....	87	57	3	....	172	215	321	174,432	1,490
1952	21	346	83,600	9	48	20	....	48	62	2	....	132	189	303	176,882	500
1953	27	459	84,350	17	65	46	38	37	70	2	....	193	275	447	284,503	2,025
1954	30	525	147,100	12	78	72	39	30	80	1	2	224	314	558	355,555	2,294
1955	36	740	209,600	23	68	57	109	33	80	1	....	280	371	652	413,277	3,075
1956	42	907	251,000	24	98	83	106	28	121	4	....	342	464	898	583,577	7,200
1957	48	1,100	265,040	23	80	110	117	31	119	2	....	379	482	990	604,801	9,893
1958	42	987	218,500	17	64	102	116	27	93	....	....	338	419	753	347,915	20,869
1959	29	739	180,289	14	55	74	96	15	54	....	4	243	312	508	286,704	6,970
1960	27	675	151,200	12	61	53	101	9	64	....	2	229	302	507	269,786	7,210

Pearl Culture

In 1956 a lease was granted to a company to grow culture pearls at Kuri Bay in Brecknock Harbour, 130 miles north-east of Derby. A small initial harvest of pearls was gathered in 1957 and significant quantities were harvested in each year from 1958 to 1961 and marketed overseas. Other licences have since been issued for the establishment of pearl culture farms, in King Sound and at Exmouth Gulf near Giralda Landing, which, however, have not yet reached the stage of commercial production. Figures in the above table do not include details of culture pearl production.

MINING AND QUARRYING

The development of mining as a major industry in Western Australia began with the discovery of gold in the Kimberley in 1885, although some forty years earlier coal had been found at the Irwin River and copper and lead in the Northampton district. The impetus given to prospecting by the Kimberley finds led to other gold strikes between 1887 and 1891 and the rich discoveries at Coolgardie in 1892 and at Kalgoorlie in 1893. Although gold is not now mined in quantities approaching the peak-year production of more than two million ounces in 1903, it nevertheless accounts for about three-fifths of the total value of mine and quarry products.

The mining industry, for so long paramount in the Western Australian economy, is now far surpassed in importance by agriculture and grazing but is still of considerable significance and contributes about one-seventh of the gross value of all primary production. The mineral resources of the State are extremely varied in character and are widely distributed geographically. Extensive exploratory work carried out as a result of wartime demands proved the existence of a number of important minerals, some of which are now being produced commercially. The geology of the State is described in Chapter II, Part I—*Physical Features and Geology*, and reference is made there to the occurrence of mineral deposits.

The following table gives details of mine and quarry production during the calendar years 1958 to 1960.

RECORDED MINE AND QUARRY PRODUCTION

Item	1958		1959		1960	
	Quantity	Value	Quantity	Value	Quantity	Value
Gold (a)	fine oz.	£	fine oz.	£	fine oz.	£
Silver (b)	874,819	14,297,587	860,969	14,106,076	869,966	14,291,902
Asbestos—	195,975	77,771	183,850	76,031	190,386	79,240
Crocidolite	tons		tons		tons	
Chrysotile	11,887	1,304,724	14,080	1,611,293	12,922	1,418,767
Beryl	1,378	38,652	632	17,249	61	1,602
Bismuth	170	31,801	267	48,052	181	33,024
lb.						
Clays—all kinds	3,310	1,475	....	....	....	....
Coal	tons		(c)			
Copper Ore	238,272	2,280,649	911,435	2,356,534	922,393	2,439,195
Cupreous Ore (d)	870,882	55,597	4,409	233,534	3,584	201,783
Felspar	7,644	114,670	11,859	184,006	7,727	140,252
Glass Sand	681	3,093	1,396	6,352	1,942	8,283
Glauconite	6,420	4,267	6,828	4,655	8,637	6,102
Gypsum	112	5,590	102	5,103	111	5,550
Ilmenite Concentrates	35,515	40,134	37,731	54,207	44,216	55,628
Iron Ore	69,817	358,359	83,347	345,860	105,283	458,319
Lead and Silver-lead Ore and Concentrates	572,928	591,204	727,084	755,725	928,463	972,293
Leucosene Concentrates	2,493	139,899	1,903	89,430	2,264	119,842
Limestone and Shell (including road-making stone but excluding building stone) ....	....	....	276	3,930	89	1,505
Magnesite	436,531	160,872	481,604	226,483	557,022	181,818
Manganese Ore ....	....	....	19	74	....	....
Monazite Concentrates	47,543	694,356	75,733	1,055,673	53,842	740,130
Ochre	110	7,211	90	6,000	242	9,319
Pyritic Ore and Concentrates (Iron)	189	1,893	104	1,040	104	1,040
Rutile Concentrates	49,389	351,847	53,030	371,989	53,299	366,739
Stone, Building and Monumental—Sandstone, Limestone, Granite, etc.	297	8,423	100	2,765	515	12,816
Stone, Crushed and Broken (e)—Granite, Diorite, Quartzite, Basalt	76,159	97,909	71,648	96,239	112,110	143,127
Talc	463,983	741,258	743,595	1,039,708	755,172	1,262,012
Tantalite Concentrates (including Tantalite-Columbite)	2,501	35,304	4,048	58,085	5,470	69,114
Tin Ore and Concentrates	lb.		lb.		lb.	
Zircon Concentrates	13,507	8,550	18,950	9,833	23,677	16,982
Other (Value only)	tons		tons		tons	
138	77,319	250	154,729	281	168,775	
106	1,125	6,787	71,691	4,018	41,471	
27,719	38,975	....	38,975	....	36,811	
Total Value ....	....	21,797,530	....	23,243,700	....	23,551,424

(a) Values are in terms of Australian currency, including amounts realized by the Gold Producers' Association Ltd. on sales of Western Australian gold. They also include Commonwealth net subsidy paid to gold producers—in 1958, £623,394; in 1959, £652,266; in 1960, £698,242. (b) By-product from treatment of auriferous ore and excludes silver contained in silver-lead and copper ores and concentrates exported, for which see table on page 271. (c) Not available. (d) For fertilizer. (e) Excluding limestone.

During the war years employment in mining and quarrying decreased considerably and, although some recovery occurred after 1945, the number of men engaged in 1960 was only 7,674 or less than one-half of the 1939 work force of 16,530. This decline in employment was, however, largely confined to the gold-mining industry and further comment on it appears on page 270.

MEN WORKING AT MINES AND QUARRIES

Description	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Gold Mining (a)	6,766	6,394	6,359	6,128	5,845	5,628	5,385	5,352	5,273	4,992
Coal Mining	1,125	1,281	1,463	1,560	1,386	1,219	1,136	1,072	1,011	984
Other Mining and Quarrying	1,055	1,297	1,304	1,186	1,161	*1,187	*1,349	*1,321	1,638	1,698
Total	8,946	8,972	9,126	8,874	8,392	*8,034	*7,870	*7,745	7,922	7,674

(a) Includes alluvial diggers. * Revised.

The mining laws of the State have been designed to encourage as well as to control activity in the industry. This policy and the experience of other countries were given due consideration in framing

them and they are regarded as equitable and offering all reasonable incentives to mining development. The various tenures are described in detail in Chapter VII, Part 1—*Land Tenure and Settlement*.

Gold

Although specimens of gold had been found in earlier years at several places in the Colony, it was first discovered in payable quantities in the Kimberley in 1885. This find led to widespread prospecting activity, resulting in further gold strikes between 1887 and 1891 in the Yilgarn, Pilbara, Ashburton and Murchison districts. These were followed by spectacular discoveries in 1892 at Coolgardie and in 1893 at Kalgoorlie where the famous Golden Mile, which is still the State's most productive field, was developed. By 1900 all the present proclaimed goldfields, ranging from Kimberley in the north to Phillips River in the south, had been opened up.

The production of each of these fields, as reported to the Mines Department, for each year from 1951 to 1960 is shown in the following table.

MINE PRODUCTION OF GOLD (†) CLASSIFIED ACCORDING TO GOLDFIELD
(Fine Ounces)

Goldfield	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Kimberley	120	391	238	83	192	179	68	50	38	18
Pilbara	9,153	12,938	7,973	2,801	3,874	2,074	785	1,004	1,071	2,944
West Pilbara	21	15	4	11	20	1	57	15	11	5
Ashburton	6	18	84	89	10	1	1	....	....	1
Gascoyne .....	....	....	....	21	....	....	....	6	43	141
Peak Hill	271	5,603	9,014	8,683	112	16	260	638	436	501
East Murchison	890	1,350	1,199	347	134	272	206	817	732	381
Murchison	63,419	75,319	101,030	135,214	89,146	85,914	85,627	81,984	95,361	91,970
Yalgoo	1,657	454	423	....	12	....	112	9	61	1
Mount Margaret	24,228	27,982	29,140	28,413	28,671	29,851	32,519	31,010	34,192	34,106
North Coolgardie	24,265	34,830	36,459	34,531	35,918	27,646	23,525	21,027	22,458	20,250
Broad Arrow	3,471	3,225	2,550	2,847	2,735	1,957	2,928	2,385	1,663	1,543
North-East Coolgardie	345	950	384	213	369	105	115	322	385	141
East Coolgardie	444,629	454,932	484,049	486,040	489,040	474,690	510,830	529,768	510,382	531,981
Coolgardie	26,229	22,867	19,601	18,743	21,590	17,839	19,267	14,867	17,393	12,342
Yilgarn	5,180	7,480	55,630	60,340	66,710	84,090	80,995	81,740	73,302	70,689
Dundas	44,274	78,914	74,135	83,425	95,718	89,069	92,071	108,331	101,643	101,555
Phillips River	63	189	479	76	3	1	359	812	1,366	1,331
Outside Proclaimed Goldfields	24	11	39	115	54	12	16	34	432	66
Total	648,245	727,468	823,331	861,992	834,326	813,617	849,741	874,819	860,969	869,966

(†) As reported to the Mines Department.

Production reached a maximum of 2,064,800 fine ounces in 1903 but there followed a gradual and continuous decline, due mainly to exhaustion of surface deposits, until in 1929 the yield was only 377,176 fine ounces. In succeeding years various economic factors stimulated activity in the industry and there was a well-maintained improvement until 1939 when production reached 1,214,238 fine ounces. The second World War brought about a decline which was accelerated by the outbreak of hostilities with Japan, gold mining being one of the first industries to be affected by the introduction early in 1942 of a rigid system of manpower control. Although output has not reached pre-war level it has increased considerably in recent years, and in 1960 gold mines reported a total yield of 869,966 fine ounces.

The figures given in the following table relate to refinery production and comprise gold refined at the Mint and gold contained in gold-bearing materials exported. Particulars for individual years do not agree with those for mine production, quoted in the preceding tables, because of the delay between production at the mine and refining at the Mint. Values are in Australian currency and include amounts, totalling £1,204,206 for the years 1952 to 1960, distributed by the Gold Producers' Association Ltd. from premiums on sales of Western Australian gold. Values also include net subsidy payments to gold producers made by the Commonwealth Government under the provisions of the Gold-Mining Industry Assistance Act 1954-1959. This assistance to the industry in Western Australia amounted to £3,182,558 in the years 1955 to 1960.

It will be seen that refinery production of gold from 1886 to 1960 amounted to 61.6 million fine ounces. The total value was £446.9 million but it should be noted that this figure has been derived by the aggregation of annual valuations made at prices *current at the time of production*, which ranged between £4 4s. 11.45d. per fine ounce in 1886 and £15 12s. 6d. per fine ounce in 1960, and the addition of premiums paid by the Gold Producers' Association Ltd. and of government subsidies.

REFINERY PRODUCTION OF GOLD FROM 1886

Period	Quantity			Value
	Refined Outside the State (a)	Refined at Perth Mint	Total	
Prior to 1951	fine oz. 11,540,871	fine oz. 41,921,771	fine oz. 53,462,442	£ 315,098,305
1951	5,590	622,189	627,779	9,725,343
1952	9,607	720,368	729,975	11,847,917
1953	5,396	818,516	823,912	13,290,092
1954	3,089	847,451	850,540	13,313,618
1955	4,091	837,914	842,005	13,374,688
1956	2,331	810,049	812,380	13,202,400
1957	2,043	894,638	896,681	14,550,893
1958	1,810	865,378	867,188	14,178,328
1959	2,322	864,287	866,609	14,194,195
1960	2,069	853,690	855,759	14,069,903
From 1886 to 31st December, 1960	11,579,019	50,056,251	61,635,270	446,854,682

(a) Comprises gold in ores and concentrates exported.

Except for minor fluctuations, a general increase has occurred in the quantity of ore treated annually since the war. This has been achieved with a decreasing work force by the introduction of new methods and improved tools and machinery, the number of men employed (including alluvial diggers) having declined from 6,961 in 1946 to 4,992 in 1960 while, in the same period, the amount of ore treated rose from 2,194,477 to 3,056,445 tons.

The Department of Mines operates batteries for the treatment of ore which is mined by prospectors or other small producers and various concessions are made in order to encourage work which is exploratory or too limited in extent to warrant the installation of major plant. Figures for the State Batteries are included in the following table.

GOLD MINING—SUMMARY OF OPERATIONS (a)

Year	Leases in Force at end of Year (b)		Gold-Mining Machinery in use at end of Year						Total Value of Gold- Mining Machinery	Ore Treated	Effective (†) Workers Employed at Mines		Alluvial Diggers
	Leases	Area	Batteries		Other Crush- ing Mills	Cyaniding		Above Ground			Under Ground		
			Num- ber	Head of Stamps		Leach- ing and Agitat- ing Vats	Vacuum Filters and Presses						
1951	No.	acres		No.	No.	No.	No.	£	tons	No.	No.	No.	
1951	1,436	26,563	85	511	418	427	79	4,377,789	2,471,679	3,354	3,388	24	
1952	1,476	28,217	71	486	416	370	84	6,411,794	2,626,612	3,235	3,129	30	
1953	1,360	25,454	66	466	442	343	105	6,839,946	3,169,875	3,208	3,121	30	
1954	1,360	25,283	65	462	373	316	80	6,966,213	3,240,378	3,080	3,019	29	
1955	1,284	23,732	54	396	327	269	86	6,428,883	2,865,048	2,910	2,912	23	
1956	1,190	21,739	50	376	317	262	79	6,896,794	2,870,273	2,694	2,918	16	
1957	1,168	21,265	53	346	201	255	60	7,021,355	2,951,011	2,568	2,804	13	
1958	1,131	20,777	49	326	184	231	62	7,270,143	3,021,072	2,499	2,840	13	
1959	1,129	20,799	50	351	179	202	57	7,661,961	2,959,202	2,481	2,780	12	
1960	1,051	19,306	50	324	178	219	63	7,969,767	3,056,445	2,394	2,586	12	

(a) Including Government Batteries. (b) Includes leases taken up on private property. (†) Excludes workers on sick, accident, annual and long service leave. Figures represent average over whole year.

Silver

Western Australia has produced over 10 million ounces of silver, by far the greater part of it as a by-product in the recovery of gold, the average silver content of the gold bullion submitted for refining being about 18 per cent. The other silver production is from silver-lead and copper ores and concentrates exported for treatment outside the State.

PRODUCTION OF SILVER

Year	From Treatment of Auriferous Ore		Silver Content of Silver-lead and Copper Ores and Concentrates Exported		Year	From Treatment of Auriferous Ore		Silver Content of Silver-lead and Copper Ores and Concentrates Exported	
	Quantity	Value	Quantity	Value		Quantity	Value	Quantity	Value
	fine oz.	£	fine oz.	£		fine oz.	£	fine oz.	£
1951	188,942	77,006	7,801	2,126	1956	207,478	88,274	9,769	2,699
1952	186,441	76,569	12,712	3,556	1957	188,204	74,170	8,910	3,521
1953	*214,766	84,618	14,598	4,783	1958	195,975	77,771	4,792	1,880
1954	222,446	85,433	5,931	1,500	1959	183,850	76,031	9,711	3,882
1955	232,667	91,642	3,128	1,139	1960	190,386	79,240	6,371	2,594

* Revised.

Asbestos

Several types of asbestos occur in the State but only two have been produced in significant quantities. Blue asbestos (crocidolite) is mined at Wittenoom Gorge in the West Pilbara district and, in 1960, production was 12,922 tons, valued at £1,418,767. The production of chrysotile, which occurs at a number of places in the Pilbara and West Pilbara districts, was only 61 tons in 1960, valued at £1,602.

PRODUCTION OF ASBESTOS

Year	Crocidolite		Chrysotile		Total	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	£	tons	£	tons	£
1951	1,393	196,338	726	29,301	2,119	225,639
1952	2,940	557,861	652	37,255	3,592	595,116
1953	3,795	641,595	606	65,769	4,401	707,364
1954	3,794	542,203	303	13,474	4,097	555,677
1955	4,487	486,032	275	15,997	4,762	502,029
1956	7,286	800,710	761	25,366	8,047	826,076
1957	11,105	1,195,634	1,389	42,067	12,494	1,237,701
1958	11,887	1,304,724	1,378	38,652	13,265	1,343,376
1959	14,680	1,611,203	632	17,249	15,312	1,628,452
1960	12,922	1,418,767	61	1,602	12,983	1,420,369

Bauxite

A mining company has carried out a survey of bauxite deposits which occur over a large area in the Darling Range, and in 1959 and 1960 trial shipments of bauxite totalling 36,741 tons were sent to Tasmania and Japan. In 1961 the Alumina Refinery Agreement Act was passed by the State Parliament ratifying an agreement between the Government and Western Aluminium No Liability for the construction of a refinery at Kwinana to produce alumina from bauxite mined in the Darling Range and for the export of bauxite. The alumina will be shipped to Victoria for final extraction of aluminium.

Beryllium Ore

Beryl occurs in many localities throughout the State but is obtained mainly from the Pilbara and Gascoyne districts. Production was negligible until, as a result of the wartime demand for beryllium-copper alloys, 548 tons were produced in 1943 and 387 tons in 1944. Production then declined but recovered to some extent in 1951 when 91 tons were produced. It reached a post-war peak of 350 tons in 1957 but fell to 170 tons in 1958 and, although it rose to 267 tons in 1959, production in 1960 was only 181 tons.

PRODUCTION OF BERYL

Item	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity (tons)	91	85	125	132	199	310	350	170	267	181
Value (£)	11,174	14,562	22,223	22,607	34,430	57,113	64,234	31,801	48,052	33,024

Coal

The first reports of coal discoveries, in the Murray district and on the Irwin River, were made in 1846 but the only commercial production in Western Australia occurs at Collie where the Collie River

Coal Mining District was proclaimed in 1896. The coal is sub-bituminous in rank and there are substantial reserves in the area.

Annual production exceeded one million tons for the first time in 1954, but in 1956 it fell to 830,007 tons. It increased in each of the next four years and in 1960 production totalled 922,393 tons.

Open-cut mining was commenced at Collie in 1943 and the amount produced by this means increased rapidly until in 1952 almost one-half of the total production came from open cuts. In each year from 1953 to 1960 the proportion of open-cut coal was less than in 1952, and in 1960 was little more than one-eighth of all coal produced.

COAL PRODUCTION

Year	Quantity			Value
	From Deep Mines	From Open Cuts	Total	
	tons	tons	tons	£
1951	480,145	368,330	848,475	1,716,788
1952	419,117	411,344	830,461	2,457,296
1953	493,035	393,147	886,182	3,073,073
1954	607,727	410,616	1,018,343	3,588,818
1955	599,662	304,130	903,792	3,089,311
1956	621,465	208,542	830,007	2,723,981
1957	689,882	148,779	838,661	2,552,657
1958	779,396	91,486	870,882	2,280,649
1959	800,856	110,579	911,435	2,356,534
1960	798,184	124,209	922,393	2,439,195

For some years after the war, employment in coal mining rose steadily and reached 1,560 in 1954. It has since declined and in 1960 was only 984. Substantial changes have also occurred in the proportion of men working above ground, the principal reason being the fluctuation which has occurred in open-cut operations.

MEN WORKING AT COAL MINES

Description	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Above Ground	436	564	647	708	582	443	377	230	207	206
Under Ground	689	717	816	852	804	776	759	842	804	778
Total	1,125	1,281	1,463	1,560	1,386	1,219	1,136	1,072	1,011	984

Copper Ore

Copper ore in commercial quantities was discovered in 1849 in the Northampton district. High-grade ore was found in 1855 at Bowes River in the same area and in 1872 one of the richest deposits was discovered in the West Pilbara near Roebourne. Considerable quantities of copper have been produced at the mines in the Northampton district, where it occurs in association with lead, and also in the Ravensthorpe area, in association with gold. Another important producer has been the Murrin Murrin district in the Mount Margaret area.

Due to low prices, rising costs of mining and treatment and the exhaustion of rich secondary ores near the surface, production was on a very small scale between 1925 and 1956. It has since increased substantially, however, and in 1960 amounted to 3,584 tons valued at £201,783.

PRODUCTION OF COPPER ORE (a)

(For Smelting to Copper)

Item	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity (tons)	43	17	50	....	12	212	1,804	1,802	4,409	3,584
Value (£)	799	1,200	3,302	....	1,021	12,891	60,011	55,597	233,534	201,783

(a) For production of cupreous ore for fertilizer see following section.



Above—Pearling lugger off Broome



Below—Pearl diving

Cupreous Ore (For Fertilizer)

Until recent years, the production of ores having a copper content of less than 10 per cent. was uneconomical because of high costs of transport and smelting. The demand for copper to remedy trace element deficiencies in soils has, however, created a market for low-grade ores for use in chemical fertilizers. Production for this purpose commenced in 1947, and in 1960 the output was 7,727 tons, valued at £140,252. The Pilbara, Peak Hill, Murchison and Yalgoo areas are the principal sources of supply.

PRODUCTION OF CUPREOUS ORE FOR FERTILIZER

Item	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity (tons)	1,337	1,644	1,948	4,748	7,731	7,713	4,639	7,644	11,859	7,727
Value (£)	16,104	21,595	21,004	50,381	101,731	113,442	82,127	114,670	184,006	140,252

Ilmenite, Leucoxene, Monazite, Rutile and Zircon

The treatment of beach sands near Bunbury, Busselton and Capel for the extraction of ilmenite is a recent development in mineral production. Although the sands being treated also contain leucoxene, monazite, rutile and zircon, the ilmenite content is of particular importance because, unlike that from deposits being worked elsewhere in Australia, it is virtually chrome-free and little difficulty is experienced in producing a concentrate of high quality. After 1956, when recorded production of ilmenite concentrates was 3,293 tons valued at £15,150, output rose rapidly and 105,283 tons valued at £458,319 were produced in 1960.

PRODUCTION OF ILMENITE CONCENTRATES

Item	1956	1957	1958	1959	1960
Quantity (tons)	3,293	70,029	69,817	83,347	105,283
Value (£)	15,150	412,409	358,359	345,860	458,319

Concentrates containing leucoxene, monazite, rutile and zircon are recovered as by-products from the treatment of the beach sands and the first shipments were made in 1958, when 513 tons of concentrates valued at £16,759 were exported. In 1960 recorded production totalled 4,864 tons valued at £65,111.

PRODUCTION OF LEUCOXENE, MONAZITE, RUTILE AND ZIRCON CONCENTRATES

Concentrate	1958		1959		1960	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	£	tons	£	tons	£
Leucoxene	276	3,930	89	1,505		
Monazite	90	6,000	242	9,319		
Rutile	100	2,765	515	12,816		
Zircon	106	1,125	6,787	71,691	4,018	41,471

Iron

Iron-ore deposits are widely distributed throughout Western Australia, but until comparatively recent years there was very little development, due to the absence of smelting works in the State and the high cost of transporting ore to distant markets. Since 1951, however, large quantities of hematite have been produced at Cockatoo Island (Yampi Sound) in the West Kimberley district for shipment to the other Australian States. These deposits, together with those of the adjacent Koolan Island, are of considerable magnitude and consist of high-grade ore. Development work is now in progress to exploit the deposits on Koolan Island.

Pig-iron was produced for the first time in Western Australia in 1948. It was smelted at Wundowie in the Darling Range east of Perth from brown iron ore (limonite) mined in the vicinity and

using charcoal produced from local eucalypts. More recently ore obtained from Koolyanobbing, east of Bullfinch in the Yilgarn district, has replaced the Wundowie limonite in the smelting process. The extensive deposits in the Koolyanobbing area are mainly high-grade hematite ores with some limonite. The production of pig-iron at Wundowie for each of the five years in the period ended 30th June, 1960 is shown on page 292.

PRODUCTION OF IRON ORE

Item	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity (tons)	35,652	223,788	707,383	651,744	528,630	336,890	416,236	572,928	727,084	928,463
Value (£)	48,827	230,739	709,655	654,323	540,363	337,636	428,870	591,204	755,725	972,293

There have recently been a number of developments in connexion with iron-ore deposits which, it is anticipated, will lead to greatly expanded production. An agreement relating to the establishment of an integrated iron and steel works in Western Australia, made by the Government with the Broken Hill Proprietary Company Limited and ratified in 1960 by the State Parliament, contains provisions for the extension of iron-ore mining in the Yilgarn district. The announcement in December, 1960 of the Commonwealth Government's decision to modify its embargo on oversea exports, which had been in force since 1938, caused increased interest in Western Australian deposits. The subdivision of the deposits (other than those reserved for the domestic iron and steel industry under the Commonwealth's revised export policy) into three categories was announced by the State Government in March, 1961. The first category includes known high-grade deposits, not covered by lease agreements, which are to be retained by the Crown to ensure supplies for the State's steel requirements or for export. The second category, being known medium and low grade deposits, and the third category, comprising deposits as yet undiscovered, may be made the subject of temporary reservations granting the right to explore, each such reservation being limited to a maximum area of 50 square miles. Following this announcement, the State Government in July, 1961 granted 87 temporary reserves with exclusive rights to prospect for iron ore for a period of two years, the total area involved being 4,130 square miles. During the 1961 session the State Parliament ratified agreements between the Government and two mining companies. The Iron Ore (Scott River) Agreement Act relates to an arrangement made with Mineral Mining and Exports (W.A.) Pty. Ltd. for the establishment of an industry to process iron ore in the Scott River area near Augusta in the extreme south-west of the State, and the Iron Ore (Tallering Peak) Agreement Act incorporates an agreement with Western Mining Corporation Limited for the mining and export of iron ore from the Tallering Peak area about 75 miles north-east of the port of Geraldton. In November, 1961 the Minister for National Development disclosed the existence of extensive deposits in the Pilbara.

Lead Ore

Lead ore was discovered near the lower Murchison River in 1848, at what became known as the Geraldine Mine. It has since been found in other localities, principally in the Pilbara, Ashburton and West Kimberley districts, and half a million tons have been raised, the great bulk of it from the mineral field around Northampton, the area of the first finds. Production fluctuated very widely and almost ceased entirely during the war, but a substantial increase occurred in the post-war years and in 1956 it rose to 7,613 tons. Since then the downward trend in world prices has adversely affected production and in 1960 only 2,264 tons of lead and silver-lead ores were mined.

Although the ore from the Northampton field, the principal producer, is almost free from silver, that from other areas further north, notably the Ashburton and Pilbara, has a silver content which may be as much as ten ounces per ton. Production of such ores is included in the following table.

PRODUCTION OF LEAD AND SILVER-LEAD ORES AND CONCENTRATES

Item	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity (tons)	2,539	7,449	6,425	2,167	1,416	7,613	4,180	2,493	1,903	2,264
Value (£)	242,262	938,743	364,384	102,683	96,311	645,804	316,465	139,899	89,430	119,842

Manganese Ore

Deposits of manganese ore occur in several parts of the State but up to the end of 1947 only 252 tons had been mined. After 1947 production increased rapidly and in 1959 it reached a peak of 75,733 tons valued at £1,055,673 but declined in 1960 to 53,842 tons valued at £740,130. Deposits at a number of centres in the Peak Hill, Marble Bar and Nullagine districts are being worked at present.

PRODUCTION OF MANGANESE ORE

Item	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity (tons)	5,257	5,045	10,324	40,581	44,194	56,234	73,191	47,543	75,733	53,842
Value (£)	33,789	35,634	150,991	608,215	497,588	737,569	1,162,402	694,356	1,055,673	740,130

Pyrites

The mining of iron pyrites was developed during the war to provide a substitute for oversea supplies of sulphur required for the manufacture of sulphuric acid for superphosphate. Production at Norseman, which is the principal source of supply, commenced in 1942 and has been continued in post-war years. All ore is now concentrated at the mine before being railed to superphosphate works in the metropolitan area for extraction of the sulphur. A second source of supply was developed in 1956 when a metropolitan works commenced using concentrates from a gold mine at Kalgoorlie. Gold is obtained as a by-product following the extraction of the sulphur from these concentrates.

PRODUCTION OF IRON PYRITES (ORE AND CONCENTRATES)

Item	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity (tons)	46,615	53,577	59,248	56,150	40,485	60,969	57,918	49,389	53,030	53,299
Value (£)	296,988	422,029	489,985	441,466	397,269	420,052	382,567	351,847	371,989	366,739

Tin Ore

Tin ore was first discovered at Greenbushes in 1888. It has since been found at several other places, but the Greenbushes and Pilbara fields have been the only major producers. Output declined during the war but increased substantially after 1949 and reached a peak in 1956 when 358 tons of ore and concentrates valued at £208,273 were produced. In 1958 it declined to 138 tons valued at £77,319, the decrease being due mainly to contraction of operations in the Greenbushes field. Production increased in 1959, and again in 1960 when the total output was 281 tons, of which 261 tons came from the Pilbara field.

PRODUCTION OF TIN ORE AND CONCENTRATES

Item	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity (tons)	61	98	113	121	180	358	270	138	250	281
Value (£)	39,493	68,716	63,129	62,976	94,912	208,273	155,079	77,319	154,729	168,775

Other Minerals

In addition to the other minerals listed in the table on page 268 there are some which have a high potential value but are not produced in large quantities at present. Zinc is associated with many of the silver-lead ores and some of the copper ores and has been mined as the carbonate with a zinc content of 38 per cent. Arsenious oxide and antimonial concentrates were produced commercially for some years as by-products in the treatment of auriferous ores. Small amounts of bismuth concentrates assaying as high as 73 per cent. bismuth have also been produced. Production of tantalum ores and concentrates has fluctuated with demand, but a large part of world requirements has been met from the State's resources. Tungsten ores have been produced in small quantities for some years with a slight increase during the war. Since then, output has been spasmodic, but in 1952 was valued at £49,710. Lithium, yttrium, cerium, thorium, vanadium, niobium and molybdenum-bearing minerals are known to occur

in commercial quantities and small amounts of minerals containing uranium, rubidium and caesium have been found. Deposits of bentonite, barytes, graphite, mica, kyanite, sillimanite, spodumene and vermiculite are also known and small amounts have been produced.

An extensive programme of oil exploration was commenced in 1951 but, although flow oil was found in the Exmouth Gulf area of the Carnarvon Basin in 1953, no commercial development resulted. After 1953 the search was intensified and a large area of the State has been scientifically examined and geological and geophysical surveys are still being carried out. Bores have been drilled at a number of points in the Carnarvon, Perth and Eucla Basins and in the Fitzroy section of the Canning Basin, and exploration is continuing.

Quarrying

The following table gives details of the production of certain quarry products from 1950-51 to 1960.

SELECTED ITEMS OF QUARRY PRODUCTION

Year	Building and Monumental Stone (a)	Other Stone	
		Granite, Diorite, Quartzite, Basalt, etc. (b)	Limestone and Shell (c)
	tons	tons	tons
1950-51	72,300	306,452	196,150
1951-52	107,515	353,207	178,201
1952-53	92,384	403,580	202,294
1953-54	94,611	436,385	231,625
1954-55	118,336	511,877	242,078
1956 (d)	80,076	489,505	370,254
1957 (d)	55,331	504,282	427,286
1958 (d)	76,159	463,983	436,531
1959 (d)	71,648	743,595	481,604
1960 (d)	112,110	755,172	557,022

(a) Calcareous sandstone (including limestone) and granite.

(b) Principally for roads, concrete aggregate, filling, etc.

(c) Principally for the manufacture of lime and cement and for road making.

(d) Year ended 31st December.

The increasing demand for building and road construction materials is shown by the preceding table but it should be noted that gravel, sand and clays, for which reliable and complete information cannot be obtained, are not included.

CHAPTER VIII—continued

PART 2—SECONDARY INDUSTRY

EXPLANATORY NOTES AND DEFINITIONS

Unless otherwise stated the figures quoted in this Part cover all industrial establishments conforming to the definition of a factory, including power stations and gas works.

Factory

For statistical purposes a factory is defined as any establishment which is engaged in the processes of manufacturing, assembling, treating or repairing and in which four or more persons are employed during any period of the year or power other than manual is used.

Employment

Average employment figures may be expressed as an average "over the period worked" or as an average "over the whole year." Thus a factory which operates for only six months of the year and employs 20 persons throughout that period has an average employment of 20 "over the period worked" but an average of only 10 "over the whole year." Where seasonal industries, such as meat and fish preserving, whaling or fruit packing, are involved there can consequently be a considerable difference between figures covering the same field if different bases are used in their computation. In this Part, unless otherwise stated, figures quoted are the average "over the whole year." It should also be noted that they include working proprietors, but exclude all persons engaged in obtaining raw materials (e.g., fallers and haulers employed by sawmills) and all persons engaged in selling and distribution.

Salaries and Wages

Salaries and wages quoted exclude amounts drawn by working proprietors.

Value of Output

The value of output is the selling value "at the factory" (i.e., the value at the point of sale less all selling and distribution costs) of all goods made or processed during the year and includes the amount received for other work done, such as repair work, assembling and making-up for customers. Any bounty or subsidy received on finished products is included.

Net Production

"Net Production" is the value added in the course of manufacture. It is derived from the value of output by deducting the value of goods consumed in the process of production. The values deducted are those of materials used, fuel, power and light, lubricating oil and water, repairs to plant and buildings, tools replaced, and containers and packings. "Net Production" represents the sum available for payment of wages, rent, depreciation, other sundry expenses and for interest and profit.

Confidential Information

The Acts under which these statistics are collected require that information supplied on any individual return must be treated as confidential. For this reason it has not been possible to publish some items and in other cases it has been necessary to combine details for publication. The tables affected carry appropriate footnotes.

HISTORICAL REVIEW

While secondary industry in Western Australia has grown considerably since 1900 the greatest advance both in the number and the size of factories operating has occurred since 1945. One of the factors contributing to this growth has been the provision of adequate power in the south-western portion of the State by the expansion of electricity supplies provided by generating stations linked in a grid system.

In 1900 there were 632 factories operating in Western Australia. By 1910 the number had risen to 822 and by 1920 to 998. Progress during the first World War was comparatively slow, mainly because the more advanced manufacturing facilities already existing in other States were better suited to rapid development. During the decade 1921-1930, however, efforts were made to foster Western Australian secondary industry and considerable success was achieved during the latter years of this period, the number of factories increasing from 1,170 in 1926 to 1,466 in 1930. Although some decline occurred in the depression years of 1930 to 1933, there were 1,658 factories in operation in 1935 and by 1940 the number had reached 2,129.

No immediate stimulus to the State's manufacturing activity followed the outbreak of the second World War, but the more direct threat to Australia which resulted from the fall of Singapore called for a total use of industrial potential, and from 1942 onwards an increasing volume of war contracts were placed in Western Australia. The greatest demand was for processed foodstuffs but other forms of war production which were especially developed included munitions manufacture, shipbuilding (principally of wooden coastal craft) and marine engineering. Although fewer factories operated because of the decline in those classes of production which were purely for civilian purposes, employment and output increased substantially.

Production which had been developed largely to meet the demands of the armed services declined sharply at the conclusion of the war and this was reflected particularly in the decreased manufacture of processed foodstuffs, the full production of which considerably exceeded civilian requirements. However, secondary industry as a whole benefited greatly from the engineering skills and equipment acquired in wartime activities and their transfer to civilian uses facilitated the expansion of the metal industries in the State and influenced the production of small to medium-sized machine tools and the establishment of a factory producing several types of tractors and farm machinery.

Such advances enlarged the scope of Western Australian secondary industry and by 1959-60 the number of factories had increased to 4,279. However, net production per head of population is still low in comparison with other States, particularly New South Wales and Victoria which have consistently increased their lead in industrial production. Manufacturing net production per head of population in each of the States during the year ended 30th June, 1960, was as follows :—New South Wales, £241 8s.; Victoria, £243 9s.; Queensland, £109 17s.; South Australia, £174 11s.; Western Australia, £120 8s.; and Tasmania, £174 18s.

The average number of persons employed in Western Australian factories from 1900, was as follows :—1900, 11,166 persons; 1905, 13,481; 1910, 14,894; 1915, 15,882; 1920, 16,942; 1925-26, 20,667; 1929-30, 19,643; 1934-35, 17,769; 1939-40, 22,967; 1944-45, 29,146; 1949-50, 40,733; 1954-55, 49,314 and 1959-60, 49,651. These figures indicate the moderate increase which occurred in factory employment between 1900 and 1920, the continued expansion in the 1920's, the decline in the early 1930's and the accelerated development during and after the second World War. They do not show the levels to which it fell during the first World War and during the depression years but these movements can be seen from the annual averages appearing in the *Statistical Summary from 1829* preceding the *Appendix*.

The large increase between 1944-45 and 1949-50 was due in part to the establishment of many smaller types of factory, such as motor-repair workshops, dry-cleaning works and bakeries, resulting from the return to civilian life of service personnel and from unusually large population gains by natural increase and from immigration. This high level of population increase was maintained in the following five years and in 1954-55 average factory employment reached 49,314. In 1955-56 the number of persons engaged in factories exceeded 50,000 for the first time but then declined in each of the three succeeding years and in 1958-59 had fallen to 48,417. An improvement was shown in 1959-60, when the average for the year rose to 49,651.

Several relatively large concerns began to operate during the post-war years. Sharp rises in the total horsepower of engines used to drive machinery are indicative of this growth in the number of highly-mechanized works. Increases in net production and the enhanced values of land and buildings and of plant and machinery are also significant, but when considering these figures allowances should be made for price changes which occurred during the period.

In 1948 a blast furnace, using charcoal made in an associated wood-distillation plant, began producing high-grade charcoal-iron. Additions have since been made to the plant and its original capacity of 10,000 tons per annum has been expanded to approximately 50,000 tons. Major developments have included the establishment of an oil refinery in 1955, and a second portland cement factory and a steel-rolling mill in 1956. In 1960 the State Parliament passed legislation to ratify agreements made by the Government with the Broken Hill Proprietary Company Limited relating to the establishment of an integrated iron and steel works in Western Australia and with Australian Paper Manufacturers Limited for the establishment and operation of a mill to produce paper and paper board. Reference is made to this legislation on pages 92 and 95. In May, 1960, B P Refinery (Kwinana) Ltd. announced its decision to add a lubricating oil refinery to its plant at Kwinana and a British chemical firm confirmed its intention to build a large titanium oxide pigment factory at Bunbury.

A summary of selected items of factory activity from 1900 is given in the following table.

SELECTED ITEMS OF FACTORY ACTIVITY

Year	Number of Factories	Persons Employed (a)			Book Values of:—		Engines and Electric Motors used to drive Machinery (b)	Net Production
		Males	Females	Total	Land and Buildings	Plant and Machinery		
					£	£	rated h.p.	£
1900	632	10,261	905	11,166	1,204,326	1,252,927	7,270	(c)
1905	777	11,829	1,652	13,481	1,789,612	1,869,753	11,151	(c)
1910	822	12,404	2,490	14,894	1,822,768	1,939,273	11,378	2,736,000
1915	983	13,453	2,429	15,882	2,635,523	2,733,582	21,997	3,233,935
1920	998	14,311	2,631	16,942	3,563,777	3,411,248	26,481	4,854,075
1925-26 (d)	1,170	17,393	3,274	20,667	4,855,161	5,480,905	37,631	9,611,113
1929-30	1,466	15,921	3,722	19,643	5,623,214	6,090,986	37,754	7,488,060
1934-35	1,658	14,248	3,521	17,769	5,673,461	5,763,428	42,520	6,284,923
1939-40	2,129	18,331	4,636	22,967	6,863,468	7,958,495	66,925	9,027,728
1944-45	1,931	22,404	6,742	29,146	7,654,187	8,254,231	80,667	12,960,009
1949-50	3,023	33,711	7,022	40,733	11,055,002	11,456,787	120,380	26,044,026
1954-55	3,727	42,294	7,020	49,314	30,229,913	54,958,205	204,848	60,955,829
1955-56	3,871	43,340	6,768	50,108	32,858,951	56,533,675	223,670	69,732,802
1956-57	3,935	42,122	6,626	48,748	35,519,634	63,272,185	238,959	73,441,949
1957-58	3,941	42,039	6,423	48,462	36,845,609	63,840,075	242,719	75,312,250
1958-59	4,125	41,951	6,466	48,417	40,689,726	66,097,785	254,395	78,762,159
1959-60	4,279	42,957	6,694	49,651	43,572,762	64,224,950	261,660	86,373,312

(a) Includes working proprietors and, up to and including 1925-26, fallers and haulers employed by sawmills. (b) Excludes engines used in electricity generating stations and motors driven by electricity of own generation. (c) Figures not available. (d) Period of 18 months ended 30th June, 1926.

During the period reviewed, population censuses were taken in the years 1901, 1911, 1921, 1933, 1947 and 1954. In the following table factory employment in those years is compared with the "total work force" as recorded at the census and also as adjusted to give comparable components for the two sets of figures. The "adjusted total work force" shown includes employers, self-employed persons and wage and salary earners but excludes persons who were not actually employed at the time of the census, whether this was due to inability to secure work, to sickness or industrial disputes, or to any other cause. It also excludes helpers not receiving wage or salary. Although it includes a small number of employers who were not themselves actively engaged, this is insufficient to affect the validity of the comparison.

FACTORY EMPLOYMENT IN RELATION TO TOTAL WORK FORCE

Year	Census Date	Average Number of Factory Workers during the Year	Total Work Force at Census Date	Adjusted Total Work Force at Census Date	Proportion of Factory Workers to Adjusted Total Work Force
1901	1901—31st March	(a) 12,198	98,145	91,600	per cent.
1911	1911—3rd April	(a) 16,754	133,253	125,886	13.3
1921	1921—4th April	(a) 18,151	140,296	129,641	13.3
1932-33	1933—30th June	(b) 14,810	187,636	159,222	14.0
1946-47	1947—30th June	(b) 33,806	206,400	197,825	9.3
1953-54	1954—30th June	(b) 47,459	258,401	253,269	17.1
					18.7

(a) Figures for calendar year. Includes fallers and haulers employed by sawmills. (b) For year ended 30th June.

GENERAL SUMMARY, 1950-51 TO 1959-60

Location of Secondary Industry

The greatest population, both in number and in density, occurs in the Metropolitan Statistical Division and, with a few notable exceptions, the principal factories and more than half of the small to moderate-sized establishments are located there. The Swan Division ranks next in density of population and the recent establishment of major industries in the Kwinana area also places it next in manufacturing activity measured by such standards as value of land and buildings and of machinery and plant, consumption of power, fuel and light, value of materials used, value of output and net production. The South-West Division ranks next to the Metropolitan Division in total population and also in factory employment and number of factories.

These three Divisions together contain approximately three-quarters of the total population of the State and other factors influencing the concentration of manufacturing industry in the area are the easier availability of raw materials and the provision of adequate power and fuel supplies and transport facilities. Electric power is distributed in the Metropolitan and Swan Divisions by the State Electricity Commission and a grid system established by the Commission now distributes power over a large part of the South-West Division. The only coal deposits at present being worked are in the South-West Division near Collie, some 120 miles to the south of Perth. These Divisions also contain well-developed road and railway systems, the State's principal port at Fremantle and other ports at Bunbury and Busselton.

Reference to manufacturing activity in the several Statistical Divisions of the State is also made in the section *Geographical Distribution of Industry* which appears at the beginning of this Chapter. The Divisions are shown on the map at the back of the Year Book.

PRINCIPAL ITEMS ACCORDING TO STATISTICAL DIVISIONS, 1959-60

Statistical Division	Number of Factories	Book Values of—		Persons Employed (including Working Proprietors) (a)		Salaries and Wages (excluding Amounts drawn by Working Proprietors)	
		Land and Buildings	Plant and Machinery	Males	Females	Males	Females
Metropolitan	2,628	£ 20,243,878	£ 24,447,207	30,503	5,701	£ 27,363,384	£ 2,885,182
Percentage of State Total	59.08	67.12	38.07	71.01	85.16	71.49	85.69
Other Divisions—							
Swan	190	4,481,597	22,703,826	3,298	261	3,283,726	135,469
South-West	529	4,989,788	9,290,255	4,312	250	3,490,015	110,805
Southern Agricultural	279	1,479,300	1,821,713	1,447	256	1,139,838	132,492
Central Agricultural	326	1,174,331	2,012,209	1,453	82	1,131,491	33,563
Northern Agricultural	180	731,655	629,293	707	51	532,162	22,070
Eastern Goldfields	152	517,086	1,554,817	750	64	628,783	29,407
Central	86	955,127	1,765,630	487	29	706,283	17,217
North-West							
Pilbara							
Kimberley							
Total, Other Divisions	1,751	14,328,884	39,777,743	12,454	993	10,912,298	481,683
Percentage of State Total	40.92	32.88	61.93	28.99	14.84	28.51	14.31
STATE TOTAL	4,279	43,572,762	64,224,950	42,957	6,694	38,275,682	3,366,865

Statistical Division	Value of Output	Cost of—				Net Production (b)
		Power, Fuel and Light (including Water and Lubricants)	Repairs to Buildings and Plant	Materials Used (including Containers)	Total	
Metropolitan	£ 120,343,314	£ 3,587,830	£ 1,840,029	£ 61,561,151	£ 66,989,010	£ 53,354,304
Percentage of State Total	55.82	35.63	51.31	53.28	51.85	61.77
Other Divisions—						
Swan	53,773,779	2,552,962	668,367	34,917,983	38,139,312	15,634,467
South-West	18,465,468	1,532,059	449,482	7,970,955	9,952,496	8,512,972
Southern Agricultural	6,580,887	276,719	130,918	3,581,367	3,989,004	2,591,883
Central Agricultural	6,938,937	657,567	144,103	3,732,629	4,534,299	2,404,638
Northern Agricultural	2,006,955	130,140	85,916	1,257,514	1,473,570	1,133,385
Eastern Goldfields	3,189,196	1,010,193	122,678	611,917	1,744,788	1,444,408
Central	3,683,940	323,641	144,611	1,918,433	2,386,085	1,297,255
North-West						
Pilbara						
Kimberley						
Total, Other Divisions	95,239,162	6,483,281	1,746,075	53,990,798	62,220,154	33,019,008
Percentage of State Total	44.18	64.37	48.69	46.72	48.15	38.23
STATE TOTAL	215,582,476	10,071,111	3,586,104	115,551,949	129,209,164	86,373,312

(a) Average over whole year. (b) See *Explanatory Notes and Definitions* on page 277. † Separate particulars not available for publication. See note (b).

FACTORIES AND EMPLOYMENT IN EACH STATISTICAL DIVISION

Statistical Division	Year				
	1955-56	1956-57	1957-58	1958-59	1959-60
NUMBER OF FACTORIES					
Metropolitan	2,326	2,358	2,346	2,433	2,528
Swan	176	177	178	187	190
South-West	477	491	483	514	529
Southern Agricultural	253	244	248	268	279
Central Agricultural	303	302	313	322	326
Northern Agricultural	147	156	157	173	180
Eastern Goldfields	139	137	139	147	152
Central	19	20	19	19	19
North-West	17	16	16	17	19
Pilbara	13	13	14	14	16
Kimberley	21	21	28	31	32
Whole State	3,871	3,935	3,941	4,125	4,279

PERSONS EMPLOYED (a)					
Metropolitan	37,061	35,942	35,527	35,260	36,204
Swan	3,292	3,235	3,295	3,348	3,559
South-West	4,097	4,569	4,558	4,595	4,562
Southern Agricultural	1,492	1,521	1,672	1,709	1,703
Central Agricultural	1,572	1,525	1,532	1,511	1,535
Northern Agricultural	653	645	657	692	758
Eastern Goldfields	865	840	819	798	814
Central	51	59	56	53	43
North-West	163	150	144	130	112
Pilbara	23	26	34	36	55
Kimberley	239	236	268	285	306
Whole State	50,108	48,748	48,462	48,417	49,651

(a) Average over the whole year and inclusive of working proprietors.

Employment and Wages

For statistical purposes, secondary industry is divided into the 16 classes shown in the table on page 282. The largest volume of employment is provided in Class IV—Industrial Metals, Machines, Implements and Conveyances. In 1959-60 the industries which comprise this class employed an average over the whole year of 20,494 persons, including 3,511 in government workshops engaged in constructing and repairing railway rolling stock. Another large employer of labour is the class Sawmilling, Woodworking and Basketware. Mills sawing logs employed 3,189 persons, and those engaged only in resawing and dressing of rough-sawn timber, 629. In the class Food, Drink and Tobacco, there were 1,087 persons engaged in bakeries and 1,511 in meat and fish preserving factories. In chemical fertilizer works, within the class Chemicals, Dyes, Explosives, Paints, Oils and Grease, employees numbered 927 and in brick, tile and pottery works, in the class Bricks, Pottery, Glass, etc., 1,013 persons were employed.

The first table on page 282 gives detailed employment data in each class for June, 1960, and as a total for June in each year from 1956 to 1959. For the purpose of this table, figures for June have been chosen in order to show the incidence of junior employment, particulars of which are collected for that month only.

In 1945, towards the end of the war, the ratio of male to female employment was 3·3 : 1. Within the next five years it increased to 4·6 : 1 and by 1954-55 it had risen to 6·1 : 1. It then rose slowly to 6·3 : 1 in 1956-57 and has since shown little variation.

During the same period there was a substantial fall in the proportion of junior employment in both sexes. However, although the proportion of junior males to total males employed became fairly steady by about 1950 and has not changed greatly since, the proportion of junior females continued to fall until 1955 and has since tended to increase slightly. The changes which have occurred during the five years from 1956 to 1960 in the age grouping of workers in secondary industry are illustrated in the second table on page 282 where the numbers of males and females in each age group are expressed as a percentage of total factory employment for each sex.

FACTORY EMPLOYMENT FOR THE MONTH OF JUNE, 1960
(Excluding Working Proprietors)

Class of Industry	Number of Factories	Employees			Age Group					
		Male	Female	Total	Under 16 years		16 years and under 21		21 years and over	
					M.	F.	M.	F.	M.	F.
I Treatment of Non-Metalliferous Mine and Quarry Products	131	1,495	71	1,566	20	1	118	22	1,357	48
II Bricks, Pottery, Glass, etc.	48	1,259	102	1,361	7	2	94	15	1,158	85
III Chemicals, Dyes, Explosives, Paints, Oils, Grease	70	2,423	234	2,657	13	9	129	77	2,281	148
IV Industrial Metals, Machines, Conveyances	1,869	18,545	1,013	19,558	437	29	2,853	348	15,255	636
V Precious Metals, Jewellery, Plate	75	149	8	157	....	....	28	4	121	4
VI Textiles and Textile Goods (inclusive of Knitted Goods)	42	473	423	896	11	27	58	160	404	236
VII Skins and Leather (not Clothing or Footwear)	30	479	114	593	20	5	43	33	416	76
VIII Clothing (except Knitted)	399	798	2,062	2,860	24	132	167	698	607	1,232
IX Food, Drink and Tobacco	624	4,810	1,280	6,090	81	55	437	449	4,292	776
X Sawmilling, Woodworking and Basketware	470	5,151	84	5,235	100	3	554	19	4,497	62
XI Furniture of Wood, Bedding, etc.	175	1,078	195	1,273	60	2	206	54	812	139
XII Paper, Stationery, Printing, Bookbinding, etc.	128	2,051	593	2,644	61	42	352	215	1,638	336
XIII Rubber	44	215	36	251	5	2	31	18	179	16
XIV Musical Instruments	8	27	....	27	....	....	7	....	20	....
XV Miscellaneous Products	72	299	152	451	22	22	54	48	223	82
Total, Classes I to XV	4,185	39,252	6,367	45,619	861	331	5,131	2,160	33,260	3,876
XVI Heat, Light and Power	94	1,196	15	1,211	2	1	59	5	1,135	9
TOTAL, ALL CLASSES—June, 1960	4,279	40,448	6,382	46,830	863	332	5,190	2,165	34,395	3,885
June, 1959	4,125	39,163	6,212	45,348	822	331	5,001	2,077	33,313	3,804
June, 1958	3,941	39,054	6,178	45,232	769	327	5,043	2,055	33,242	3,796
June, 1957	3,935	39,556	6,262	45,818	898	327	5,071	1,984	33,587	3,951
June, 1956	3,871	39,996	6,490	46,486	901	361	4,888	2,032	34,207	4,097

PERCENTAGE OF FACTORY EMPLOYEES IN CERTAIN AGE GROUPS

Month of June	Under 16 years	16 years and under 21	Total under 21 years	21 years and over	All Ages
MALES					
1956	2.25	12.22	14.47	85.53	100.00
1957	2.27	12.82	15.09	84.91	100.00
1958	1.97	12.91	14.88	85.12	100.00
1959	2.10	12.78	14.88	85.12	100.00
1960	2.13	12.83	14.96	85.04	100.00
FEMALES					
1956	5.56	31.31	36.87	63.13	100.00
1957	5.22	31.68	36.90	63.10	100.00
1958	5.29	33.27	38.56	61.44	100.00
1959	5.33	33.43	38.76	61.24	100.00
1960	5.20	33.93	39.13	60.87	100.00

The average amount of salary and wages paid to both male and female employees in secondary industry has increased each year since 1950-51. In the following table details are shown for each class of industry in each of the ten years from 1950-51 to 1959-60, together with comparative totals for the whole of Australia.

AVERAGE ANNUAL AMOUNT OF SALARY AND WAGES PAID PER EMPLOYEE (a)

(£)

Class of Industry	Year ended 30th June									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
MALES										
I Treatment of Non-Metalliferous Mine and Quarry Products	471	640	716	793	815	851	870	871	902	956
II Bricks, Pottery, Glass, etc.	517	680	720	781	847	880	872	926	913	955
III Chemicals, Dyes, Explosives, Paints, Oils, Grease	608	799	867	877	932	1,021	1,001	1,061	1,065	1,111
IV Industrial Metals, Machines, Implements, and Conveyances	505	623	682	730	781	821	835	856	876	918
V Precious Metals, Jewellery, Plate	500	676	716	736	797	829	895	890	869	941
VI Textiles and Textile Goods (inclusive of Knitted Goods)	555	679	736	830	815	871	931	954	993	1,050
VII Skins and Leather (not Clothing or Footwear)	533	658	747	777	790	865	914	912	950	1,040
VIII Clothing (except Knitted)	495	623	714	703	753	771	794	834	823	863
IX Food, Drink and Tobacco	579	723	797	822	838	863	889	937	952	1,000
X Sawmilling, Woodworking and Basketware	459	567	650	701	724	755	777	798	823	861
XI Furniture of Wood, Bedding, etc.	457	564	610	660	689	737	738	796	820	856
XII Paper, Stationery, Printing, Bookbinding, etc.	538	653	742	801	875	910	934	969	1,020	1,096
XIII Rubber	546	676	729	739	827	839	844	871	860	916
XIV Musical Instruments	387	497	575	590	673	726	819	736	787	775
XV Miscellaneous Products	455	546	605	683	705	729	765	800	814	849
XVI Heat, Light and Power	621	775	906	911	994	1,054	1,077	1,045	1,076	1,158
ALL CLASSES—										
Western Australia	516	644	712	754	798	840	857	885	905	951
Australia	596	726	783	821	878	934	971	1,002	1,031	1,112

FEMALES

VI Textiles and Textile Goods (inclusive of Knitted Goods)	273	366	423	430	441	469	482	491	527	537
VII Skins and Leather (not Clothing or Footwear)	295	359	394	417	424	466	490	507	488	494
VIII Clothing (except Knitted)	283	363	404	428	436	448	464	479	478	510
IX Food, Drink and Tobacco	280	340	391	414	424	436	457	459	482	517
XII Paper, Stationery, Printing, Bookbinding, etc.	262	339	376	408	426	427	437	478	497	537
XV Miscellaneous Products	240	309	360	383	381	404	420	384	427	467
All other Classes	282	363	407	422	447	471	490	499	506	519
ALL CLASSES—										
Western Australia	280	351	400	422	434	450	467	479	490	517
Australia	338	422	468	493	510	530	558	578	592	633

TOTAL EMPLOYEES

I Treatment of Non-Metalliferous Mine and Quarry Products	467	634	708	783	808	839	858	858	888	939
II Bricks, Pottery, Glass, etc.	504	664	700	749	814	852	837	890	879	926
III Chemicals, Dyes, Explosives, Paints, Oils, Grease	571	765	826	832	888	977	959	1,014	1,018	1,059
IV Industrial Metals, Machines, Implements and Conveyances	495	611	669	717	766	805	818	839	858	897
V Precious Metals, Jewellery, Plate	512	632	671	700	756	799	867	858	846	923
VI Textiles and Textile Goods (inclusive of Knitted Goods)	411	529	589	644	624	683	730	749	791	823
VII Skins and Leather (not Clothing or Footwear)	493	608	691	711	719	791	837	842	867	933
VIII Clothing (except Knitted)	387	421	487	499	515	532	554	576	574	606
IX Food, Drink and Tobacco	507	632	704	726	744	769	793	830	850	896
X Sawmilling, Woodworking and Basketware	457	564	647	687	721	751	774	794	819	856
XI Furniture of Wood, Bedding, etc.	437	546	586	632	661	704	704	756	775	802
XII Paper, Stationery, Printing, Bookbinding, etc.	468	573	655	707	766	795	820	859	902	971
XIII Rubber	517	646	702	698	793	802	806	830	821	859
XIV Musical Instruments	387	497	575	590	664	716	797	743	789	775
XV Miscellaneous Products	385	471	532	590	599	633	659	672	684	718
XVI Heat, Light and Power	614	771	900	901	987	1,045	1,072	1,039	1,069	1,150
ALL CLASSES—										
Western Australia	474	595	665	703	744	785	802	829	848	890
Australia	526	651	710	743	789	837	872	901	927	996

(a) Excludes working proprietors and amounts drawn by them.

Capital Employed

In the following table the amount of capital employed in secondary industry is shown, together with the horsepower of engines in use and the relation of factories using power-driven machinery to those using manual labour only.

FACTORY CAPITAL EMPLOYED

Year	Number of Factories		Engines and Electric Motors used to drive Machinery (a)	Book Values of —	
	Using Manual Labour only	Using Power-driven Machinery		Land and Buildings	Plant and Machinery
1950-51	158	2,953	rated h.p. 130,188	£ 13,380,566	£ 14,712,662
1951-52	151	3,116	144,726	16,747,352	20,715,509
1952-53	155	3,269	160,103	20,959,603	24,084,814
1953-54	137	3,386	169,694	24,738,939	28,194,983
1954-55	115	3,612	204,848	30,229,913	54,968,205
1955-56	137	3,734	223,670	32,858,951	56,533,675
1956-57	135	3,800	238,959	35,519,634	63,272,185
1957-58	130	3,811	242,719	36,845,609	63,840,075
1958-59	140	3,985	254,395	40,689,726	66,097,785
1959-60	(b)	(b)	261,660	43,572,762	64,224,950

(a) Excludes engines used in electricity generating stations and motors driven by electricity of own generation.
(b) Not available.

Motive Power and Fuel Consumed**RATED HORSEPOWER OF ENGINES(†) EMPLOYED TO DRIVE MACHINERY**

Year	Steam		Internal Combustion			Motors driven by—		Total (a)
	Reciprocating	Turbine	Gas	Light Oil	Heavy Oil	Electricity Purchased	Electricity of own Generation	
1950-51	9,648	144	1,963	5,354	12,687	100,392	6,053	130,188
1951-52	10,439	130	1,621	6,798	15,245	110,493	7,598	144,726
1952-53	10,827	130	1,559	7,156	15,827	124,604	7,435	160,103
1953-54	11,002	130	355	9,482	13,786	134,939	7,480	169,694
1954-55	11,010	10,613	1,499	10,712	12,068	158,946	6,470	204,848
1955-56	12,122	10,609	1,462	15,601	11,867	172,009	6,369	223,670
1956-57	11,167	10,638	1,393	15,788	9,973	190,000	5,170	238,959
1957-58	11,318	11,002	1,302	13,362	9,707	196,028	4,931	242,719
1958-59	10,912	11,640	3,495	15,736	9,203	203,409	5,282	254,395
1959-60	10,070	11,665	3,505	19,292	6,145	210,983	5,558	261,660

(†) Excludes engines held in reserve or idle and engines used in electricity generating stations. (a) Excludes particulars shown under "Electricity of own Generation."

POWER, FUEL AND LIGHT USED IN FACTORIES

Year	Coal		Coke		Wood		Fuel Oil		Electricity	Other (Gas, Tar Fuel, etc.)
	tons	£	tons	£	tons	£	'000 gal.	£	£	£
1950-51	459,130	1,134,895	21,493	97,162	435,111	579,877	11,210	849,799	723,139	156,566
1951-52	462,510	1,665,076	26,280	133,216	473,810	657,801	13,627	1,215,884	1,031,073	193,441
1952-53	443,783	2,137,504	22,378	129,214	429,556	644,362	14,120	1,369,600	1,382,211	203,920
1953-54	568,130	2,891,657	17,922	147,102	358,599	462,236	15,518	1,392,205	1,534,571	207,004
1954-55	602,871	3,225,276	18,135	144,288	345,326	429,094	31,748	1,961,268	1,710,148	207,197
1955-56	586,312	2,955,651	21,743	178,359	330,459	420,252	52,342	2,920,077	1,920,364	248,003
1956-57	537,464	2,646,366	23,460	216,703	322,222	420,764	52,209	3,321,370	1,933,825	269,546
1957-58	562,456	2,535,154	20,101	196,429	312,532	415,930	53,579	3,497,146	1,991,402	339,280
1958-59	581,979	2,537,071	18,464	212,759	281,841	378,227	64,861	3,533,000	2,052,931	384,189
1959-60	606,566	2,568,443	17,920	222,018	271,083	380,968	70,738	3,591,644	2,243,709	550,371

Electricity is the most economical and convenient source of power in the principal manufacturing areas of the State and most factories have plants designed for its use. This position has become more pronounced as the installation of new major generating stations has extended the area in which adequate electric power is available. Electric motors are consequently the main source of motive power in factories. Oil engines are next in order of total horsepower produced and are still used in those country districts which are not yet supplied with power from the central generating stations.

The increased horsepower of steam engines in use in 1954-55 was due to an expansion in Class III, which covers the production of chemicals, dyes, explosives, paints, oils and grease, and in which specialized processes make their use desirable.

The tables on page 284 show the proportions in which the various types of motive power were used during the ten years from 1950-51 to 1959-60 and the quantities and values of fuel used. The fuels consumed are used for such heating purposes as brick and pottery firing, lime burning and the heating of bakers' ovens, as well as for steam generation and the operation of engines.

Value of Output and Net Production

The basis on which each of these values is computed is defined in the section *Explanatory Notes and Definitions* on page 277. In the following table for the years 1955-56 to 1959-60 the major components of the cost of production, and the margin to cover other expenditure and profit are expressed as a percentage of the value of output.

COSTS AS A PERCENTAGE OF VALUE OF OUTPUT

Particulars	1955-56	1956-57	1957-58	1958-59	1959-60
Materials Used	50.42	51.57	52.56	50.74	51.26
Containers (non-returnable)	2.63	2.57	2.52	2.50	2.34
Repairs to Buildings and Plant	1.96	1.80	1.75	1.73	1.66
Power, Fuel and Light Used	4.94	4.70	4.57	4.64	4.43
Lubricating Oil and Water Used	0.24	0.22	0.23	0.25	0.24
Salaries and Wages (a)	21.24	19.67	19.33	19.74	19.32
Balance for Other Costs (including Depreciation, Rent, Interest, etc.) and Profit	18.57	19.47	19.04	20.40	20.75
Total	100.00	100.00	100.00	100.00	100.00

(a) Excludes amounts drawn by working proprietors.

The annual values of output and net production and of net production per person employed are shown in the following table for the years 1955-56 to 1959-60.

VALUE OF OUTPUT AND NET PRODUCTION

Year	Value of Output	Net Production		Year	Value of Output	Net Production	
		Total	Average per Person Employed(a)			Total	Average per Person Employed(a)
1950-51	£ 84,431,056	£ 34,220,384	£ 782	1955-56	£ 175,146,435	£ 69,732,802	£ 1,392
1951-52	106,571,588	42,745,325	948	1956-57	187,636,004	73,441,949	1,507
1952-53	119,309,764	49,191,332	1,089	1957-58	196,202,633	75,312,250	1,554
1953-54	134,586,811	55,147,229	1,162	1958-59	196,202,698	78,762,159	1,627
1954-55	149,584,445	60,955,829	1,236	1959-60	215,582,476	86,373,312	1,740

(a) Based on average employment (including working proprietors) over the whole year.

Summary According to Industry

The following table gives number of factories, employment and summarized financial data for 1959-60 for each of the 16 classes of industry and for the sub-classes of which they are comprised.

Foundries (Ferrous)	17	449	10	422,725	1,134,911	111,776	21,555	562	377,300	511,193	613,718
Plant, Equipment and Machinery (including Machine Tools)	137	2,883	221	2,872,048	8,862,725	135,639	96,716	9,450	4,408,853	4,650,658	4,212,067
Other Engineering	155	846	35	687,375	2,157,575	36,848	34,365	649	904,362	976,224	1,181,351
Extracting and Refining of other Metals: Alloys	4	13	...	11,848	90,871	4,123	5,048	...	44,433	53,604	1,37,267
Electrical Machinery, Cables and Apparatus	91	923	113	860,696	2,395,871	25,797	26,422	6,617	1,010,286	1,069,122	1,326,749
Construction and Repair of Vehicles—Tramcars and Railway Rolling Stock: Government and Municipal	19	3,489	22	3,020,347	5,354,024	110,271	43,606	...	1,601,439	1,755,316	3,598,708
Motor Vehicles: Repairs	988	4,638	228	3,748,819	10,849,349	121,325	134,212	152	4,602,557	4,848,246	6,001,103
Motor Bodies	174	1,015	31	782,955	2,419,426	18,654	18,741	1,389	1,061,378	1,100,162	1,319,264
Motor Accessories	31	136	13	104,686	345,250	7,641	2,994	147	134,331	145,113	200,137
Cycles and Accessories	8	203	13	233,204	416,882	5,651	10,773	...	101,424	117,848	299,034
Aircraft .....	...	...	...	...	...	...	...	...	...	...	...
Ship and Boat Building and Repairing, and Marine Engineering—Government	42	689	57	647,399	2,891,618	61,367	51,408	5,595	1,606,634	1,725,004	1,166,014
Pipes, Tubes and Fittings—Ferrous .....	...	...	...	...	...	...	...	...	...	...	...
Stoves, Ovens and Ranges .....	...	...	...	...	...	...	...	...	...	...	...
Sewing Machines .....	...	...	...	...	...	...	...	...	...	...	...
Other Metal Work .....	...	...	...	...	...	...	...	...	...	...	...
Ship and Boat Building and Repairing, and Marine Engineering—Other than Government	33	191	1	149,409	397,693	3,793	5,413	...	144,145	153,351	244,342
Cutlery and Small Hand Tools	13	82	3	61,410	153,853	1,972	2,324	...	48,708	53,131	100,722
Agricultural Machines and Implements	39	354	13	328,258	999,758	11,282	17,458	454	476,467	505,661	494,097
Non-ferrous Metals—Founding, Casting, etc.	28	283	11	238,551	736,506	24,711	8,785	557	304,682	338,735	397,771
Galvanized Iron Working and Tinsmithing—Sheet Metal Working, Pressing and Stamping	75	1,090	164	1,029,422	4,472,326	57,553	66,712	34,676	2,339,701	2,498,642	1,973,684
Wire and Wire Working (including Nails)	17	410	33	361,225	2,143,197	29,352	35,053	7,912	1,302,311	1,374,628	768,569
Wireless and Amplifying Apparatus	36	122	9	112,082	289,219	2,409	1,798	76	97,255	101,538	187,681
Total, Class IV	1,869	19,467	1,027	17,204,712	56,517,493	1,385,869	834,120	70,838	26,521,219	28,812,046	27,705,447
Class V—Precious Metals, Jewellery, Plate Jewellery	17	38	3	25,913	75,759	850	312	213	18,443	19,818	55,941
Watches and Clocks (including Repairs)	44	80	3	49,705	134,499	1,245	481	88	20,701	22,515	101,984
Electroplating (Gold, Silver, Chromium, etc.)	14	91	2	75,754	194,559	10,399	4,889	30	36,386	51,704	142,855
Total, Class V	75	209	8	151,372	394,817	12,494	5,682	331	75,530	94,037	300,780
Class VI—Textiles and Textile Goods (inclusive of Knitted Goods)	10	326	319	541,484	4,527,911	50,203	73,404	19,852	3,299,340	3,442,799	1,085,112
Wool—Carding, Spinning, Weaving .....	...	...	...	...	...	...	...	...	...	...	...
Hosiery and other Knitted Goods .....	...	...	...	...	...	...	...	...	...	...	...
Flax Mills .....	...	...	...	...	...	...	...	...	...	...	...
Rope and Cordage .....	...	...	...	...	...	...	...	...	...	...	...
Bags and Sacks .....	...	...	...	...	...	...	...	...	...	...	...
Canvas Goods (Tents, Tarpaulins, etc.) .....	...	...	...	...	...	...	...	...	...	...	...
Other .....	...	...	...	...	...	...	...	...	...	...	...
Total, Class VI	42	543	425	786,469	6,005,310	62,780	86,174	28,680	4,159,573	4,337,207	1,668,103

For footnotes see page 290.

SUMMARY OF FACTORIES ACCORDING TO INDUSTRY, 1959-60—continued

Nature of Industry	Number of Factories	Persons Employed (a)		Salaries and Wages (b)	Value of Output	Cost of—					Net Production (c)	
		Males	Females			Repairs to Buildings and Plant, etc.	Non-Re-turnable Containers, etc.	Materials Used	Total			
Class VII—Skins and Leather (not Clothing or Footwear)												
Furs, Skins and Leather— Furriers and Fur Dressing Woolscouring and Felmongery Tanning, Currying and Leather Dressing Saddlery, Harness, Bags, Trunks and other Goods of Leather and Leather Substitutes (not Clothing or Footwear)— Bags, Trunks and other Goods of Leather and Leather Substitutes Saddlery, Harness and Whips	3	8	16	14,327	64,004	517	16	94	26,984	27,611	36,393	
	22	482	97	542,487	2,039,167	87,401	39,436	6,222	994,899	1,127,958	911,209	
	5	18	8	15,036	60,732	478	727	308	34,159	35,672	25,060	
Total, Class VII	30	508	121	571,830	2,163,903	88,396	40,179	6,624	1,056,042	1,191,241	972,662	
Class VIII—Clothing (except Knitted)												
Tailoring and Ready-made Clothing Waterproof and Oilskin Clothing Handkerchiefs, Ties and Scarves Hats and Caps Dressmaking, Hemstitching Millinery Shirts, Collars, Underclothing Gloves Boot and Shoe Accessories Umbrellas and Walking Sticks Boots and Shoes (not Rubber) Boot and Shoe Repairing Dyeing and Cleaning (including Renovating and Repairing)	116	245	439	336,657	1,227,854	10,375	4,358	2,219	601,174	618,126	609,728	
	7	15	79	56,192	158,513	1,444	1,218	2,235	66,547	71,444	87,069	
	60	24	618	305,632	812,486	5,877	4,827	1,359	356,158	368,221	444,265	
	6	1	27	12,933	53,921	476	63		21,637	22,176	31,745	
	14	46	493	284,997	785,186	5,340	4,481	2,405	344,080	356,256	426,930	
	3	8	7	6,936	32,856	110	6	3	18,121	18,240	14,616	
	11	307	216	370,848	1,039,214	6,484	14,316	9,766	505,475	536,041	503,173	
	94	192	8	84,519	341,155	3,228	1,886	1,931	87,650	94,695	246,460	
	88	269	321	331,527	810,580	52,008	20,513	8,658	93,268	174,447	636,133	
Total, Class VIII	399	1,107	2,209	1,790,241	5,259,765	85,342	51,668	28,576	2,094,060	2,259,646	3,000,119	
Class IX—Food, Drink and Tobacco												
Flour Milling Cereal Foods and Starch Animal and Bird Foods Bakeries (including Cakes and Pastry) Biscuits Sugar Refining Ice Cream Confectionery (including Chocolate and Icing Sugar) Jams, Fruit and Vegetable Canning Pickles, Sauces, Vinegar Bacon Curing	18	369	27	405,445	6,907,902	109,316	37,773	405,148	5,569,592	6,121,829	786,072	
	11	80	64	93,535	1,714,587	34,072	7,377	103,149	294,379	439,870	274,917	
	19	109	10	112,188	1,175,092	14,860	15,907	50,539	780,487	861,593	313,599	
	294	905	182	625,169	4,390,892	138,931	55,877	55,094	2,348,864	2,596,766	1,794,126	
	7	297	323	509,770	4,231,897	106,017	38,621	337,294	2,861,633	3,343,565	888,332	
	6	115	153	185,141	984,663	18,232	9,696	120,618	458,023	606,569	378,094	
	4	37	27	49,889	297,672	3,755	6,834	53,180	117,079	180,348	116,824	
	5	28	37	44,133	243,070	4,719	6,471	62,471	73,765	107,439	8,651	
	5	221	67	241,881	3,154,540	36,312	36,117	81,216	2,611,424	2,766,069	389,471	

Butter Factories	19	280	55	269,975	4,239,557	66,080	51,210	135,884	3,452,569	3,705,743	533,814
Cheese Factories	4	102	8	102,583	368,407	3,787	4,146	22,550	194,734	225,217	143,190
Condensed and Dried Milk Factories	48	1,411	100	1,580,494	6,533,453	175,865	148,094	341,972	3,539,383	4,205,314	2,328,189
Margarine	63	217	229	283,821	2,115,995	16,740	17,446	395,800	864,026	1,294,012	821,933
Meat and Fish Preserving	36	289	36	310,690	904,962	132,428	58,996	152,174	388,446	443,848	515,916
Condiments, Coffee, Spices, etc. (including Tea Blending and Packing, Food Packing, etc.)	43	225	44	194,073	1,029,199	20,663	26,207	140,208	447,523	634,602	394,597
Ice and Refrigerating	6	506	25	529,147	4,606,733	184,499	55,750	665,712	1,487,990	2,393,951	2,212,782
Aerated Waters, Cordials, etc.	25	65	11	40,575	294,967	2,740	3,412	30,833	142,964	179,949	115,018
Breweries	11	75	5	71,007	380,618	2,228	2,206	211,942	83	216,459	144,159
Making	624	5,311	1,403	5,627,506	42,553,706	1,071,044	582,646	3,363,785	25,289,566	30,307,041	12,246,665
Tobacco, Cigars and Cigarettes	208	3,161	28	2,553,858	9,221,734	247,334	361,641	2,394	3,457,705	4,069,074	5,152,660
Wine Making	27	616	13	549,982	2,353,851	41,895	52,657	1,285	1,381,768	1,477,555	876,296
Bottling	9	276	2	246,654	1,041,942	15,378	28,502	2,038	505,210	551,128	490,814
Total, Class IX	202	1,299	26	1,091,280	3,407,838	33,577	43,314	1,635	1,685,991	1,764,517	1,643,321
Class X—Sawmilling, Woodworking and Basketware	3	6	6	6,416	19,612	248	406	...	7,976	8,640	10,972
Sawmills—Sawing from the Log	6	92	5	69,366	237,487	2,549	2,627	...	192,682	192,838	108,629
Sawmills—Resawing, Dressing, etc.	6	15	1	4,050	25,318	392	834	...	6,686	7,882	17,938
Planed Mills (including Veneers)	9	54	6	37,420	71,127	388	120	32	21,319	21,859	46,268
Other	470	5,519	81	4,566,396	16,378,889	341,771	489,601	7,354	7,190,267	8,023,993	3,349,896
Total, Class X	153	1,002	87	742,707	2,839,456	19,272	14,958	1,294	1,584,083	1,569,492	1,259,984
Class XI—Furniture of Wood, Bedding, etc.	4	117	99	145,026	723,024	3,364	10,660	671	385,669	400,374	327,650
Cabinet, Furniture Making and Upholstery	4	2	27	15,246	82,295	185	59	...	55,747	55,874	20,321
Bedding and Mattresses (not wire)	8	9	3	7,810	25,917	141	8	...	11,544	11,693	11,524
Furnishing Drapery	8	46	36	64,664	332,581	992	1,269	...	195,747	201,952	130,429
Picture Frames	175	1,176	202	975,453	3,996,073	23,977	26,954	2,809	2,185,745	2,239,485	1,758,588
Window and Verandah Blinds	19	724	30	881,022	3,430,690	47,215	29,371	3	1,492,882	1,569,471	1,861,219
Total, Class XI	5	264	86	305,095	709,926	27,482	14,767	4,111	248,476	294,836	415,090
Class XII—Paper, Stationery, Printing, Bookbinding, etc.	84	816	382	956,650	2,989,494	28,014	40,600	13,583	1,096,924	1,179,121	1,810,363
Newspapers and Periodicals	7	66	42	79,307	555,758	2,808	4,246	6,450	307,890	321,384	234,374
Printing, Government	5	167	12	212,799	384,526	7,332	4,207	47	54,442	66,028	298,498
Stereotyping, Electrotyping	8	68	63	98,457	721,927	3,405	3,988	926	450,936	459,256	262,671
Paper Making	128	2,105	595	2,532,300	8,772,311	116,256	97,180	25,120	3,651,540	3,890,096	4,882,215
Other	84	816	382	956,650	2,989,494	28,014	40,600	13,583	1,096,924	1,179,121	1,810,363
Stationery, General (including Bookbinding)	7	66	42	79,307	555,758	2,808	4,246	6,450	307,890	321,384	234,374
Stationery and Paper Products	5	167	12	212,799	384,526	7,332	4,207	47	54,442	66,028	298,498
Cardboard Boxes, Cartons and Containers	8	68	63	98,457	721,927	3,405	3,988	926	450,936	459,256	262,671
Process and Photo-engraving	128	2,105	595	2,532,300	8,772,311	116,256	97,180	25,120	3,651,540	3,890,096	4,882,215
Paper Bags	...	...	...	...	...	...	...	...	...	...	...
Total, Class XII	...	...	...	...	...	...	...	...	...	...	...

For footnotes see page 290.

SUMMARY OF FACTORIES ACCORDING TO INDUSTRY, 1959-60—continued

Nature of Industry	Number of Factories	Persons Employed (a)		Salaries and Wages (b)	Value of Output	Cost of—					Net Production (c)
		Males	Females			Power, Fuel, Light, Water and Lubricants Used	Repairs to Buildings and Plant, etc.	Non-Returnable Containers, etc.	Materials Used	Total	
Class XIII—Rubber											
Rubber Goods (including Tyre Making) ...	44	237	33	£ 214,727	£ 893,829	£ 29,441	£ 24,835	£ 257	£ 394,166	£ 448,199	£ 445,480
Tyre Retreading and Repairing ...	...	...	...	...	...	...	...	...	...	...	...
Total, Class XIII ...	44	237	33	£ 214,727	£ 893,829	£ 29,441	£ 24,835	£ 257	£ 394,166	£ 448,199	£ 445,480
Class XIV—Musical Instruments											
Pianos, Piano-Players, Organs, etc. ...	8	33	1	£ 22,489	£ 56,275	£ 320	£ 31	...	£ 16,133	£ 16,484	£ 39,791
Other ...	...	...	...	...	...	...	...	...	...	...	...
Total, Class XIV ...	8	33	1	£ 22,489	£ 56,275	£ 320	£ 31	...	£ 16,133	£ 16,484	£ 39,791
Class XV—Miscellaneous Products											
Plastic Moulding and Products ...	16	134	71	£ 131,768	£ 433,806	£ 5,677	£ 6,765	£ 3,316	£ 202,553	£ 218,311	£ 215,495
Brooms and Brushes ...	...	...	...	...	...	...	...	...	...	...	...
Optical Instruments and Appliances ...	29	122	14	£ 111,555	£ 334,773	£ 3,551	£ 2,771	£ 633	£ 111,170	£ 118,125	£ 216,648
Surgical and Other Scientific Instruments and Appliances ...	...	...	...	...	...	...	...	...	...	...	...
Photographic Material, Developing, etc. ...	15	32	74	£ 57,448	£ 154,440	£ 2,885	£ 1,314	£ 1,247	£ 38,205	£ 43,651	£ 110,789
Toys, Games and Sports Requisites ...	6	13	...	£ 3,889	£ 28,302	£ 126	£ 196	£ 93	£ 10,452	£ 10,867	£ 17,485
Other ...	6	26	1	£ 21,349	£ 131,749	£ 5,947	£ 538	£ 613	£ 65,219	£ 72,317	£ 59,432
Total, Class XV ...	72	327	160	£ 326,009	£ 1,083,070	£ 18,186	£ 11,584	£ 5,902	£ 427,599	£ 463,271	£ 619,799
Total, Classes I to XV ...	4,185	41,717	6,078	£ 40,223,402	£ 206,654,576	£ 6,327,211	£ 3,259,552	£ 5,047,511	£ 109,922,709	£ 124,556,983	£ 82,097,593
Class XVI—Heat, Light and Power											
Electric Light and Power—											
Government ...	11	720	10	£ 846,965	£ 5,286,051	£ 2,287,060	£ 136,692	...	£ 22,416	£ 2,446,168	£ 2,839,883
Local Authority ...	38	96	2	£ 110,771	£ 500,401	£ 208,491	£ 33,266	...	£ 6,826	£ 243,583	£ 256,818
Companies ...	42	248	4	£ 271,037	£ 2,067,905	£ 1,119,927	£ 121,690	...	£ 6,716	£ 1,248,333	£ 819,572
Gas Works—											
Government ...	3	176	...	£ 190,872	£ 1,078,543	£ 138,422	£ 34,904	£ 3,953	£ 541,818	£ 714,097	£ 359,446
Companies ...	...	...	...	...	...	...	...	...	...	...	...
Total, Class XVI ...	94	1,240	16	£ 1,419,145	£ 8,927,900	£ 3,743,900	£ 326,552	£ 3,953	£ 577,776	£ 4,652,181	£ 4,275,719
GRAND TOTAL ...	4,279	42,957	6,094	£ 41,642,547	£ 215,582,476	£ 10,071,111	£ 3,586,104	£ 5,051,464	£ 110,500,485	£ 129,209,164	£ 86,373,312

(a) Includes working proprietors, not available for publication. See note (c).

(b) Excludes amounts drawn by working proprietors.

(c) See Explanatory Notes and Definitions on page 277.

† Separate particulars

Government Factories

The activities of factories operated by the Commonwealth and State Governments and by government instrumentalities are included in the tables appearing elsewhere in this Part but are summarized in the following table in order to trace their development from 1950-51 to 1959-60. The factory activities of local government authorities are excluded from this table but are included in all other tables.

The figures shown relate to work done in the repair and maintenance of government plant and equipment; other factory activities, associated with meat treatment, charcoal-iron production, printing and sawmilling; and the operations of the principal electricity and gas undertakings, which are conducted by the State Government. Also included in the table are the activities of the trading concern formerly known as State Building Supplies, which produced bricks and sawn timber, and the Western Australian Government Railways sawmill at Banksiadale. These undertakings were sold to private interests on the 30th June, 1961.

SUMMARY OF GOVERNMENT FACTORY ACTIVITY

Year	Number of Factories	Persons Employed (Average over whole year)			Salaries and Wages Paid		
		Males	Females	Total	Males	Females	Total
					£	£	£
1950-51	88	6,573	153	6,726	3,364,960	39,650	3,404,610
1951-52	85	6,719	156	6,875	4,260,857	56,148	4,317,005
1952-53	86	6,897	149	7,046	4,921,224	65,516	4,986,740
1953-54	92	7,265	156	7,421	5,442,440	72,349	5,514,789
1954-55	100	7,705	163	7,868	6,172,691	79,342	6,252,033
1955-56	111	8,104	172	8,276	6,814,468	76,598	6,891,066
1956-57	118	8,124	165	8,289	6,831,587	78,957	6,910,544
1957-58	119	8,298	170	8,468	7,091,855	84,425	7,176,280
1958-59	141	8,674	176	8,850	7,703,669	87,955	7,791,624
1959-60	142	8,378	178	8,556	7,884,870	92,045	7,976,915

Year	Value of Output	Cost of—			Net Production (b)	Book Values of—	
		Power, Fuel, Light, Water and Lubricants Used	Materials Used and Repairs to Buildings and Plant, etc. (a)	Total		Land and Buildings	Plant and Machinery
	£	£	£	£	£	£	£
1950-51	10,137,544	1,224,870	3,796,931	5,021,801	5,115,743	2,004,556	4,376,949
1951-52	12,434,319	1,933,312	4,431,096	6,364,408	6,069,911	3,485,854	8,364,148
1952-53	14,268,007	2,144,909	4,615,230	6,760,139	7,507,868	5,258,135	9,660,402
1953-54	15,697,399	2,484,466	4,951,639	7,436,105	8,261,294	5,784,878	11,162,565
1954-55	17,320,780	2,850,341	5,206,954	8,057,295	9,263,485	6,578,604	11,952,216
1955-56	19,121,175	2,894,829	5,926,963	8,821,792	10,299,383	5,342,866	13,223,046
1956-57	19,360,434	2,997,873	6,008,361	9,006,234	10,354,200	5,864,520	17,189,454
1957-58	19,512,080	2,876,936	5,843,179	8,720,115	10,791,965	5,830,999	19,371,066
1958-59	21,099,864	3,028,438	6,376,869	9,405,297	11,694,567	7,641,522	19,362,549
1959-60	22,508,725	3,261,412	6,732,860	9,994,272	12,514,453	8,182,149	19,320,615

(a) Including non-returnable containers.

(b) See *Explanatory Notes and Definitions* on page 277.

Articles Produced and Materials Used

The following table lists some of the principal products of secondary industry in the State and shows the quantities produced in each of the five years from 1955-56 to 1959-60. As the list does not include all items manufactured, it should not be regarded as necessarily giving an accurate assessment of factory development as a whole. However, as production is expressed in terms of physical units, individual items may be compared over the years reviewed without considering price changes.

Items in which production has risen during these years include sulphuric acid, which has increased by 34 per cent. since 1955-56; electricity, 25 per cent.; pig-iron, 286 per cent.; ready-mixed paints and enamels (excluding water paints), 25 per cent.; meat and bone meal stock and poultry foods, 72 per cent.; superphosphate, 36 per cent.; raw and refined tallow (including dripping), 44 per cent.; tyre retreads, 26 per cent.; and scoured wool, 61 per cent. However, there have been many fluctuations over the period reviewed and there are numerous examples of declining production and of peak production occurring in intermediate years. Consequently a more accurate assessment of trends will be obtained by considering each of the five years shown rather than by comparing two years only.

ITEMS OF FACTORY PRODUCTION (a)

Commodity	Unit	1955-56	1956-57	1957-58	1958-59	1959-60
Acids—Acetic	cwt.	6,577	6,529	6,941	6,585	7,040
Sulphuric	ton	169,468	175,054	208,355	192,077	226,376
Aerated Waters	gal.	4,041,517	3,850,610	4,291,794	4,385,070	4,322,485
Bacon and Ham	lb.	7,237,217	6,839,975	6,012,477	6,619,106	7,117,467
Bark—Ground	ton	1,034	1,025	603	961	†
Bath Heaters—Solid Fuel	number	6,972	6,123	5,944	5,609	6,349
Boots, Shoes and Sandals	pair	551,871	559,079	538,581	566,970	599,555
Bran	ton (2,000lb.)	41,439	39,178	34,073	32,203	33,426
Bread (2 lb. loaf)	number	54,225,009	54,616,630	55,784,603	55,488,053	56,923,201
Bricks (Standard Size)—Clay	'000	96,247	90,542	101,070	93,194	100,462
Cement	lb.	3,159	1,973	1,904	1,300	†
Butter	number	16,584,001	16,715,523	15,247,384	13,812,718	16,521,619
Caravans (Complete)	dozen	154	121	171	140	†
Cardigans, Pullovers (all types)	dozen	11,225	11,561	11,737	10,500	10,936
Cases—Fruit, Vegetable, etc. (including shooks)	number	2,761,645	3,325,320	2,163,290	2,254,057	2,320,090
Cheese	lb.	1,708,439	2,647,935	2,277,385	2,644,853	3,231,796
Coats—Sports—Men's and Youths'	number	6,283	5,164	3,993	3,611	7,599
Coke (including Coke Breeze)	ton	25,778	26,769	21,993	19,631	19,603
Confectionery (not Chocolate)	lb.	3,623,968	4,083,190	4,321,505	4,775,103	†
Condiols and Syrups	gal.	281,258	270,301	288,141	226,920	194,604
Custard Powder	lb.	607,455	688,668	689,588	693,220	715,496
Cycles	number	7,295	6,457	6,531	6,531	†
Electricity (b)	'000 kwh.	752,591	781,620	823,765	876,169	938,078
Fibrous Plaster Sheets	sq. yd.	2,171,929	1,491,998	1,505,789	1,349,280	1,422,618
Flour—Ordinary	ton (2,000lb.)	179,362	169,535	148,148	139,702	150,774
Self-raising	cwt.	93,563	90,214	87,607	85,487	86,694
Gas (Town) (c)	'000 cub. ft.	1,470,590	1,451,005	1,419,518	1,417,953	1,433,202
Ice	ton	24,474	18,819	14,426	11,710	8,049
Iron—Pig-Iron	ton	12,324	14,080	16,505	24,330	47,536
Jelly Crystals	lb.	1,010,599	977,060	1,040,788	941,118	908,997
Lime (Quicklime)	ton	25,649	25,759	27,900	22,983	23,280
Mattresses—	number					
Woven Wire, Link Mesh, etc. (d)	number	29,449	*28,222	26,923	24,648	22,969
Soft Filled (e)	"	41,285	*40,525	*41,258	36,597	38,643
Inner Spring	"	23,010	23,716	29,370	33,613	†
Methanol	gal.	41,912	22,719	16,997	19,674	34,478
Paints and Enamels (f)	gal.	292,567	299,973	307,846	302,229	367,119
Pickles and Chutneys	pint	454,458	475,237	500,802	469,789	474,799
Plaster of Paris	ton	23,109	17,317	17,900	15,104	16,905
Pollard	ton (2,000lb.)	29,018	29,274	26,061	24,320	25,539
Pyjamas—Men's and Boys' (g)	dozen	10,594	11,217	11,243	12,900	11,977
Sauce (all types)	pint	760,127	699,700	753,172	730,498	802,536
Shirts (all types)—Men's and Boys'	dozen	42,190	47,028	52,767	54,125	62,043
Sleepers, Railway—Sawn	'000 sup. ft.	40,105	44,117	48,079	57,898	43,262
Shippers	pair	408,081	373,138	286,176	233,762	163,040
Soap and Soap Substitutes (h)	cwt.	80,021	78,849	79,992	79,323	76,668
Stock and Poultry Foods—						
Meat and Bone Meal	"	131,910	151,871	173,543	195,762	226,246
Suits—Men's and Youths'—3 piece....	number	2,300	1,678	1,069	630	498
" 2 piece....	"	20,006	17,811	16,595	14,994	16,997
Superphosphate	ton	463,413	482,049	578,781	529,799	629,040
Tallow (Raw and Refined) (i)	cwt.	107,281	107,310	110,060	136,885	153,982
Tiles (Roofing)—Cement	'000	7,489	5,716	6,792	5,740	5,699
Timber (from local logs)—Sawn (j)	'000 sup. ft.	222,398	204,475	201,664	211,832	198,903
Trousers—Men's and Youths'—Sports	number	48,914	60,118	59,228	59,684	75,231
" Work	"	128,489	147,118	156,202	160,206	180,904
Tyres (Retreaded)	gal.	114,970	128,169	135,726	134,262	144,496
Vinegar (including Bulk)	gal.	203,302	191,418	166,868	216,254	189,271
Wool—Scoured	lb.	20,905,368	24,348,824	25,811,917	28,199,304	33,667,587

(a) Some major items of production are not available for publication. (b) Total generated—see page 302 for electricity distributed. (c) Total made—see page 302 for gas distributed. (d) Excluding wire stretchers and folding beds. (e) Includes rubber, plastic foam and sponge. (f) Ready mixed, excluding water paints. (g) Woven fabric. (h) Includes detergents. (i) Includes dripping. (j) Includes railway sleepers (see separate item above) and plywood veneers in terms of super. feet. † Not available for publication. * Revised.

The consumption of various materials in specific industries is shown in the following table for the years 1955-56 to 1959-60. As in the preceding table, figures are in terms of physical units and particulars for individual items may therefore be directly compared over the period reviewed without considering price changes which might have occurred. However, they do not necessarily represent total factory consumption of the materials shown, as information is not available or cannot be published for some industries.

INDIVIDUAL INDUSTRIES

The tables on pages 294-300, which appear in the industry order shown in the table on pages 286-90, deal with factory activity in selected industries for each of the ten years from 1950-51 to 1959-60. When considering employment, salaries and wages, value of output and net production, reference should be made to the section *Explanatory Notes and Definitions* on page 277.

MATERIALS USED IN FACTORIES

Item	Industry or Process in which Used	Unit	1955-56	1956-57	1957-58	1958-59	1959-60
Bark—Ground	Tanning	ton	284	230	263	313	313
Canvas and Duck	Canvas Goods	sq. yd.	348,337	297,398	335,053	398,494	380,974
Cement	Cement Goods (excl. Asbestos-Cement Goods)	ton	35,627	33,438	38,140	44,914	50,047
Coal—Fuel	Total Factory Consumption	"	586,312	537,464	562,456	581,979	606,566
Gas	Gas Works	"	55,956	41,789	54,388	52,206	52,436
Eggs	Egg Pulping	dozen	1,165,241	1,582,681	2,842,087	1,229,082	881,450
Flour—Ordinary	Bakeries	150 lb. bag	552,778	522,778	557,916	559,520	576,492
	Biscuits, Confectionery, Ice Cream	"	42,004	42,907	42,907	43,862	43,862
	Macaroni, Spaghetti, Cereals	"	16,480	15,269	21,287	21,427	16,853
	Self-raising Flour	"	62,884	67,215	62,159	62,865	63,146
	Jams	cwt.	54,845	38,455	82,538	46,684	58,924
	Wine	ton	3,796	4,630	8,724	9,186	4,410
	Wine Making and Cement	"	37,967	38,429	28,493	26,456	28,845
Fruit (excluding Grapes for Wine)	Tanning	number	107,492	105,528	106,416	96,453	97,641
Gypsum	(Saddlery, Bags, Boots and Shoes	lb.	1,408,534	1,180,561	1,025,527	1,059,268	980,511
Hides (all kinds)	Foot Accessories and Repairing	sq. ft.	2,092,842	1,681,995	1,715,727	1,765,887	1,787,756
Leather—By area	Paints	gal.	32,841	32,827	32,700	27,178	30,509
Linseed Oil	Chemical Fertilizers	ton	3,248	3,457	3,382	3,892	3,892
Muriate of Potash	Newsprint, Other Printing	"	12,551	11,682	12,408	15,080	14,322
Paper—Newsprint	Boxes, General Printing, etc.	"	9,357	9,147	9,401	2,665	398,666
Phosphate Rock	Chemical Fertilizers	lb.	300,836	307,162	363,537	833,237	1,464,568
Rubber	Tyre Retreading	cwt.	1,086,731	1,187,644	1,258,587	1,313,099	96,908
Soda Ash	Boiler Making and Soaps	"	46,932	50,430	43,299	50,182	75,239
Sugar—Refined	Aerated Waters	70 lb. bag	9,534	9,817	73,067	85,767	74,521
	Bakeries	"	23,443	24,449	24,987	24,798	25,239
	Biscuits, Condenseries, Ice Cream	"	33,643	46,704	50,185	38,904	47,874
	Confectionery	"	16,170	46,700	50,322	45,928	44,142
	Jams, Pickles, Sauces	"	12,145	10,987	13,223	14,425	14,142
	Manufacturing Grocers	"	49,777	53,310	50,346	56,078	59,002
	Chemical Fertilizers	ton	2,441	3,394	3,466	2,727	3,480
	"	"	2,218	2,800	3,466	2,727	3,480
	"	"	85,482	32,201	47,123	42,117	52,462
	Soap and Candles, etc.	cwt.	30,385	33,586	34,685	33,686	31,965
	Tanning	ton	835	799	756	650	596
Sulphate of Ammonia	Sawmills, Plywood Mills, etc.	000 sup. ft. (a)	507,808	483,675	483,948	511,133	472,644
Sulphur	Pickles, Jams, Sauces	ewt.	11,959	10,930	11,300	12,228	11,886
Tallow	"	"	24,807	47,828	14,156	30,178	28,137
Tanning Extract	"	"	27,108	22,005	12,098	8,089	8,089
Timber (Local)	"	"	8,908,909	8,632,871	7,946,454	7,427,510	7,890,360
Tomatoes	Flour Mills, Stock Foods, etc.	bu. sh.	86,780	91,384	70,180	75,348	71,304
Wheat	Knitting Mills, Rope Works, etc.	lb.	185,963	143,907	151,254	134,165	123,348
Wool	Knitting Mills	"	185,963	143,907	151,254	134,165	123,348
Woolen	Knitting Mills	"	185,963	143,907	151,254	134,165	123,348

† Not available for publication. (a) Hoppus measure.

INDIVIDUAL INDUSTRIES LIME, PLASTER AND PLASTER SHEETS

Year	Num-ber of Fac- to- ries	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Em- ployed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Pro- duction	Materials Used			Production (d)				
										Sisal Hemp and Substitutes		Limestone	Fibrous Plaster Sheets		Iime (Quicklime)		
										tons	£		sq. yds.	£		tons	£
1950-51	45	206,175	1,483	543	262,685	59,227	437,880	989,904	442,847	1,066	74,568	56,648	21,329	2,067,752	374,996	20,121	144,071
1951-52	48	205,302	1,114	567	343,227	61,322	656,437	1,289,113	571,354	1,339	114,170	58,616	25,816	2,574,632	554,041	22,480	183,000
1952-53	46	198,039	969	575	375,751	74,987	702,118	1,340,385	563,280	1,260	95,137	60,965	26,150	2,436,220	531,865	25,384	204,948
1953-54	46	282,887	969	595	422,957	75,807	759,768	1,452,354	616,779	1,445	109,100	58,164	23,395	2,348,624	552,516	22,594	198,763
1954-55	49	368,141	1,129	632	467,408	83,143	809,712	1,639,844	746,989	1,475	113,904	54,135	32,433	2,517,204	614,526	25,505	230,813
1955-56	51	456,495	1,310	573	450,726	85,731	783,518	1,552,602	683,353	1,199	93,939	51,651	30,386	2,171,929	518,330	25,649	224,465
1956-57	54	473,164	1,326	482	368,431	83,437	698,712	1,445,239	663,090	832	74,452	56,436	33,976	1,491,998	363,526	25,759	221,783
1957-58	51	501,364	1,759	478	373,075	92,934	683,477	1,484,782	708,371	737	68,820	53,139	31,051	1,505,789	402,847	27,900	215,525
1958-59	54	571,305	2,231	453	380,721	88,849	785,427	1,597,465	723,189	691	64,225	43,701	33,971	1,349,280	372,008	22,983	182,191
1959-60	57	682,652	2,236	483	410,582	80,151	772,726	1,626,082	773,205	711	79,313	46,836	31,207	1,422,618	396,841	23,280	171,286

(a) Book values at end of year.
in factories classified to other industries.

(b) Excludes motors driven by electricity of own generation.

(c) Includes water and lubricants.

(d) Includes quantities produced

CEMENT AND CEMENT GOODS (INCLUDING ASBESTOS CEMENT SHEETS)

Year	Num-ber of Fac- to- ries	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Em- ployed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Pro- duction	Materials Used		Production (e) (f)			
										Reinforcing Steel	Cement (d)	Cement Roofing Tiles	Cement Bricks		
		£	rated h.p.		£	£	£	£	£	tons	tons	'000	£	'000	£
1950-51	52	441,118	4,890	808	388,788	197,412	690,768	1,539,752	721,572	2,086	46,106	17,319	5,888	197,320	2,684
1951-52	75	725,065	6,310	1,094	666,739	276,654	1,018,098	2,323,038	1,028,286	1,375	38,092	25,454	10,552	388,995	4,467
1952-53	68	827,347	7,889	1,063	737,977	253,769	1,278,583	3,049,166	1,375,823	1,141	43,201	26,113	11,738	396,559	5,846
1953-54	57	733,406	8,634	1,015	790,937	580,489	1,418,013	3,574,567	1,615,065	1,062	44,626	26,708	9,588	356,915	5,066
1954-55	54	935,064	9,169	1,179	952,847	694,141	1,994,401	4,370,509	1,761,967	1,797	101,362	36,179	11,082	375,194	8,740
1955-56	52	2,806,711	13,510	1,146	948,743	660,872	1,795,117	4,137,966	1,741,977	1,657	91,003	32,708	7,489	224,884	3,159
1956-57	48	2,654,404	13,148	898	774,128	513,440	1,588,746	3,914,547	1,912,381	1,613	80,409	29,686	5,716	215,687	1,973
1957-58	48	2,660,490	13,099	877	747,068	433,877	1,588,255	4,010,774	2,038,742	1,233	62,886	31,881	6,792	223,040	1,904
1958-59	53	2,653,395	13,009	899	782,767	405,816	1,697,143	4,228,296	2,125,337	1,239	66,970	42,174	5,740	180,875	1,900
1959-60	55	2,707,275	13,343	929	867,691	379,769	1,805,259	4,361,077	2,176,049	1,533	79,704	47,257	5,599	173,794	1,905

(a) Book values at end of year.

(b) Excludes motors driven by electricity of own generation.

(c) Includes water and lubricants.

(d) Excludes quantities used in pro-

duction of asbestos cement sheets.

(e) Includes quantities produced in factories classified to other industries.

(f) Certain major items of production are not available for publication.

† Not available for publication.

BRICKS, TILES, EARTHENWARE, PORCELAIN, ETC. (a)

Year	Number of Factories	Land, Buildings, Plant and Machinery (b)	Engines and Electric Motors Used (c)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (d)	Repairs, Containers and Materials Used	Value of Output	Net Production	Production (e)		
										Bricks—Standard Clay (f)	Fire Bricks and Blocks	
		£	rated h.p.		£	£	£	£	£	No.	£	£
1950-51	32	516,949	4,984	985	490,721	180,496	183,892	1,120,744	756,356	64,628,000	541,368	80,293
1951-52	34	675,554	5,551	991	654,364	261,159	220,171	1,466,143	984,813	72,417,000	758,171	103,387
1952-53	37	1,629,851	8,450	1,075	794,328	337,890	271,654	1,900,946	1,271,412	82,521,000	1,011,435	93,856
1953-54	38	1,777,525	8,443	1,202	904,749	424,234	341,933	2,355,089	1,588,932	96,174,000	1,205,084	90,021
1954-55	37	2,059,134	8,770	1,273	1,082,742	493,459	394,122	2,576,199	1,688,618	106,672,000	1,340,708	95,379
1955-56	36	2,064,303	9,413	1,191	988,844	483,470	403,961	2,453,213	1,565,782	96,247,000	1,233,589	88,289
1956-57	34	2,012,488	9,200	1,017	849,523	388,396	355,114	2,191,459	1,447,949	90,542,000	1,249,748	59,387
1957-58	32	1,973,435	9,637	1,092	871,373	438,422	400,026	2,518,376	1,679,928	101,070,000	1,422,412	72,376
1958-59	31	1,884,432	9,551	1,084	905,669	396,067	389,720	2,356,621	1,590,834	93,194,000	1,349,692	65,063
1959-60	30	1,742,275	9,637	1,013	928,506	393,565	383,018	2,509,486	1,747,903	100,462,000	1,518,907	†

(a) Excludes cement bricks and cement roofing tiles. See preceding table. (b) Book values at end of year. (c) Excludes motors driven by electricity of own generation. (d) Includes water and lubricants. (e) Certain major items of production are not available for publication. (f) Excludes fire bricks. † Not available for publication.

CHEMICAL FERTILIZERS

Year	Num-ber of Fac-tories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Pro-duction	Materials Used		Production of Superphosphate	
										Phosphate Rock	Sulphur	Pyrites	
		£	rated h.p.		£	£	£	£	£	tons	£	tons	£
1950-51	5	1,317,637	4,326	762	459,958	71,286	3,480,258	4,274,653	723,109	260,310	1,240,222	40,421	227,088
1951-52	5	1,352,362	4,326	848	669,451	73,795	5,170,537	6,466,751	1,222,419	263,891	2,151,352	40,421	424,886
1952-53	5	1,519,560	4,543	901	725,571	128,668	5,087,817	6,791,432	1,574,947	264,949	1,856,840	54,584	47,878
1953-54	5	3,048,785	4,864	889	769,629	126,291	4,827,575	6,514,091	1,560,225	270,121	1,716,730	57,309	641,119
1954-55	6	4,070,938	7,533	1,004	874,366	141,461	4,882,795	6,968,260	1,944,004	296,554	1,847,768	60,137	737,344
1955-56	6	4,032,936	7,684	977	883,741	145,425	5,009,249	7,561,183	2,406,509	300,836	2,006,082	53,279	659,918
1956-57	6	3,861,954	8,180	942	839,228	149,561	5,428,211	7,601,544	2,023,772	307,102	2,301,583	583,490	463,413
1957-58	6	3,753,202	8,050	1,004	1,005,278	165,192	6,413,050	7,789,054	2,210,812	368,521	3,010,083	67,097	482,049
1958-59	6	3,801,536	8,819	975	955,928	152,000	5,394,113	7,517,626	1,971,513	335,237	2,384,582	†	578,781
1959-60	6	3,649,470	9,334	927	948,278	169,441	5,992,846	8,644,052	2,481,765	393,656	2,840,856	†	529,799

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. † Not available for publication.

ENGINEERING, METAL WORKING, CONSTRUCTION AND REPAIR OF VEHICLES AND MACHINES

Year	Number of Factories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Production
1950-51	994	£ 6,201,784	rated h.p. 34,640	15,971	£ 7,518,344	426,662	£ 10,164,922	£ 22,596,356	£ 12,004,772
1951-52	1,067	7,624,284	37,811	16,376	9,495,583	596,407	12,780,354	27,454,979	14,078,218
1952-53	1,189	9,841,425	41,741	18,868	10,678,834	641,996	13,413,925	30,082,060	16,026,139
1953-54	1,264	11,910,696	45,617	18,241	12,408,098	720,419	17,191,647	36,909,513	18,987,447
1954-55	1,381	13,719,254	48,913	18,726	13,586,572	764,060	17,366,152	39,887,318	21,257,106
1955-56	1,484	15,400,934	51,787	19,410	14,769,312	887,884	18,387,160	41,190,899	21,965,655
1956-57	1,564	16,661,970	65,267	19,490	15,030,186	1,008,276	20,552,495	44,886,239	23,275,468
1957-58	1,609	20,720,552	67,817	19,549	15,450,376	1,046,329	22,430,241	47,850,886	24,374,266
1958-59	1,764	21,968,039	69,505	18,380	15,606,009	1,102,185	22,282,581	48,332,547	24,887,751
1959-60	1,869	22,936,958	73,456	20,494	17,204,712	1,385,889	27,426,177	56,517,493	27,705,447

(a) Book values at end of year.

(b) Excludes motors driven by electricity of own generation.

(c) Includes water and lubricants used.

BOOTS AND SHOES

Year	Num-ber of Fac-tories	Land, Buildings, and Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Em-ployed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Leather Used		Production (d)	
								Purchased by Weight	Purchased by Area	Boots, Shoes and Sandals	Slippers
		£	rated h.p.	£	lb.	sq. ft.	£	£	sq. ft.	pairs	pairs
1950-51	12	203,226	512	887	368,851	5,323	459,806	1,418,833	123,471	729,983	609,333
1951-52	12	236,863	575	898	474,697	7,096	614,691	1,393,439	155,910	743,251	609,333
1952-53	10	234,523	606	738	427,137	7,833	538,515	1,282,456	166,389	738,809	581,958
1953-54	11	272,359	595	767	444,048	8,548	596,840	1,294,086	175,566	800,072	644,725
1954-55	11	281,691	589	634	395,058	7,914	481,114	1,080,911	154,430	850,207	624,313
1955-56	10	290,214	495	607	382,590	7,557	521,581	1,057,220	154,710	856,275	698,590
1956-57	11	293,812	600	592	383,380	6,989	439,287	1,075,796	164,710	772,590	608,081
1957-58	11	266,061	563	503	335,179	6,532	402,792	1,190,615	158,184	659,679	581,958
1958-59	12	307,559	575	512	332,796	6,586	448,746	1,207,779	158,552	735,027	588,581
1959-60	11	340,992	489	523	370,848	6,484	529,557	1,245,599	234,844	566,970	599,555

(a) Book values at end of year.

(b) Excludes motors driven by electricity of own generation.

(c) Includes water and lubricants.

(d) Includes quantities produced in factories classified to other industries.

FLOUR MILLING

Year	Num- ber of Fac- to- ries	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Em- ployed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Con- tainers and Materials Used	Value of Output	Net Pro- duction	Wheat Ground	Production (d)					
											Flour	Bran	Pollard			
		£	rated h.p.		£	£	£	£	£	£	tons (e)	£	tons (e)	£	tons (e)	£
1950-51	20	1,244,713	4,555	546	346,395	79,031	4,605,556	5,341,363	656,776	9,855,510	3,713,611	917,345	4,109,061	47,877	601,143	34,907
1951-52	20	1,271,675	4,566	559	427,180	115,603	6,086,577	7,004,411	849,931	10,432,012	4,743,649	221,846	5,127,913	48,537	949,589	35,771
1952-53	20	1,262,820	5,720	571	467,782	135,232	7,088,874	8,025,194	851,068	10,832,390	5,919,793	224,380	5,989,491	49,233	955,332	35,364
1953-54	20	1,300,525	5,280	543	439,365	125,131	6,782,569	7,712,395	834,945	8,588,076	6,025,509	187,388	5,605,602	41,793	855,256	31,314
1954-55	20	1,358,303	5,060	507	416,199	110,402	6,260,307	7,066,426	705,717	8,078,907	6,558,970	165,767	5,029,848	37,640	790,173	58,863
1955-56	20	1,396,394	5,689	510	433,983	116,616	6,402,018	7,241,128	722,494	8,601,658	5,751,472	179,362	5,315,746	41,489	799,373	29,018
1956-57	20	1,410,380	5,407	504	422,162	114,727	6,279,316	7,133,598	758,955	8,318,043	5,678,022	169,585	5,236,955	39,178	767,341	29,274
1957-58	19	1,329,433	5,337	455	394,617	103,941	5,655,383	6,360,287	797,463	7,392,991	5,158,962	145,143	4,744,142	34,073	651,195	26,061
1958-59	20	1,305,723	5,280	428	385,789	100,726	5,585,335	6,409,301	773,240	7,125,484	5,102,678	139,702	4,549,315	32,203	627,994	24,320
1959-60	18	1,279,382	5,151	396	405,445	109,516	6,012,513	6,907,902	786,073	7,577,149	5,556,627	150,774	4,976,596	33,426	659,457	25,539

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. (d) Includes quantities used in own works. (e) Short ton = 2,000 lb.

CONFECTIONERY

Year	Number of Factories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Pro- duction	Materials Used				Confectionery (not Chocolate) Produced (d) (e)	
										Sugar (70 lb. bags)	Glucose			lb.	£
		£	rated h.p.		£	£	£	£	£	No.	cwt.	£	£		
1950-51	8	165,072	463	335	117,958	17,806	368,493	614,389	228,570	48,286	70,754	12,243	55,954	3,583,333	339,995
1951-52	8	161,397	466	351	138,225	15,332	431,656	698,676	251,688	48,934	90,108	12,651	61,520	3,879,947	492,459
1952-53	8	179,332	473	328	148,012	17,958	396,014	675,534	261,562	48,222	103,614	10,703	56,023	3,887,845	484,585
1953-54	8	166,527	479	314	168,169	17,589	432,757	755,813	306,487	46,555	104,489	8,697	46,715	3,451,985	486,365
1954-55	7	148,344	477	321	167,548	17,282	458,521	789,460	313,657	48,370	107,555	9,663	53,470	3,824,736	534,505
1955-56	7	154,255	447	325	179,065	16,165	409,295	732,856	307,386	46,170	103,025	9,416	47,893	3,623,968	480,383
1956-57	6	159,418	469	299	176,637	15,754	485,441	788,275	307,080	46,710	113,583	10,565	53,710	4,083,190	534,752
1957-58	7	175,102	420	297	185,089	16,317	502,955	846,931	327,659	50,432	124,883	11,415	56,427	4,321,505	552,838
1958-59	6	177,603	496	264	179,401	15,484	551,516	929,586	362,586	48,928	121,709	11,004	60,150	4,775,103	626,512
1959-60	6	173,366	501	268	185,141	18,232	568,337	984,663	378,094	+	+	+	+	+	+

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. (d) Includes quantities produced in factories classified to other industries. (e) Certain major items of production are not available for publication. † Not available for publication.

JAMS, PICKLES, SAUCES AND VINEGAR.

Year	Num- ber of Fac- tories	Land Build- ings, and Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Em- ployed	Salaries and Wages	Power, Fuel, and Light Used (c)	Repairs, Con- tainers and Ma- terials Used	Value of Output	Net Pro- duction	Materials Used		Production				
										Fruit	Vegetables (d)	Jams (e)	Pickles and Chutneys	Sauces		
		£	rated h.p.		£	£	£	£	£	cwt.	£	lb.	£	pints	£	£
1950-51	11	120,683	386	186	74,406	6,882	203,570	379,967	169,515	17,264	15,190	13,654	19,487	455,630	870,594	59,535
1951-52	11	134,228	389	179	78,263	7,089	265,998	421,334	148,547	18,244	20,956	10,809	36,572	446,398	969,965	69,813
1952-53	11	133,945	368	128	76,773	5,872	231,126	387,871	150,878	16,827	13,116	4,436	19,277	527,461	830,499	69,605
1953-54	11	152,680	371	139	78,278	5,424	218,170	368,265	144,671	9,152	12,014	8,098	26,478	673,583	992,897	57,721
1954-55	12	172,733	283	126	76,216	5,822	219,569	353,532	133,641	6,737	13,313	13,027	32,693	663,807	654,566	57,951
1955-56	9	177,369	278	139	85,566	6,246	305,396	485,348	173,206	23,143	25,697	27,108	53,517	454,458	64,020	77,749
1956-57	9	185,493	337	151	98,889	7,575	398,795	614,466	208,096	15,901	19,684	22,005	65,548	475,287	68,522	78,701
1957-58	9	212,615	349	124	83,483	6,700	295,059	490,583	188,824	31,733	33,292	12,098	33,968	500,802	66,075	75,172
1958-59	9	213,538	378	118	85,139	8,635	296,682	491,018	195,701	21,982	25,595	4,689	13,121	469,789	64,903	78,498
1959-60	9	221,778	370	129	94,032	8,474	319,813	540,742	212,455	23,330	28,966	8,039	17,750	474,799	68,839	802,536

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. (d) Excludes tomatoes. (e) In-
cludes quantities produced in factories classified to other industries. † Not available for publication.

BACON CURING

Year	Num- ber of Fac- tories	Land Build- ings, and Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Em- ployed	Salaries and Wages	Power, Fuel, and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Pro- duction	Pigs Killed (d)				Bacon and Ham Produced (e)	
										On own Account		Total		On Com- mission	£
										For Curing	For other purposes	Quantity	Cost at Works		
		£	rated h.p.		£	£	£	£	£	No.	No.	No.	£	No.	lb.
1950-51	4	105,057	901	258	136,888	18,017	1,541,905	1,845,505	285,583	74,221	11,037	85,258	990,242	186	7,969,883
1951-52	4	104,646	908	253	176,372	27,482	1,916,175	2,224,450	280,793	83,207	12,927	96,134	1,400,299	222	8,243,124
1952-53	4	174,459	919	263	180,727	35,493	2,012,212	2,307,390	259,685	76,838	12,201	89,039	1,423,237	137	8,272,455
1953-54	4	136,019	762	215	166,553	29,708	2,035,665	2,237,656	172,283	77,166	6,938	84,104	1,559,042	119	7,722,949
1954-55	4	144,938	929	254	189,145	33,350	1,835,133	2,298,546	400,063	89,681	26,667	116,348	1,352,293	341	7,437,768
1955-56	4	161,902	878	267	183,819	33,530	2,103,989	2,346,617	209,098	88,039	17,275	105,314	1,520,504	207	7,237,217
1956-57	4	170,499	841	254	195,056	35,114	2,443,110	2,814,733	337,509	94,686	11,999	106,685	1,796,753	236	6,839,975
1957-58	4	193,692	1,133	268	230,708	39,471	2,566,848	3,004,163	397,844	121,891	24,287	146,178	1,823,453	510	6,612,477
1958-59	4	234,174	1,125	301	231,858	39,280	2,449,886	2,793,304	304,138	101,893	19,651	121,544	1,582,234	276	6,619,106
1959-60	5	278,728	1,238	288	241,881	36,312	2,728,757	3,154,540	389,471	77,444	29,776	107,220	1,825,383	102	7,117,467

(a) Book values at end of year. (b) Excludes motors driven by electricity of own generation. (c) Includes water and lubricants. (d) Excludes pigs condemned.
(e) Includes quantities produced in factories classified to other industries.

BUTTER, CHEESE AND CONDENSED AND PROCESSED MILK

Year	Num- ber of Fac- tories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used(b)	Persons Em- ployed	Salaries and Wages	Power, Fuel and Light Used(c)	Repairs, Containers and Materials Used	Value of Output	Net Pro- duction	Materials Used			Production		
										Butter Fat Content of Cream	Total Whole Milk (d)	Butter	Cheese		
		£	rated h.p.		£	£	£	£	£	lb.	gal.	£	lb.	£	
1950-51	16	336,465	1,552	343	177,774	48,296	2,075,515	2,512,641	388,830	12,478,754	1,464,302	35,505,845	15,224,913	1,789,755	118,469
1951-52	14	368,465	1,672	354	231,361	66,514	2,563,859	3,041,814	411,441	12,171,024	1,876,516	34,251,664	15,020,018	2,240,419	131,796
1952-53	15	424,083	1,876	322	241,978	70,864	3,124,819	3,745,032	549,349	11,877,898	2,205,266	33,607,143	14,516,018	2,625,632	235,165
1953-54	15	419,702	1,838	294	222,966	68,775	3,236,593	3,817,190	511,822	11,209,678	2,189,903	32,559,719	13,757,468	2,561,648	322,339
1954-55	17	537,283	3,477	286	212,371	70,109	3,286,275	3,899,864	548,480	13,077,206	2,517,304	36,147,796	16,005,099	2,949,481	293,563
1955-56	18	565,591	2,345	292	230,370	65,235	3,301,824	3,863,417	496,358	13,544,985	2,539,334	37,141,040	16,584,601	2,940,626	196,271
1956-57	18	592,123	2,393	312	248,964	70,195	3,424,743	4,024,751	529,813	13,702,685	2,538,963	38,381,870	16,715,523	2,946,741	296,430
1957-58	18	614,997	2,345	302	253,867	64,472	3,056,327	3,589,802	497,003	12,456,776	2,200,149	34,828,242	15,247,884	2,545,504	227,385
1958-59	19	835,871	3,078	325	276,877	62,548	3,032,881	3,710,224	614,795	11,265,489	2,096,622	32,073,417	13,812,718	2,512,933	306,852
1959-60	19	832,622	3,524	315	269,975	66,080	3,639,663	4,239,557	533,814	13,463,763	2,677,324	37,281,495	16,521,619	3,058,199	383,267

(a) Book values at end of year.
(b) Excludes motors driven by electricity of own generation.
(c) Includes water and lubricants.
(d) Includes whole milk equivalent of cream used.

AERATED WATERS, CORDIALS, ETC.

Year	Number of Factories	Land, Buildings, Plant and Machinery Used (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Containers and Materials Used	Value of Output	Net Production	Sugar (70 lb. Bags)	Production (d)				
											Aerated Waters		Cordials and Syrups		
		£	rated h.p.		£	£	£	£	£	No.	£	gal.	£	gal.	£
1950-51	52	272,269	897	322	114,964	11,991	299,669	614,274	302,614	55,964	76,946	3,405,896	543,384	168,729	92,914
1951-52	55	330,072	1,198	301	138,708	16,663	399,513	741,301	325,125	56,726	96,251	3,876,886	645,516	201,598	115,896
1952-53	49	309,290	1,118	269	134,656	15,592	379,699	729,889	334,578	54,181	115,060	3,503,029	639,809	214,043	129,976
1953-54	48	329,142	1,168	263	181,204	15,625	388,947	833,060	418,488	56,273	129,280	3,503,029	714,922	290,446	168,717
1954-55	46	352,030	1,200	265	170,755	16,607	508,312	919,420	394,501	64,570	148,326	4,000,423	816,267	268,133	186,568
1955-56	45	441,650	1,082	281	181,337	16,012	509,444	937,490	412,084	66,814	154,241	4,041,517	834,268	281,258	218,212
1956-57	44	475,538	1,139	271	172,546	14,427	516,234	984,298	403,637	63,317	158,018	3,850,610	827,103	270,801	210,180
1957-58	45	506,761	1,200	274	179,113	17,977	583,217	1,071,495	470,301	73,078	185,894	4,281,794	967,176	288,141	221,887
1958-59	42	510,229	1,173	265	181,751	21,755	616,285	1,072,689	454,649	85,767	196,774	4,385,570	974,958	296,350	169,038
1959-60	43	526,207	1,257	269	194,073	20,663	613,939	1,029,199	394,597	74,521	191,296	4,322,485	972,451	194,604	141,590

(a) Book values at end of year.
(b) Excludes motors driven by electricity of own generation.
(c) Includes water and lubricants.
(d) Includes quantities produced in factories classified to other industries.

SAWMILLING (MILLS OPERATING ON LOGS) (a)

Year	Num- ber of Fac- tories	Land, Buildings, and Plant Machinery (b)	Engines and Electric Motors Used (c)	Persons Em- ployed	Salaries and Wages	Power, Fuel and Light Used (d)	Repairs, Con- tainers and Materials Used	Value of Output	Net Pro- duction	Logs (Local), Sawm (e)				Sawn Timber Produced from Local Logs (f)			
										Hardwoods	Pines	Hardwoods	Pines	Hardwoods	Pines	Hardwoods	Pines
		£	rated h.p.		£	£	£	£	£	'000 sup. ft. (Hoppus)	'000 sup. ft. (Hoppus)	£	'000 sup. ft.	£	'000 sup. ft.	£	'000 sup. ft.
1950-51	179	1,211,982	18,531	2,910	1,287,678	100,729	1,671,582	3,950,018	2,177,707	346,660	1,487,395	22,829	153,601	3,950,310	3,210	38,289	3,210
1951-52	231	1,874,976	23,323	3,835	1,744,850	150,435	2,201,284	5,528,042	3,174,823	391,332	1,911,121	38,073	175,131	5,380,089	3,159	76,524	3,159
1952-53	223	2,084,603	24,964	3,660	2,273,865	201,237	2,776,279	7,003,310	4,025,704	449,977	2,413,788	9,925	199,844	6,744,200	3,970	130,680	3,970
1953-54	224	2,085,599	27,270	3,723	2,529,310	214,231	3,166,416	7,610,750	4,230,103	481,260	2,841,502	7,164	213,723	7,365,027	2,998	84,450	2,998
1954-55	231	2,384,391	29,297	3,833	2,646,573	232,116	3,468,994	7,958,049	4,256,939	501,128	3,104,359	10,546	220,444	7,701,831	5,351	114,559	5,351
1955-56	231	2,404,418	32,545	3,872	2,770,779	229,881	3,921,537	8,774,340	4,632,932	507,608	3,525,844	11,959	218,405	8,284,892	5,993	150,328	5,993
1956-57	232	2,531,412	34,224	3,805	2,575,248	231,612	3,643,501	8,533,362	4,664,249	486,675	3,247,880	10,930	198,679	8,171,448	5,798	152,007	5,798
1957-58	217	2,204,477	33,235	3,891	2,545,528	237,253	3,743,831	8,529,198	4,548,114	483,948	3,361,382	11,300	103,159	8,271,012	5,892	161,718	5,892
1958-59	215	2,333,945	35,574	3,480	2,677,024	250,203	3,937,250	9,019,521	4,832,068	511,133	3,521,494	12,228	104,579	9,054,016	6,346	162,860	6,346
1959-60	208	2,237,198	35,212	3,189	2,558,358	247,334	3,821,740	9,221,734	5,152,680	472,644	3,338,929	11,886	193,429	9,084,918	5,474	214,898	5,474

(a) Excluding particulars of felling and hauling.

(b) Book values at end of year.

(c) Excludes motors driven by electricity of own generation.

(d) Includes water and lubricants.

(e) Includes logs used by plywood mills and small quantities used by factories classified to other industries.

(f) Includes railway sleepers and plywood veneers in terms of super. feet and small quantities of timber produced in factories classified to other industries.

CABINET AND FURNITURE MAKING AND UPHOLSTERY

Year	Number of Factories	Land, Buildings, Plant and Machinery (a)	Engines and Electric Motors Used (b)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (c)	Repairs, Con- tainers and Materials Used	Value of Output	Net Production	Wooden Furniture Produced (d)
		£	rated h.p.		£	£	£	£	£	£
1950-51	141	435,491	3,255	1,263	489,751	10,691	883,079	1,685,741	791,971	1,611,073
1951-52	143	531,336	3,369	1,263	603,138	13,587	1,001,479	2,009,875	994,309	1,946,532
1952-53	144	574,069	3,452	1,178	596,906	16,628	1,103,039	1,926,845	969,435	1,820,139
1953-54	153	620,530	3,505	1,179	646,524	18,391	1,163,014	2,189,951	1,068,521	2,099,694
1954-55	151	719,870	3,493	1,170	669,671	18,421	1,157,127	2,284,237	1,102,302	2,169,285
1955-56	152	709,638	3,410	1,102	678,408	17,821	1,103,247	2,259,408	1,084,460	1,948,373
1956-57	151	753,785	3,310	1,025	623,885	18,434	1,103,247	2,131,733	1,010,052	1,977,297
1957-58	150	739,860	3,363	1,009	653,987	17,966	1,209,058	2,296,826	1,069,802	2,305,119
1958-59	150	768,440	3,628	1,010	675,509	18,096	1,238,448	2,386,762	1,080,220	2,313,715
1959-60	153	831,275	3,588	1,069	742,707	19,272	1,550,220	2,829,456	1,259,964	2,682,711

(a) Book values at end of year.

(b) Excludes motors driven by electricity of own generation.

(c) Includes water and lubricants.

(d) Includes quantities produced in factories classified to other industries.

(e) Excludes furniture of wicker, etc., and of metal or partly of metal.

ELECTRICITY AND TOWN GAS UNDERTAKINGS

Electricity Generation and Transmission

Prior to the establishment of the State Electricity Commission in 1946, electricity was generated and distributed by a large number of independent power stations. A government-owned steam power station at East Perth supplied the metropolitan area and small units of the same type, but privately-owned, operated in the major mining centres of Collie and Kalgoorlie. With other minor exceptions the country areas were dependent on internal combustion equipment, owned privately or by local government authorities and supplying either alternating or direct current at various voltages. Since 1946 a number of power stations have been absorbed into the Commission's network and, although there are still about 80 independent operators, the Commission now supplies most of the electricity used in the south-western portion of the State and all electricity sold in the metropolitan area. The Commission functions under the State Electricity Commission Act, 1945-1959 and consists of nine members, including the Chairman, appointed by the Governor. Four of the Commissioners are representatives of consumers, one for the metropolitan area, two for the rest of the State and one representing commercial consumers. Of the remaining five, one is the Under Treasurer of the State or his deputy, one represents employees of the Commission and three are required to be qualified engineers.

In 1937-38 steam power stations accounted for 54 per cent. of installed generator capacity but by 1960-61 this proportion had risen to 82 per cent., operated mainly by the Commission. During the same period the capacity of internal combustion equipment also increased, but to a much lesser extent, and installations were principally in the more isolated mining areas. As coal is almost exclusively the fuel used by steam power stations, it is by far the most important source of energy for electricity generation, but consumption of fuel oils is also significant.

In the metropolitan area the Commission has modernized the 55,000 kilowatt plant at the East Perth power station and, in 1954, completed a new station at South Fremantle, with a capacity of 100,000 kilowatts. These are linked with a new power station at Bunbury, consisting of four units, each of 30,000 kilowatt capacity, the last of which was brought into operation in July, 1961.

One of the responsibilities undertaken by the State Electricity Commission was the administration of the South-West State Power Scheme Act, 1945, designed to develop electrification in the south-western portion of the State. As a first stage in this development, it acquired the Collie power station and increased its capacity from 5,000 to 12,500 kilowatts. In 1958 it installed at Wellington Dam, near Collie, a hydro-turbine which is connected to the Collie power station and operated from it by remote control. Completion of the raising of the wall of the Dam in 1960 has made it possible to operate the unit at the head of water for which it was designed. Work has commenced on the construction of a major power station at Muja, on the Collie coalfields, and contracts have been let for the installation of two 60,000 kilowatt capacity turbo-alternators.

At Albany, in the extreme south of the State, the Commission operates a diesel station of 5,300 kilowatt capacity, which serves the towns of Albany, Mount Barker and Denmark and limited surrounding areas. A transmission line from Collie to Albany is now being erected, and when this is completed the Albany diesel plant will cease to operate and Albany will be supplied from the Commission's main system.

The generating stations situated at East Perth, South Fremantle, Bunbury and Collie are interconnected. The main links are two 132,000 volt transmission lines from Cannington switchyard in the metropolitan area to the Bunbury power station switchyard and 66,000 volt transmission lines from Bunbury and Cannington complete the interconnexion.

From Cannington a 66,000 volt transmission line extends 161 miles eastwards almost to Merredin and from Bunbury 66,000 volt lines extend to Capel, Collie, Bridgetown, Wagin, Narrogin and Katanning. Further extensions, of 22,000 volts, supply Margaret River, Pemberton and Boyup Brook.

Minor systems which are privately-owned or controlled by local government authorities are being absorbed as the grid system's transmission lines extend into the country areas and when this work is completed all except the more sparsely-populated areas of the State will be provided with electric power of standard frequency and voltage.

Town Gas Production

Town gas production in Western Australia is now limited to three establishments. Two works, situated at Perth and Albany, are operated by the State Electricity Commission and the third, at Fremantle, is operated privately.

ELECTRICITY GENERATING (a)

Year	Gener-ating Sta-tions	Land, Buildings, Plant and Ma-chinery (b)	Engines Used to Drive Gen-erators	Persons Em-ployed	Salaries and Wages	Power, Fuel, and Light Used (c)	Repairs and Materials Used	Value of Output	Net Pro-duction	Fuels Used			Electricity (d)	
										Coal	Fuel Oil	Gener-ated	Distributed	
		£	rated h.p.		£	£	£	£	£	tons	gal.	£	'000 kwh.	£
1950-51	113	4,272,997	203,002	1,023	617,881	1,722,616	246,000	2,827,501	858,985	339,184	803,243	6,643,003	586,360	8,431,092
1951-52	100	3,213,102	205,055	1,008	836,272	2,353,374	288,619	2,774,441	1,139,448	335,907	1,221,663	7,924,178	714,830	4,674,778
1952-53	95	10,194,394	238,189	1,008	916,588	2,650,593	259,119	5,109,589	2,199,875	314,435	1,461,106	8,086,481	810,162	5,994,265
1953-54	93	11,641,753	278,117	961	848,712	3,079,371	275,339	5,663,331	2,308,921	411,111	1,464,214	8,927,644	830,657	6,781,024
1954-55	94	12,699,433	323,119	945	923,294	3,352,550	306,437	6,262,257	2,602,970	431,251	2,275,402	11,672,741	932,033	7,523,244
1955-56	90	12,307,345	359,751	949	1,000,000	3,302,395	368,085	6,334,893	2,663,933	470,060	2,308,900	9,688,107	852,188	8,071,083
1956-57	87	17,384,715	408,432	971	1,052,490	3,438,092	391,544	6,645,692	2,915,546	464,243	2,258,452	11,044,893	1,004,168	8,545,583
1957-58	87	16,459,089	410,306	1,071	1,120,361	3,433,203	387,315	7,087,686	3,015,169	501,171	2,217,511	10,413,223	1,036,319	8,925,765
1958-59	88	20,236,373	452,673	1,108	1,181,713	3,529,516	333,730	7,856,461	3,493,915	526,575	2,255,492	11,399,167	1,102,079	9,629,380
1959-60	91	20,730,473	506,680	1,080	1,228,773	3,610,478	327,606	7,834,357	3,516,273	551,368	2,304,926	12,118,145	1,114,737	785,147
														10,323,982

(a) Excluding particulars of transmission and distribution. See also *Explanatory Notes and Definitions* on page 277. (b) Book values at end of year. (c) Includes water and lubricants. (d) Includes quantities produced in factories classified to other industries.

GAS WORKS (a)

Year	Gas Works	Land, Buildings, and Plant and Machinery (b)	Engines and Electric Motors Used (c)	Persons Employed	Salaries and Wages	Power, Fuel and Light Used (d)	Repairs, Containers and Materials Used	Value of Output		Net Production	Materials Used				Gas Distributed	Coke (including Coke Breeze) Produced (e)
								£	tons		Coal (Carbonized)		Oil			
											£	gal.		£		
1950-51	4	874,886	1,262	183	104,158	45,191	437,969	589,010	105,850	59,494	305,184	1,359,476	91,131	28,217	66,970	
1951-52	4	1,092,922	1,245	201	153,207	78,045	612,728	871,734	180,961	64,621	406,768	1,825,004	158,900	30,689	112,530	
1952-53	4	1,356,615	1,237	212	156,597	80,860	712,052	960,940	188,058	63,750	482,898	2,036,482	186,892	23,930	110,499	
1953-54	4	1,607,377	1,202	201	180,647	98,986	678,560	1,008,168	225,622	56,240	454,242	2,114,791	173,144	21,111	129,528	
1954-55	4	1,662,989	1,245	200	187,667	104,906	633,383	996,751	258,462	55,167	442,972	1,925,045	149,068	22,068	131,185	
1955-56	4	1,723,770	1,212	191	172,652	104,780	639,993	1,024,716	279,943	55,956	465,482	1,701,088	135,838	25,778	149,854	
1956-57	4	1,784,827	1,185	175	158,379	174,929	566,389	1,015,099	273,781	41,789	410,592	1,469,998	120,949	26,769	163,353	
1957-58	3	1,762,806	1,204	184	167,471	103,721	617,847	1,062,076	340,508	54,388	456,090	1,532,775	132,142	19,987	168,558	
1958-59	3	1,825,792	1,204	182	179,635	138,022	602,438	1,074,966	336,461	52,206	426,439	1,618,740	137,826	19,681	183,470	
1959-60	3	1,786,334	1,356	176	190,372	133,422	580,675	1,073,543	359,446	52,436	396,674	1,697,103	143,849	19,603	187,223	

(a) Excluding particulars of distribution. See also *Explanatory Notes and Definitions* on page 277. (b) Book values at end of year. (c) Excludes motors driven by electricity of own generation. (d) Includes water and lubricants. (e) Includes quantities used in own works.

DEPARTMENT OF INDUSTRIAL DEVELOPMENT

At the end of the first World War the State Government, with the object of fostering secondary industry, established a Council of Industrial Development which has since been succeeded by the Department of Industrial Development.

The functions of this Department are to assist the expansion of existing industry, foster the establishment of new industries, encourage exports, organize exhibitions and publicize Western Australian trade and industry. It also conducts investigations and research into the commercial possibilities of using indigenous raw materials for industrial purposes. In carrying out these functions the Department establishes and maintains liaison with industry and with Government Departments responsible for the provision of necessary services, information and finance.

CHAPTER IX—TRADE, TRANSPORT AND COMMUNICATION

PART 1—TRADE

TRADE FROM 1829 TO FEDERATION IN 1901

Statistics concerning the external trade of the Colony of Western Australia during the early years of settlement were obtained from the reports of Harbour Masters and are recorded in the colonial Blue Books. Records of trade activity in the early period are not detailed and although they show that in 1829, the year of establishment of the Colony, the total value of imports was about £50,000, they give no particulars of the type of goods nor of their precise origin. From 1846 more comprehensive details are available and in that year imports consisting principally of apparel and haberdashery, flour, biscuits, grain, tea, coffee and sugar amounted in value to £25,959.

Western Australia depended at first upon the United Kingdom for most of its imports. The first specific record of trade with the other Australian Colonies relates to the year 1857 when the value of goods received from South Australia, New South Wales and Victoria was £9,473, compared with £67,135 from the United Kingdom and a total of £94,532 from all sources. Purchases from the other Australian Colonies gradually increased in importance and in 1877 exceeded in value those from Britain and comprised nearly half the total.

In the decade before Federation, the other Australian Colonies provided 54 per cent. of Western Australia's purchases and the United Kingdom 36 per cent. The total value of imports was still well below £1 million in 1890 but in the next ten years, principally as a result of the population increase and the expansion of public works following the rich gold discoveries of 1892 and later, imports increased greatly both in range and in quantity. The importation of mining machinery, railway stores and rolling stock, iron and steel products, added to a larger volume of commodities necessary to meet growing consumer requirements, caused a rise in the value of imports to £5·96 million in 1900. Of this amount £2·68 million was spent on goods from the other Australian Colonies and £2·23 million on imports from the United Kingdom.

Almost from the inception of the Colony until the gold finds of the 1890's wool was Western Australia's most valuable export, although the Blue Books show that in some of the early years whale oil and whale bone were more important. The first known record of consignment of any commodity is for the year 1834, when 7,585 lb. of wool valued at £758 was sent to England. In 1892 almost 9 million lb. worth £326,703 was shipped from the Colony, representing nearly two-fifths of a total value of exports of £882,148. Other items, in order of importance, were gold, £226,282; pearl-shell and pearls, £119,259; timber, £78,419; sandalwood, £42,870; and hides and skins, £36,897. In the following year, the value of gold exported almost doubled and was nearly twice as great as the return from wool. Shipments of gold continued to increase and in 1900 exports of coin and bullion worth £5·55 million accounted for more than four-fifths of a total export income of £6·85 million, while timber with an export value of £0·46 million had displaced wool as the commodity second in importance to gold.

In all but a few of the seventy years before Federation, Western Australia's principal market was the United Kingdom which in the ten years from 1891 to 1900 took 49 per cent. of all exports, compared with 41 per cent. consigned to the other Australian Colonies and 10 per cent. to all other destinations.

TRADE FROM 1901 TO 1949-50

After Federation, external trade continued to develop steadily with some contraction during the first World War, the economic depression of the 1930's and again during the second World War.

Between the beginning of the century and 1949-50, the value of imports increased, with some fluctuation, from less than £6·5 million to nearly £70 million. Detailed statistics of imports in this half-century are indicative of the growth of the State and the changing direction of its development. In the early part of the period, notable imports were materials for ore treatment and gold extraction, mining machinery and railway stores but in the 1920's such items as agricultural implements and machinery, tractors and processing plant became more significant. In the years immediately following the second World War, another change in the pattern of import trade had become apparent, with metals and metal manufactures (including motor vehicles and parts), petroleum products, electrical appliances and equipment accounting for almost one-half of the value of all imports in 1949-50.

During the period from 1901 to 1947-48 the value of exports rose from £8.5 million to £61.9 million, staple commodities being gold, wheat and flour, wool and timber. Export income from gold fluctuated widely. In the ten years before Federation it had been by far the most valuable item of export. In 1903, the peak year of production, gold shipments earned £8.62 million compared with £0.64 million from timber and £0.44 million from wool. Despite a consistent decline in output since that year and the development of wheat growing as a major industry, gold continued to be the principal item until 1919-20, when revenue from its export, £3.40 million, was exceeded for the first time by that from wheat and flour, £5.07 million, wool being next in order with export earnings of £3.94 million.

Between 1921 and 1930 the area sown to wheat trebled and wheat and flour comprised the principal source of export income throughout this decade except for two years, 1922-23 and 1923-24, when wool exports were more important. In 1927-28 the value of gold shipped, £0.66 million, was the lowest recorded for 35 years. In the same year wheat and flour earned £8.00 million and wool £4.96 million of a total export income of £18.2 million.

Prices of wheat and wool fell sharply at the beginning of the next decade, reaching their lowest level in 1930-31 with an average f.o.b. value for wheat of 2s. 3½d. per bushel and for wool of 8.94 pence per lb. Despite an increase in shipments, earnings from the export of these commodities declined. The depreciation of Australian currency in terms of sterling during 1930 and 1931 led to increased activity in the gold-mining industry. With greater production and enhanced prices gold again became a major source of income and for ten years from 1933-34 was once more the principal item of export.

In the years immediately following the war, export income from wool and from wheat and flour showed substantial increases. In 1949-50 export earnings from wool, greasy and scoured, were £25.5 million, and from wheat and flour £20.9 million, these items together accounting for three-quarters of the total export revenue.

CLASSIFICATION AND VALUATION OF IMPORTS AND EXPORTS

Particulars of Western Australian trade are classified in accordance with a Statistical Classification of Imports and Exports based on the tariff schedule used for Customs purposes. The classification comprises some 3,000 items of imports and about 1,200 items of exports, the items being grouped into a number of classes and sub-classes, which are shown in the table on page 309. The detailed classification and an accompanying index appear in Part IV of the *Statistical Register of Western Australia*.

Prior to an amendment to the Customs Act 1901-1936, effective from the 15th November, 1947, imports direct from overseas were recorded in "British currency values." These British currency values were the values used for Customs duty purposes, namely the f.o.b. value in sterling at the port of shipment plus an addition of 10 per cent. The 1947 amendment, in prescribing a new procedure for valuation, provided that the basis should be Australian currency f.o.b. at the port of shipment without the 10 per cent addition. Statistics of the value of overseas imports have been recorded on this basis since its introduction and those for earlier years were revised accordingly back to 1938-39.

Statistics of imports from other Australian States are recorded in terms of landed cost.

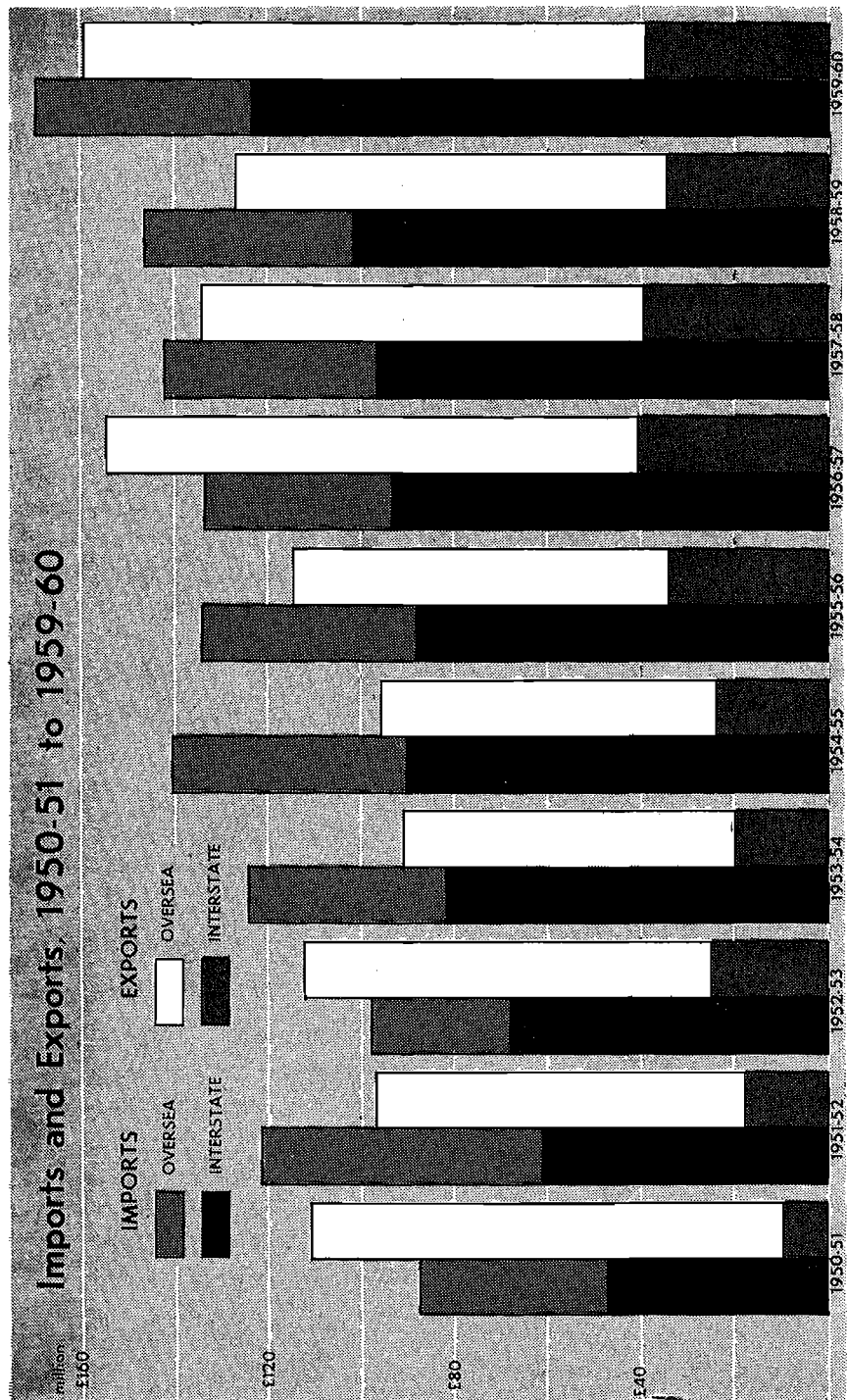
The value of goods exported, both overseas and interstate, is recorded in Australian currency. The basis of valuation is f.o.b., or its equivalent, at the port of shipment or other point of consignment.

GENERAL SUMMARY OF TRADE, 1950-51 TO 1959-60

Statistics during the ten-year period ended 30th June, 1960 reveal an irregular pattern of fluctuating trading balances, as shown in the next table. In each of the years under review overseas trade resulted in a favourable balance while interstate trade showed a deficit.

In 1950-51, although the value of imports was £18.7 million greater than in the previous year, exceptionally high prices brought the value of wool exported to £56.3 million, more than double the amount of £25.5 million recorded in 1949-50, and total external trade for the year showed a surplus of £23.7 million. The position deteriorated in 1951-52 when the value of imports increased by £34.2 million to an unprecedentedly high level of £122.3 million. Purchases from overseas, at £60.2 million, were almost equal to the value of imports from other Australian States. At the same time there was a sharp decline in export revenue due to a fall in wool prices to little more than half the record average of 143.43 pence per lb. f.o.b. in the previous year, and an unfavourable balance of £24.6 million resulted.

Following the extension and intensification of import restrictions by the Commonwealth Government in March, 1952, the value of overseas imports fell by more than half, from £60.2 million in 1951-52 to £29.9 million in 1952-53. Although interstate imports rose in value from £62.1 million to £68.6 million there was an increase in the value of all exports to £113.1 million and total trade for the year



showed a surplus of £14.7 million. There were some relaxations of import restrictions in 1953 and the first half of 1954 and overseas imports rose from £29.9 million in 1952-53 to £42.5 million in 1953-54, while imports from other Australian States also increased, from £68.6 million to £82.7 million, giving a total increase of £26.7 million in the value of imports. Export revenue declined by £21.5 million and the total trade deficit was £33.6 million.

The rising import trend continued into 1954-55 and, while revenue from exports had begun to increase, total trade for the year showed an adverse balance of £45.6 million, some £12 million greater than that of the previous year. Although a deficit was recorded again in 1955-56, there was a considerable improvement. Expenditure on imports was £6.24 million lower than in 1954-55 and export income increased by £19.6 million, mainly as a result of larger shipments of refined petroleum to the other Australian States (see letterpress *Petroleum Products* on page 318). The value of imports showed little change in 1956-57, but export income rose by more than £40 million, resulting in a surplus of £21.5 million, the first since 1952-53. In 1957-58 imports increased by nearly £9 million to £143.4 million. Earnings from exports of wheat, gold and wool showed substantial decreases and the total decline in export income amounted to more than £21 million. The excess of imports over exports for the year was £8.47 million. In 1958-59 imports from overseas declined by almost £1 million but interstate imports continued to increase, rising by £3.66 million to £101.2 million. The value of imports from all sources was £146.2 million. Export income fell by £8.48 million due largely to smaller returns from wool, wheat, petroleum products and oats. The year's trading showed an unfavourable balance of £19.7 million, a deficiency greater by £11.2 million than that for the previous year.

During 1959 the Commonwealth Government effected a progressive relaxation of import restrictions, and large-scale licensing changes involving an almost complete abolition of controls were made as from the 23rd February, 1960. Although imports in 1959-60 rose by £23.3 million to £169.5 million, exports increased by £32.5 million to £159.0 million giving a net trade deficit of £10.5 million. The rise in the value of imports was accounted for mainly by larger purchases of machines and machinery, motor vehicles and components, television sets and apparel, while the improvement in exports was attributable principally to increases in earnings from wool of £9.71 million, from wheat of £8.16 million and from gold of £7.31 million.

SUMMARY OF IMPORTS AND EXPORTS (£'000)

Item	Year ended 30th June—									
	1951	1952	1953	1954	1955	1956	1957 (a)	1958 (a)	1959	1960
OVERSEA										
Imports	40,258	60,237	29,875	42,525	50,647	46,482	40,211	45,888	44,986	46,181
Exports	102,196	79,551	87,852	71,649	72,039	81,036	114,832	94,689	91,801	120,068
Excess of :—										
Imports over Exports	....	....	....	....	....	....	....	....	....	....
Exports over Imports	61,938	19,314	57,977	29,124	21,392	34,554	74,621	48,801	46,815	73,887
INTERSTATE										
Imports	47,914	62,104	68,606	82,687	91,055	88,976	94,340	97,551	101,215	123,348
Exports	9,661	18,141	25,281	20,004	24,055	34,636	41,195	40,283	34,692	38,930
Excess of :—										
Imports over Exports	38,253	43,963	43,325	62,683	67,000	54,340	53,145	57,268	66,523	84,418
Exports over Imports	....	....	....	....	....	....	....	....	....	....
TOTAL										
Imports	88,172	122,341	98,481	125,212	141,702	135,458	134,551	143,439	146,201	169,529
Exports	111,857	97,692	113,133	91,653	96,094	115,672	156,027	134,972	126,493	158,998
Excess of :—										
Imports over Exports	....	24,649	....	33,559	45,608	19,786	....	8,467	19,708	10,531
Exports over Imports	23,685	....	14,652	....	....	....	21,476	....	....	....

(a) Figures for 1956-57 incorporate an adjustment to include, and those for 1957-58 to exclude, an amount of £504,450, representing the value of a consignment of goods exported overseas in 1956-57 but not recorded until 1957-58.

IMPORTS

In each year of the period from 1950-51 to 1959-60, more than one-half of Western Australia's expenditure on imports was on goods purchased in the other Australian States. In 1959-60 the proportion rose to 72.8 per cent. and the average for the period was 65.7 per cent. The following table, which relates to the years 1958-59 and 1959-60, provides a summary of the principal items imported from this source, and also gives a dissection of imports according to main supplying States in 1959-60.

VALUE OF PRINCIPAL IMPORTS FROM AUSTRALIAN STATES (a)

Commodity	Year ended 30th June, 1959	Year ended 30th June, 1960				
	All States	New South Wales	Victoria	South Australia	Queensland, Tasmania, Northern Territory	All States
	£	£	£	£	£	£
Apparel (other than headwear and footwear)	8,586,666	3,395,317	7,242,442	162,869	130,855	10,931,483
Bananas	327,698	288,901	2,410	21,804	260	313,375
Batteries	662,902	594,092	152,944	1,565	33	748,634
Blankets and Rugs	165,341	18,907	144,909	51,365	22,264	237,445
Breakfast Foods	247,115	215,026	54,797	2,637	275	272,735
Brushware	234,588	60,275	62,237	106,087	9	228,608
Builders' Hardware	542,050	268,210	327,573	47,123	34,650	677,556
Butter	809,489	9	334,170	....	....	334,179
Cable, Electrical (Covered)	771,972	510,590	444,058	9,699	647	964,994
Carpets and Carpeting	452,189	103,849	517,104	7,701	977	629,631
Cheese	519,011	4,424	494,697	24,867	22,408	546,396
Cigarettes	2,307,088	847,891	1,900,958	14,260	1,069	2,764,168
Coal	391,409	432,840	....	....	....	432,840
Confectionery	1,439,903	605,889	639,937	59,376	271,270	1,576,472
Explosives	1,043,500	13,774	986,056	....	....	979,830
Footwear	2,448,366	590,883	2,001,353	101,733	2,661	2,696,630
Fruits preserved in liquid	625,852	15,062	231,610	167,627	304,332	718,631
Hand Tools (Non-powered)	460,287	168,609	327,261	20,367	10,253	526,490
Headwear	275,408	151,962	120,628	5,529	861	278,980
Iron and Steel	7,790,430	10,785,940	125,483	265,002	11,796	11,188,221
Jam	377,597	29,144	245,348	34,834	60,238	369,564
Machines and Machinery—						
Agricultural	2,474,984	224,323	2,564,217	869,482	52,634	3,710,656
Refrigerators (Household)	1,339,213	439,679	178,807	484,780	....	1,103,166
Tractors and Parts	1,199,905	204,906	1,216,956	85,538	6,760	1,514,160
Washing Machines	783,896	275,236	24,952	680,490	109	980,787
Other	6,083,258	3,332,399	2,465,954	1,247,706	216,873	7,262,932
Magazines, Periodicals and Books	662,018	494,228	202,490	41,902	5,325	743,945
Margarine	554,449	602,312	25,091	7,546	64,177	599,126
Medicinal Preparations	2,036,785	1,514,845	647,836	226,827	10,693	2,400,201
Metals, Non-ferrous	1,094,773	891,907	441,562	42,725	66,247	1,442,441
Milk and Cream, Preserved	801,478	65,215	1,000,634	6	....	1,065,855
Motor Vehicles and Components (excluding Motor Cycles)	11,329,334	2,407,272	7,996,984	3,687,833	65,771	14,157,860
Paints, Varnishes and Lacquers	802,947	343,923	127,371	275,632	1,804	748,730
Paper and Paper Boards	1,574,935	298,254	871,246	35,764	713,893	1,919,157
Petroleum Oils and Spirits	932,414	213,999	1,069,415	7,388	....	1,290,802
Pickles, Chutneys and Sauces	301,219	75,431	176,013	37,898	2,125	291,467
Piece-goods (apparel and furnishing fabrics)	1,496,272	762,391	1,318,587	137,983	55,626	2,274,587
Soap and Soap Substitutes	1,283,093	437,522	890,578	29,010	....	1,357,110
Tobacco, Manufactured	1,161,334	622,629	334,668	1,163	946	959,406
Toilet Preparations	1,086,554	755,273	369,507	21,916	432	1,147,128
Towels and Towelling	252,408	121,230	101,659	42,830	165	265,884
Toys	345,642	166,690	167,993	17,641	3,443	355,767
Tyres and Tubes, Rubber	2,866,059	1,056,876	1,931,134	8,421	4,181	3,000,612
Vegetables preserved in liquid	427,589	124,928	280,818	9,442	19,170	434,358
Wines	535,423	39,971	40,648	596,976	191	677,786
Wire and Wire Manufactures	727,644	598,822	295,297	63,839	5,881	963,839
Wireless (Radio and Television) Equipment	912,517	3,266,386	1,171,772	691,586	1,281	5,131,025
Wool—						
Greasy and Scoured	336,109	1,750	260,064	344,997	2,870	609,681
Tops	150,529	1,320	37,921	141,790	....	181,031
Wool Yarn (Knitting Wool)	294,379	52,539	210,477	6,990	1,798	271,804
All Other Commodities	26,888,463	11,543,964	11,310,376	2,727,393	3,487,859	29,069,592
TOTAL INTERSTATE IMPORTS	101,214,984	49,937,714	54,067,002	13,677,939	(b) 5,665,102	123,347,757

(a) Figures relate to the State from which the commodity was imported, which is not in all cases the State in which it was produced. (b) Comprises Queensland, £3,518,674; Tasmania, £1,748,673; Northern Territory, £397,755.

Western Australia's imports consist predominantly of manufactured goods and equipment. During the ten years ended 30th June, 1960 more than three-quarters (76·7 per cent.) of the total of £1,305 million spent on imports from all sources represented commodities in five of the statistical classes shown in the following table. Class XII—Metals, Metal Manufactures and Machinery, accounted for 39·0 per cent.; Class VIII—Yarns and Manufactured Fibres, Textiles and Apparel, for 14·4 per cent.; Class IX—Oils, Fats and Waxes, for 11·6 per cent.; Class II—Foodstuffs of Vegetable Origin, for 6·4 per cent.; and Class XIX—Drugs, Fertilizers and Chemicals, for 5·3 per cent.

VALUE OF IMPORTS ACCORDING TO STATISTICAL CLASS
(£'000)

Class No.	Name of Class	Year ended 30th June :—				
		1951	1952	1953	1954	1955
I	Foodstuffs of Animal Origin	2,037	2,376	2,755	3,149	3,261
II	Foodstuffs of Vegetable Origin	5,549	6,129	7,041	8,104	9,008
III	Spirituos and Alcoholic Liquors	456	557	526	767	858
IV	Tobacco, Cigarettes, Cigars and Snuff	1,979	2,327	2,343	2,864	3,026
V	Live Animals	508	599	512	726	610
VI	Animal Substances other than Foodstuffs	1,363	881	660	633	538
VII	Vegetable Substances and Fibres	643	773	638	734	711
VIII (A)	Yarns and Manufactured Fibres	1,829	3,788	1,472	1,512	2,024
VIII (B)	Textiles	6,396	8,468	3,932	6,982	6,983
VIII (C)	Apparel	6,697	8,866	7,890	10,382	10,741
IX	Oils, Fats and Waxes	8,192	9,287	8,412	8,858	15,976
X	Pigments, Paints and Varnishes	767	927	874	1,262	1,397
XI	Rocks and Minerals (including Ores and Concentrates)	1,373	1,133	1,223	1,582	1,662
XII (A)	Metals and Metal Manufactures	18,476	26,833	22,013	29,694	32,230
XII (B)	Dynamo Electrical Machinery and Appliances	3,356	4,224	3,986	5,145	5,479
XII (C)	Machines and Machinery (except Dynamo Electrical)	11,976	18,536	14,862	20,155	21,126
XIII (A)	Rubber and Rubber Manufactures	2,776	4,426	3,442	3,639	3,758
XIII (B)	Leather and Leather Manufactures	326	488	455	434	408
XIV	Wood and Wicker, Raw and Manufactured	640	1,037	510	924	816
XV	Earthenware, Cement, China, Glass, etc.	1,080	1,705	1,071	1,623	1,704
XVI (A)	Pulp, Paper and Board	1,230	2,574	1,373	1,659	2,588
XVI (B)	Paper Manufactures and Stationery	1,343	1,976	1,948	2,266	2,627
XVII	Sporting Materials, Toys, Fancy Goods, etc.	906	1,108	751	1,336	1,406
XVIII	Optical, Surgical and Scientific Instruments and Apparatus	647	872	529	844	916
XIX	Drugs, Fertilizers and Chemicals	4,224	5,209	4,978	5,910	6,733
XX	Miscellaneous	3,392	7,241	4,289	4,023	5,117
XXI	Gold and Silver ; Bronze Specie	11	1	6	5	(a)
	TOTAL IMPORTS	88,172	122,341	98,481	125,212	141,703

Class No.	Name of Class	Year ended 30th June :—				
		1956	1957	1958	1959	1960
I	Foodstuffs of Animal Origin	3,093	3,145	3,829	3,990	4,125
II	Foodstuffs of Vegetable Origin	8,722	9,695	9,050	9,977	10,507
III	Spirituos and Alcoholic Liquors	947	914	831	912	1,185
IV	Tobacco, Cigarettes, Cigars and Snuff	2,677	3,139	2,796	3,551	3,797
V	Live Animals	560	586	1,020	775	753
VI	Animal Substances other than Foodstuffs	536	1,341	893	565	870
VII	Vegetable Substances and Fibres	549	722	632	538	659
VIII (A)	Yarns and Manufactured Fibres	1,474	1,984	1,821	1,563	1,614
VIII (B)	Textiles	6,597	6,211	6,462	6,313	7,263
VIII (C)	Apparel	10,235	11,525	11,170	11,505	14,102
IX	Oils, Fats and Waxes	18,305	19,228	21,737	20,485	21,508
X	Pigments, Paints and Varnishes	1,467	1,482	1,488	1,414	1,345
XI	Rocks and Minerals (including Ores and Concentrates)	1,447	1,400	1,453	1,237	1,229
XII (A)	Metals and Metal Manufactures	28,908	26,369	31,615	29,976	37,959
XII (B)	Dynamo Electrical Machinery and Appliances	5,725	5,472	5,215	5,579	10,533
XII (C)	Machines and Machinery (except Dynamo Electrical)	17,299	14,110	15,606	16,402	20,228
XIII (A)	Rubber and Rubber Manufactures	3,955	3,464	3,448	3,756	3,876
XIII (B)	Leather and Leather Manufactures	364	398	385	365	367
XIV	Wood and Wicker, Raw and Manufactured	840	831	874	815	897
XV	Earthenware, Cement, China, Glass, etc.	1,655	1,507	1,584	1,640	1,740
XVI (A)	Pulp, Paper and Board	2,329	2,407	2,546	2,739	3,088
XVI (B)	Paper Manufactures and Stationery	2,687	2,795	2,833	2,973	3,245
XVII	Sporting Materials, Toys, Fancy Goods, etc.	1,513	1,463	1,488	1,351	1,718
XVIII	Optical, Surgical and Scientific Instruments and Apparatus	973	974	1,063	1,244	1,379
XIX	Drugs, Fertilizers and Chemicals	6,760	7,412	8,333	9,499	9,607
XX	Miscellaneous	5,841	5,977	5,267	7,037	5,935
XXI	Gold and Silver ; Bronze Specie	(a)	....	....	....	....
	TOTAL IMPORTS	135,458	134,551	143,439	146,201	169,529

(a) Less than £500.

In 1959-60 the value of imports of commodities in the five main classes was £133 million or 78.6 per cent. of all imports aggregating £170 million.

In Class XII, which accounted for £68·7 million, principal items were motor vehicles and components £16·5 million, iron and steel £12·0 million, telephone, telegraph, wireless and television equipment £6·04 million, agricultural machinery £3·97 million, tractors and parts £3·79 million, refrigerating appliances £1·81 million, non-ferrous metals £1·50 million, internal combustion engines £1·31 million, wire and wire manufactures £1·10 million, cooking and heating appliances £1·08 million, earthworking and road-making machinery £1·04 million, covered electrical cable and wire £1·03 million, washing machines £0·98 million, office and accounting machines £0·84 million, and batteries and accumulators £0·76 million.

Class VIII showed total imports of £23·0 million, the main commodities being apparel other than footwear £11·4 million, piece-goods £4·24 million, footwear £2·73 million, bags, sacks and woolpacks £0·96 million, carpets and carpeting £0·92 million, linoleums £0·46 million, towels and towelling £0·33 million, bed linen and bedspreads £0·31 million, knitting wool £0·27 million, blankets and rugs £0·26 million, sewing threads £0·17 million, and cordage, rope and twine £0·13 million.

Class IX recorded a total of £21·5 million, the predominant items being crude petroleum £17·1 million and refined petroleum oils and spirits £3·82 million. (See letterpress *Petroleum Products* on page 318.)

In Class II, imports aggregating £10·5 million were accounted for mainly by confectionery £1·59 million, dried and canned fruits (including juices and syrups) £1·20 million, tea £1·03 million, jam, pickles, chutneys and sauces £0·68 million, canned and frozen vegetables £0·55 million, coffee £0·51 million, prepared soups £0·33 million, bananas £0·31 million, nuts £0·27 million, and breakfast foods £0·27 million.

In Class XIX, with a total of £9·61 million, imports consisted largely of medicinal preparations and drugs £2·48 million, soap and soap substitutes £1·39 million, chemical fertilizers £1·35 million, and toilet preparations £1·15 million.

EXPORTS

It will be apparent from an examination of the table on page 319 that Western Australia continues to be dependent for a very large part of its export income on the products of its primary industries as, for example, wool in the grease, wheat, oats and barley, skins and hides, fresh fruit and vegetables, mineral ores, or commodities derived from them by the first stages of processing such as wool scouring, flour milling, gold refining, sawmilling, meat and fish freezing, whale oil extraction and so on.

During the ten years ended 30th June, 1960 the aggregate value of Western Australia's exports (including the value of ships' stores) was £1,203 million. Of this total almost three-quarters (72·8 per cent.) was accounted for by fourteen commodities or groups of commodities, namely wool, greasy and scoured (£390 million or 32·4 per cent.), wheat and wheaten flour (£242 million, 20·1 per cent.), gold bullion (£68·4 million, 5·69 per cent.), frozen and chilled meats, including offals, poultry and rabbits (£27·8 million, 2·31 per cent.), timber (£25·9 million, 2·15 per cent.), skins and hides (£19·4 million, 1·61 per cent.), fresh fruit (£17·3 million, 1·44 per cent.), crayfish tails (£16·3 million, 1·35 per cent.), oats (£15·7 million, 1·30 per cent.), whale oil (£8·95 million, 0·74 per cent.), barley (£8·43 million, 0·70 per cent.), fresh vegetables (£7·40 million, 0·62 per cent.), eggs (£6·71 million, 0·56 per cent.) and the principal minerals other than gold (£22·4 million, 1·86 per cent.).

A large oil refinery began production early in 1955 and, during the first five full years of operation, refined liquid petroleum products valued at more than £127 million were exported as commercial cargo or in the form of supplies to ships and aircraft (see letterpress *Petroleum Products* on page 318). The addition of earnings from these items to the income from those already enumerated meant that in the five years ended 30th June, 1960 the total value of exports of fifteen commodities or groups of commodities was £578 million or 83·5 per cent. of that of all exports.

In the following tables and accompanying letterpress these commodities are dealt with separately for each year of the period from 1950-51 to 1959-60. The figures shown in the tables exclude details of exports in the form of ships' stores, to which some reference is made on page 320.

Wool

Wool is exported predominantly in greasy form but scoured wool is nevertheless an important item of external trade, its total export value during the ten-year period under review being more than one-fifth of that of wool in the grease.

It will be seen from the following table that export income from greasy wool fluctuated widely during the period because of large variations both in the quantity shipped and in price. The smallest export was that of the year 1950-51 which, however, showed the greatest return, due to an exceptionally high

average value of 143·43 pence per lb. f.o.b. In 1958-59, when 111 million lb. were exported, the price had fallen to 50·01 pence per lb. and earnings at £23·2 million were less than half the amount of £48·2 million realized in 1950-51.

EXPORTS OF GREASY WOOL

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity '000 lb.	80,732	91,455	100,909	100,701	96,554	113,289	108,582	96,453	111,131	111,104
Value £'000	48,247	28,645	33,879	35,673	29,648	28,947	35,626	28,612	23,156	29,008
Average value (a) pence	143·43	75·17	80·58	85·02	73·70	61·32	78·74	71·20	50·01	62·79

(a) F.o.b. value per lb.

The principal market for greasy wool in each of the ten years was the United Kingdom which received shipments aggregating 432 million lb. worth £138 million, equivalent to 42·8 per cent. of the total exports during the period. The purchasing country next in importance was France which bought 135 million lb. worth £40·2 million. Although the United States of America was a valuable customer until 1954-55, later consignments showed a consistent decline and were worth only £0·47 million in 1958-59, but made some recovery in 1959-60. Other valuable markets were Japan, Italy, Belgium-Luxembourg, the Federal Republic of Germany, and Poland.

EXPORTS OF SCOURED WOOL

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity '000 lb.	11,055	11,353	12,604	11,918	13,261	16,745	18,746	18,557	21,763	27,430
Value £'000	8,033	5,194	5,682	5,457	5,633	6,210	8,129	7,731	6,112	9,910

The United Kingdom provided the most important market for scoured wool in each year until 1957-58 when the Republic of China (Mainland) took 3·02 million lb. worth £1·55 million. In 1959-60 China's purchases amounted to £3·45 million, more than one-third of the total value of exports. The largest buyer throughout the period, after the United Kingdom, was the United States of America, followed by the Republic of China (Mainland) and the Federal Republic of Germany.

Wheat and Wheat Flour

The annual export income from wheat varied considerably during the ten years under review, from £5·64 million in 1953-54, when only 6·80 million bushels were shipped compared with an annual average for the period of 26·3 million bushels, to £30·6 million in 1956-57, a value far greater than any ever previously recorded and representing about one-fifth of the total export income for that year.

In 1950-51 the f.o.b. value of wheat rose again after a recession in 1948-49 and 1949-50, and continued to improve in the next two years after which there was a decline to 12s. 4d. per bushel in 1955-56, the lowest level during the ten-year period. Prices showed some recovery in 1956-57 and a substantial increase in 1957-58 followed by a decline to 13s. 5½d. in 1959-60.

EXPORTS OF WHEAT

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity '000 bush.	30,510	26,823	23,319	6,800	19,335	22,773	46,796	26,644	23,503	36,713
Value £'000	25,844	22,864	20,173	5,636	13,739	14,430	30,646	20,431	16,556	24,721
Average value (a) s. d.	16 11½	17 0½	17 3½	16 7	14 2½	12 4	13 1½	15 4	14 1	13 5½

(a) F.o.b. value per bushel.

The United Kingdom was the principal market for wheat in all years other than 1954-55, when purchases by India were greater, and 1957-58 when 7·72 million bushels valued at £6·77 million were sent to New South Wales following a period of drought in eastern Australia. India took large consign-

ments in all years except 1957-58 and 1958-59 when no wheat was sent there. Japan, Pakistan and, to a lesser extent, Hong Kong were important customers in the later years of the period, and Italy and Egypt in the early years. The Federal Republic of Germany and the Republic of Ireland were fairly consistent buyers. Iraq took 3.22 million bushels worth £2.28 million in 1959-60.

EXPORTS OF WHEATEN FLOUR

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity short tons (a)	159,740	161,581	176,241	147,849	120,343	129,421	127,491	111,827	104,559	87,789
Value £'000	5,887	6,834	7,545	5,852	3,610	3,883	3,737	3,454	3,169	2,548

(a) Short ton = 2,000 lb.

Western Australia's exports of wheaten flour during the ten years were mainly to Asian countries, particularly Singapore, Indonesia, Malaya and Ceylon.

Gold

Although the production of gold was well sustained during the ten years from 1950-51 to 1959-60, exports were extremely variable. In 1950-51 none was shipped, but in 1952-53 and again in 1956-57 gold bullion exports exceeded £12 million. In all, 4.31 million fine ounces were exported during the period, for an aggregate value of £68.4 million.

EXPORTS OF GOLD BULLION

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity fine oz.	394,984	759,291	418,069	618,495	410,278	770,061	207,665	131,634	599,571
Value £'000	6,571	12,399	6,615	9,669	6,421	12,060	3,256	2,059	9,369

Except for insignificant quantities sent in some years to the United Kingdom, all gold exported from Western Australia during the years 1951-52 to 1958-59 went to New South Wales for shipment overseas. All the gold consigned in 1959-60 was sent to the United Kingdom.

Meats

The items of export of frozen and chilled meats in order of importance during the ten years to 1959-60 were beef and veal, lamb and mutton, and pork. Almost the whole of Western Australia's trade in these commodities was with overseas countries, although purchases by the other Australian States were significant in some years.

EXPORTS OF FROZEN AND CHILLED MEATS

Item	Year ended 30th June :—									
	(a)1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
QUANTITY ('000 lb.)										
Beef and Veal	(b)16,973	(b)13,290	11,058	13,555	14,939	16,757	(c)15,876	(c)17,528	23,226	29,977
Lamb	2,071	2,301	6,150	4,078	4,567	7,487	7,174	7,943	9,623	6,565
Mutton	616	934	8,378	3,217	2,542	7,069	5,587	3,262	12,300	12,694
Pork	(e)	(e)	1,020	474	2,313	1,637	1,615	5,124	4,872	2,618
Other (d)	(e)	(e)	(e)	(e)	(e)	3,215	(c)2,895	(e)	4,084	6,156
VALUE (£'000)										
Beef and Veal	(b)611	(b)568	718	874	1,019	1,172	(c)1,057	(c)1,205	2,171	3,371
Lamb	109	150	441	322	548	788	623	802	832	445
Mutton	56	116	291	115	116	290	248	148	707	744
Pork	364	452	152	76	266	241	294	731	589	476
Other (d)	864	452	470	473	323	393	(c)339	(c)306	498	639
Total	(b)1,140	(b)1,286	2,072	1,860	2,272	2,884	(c)2,561	(c)3,192	4,847	5,675

(a) Excludes a small quantity of fresh meats of unspecified kinds. (b) Excludes interstate exports of veal. (c) Figures for 1956-57 incorporate an adjustment to include, and those for 1957-58 to exclude, 6,776,366 lb. of beef valued at £446,551 and 490,789 lb. of beef offal valued at £36,949 exported overseas in 1956-57 but not recorded until 1957-58. (d) Comprises mainly offals, poultry and rabbits. (e) Not available.

The United Kingdom was by far the most valuable market for beef in each of the ten years. Singapore bought appreciable quantities throughout and the United States of America was an important customer in the last three years of the period.

Lamb and mutton exports were mainly to the United Kingdom, with Singapore and Canada consistent buyers. The United States of America made notable purchases in the last three years of the period.

The other Australian States provided by far the most important market for pork in the last five years of the period, with Singapore and the United Kingdom taking consignments in each of the ten years.

The United Kingdom and Singapore were the principal buyers of offals, poultry and rabbits, although in the last three years of the period interstate exports of poultry greatly exceeded overseas shipments.

Timber

Almost all of the timber exported from Western Australia consists of the hardwoods, jarrah and karri. Much of it is shipped in the form of railway sleepers, the value of which represented more than two-fifths of that of all timber exported during the ten years under review.

In 1950-51, consignments of timber aggregating 28.1 million super. feet were worth only £0.89 million. There was some improvement in 1951-52, a substantial increase to 47.6 million super. feet valued at £2.07 million in 1952-53 and a further rise in value in 1953-54 when shipments were worth £2.24 million. After a decrease in 1954-55, sales improved greatly in the next five years, when the average annual value of exports was £3.55 million.

EXPORTS OF TIMBER (a)

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
QUANTITY ('000 super. feet)										
Railway Sleepers	7,926	7,867	11,318	15,782	15,254	22,570	24,737	35,905	40,557	33,695
Other (a)	20,184	20,792	36,267	30,536	26,494	32,021	31,410	30,967	37,004	39,906
Total (a)	28,110	28,659	47,585	46,318	41,748	54,591	56,147	66,872	77,561	73,601
VALUE (£'000)										
Railway Sleepers	254	259	403	804	696	1,147	1,411	2,026	2,239	1,808
Other (a)	638	779	1,671	1,436	1,228	1,652	1,697	1,722	1,968	2,077
Total (a)	892	1,038	2,074	2,240	1,924	2,799	3,108	3,748	4,207	3,880

(a) Excludes plywood and veneers and small quantities of timber for which super. footage is not recorded.

The other Australian States provided by far the most important market in each year and took quantities worth well over half the value of all timber exported during the ten years. The United Kingdom, South Africa and New Zealand were other consistent buyers, the Netherlands also taking significant quantities in most years of the period. Valuable shipments of railway sleepers were sent to India, Iraq, Pakistan and Ceylon in some years. Of the total exports of 151 million super. feet in 1958-59 and 1959-60, sleepers represented 74.3 million super. feet, of which 60.7 million super. feet were sent to overseas countries, principally India, Pakistan, New Zealand, the United Kingdom, South Africa and Iraq.

Skins and Hides

Skins exported from Western Australia consist largely of sheep and lamb skins, mainly with wool. France was by far the most important customer in each of the years under review, the United Kingdom being the next most valuable market except in 1952-53 when purchases by Belgium-Luxembourg were greater, and 1957-58 when Italy's purchases were slightly in excess of those of the United Kingdom. Italy and Belgium-Luxembourg were consistent buyers throughout. The United States of America took consignments in most years and Yugoslavia in each of the last three years of the period.

Other export items are calf skins and certain furred skins, notably kangaroo and rabbit. The other Australian States provided a regular market for each of these commodities throughout the period and the United States of America took consignments of furred skins in each year.

The overseas export trade in hides, which consist principally of cattle hides, was mainly with the United Kingdom, Turkey, Japan and India, and there was a consistent interstate export during the period.

EXPORTS OF SKINS AND HIDES

Type	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
QUANTITY ('000 lb.)										
Sheep and Lamb	7,001	6,544	10,845	8,293	7,610	9,169	10,863	9,676	12,040	12,795
Cattle and Calf	1,175	1,045	1,202	1,496	2,181	2,850	(a) 3,057	(a) 3,024	4,639	4,457
Other	693	585	386	496	465	388	306	192	142	157
Total	8,869	8,174	12,433	10,285	10,256	12,407	(a) 14,226	(a) 12,892	16,821	17,409
VALUE (£'000)										
Sheep and Lamb	2,375	1,304	1,801	1,465	1,242	1,351	2,038	1,708	1,318	1,847
Cattle and Calf	113	152	124	115	136	183	(a) 230	(a) 210	409	507
Other	159	141	46	67	82	103	68	20	17	29
Total	2,647	1,597	1,971	1,647	1,460	1,637	(a) 2,336	(a) 1,938	1,744	2,383

(a) Figures for 1956-57 incorporate an adjustment to include, and those for 1957-58 to exclude, an amount of £11,006, representing the value of a consignment of 204,367 lb. of cattle hides exported overseas in 1956-57 but not recorded until 1957-58.

Fruit and Vegetables

Apples are the most important of the fresh fruits exported from Western Australia, the total value of shipments during the ten years to 1959-60 representing more than four-fifths of that of all fruits exported. The United Kingdom, Sweden and Singapore were the most valuable markets, with appreciable quantities being consigned to Ceylon and Malaya in each year.

Grapes, most of which were sent to Singapore, Ceylon and Malaya, predominated among the other fresh fruits exported. Singapore was the largest buyer of both citrus fruits and stone fruits, comprising mainly plums, in each of the ten years and was also the principal market for pears in some years, although greater quantities were bought by the United Kingdom in most years of the period.

EXPORTS OF FRESH FRUIT

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
QUANTITY										
Apples '000 bush.	725	655	1,375	846	1,068	907	1,284	871	942	626
Grapes (a) cental	24,078	18,057	23,880	22,433	23,200	21,695	(d) 11	23,606	22,111	19,600
Citrus (b) '000 bush.	23	44	42	29	21	10		12	9	9
VALUE (£'000)										
Apples	865	1,071	1,930	1,809	1,599	1,428	1,955	1,524	1,477	951
Grapes (a)	185	216	221	242	239	215	216	234	192	179
Citrus (b)	35	73	68	43	31	15	18	19	17	15
Other (b) (c)	63	66	64	56	54	38	110	85	118	73
Total	1,148	1,426	2,283	1,650	1,923	1,696	2,299	1,862	1,804	1,218

(a) Oversea exports only; see note (c). (b) Interstate exports of grapefruit for the years 1950-51 and 1951-52, and of mandarins for the years 1950-51 to 1957-58, are included in the item "Other." (c) Includes interstate exports of grapes, which are not recorded separately. (d) Not available.

Potatoes constituted the principal item of exports of fresh vegetables and were sent mainly to other Australian States. Among overseas buyers Singapore was predominant and took consignments in each of the ten years under review.

Tomatoes were next in importance to potatoes and were marketed largely in other Australian States, Singapore being the chief overseas customer.

Almost one-half of the onions exported during the period went to Singapore. Consignments were sent regularly to the other Australian States and in some years these exceeded overseas shipments.

Singapore was by far the most valuable market for other fresh vegetables, accounting for more than three-fifths of export income from these items. A notable development in the later years of the period was the increase in interstate exports of beans, valued at £361,095 in the years 1956-57 to 1959-60.

EXPORTS OF FRESH VEGETABLES

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
QUANTITY (cwt.)										
Potatoes	220,082	266,020	253,147	315,470	177,561	44,773	152,119	275,534	168,848	189,190
Tomatoes	43,064	30,059	42,743	36,155	33,005	51,529	31,965	61,137	45,749	33,004
Onions	32,319	38,645	61,869	43,633	37,143	20,677	44,231	40,122	45,885	45,404
VALUE (£'000)										
Potatoes	253	367	375	650	256	86	368	416	184	218
Tomatoes	221	184	173	158	176	287	162	133	154	170
Onions	47	91	97	63	50	44	71	59	54	112
Other	78	128	122	167	158	153	235	208	235	233
Total	599	770	767	1,038	640	570	836	816	627	733

Crayfish

The export of frozen crayfish tails is a post-war development and although some small shipments had been made before 1948-49 it was not until that year that income from this source began to be significant. Complete details are not recorded for years earlier than 1952-53 when total consignments were worth £1.04 million. In each year since then exports increased in quantity and value and 6.60 million lb. worth £3.25 million were sent out of the State in 1959-60.

EXPORTS OF CRAYFISH TAILS

Item	Year ended 30th June :—									
	1951 (a)	1952 (a)	1953	1954	1955	1956	1957	1958	1959	1960
Quantity '000 lb.	3,165	2,891	2,930	3,222	3,377	3,529	3,566	4,708	6,117	6,604
Value £'000	759	931	1,042	1,171	1,245	1,511	1,757	1,983	2,641	3,250

(a) Oversea exports only ; excludes quantity and value of small consignments to other Australian States.

In each year of the period, all but a very small amount of the total shipment went to the United States of America, which in 1959-60 took 6.41 million lb. valued at £3.17 million. Small consignments went to other Australian States and to Singapore throughout the period and, in some years, to Canada and Saudi Arabia.

Oats

Exports of oats showed wide fluctuations during the ten-year period to 1959-60. In 1954-55 the value of shipments was £0.49 million and in 1958-59 it reached £3.84 million. Income from this source in 1959-60 was £2.85 million.

EXPORTS OF OATS

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity '000 bush.	1,567	2,686	2,406	2,393	1,095	4,410	4,188	1,868	9,544	6,496
Value £'000	672	1,640	1,000	863	486	1,696	1,654	955	3,843	2,850

The United Kingdom was the most important market in the first half of the period and the Federal Republic of Germany in each of the last five years. Germany's purchases during the ten years amounted to £7.89 million, more than one-half of the total value of exports. The Netherlands took consignments in each year except 1953-54 and 1954-55. During the early years of the period, other customers were Belgium-Luxembourg, South Africa and the Republic of Ireland.

Whale Oil

Whaling was conducted along the Western Australian coast from the first years of settlement and whale oil was among the earliest exports from the Colony. Activity since then has fluctuated widely and at times ceased altogether. The most recent large-scale revival of the industry began in 1949.

In 1951-52 export income at £1.36 million was the highest during the ten years despite the larger shipments made in each of the years from 1952-53 to 1958-59.

EXPORTS OF WHALE OIL

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity '000 gal.	700	2,180	2,559	3,182	2,403	2,322	2,393	2,573	2,343	1,638
Value £'000	364	1,360	936	1,093	945	967	992	1,005	740	550

The Netherlands provided the principal market during the first five years and the United Kingdom during the last five years of the period. The Federal Republic of Germany was the most consistent buyer, taking appreciable quantities in each of the ten years. Sweden and Italy were other important customers, and Belgium-Luxembourg received shipments in each year from 1951-52 to 1953-54.

Whaling activity has been limited since 1951 by quotas imposed by the International Whaling Commission on the taking of humpback whales, which predominate off the Western Australian coast. Since 1955 a company based on Albany on the south coast has extended its operations to include sperm whaling which is not subject to restriction.

Barley

Export income from barley showed a large general increase during the period, although there was a substantial fall in 1957-58 from the level of more than £1 million in the previous year. In 1959-60, total shipments amounting to 4.91 million bushels realized £2.41 million.

EXPORTS OF BARLEY

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Quantity '000 bush.	166	307	922	938	1,147	2,234	2,130	1,124	2,589	4,912
Value £'000	106	266	585	438	642	963	1,008	634	1,380	2,410

The United Kingdom was the principal buyer in each year from 1951-52 to 1955-56. Japan provided the most valuable market in 1956-57, the Federal Republic of Germany in 1957-58, Denmark in 1958-59 and Italy in 1959-60. The Netherlands took appreciable consignments in some years and the Republic of Ireland was an important customer in 1954-55.

Eggs

Eggs are exported in shell and in pulped or powdered form, those in shell comprising about two-thirds of the total export market during the ten-year period to 1959-60. Eggs not in shell are predominantly in liquid form and there is only a small trade in powdered eggs.

EXPORTS OF EGGS

Item	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
QUANTITY										
In Shell '000 doz.	1,542	1,643	2,470	2,322	2,922	2,213	2,085	2,331	1,894	1,490
Not in Shell '000 lb.	1,480	1,730	3,148	3,453	1,378	972	1,260	2,410	1,196	652
VALUE (£'000)										
In Shell	217	305	551	526	612	482	501	489	379	297
Not in Shell	210	209	470	565	168	116	156	267	119	68
Total	427	514	1,021	1,091	780	598	657	756	498	365

Singapore was the most important buyer of eggs in shell, being the principal customer in almost all years and taking consignments worth a total of £2.07 million, nearly one-half the value of all exports during the ten years. The United Kingdom market ranked next in value followed by Saudi Arabia. Kuwait and the Bahrain Islands made significant purchases throughout the period.

The United Kingdom purchased almost all of the eggs shipped in liquid form.

Minerals other than Gold

The principal minerals, other than gold, exported during the ten years from 1950-51 to 1959-60 were asbestos, manganese ore, iron ore and lead (including silver-lead) ores and concentrates. In 1956-57, ilmenite concentrates became a significant export item.

EXPORTS OF PRINCIPAL MINERALS OTHER THAN GOLD

Mineral	Year ended 30th June :—									
	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
QUANTITY (tons)										
Asbestos	1,543	2,579	2,958	3,149	3,732	7,415	10,558	11,557	10,568	15,163
Manganese Ore	11,488	7,898	14,330	26,839	34,085	54,905	58,495	74,563	56,077	78,548
Iron Ore ....	....	51,622	543,725	583,462	579,526	472,058	328,588	438,624	589,369	796,125
Ilmenite Concentrates ....	....	....	....	....	....	....	(b) 14,668	88,270	65,090	88,588
Lead Ores (a)	2,290	5,858	9,244	2,697	896	5,985	5,819	3,297	2,522	2,383
VALUE (£'000)										
Asbestos	189	355	495	493	394	720	1,070	1,460	1,083	1,556
Manganese Ore	77	58	128	414	402	635	776	1,251	814	1,112
Iron Ore ....	....	51	539	579	575	468	325	435	584	801
Ilmenite Concentrates ....	....	....	....	....	....	....	(b) 85	506	324	357
Lead Ores (a)	132	684	841	138	59	448	489	212	126	123

(a) Includes silver-lead ores and concentrates. (b) Oversea exports only. Interstate exports of all titanium and zirconium ores and concentrates amounted to 12,129 tons valued at £65,081.

During the first three years of the period, the greater part of the asbestos exported went to other Australian States, the United States of America being the most important oversea buyer. From 1953-54, trade in this commodity was predominantly with oversea countries, the United States of America continuing to take the largest quantities, other prominent buyers being Italy and Japan.

Manganese ore exported during the ten-year period went principally to other Australian States, the most important oversea customer being the United States of America. Japan took valuable consignments in each year from 1956-57, and France in 1958-59 and 1959-60.

Exports of iron ore began in 1951-52 when 51,622 tons were sent to New South Wales. In each of the three following years more than ten times this quantity was shipped to the same destination. Although consignments in the years 1955-56 to 1957-58, all to New South Wales, were at a lower level, iron ore continued to be an important item of export and shipments in 1959-60 amounted to nearly 0·8 million tons. In addition to iron ore, almost two million cwt. of pig-iron was exported during the ten-year period.

The first shipments of ilmenite concentrates were made in 1956-57 when 14,668 tons valued at £84,570 were sent overseas, almost all of it to Japan and the remainder, a very small quantity, to France. There was some interstate export, particulars of which were not recorded separately. Almost one-third of the total consignments in 1957-58 went to Tasmania and, among oversea buyers, the United Kingdom, the United States of America and Japan were the most important. In 1958-59 and 1959-60, the principal oversea customers were the United States of America, Japan and France, while Tasmania continued to take a large proportion of the total shipments.

Belgium-Luxembourg was the main market for lead ores and concentrates during the earlier years of the period, and Japan in the later years. Other notable customers were the United States of America, the United Kingdom and the Netherlands.

Petroleum Products

Although Western Australia still relies very largely for its export revenue on the products of its primary industries, an important development in recent years has been the establishment of a major oil refinery which began production in January, 1955. The total value of exports of refined liquid petroleum products, including quantities supplied as fuel to ships and aircraft, was £21·0 million in 1955-56, the first full year of operation, £29·2 million in 1957-58 and £27·3 million in 1959-60, the latest year under review.

The following table shows the amount spent on imports of these products during each year from 1950-51 to 1959-60 and on crude petroleum for each of the years from 1954-55 to 1959-60. The value of products sent out of the State in the form of commercial cargo and as supplies to ships and aircraft is also given, together with the net balance of imports in relation to exports. The significance of the refining industry in the trade of Western Australia will be readily appreciated from an examination of this balance. In the four years before the industry came into production, trade in liquid petroleum products showed an average annual net deficit of £4·72 million compared with an average surplus of £5·80 million in the first five full years of operation. In 1957-58 the net gain was £8·13 million.

SUMMARY OF TRADE IN PETROLEUM AND PETROLEUM PRODUCTS
(£'000)

Year ended 30th June:	Imports			Exports (b)			Balance	
	Crude Petroleum	Refined Liquid Petroleum Products (a)	Total	Commercial Cargo	Supplies to Ships and Aircraft	Total	Excess of Imports over Exports	Excess of Exports over Imports
1951 ....	....	7,835	7,835	37	2,925	2,962	4,873	....
1952 ....	....	8,849	8,849	31	3,418	3,449	5,400	....
1953 ....	....	7,971	7,971	261	4,392	4,653	3,318	....
1954 ....	....	8,365	8,365	131	2,938	3,069	5,296	....
1955	5,466	9,978	15,444	3,032	3,202	6,234	9,210	....
1956	13,198	4,520	17,718	16,700	4,270	20,970	....	3,252
1957	14,542	3,991	18,533	18,692	5,391	24,083	....	5,550
1958	17,954	3,164	21,118	24,377	4,865	29,242	....	8,124
1959	16,328	3,529	19,857	21,597	3,897	25,494	....	5,637
1960	17,055	3,815	20,870	23,733	3,563	27,296	....	6,426

(a) Includes petroleum spirit, kerosene, aviation turbine fuel, solar oil, diesel fuel oil, furnace oil and lubricating oil.

(b) Consists wholly of refined liquid petroleum products, there being no exports of crude petroleum.

Almost all of the crude petroleum was imported from Iran, Kuwait and Qatar while most of the output of refined liquid products was sent to other Australian States and New Zealand, the remainder being shipped principally to Aden, Ceylon and India.

Principal Exports during 1958-59 and 1959-60

The following table gives details of Western Australia's principal exports during each of the years 1958-59 and 1959-60.

PRINCIPAL EXPORTS—QUANTITY AND VALUE

Commodity	Unit of Quantity	Year ended 30th June :—			
		1959		1960	
		Quantity	Value	Quantity	Value
Ale and Beer	gal.	134,020	£ 79,926	68,730	£ 25,484
Animals—					
Cattle	number	6,148	197,992	5,502	162,420
Pigs	number	882	18,371	502	12,503
Sheep	number	135,314	382,125	147,086	422,741
Apparel (other than headwear and footwear)	n.a.	n.a.	391,280	n.a.	430,693
Asbestos	ton	10,568	1,082,924	15,163	1,555,747
Barley	bushel	2,589,126	1,380,386	4,912,352	2,409,876
Butter	lb.	392,883	84,791	421,511	91,580
Confectionery	lb.	1,963,379	263,653	2,486,483	353,374
Eggs in Shell	doz.	1,893,510	378,900	1,490,336	297,243
Eggs in Liquid or Powdered Form	lb.	1,196,220	119,432	651,880	67,840
Fish—					
Crayfish Tails, Frozen	lb.	6,116,632	2,640,650	6,603,858	3,249,611
Preserved in Containers	lb.	2,789,811	324,086	1,638,714	190,390
Flour	short ton (a)	104,559	3,168,561	87,789	2,548,108
Food for Animals	n.a.	n.a.	197,798	n.a.	253,267
Fruit, Fresh—					
Apples	bushel	941,707	1,476,959	625,711	951,533
Other	n.a.	n.a.	327,322	n.a.	266,955
Fruit, Dried—Currants	lb.	3,594,536	227,228	846,536	48,905
Gold Bullion	fine oz.	131,634	2,058,944	599,571	9,369,203
Ilmenite Concentrates	ton	65,090	323,843	88,588	356,548
Iron Ore	ton	589,369	584,430	796,125	800,706
Iron and Steel (b)	cwt.	1,520,542	2,552,951	3,899,218	6,081,100
Leather	n.a.	n.a.	268,837	n.a.	296,671
Machines and Machinery—					
Agricultural	n.a.	n.a.	122,973	n.a.	120,647
Earthworking and Mining	n.a.	n.a.	374,735	n.a.	239,916
Tractors and Parts	n.a.	n.a.	1,641,286	n.a.	2,442,713
Other (c)	n.a.	n.a.	1,902,780	n.a.	2,425,453
Manganese Ore	ton	56,073	813,874	78,547	1,111,879
Meats, Frozen and Chilled—					
Beef and Veal	lb.	23,226,399	2,171,044	29,977,441	3,370,933
Lamb	lb.	9,622,710	881,395	6,564,957	444,741
Mutton	lb.	12,300,426	707,047	12,693,532	744,088
Pork	lb.	4,371,464	589,144	2,617,978	476,409
Other (d)	lb.	4,084,117	498,206	6,155,761	638,916
Meats Preserved in Containers	lb.	1,605,368	177,488	1,627,520	173,144
Metal Scrap, Non-ferrous	cwt.	53,176	321,340	70,712	381,060
Milk and Cream, Condensed and Concentrated (not dried)	lb.	7,221,918	512,464	997,723	71,222
Oats	bushel	9,543,912	3,842,791	6,496,385	2,849,525
Paper, Paper Boards and Manufactures thereof	n.a.	n.a.	231,485	n.a.	273,945
Pearl-shell	cwt.	15,521	386,031	12,535	353,657
Petroleum Oils and Spirits, Refined	gal.	396,537,335	21,597,166	427,135,606	23,733,508
Plywood and Veneers	n.a.	n.a.	171,754	n.a.	279,756
Sausage Casings	n.a.	n.a.	162,634	n.a.	150,863
Skins and Hides—					
Cattle and Calf	lb.	4,638,696	409,565	4,456,611	506,966
Sheep and Lamb	lb.	12,040,095	1,317,695	12,795,239	1,847,212
Other	lb.	142,666	17,048	157,421	29,255
Tanning Substances	cwt.	96,887	259,046	137,509	366,606
Timber—					
Railway Sleepers	super ft.	40,556,855	2,239,054	33,695,443	1,802,855
Other	super ft.	37,004,327	1,968,428	39,905,719	2,077,371
Tobacco, Unmanufactured (leaf)	lb.	1,191,940	561,767	1,165,072	577,529
Vegetables, Fresh—					
Onions	cwt.	45,885	54,259	45,404	112,090
Potatoes	cwt.	168,848	183,847	189,190	217,857
Tomatoes	cwt.	46,749	153,839	33,004	169,952
Other	n.a.	n.a.	234,687	n.a.	233,149
Whale Oil	gal.	2,342,552	740,384	1,638,465	549,515
Wheat	bushel	23,603,275	16,556,265	36,713,316	24,720,759
Wool, Greasy	lb.	111,130,597	23,156,358	111,103,757	29,068,444
Wool, Scoured	lb.	21,763,475	6,112,115	27,429,926	9,910,131
All Other Commodities	n.a.	n.a.	12,150,424	n.a.	11,806,971
TOTAL	n.a.	n.a.	121,751,807	n.a.	154,521,535
Ships' Stores—					
Bunker Oil	gal.	74,776,721	3,707,363	86,414,833	3,493,181
Other Ships' Stores (e)	n.a.	n.a.	1,033,758	n.a.	983,744
TOTAL	n.a.	n.a.	4,741,121	n.a.	4,476,925
TOTAL EXPORTS	n.a.	n.a.	126,492,928	n.a.	158,998,460

n.a. = "not applicable" or "not available." (a) Short ton = 2,000 lb. (b) Includes values for which a quantity is not recorded : 1958-59, £148,729 ; 1959-60, £222,861. (c) Excludes dynamo electrical machinery. (d) Comprises mainly offals, poultry and rabbits. (e) For further details, see table on next page.

Of the amounts shown under the heading of Ships' Stores in the preceding table more than three-quarters represented bunker oil. Details of this and other commodities supplied to ships during each of the years 1958-59 and 1959-60 are given in the following table.

EXPORTS IN THE FORM OF SHIPS' STORES

Commodity	Unit of Quantity	Year ended 30th June :—			
		1959		1960	
		Quantity	Value	Quantity	Value
Alcoholic Beverages	gal.	152,472	£ 63,010	193,365	£ 77,000
Coal	ton	3,781	35,827	4,428	39,908
Fodders for Animals	cwt.	3,840	5,510	1,233	1,973
Foodstuffs—					
Eggs in Shell	doz.	158,544	40,886	179,140	47,828
Fish	lb.	181,583	39,465	176,514	43,200
Fruit	n.a.	n.a.	36,999	n.a.	33,239
Meats—					
Bacon and Hams	lb.	176,998	37,190	147,972	35,968
Other (a)	lb.	1,694,968	173,190	1,596,483	177,121
Vegetables—					
Potatoes	cwt.	14,609	21,803	21,723	17,941
Other	n.a.	n.a.	55,337	n.a.	63,100
Petroleum Oils and Spirits—					
Bunker Oil	gal.	74,776,721	3,707,363	86,414,833	3,493,181
Other (b)	gal.	2,118,407	189,329	466,427	69,609
Other Ships' Stores (c)	n.a.	n.a.	335,212	n.a.	376,857
TOTAL VALUE	n.a.	n.a.	4,741,121	n.a.	4,476,925

n.a. = "not applicable" or "not available". (a) Fresh or preserved by cold process. (b) Includes fuel for aircraft. (c) Where the value of ships' stores recorded in any one entry is less than £50, the stores concerned are not allocated according to commodity. This item includes amounts of £189,573 in 1958-59 and £203,742 in 1959-60 not so allocated.

OVERSEA AND INTERSTATE TRADE OF PORTS

The Port of Fremantle is Western Australia's principal port and the following table clearly shows its predominance in the State's trade. Considerable development of both the inner and the outer harbour has taken place in recent years. New handling equipment, transit sheds, roads and railways have been provided and large sums have been spent on the acquisition of land and the extension of berthing facilities at North Quay. Work on the widening and deepening of channels through the Success and Parnelia Banks in the outer harbour in Cockburn Sound was completed in 1955. A new signal station was opened in 1957. A modern passenger terminal is under construction in three stages, the first of which was completed in December, 1960 and the second in May, 1962.

There is a system of smaller ports extending along the entire coastline from Esperance in the south to Wyndham in the north.

In 1959-60, Albany was next in importance to Fremantle in terms of total trade, with imports and exports aggregating £9.66 million in value, excluding the value of ships' stores. Rock phosphate and sulphur, for use in the manufacture of superphosphate fertilizer, were the principal imports. Commodities exported included wool, wheat, frozen and chilled meats, apples, potatoes, whale oil, canned fish and barley. The value of Bunbury's trade, excluding ships' stores, was £7.16 million. Rock phosphate and sulphur were the largest import items, and exports included timber, wheat and wheaten flour, oats and ilmenite concentrates. Geraldton's total trade amounted to £6.03 million, excluding the value of ships' stores. Imports consisted mainly of rock phosphate and sulphur, and among its exports were wheat and wheaten flour, manganese and lead ores, wool, barley, oats, tomatoes and crayfish. Imports at Esperance included petroleum products valued at £0.64 million from Victoria and exports comprised copper concentrates and gypsum. Timber was the principal item of export from Busselton. Among the ports of the north-west and northern coasts, shipments from Yampi, consisting almost entirely of iron ore consigned to New South Wales, were greatest. Port Hedland exported mineral ores, mainly manganese, and wool. Asbestos fibre and wool were shipped from Point Samson. Exports from Wyndham were predominantly frozen and chilled meats, skins, hides and tallow, and from Carnarvon, whale oil and wool. Consignments of wool, frozen and chilled meats and pearl-shell were sent from Broome, while Derby exported frozen and chilled meats, cattle and wool.



PORT OF FREMANTLE—INNER HARBOUR AT THE MOUTH OF THE SWAN RIVER
City of Perth and Narrows Bridge in left background

OVERSEA AND INTERSTATE TRADE OF PORTS

Port	Year ended 30th June :—			
	1959		1960	
	Imports	Exports (a)	Imports	Exports (b)
Port of Fremantle	£ 95,226,023	£ 95,266,212	£ 101,181,800	£ 119,274,790
Other Ports—				
Albany	1,004,861	6,592,003	821,784	8,833,616
Broome	8,895	439,267	9,742	392,208
Bunbury	505,835	5,755,543	814,790	6,340,712
Busselton	3,909	328,298	1,227	415,792
Carnarvon	57,994	692,308	23,493	408,831
Derby	5	136,090	200	200,004
Esperance	606,513	72,417	791,419	291,524
Geraldton	283,082	6,394,770	289,979	6,340,744
Onslow	...	145	...	532
Point Samson	...	493,489	...	771,786
Port Hedland	...	519,677	...	812,146
Wyndham	21,621	826,867	912	738,385
Yampi	134,112	611,178	91,197	822,301
Total	2,626,827	22,862,552	2,844,743	26,368,581
All Ports	97,852,850	118,128,764	104,026,543	145,643,371
By Other Means (c)	48,348,098	8,364,164	65,502,769	8,878,164
Ships' Stores	n.a.	(d)	n.a.	4,476,925
GRAND TOTAL	146,200,948	126,492,928	169,529,312	158,998,460

n.a. = not applicable. (a) Includes ships' stores. (b) The figures shown for the several ports exclude the value of exports in the form of ships' stores, particulars of which are no longer compiled for individual ports. (c) Comprises rail, road, air freight and parcel post. (d) Included in figures shown for individual ports.

DIRECTION OF TRADE

The greater part of Western Australia's imports comprise purchases from other Australian States, which in 1959-60 supplied almost three-quarters of imports aggregating £170 million in value. The United Kingdom ranked next in importance and provided goods valued at more than £12 million. Purchases from other Commonwealth countries accounted for £7.05 million, or 4.2 per cent. of the total. Imports from foreign countries, consisting principally of crude petroleum from Iran and Arabian States, amounted to almost £27 million, equivalent to about one-sixth of all imports.

Of exports (including ships' stores) valued at £159 million, 36.8 per cent. went to foreign countries, 24.3 per cent. to Australian States, 21.9 per cent. to the United Kingdom and 13.4 per cent. to other Commonwealth countries.

The table on page 322 shows details of Western Australia's imports and exports during 1958-59 and 1959-60 classified according to State or country of origin or destination.

CUSTOMS AND EXCISE

Under the provisions of the Commonwealth of Australia Constitution Act, the Commonwealth Parliament is empowered to pass laws in respect to trade and commerce with other countries, and the authority for the collection and control of customs and excise duties is thus vested in the Commonwealth Government. The principal Acts affecting oversea trade are the Customs Act 1901-1960, the administrative Act under which the Department of Customs and Excise functions, and the various Customs Tariff Acts which provide the statutory authority for imposing the actual rates of duty in force from time to time.

The Australian tariff has been developed in conformity with the policy of protecting economic and efficient Australian industries, and of granting preferential treatment to imports from certain countries of the British Commonwealth. Three distinct Customs Tariffs are in operation, namely the British Preferential Tariff, the Intermediate Tariff and the General Tariff.

The British Preferential Tariff applies to goods which are the produce or manufacture of the United Kingdom, provided that certain requirements, such as direct consignment to Australia, have been satisfied. With the exception of a relatively small number of commodities which carry special rates of duty, the British Preferential Tariff has also been extended, as a result of separate trade agreements, to Canada and New Zealand and by tariff legislation to the Territory of Papua and New Guinea. This Tariff applies also to some other British Commonwealth countries in respect of specified goods.

VALUE OF IMPORTS AND EXPORTS
ACCORDING TO COUNTRY OF ORIGIN OR DESTINATION

Country of Origin or Destination	Imports		Exports	
	Year ended 30th June :—		Year ended 30th June :—	
	1959	1960	1959	1960
AUSTRALIA—	£	£	£	£
New South Wales	39,105,578	49,937,714	8,796,917	8,745,182
Victoria	48,512,355	54,067,002	10,424,869	12,314,949
Queensland	3,781,122	3,518,674	800,041	1,442,011
South Australia	10,720,247	13,677,939	13,036,770	14,703,796
Tasmania	1,630,604	1,748,673	301,346	389,033
Northern Territory	406,078	397,755	1,099,505	1,043,783
TOTAL	101,214,984	123,347,757	34,459,448	38,638,754
UNITED KINGDOM	13,602,895	12,129,596	27,204,307	34,847,210
OTHER COMMONWEALTH COUNTRIES—				
Aden	950,313	675,173	2,842,879	1,409,983
Borneo, British	265,796	308,031	42,483	55,815
Canada	769,414	860,249	447,288	512,611
Ceylon	882,147	781,857	1,228,970	592,132
Christmas Island (Indian Ocean)	1,116,723	969,646	794,603	446,007
Hong Kong	210,776	234,796	1,365,763	1,454,578
India	1,414,636	1,554,815	2,893,003	4,537,366
Ireland, Republic of	6,926	5,064	1,799,967	377,288
Malaya, Federation of	70,822	101,199	1,880,159	1,675,074
Malta	162	330	...	582,317
Mauritius	517	104	267,990	267,976
New Zealand	186,111	143,391	3,296,926	3,292,965
Pakistan	227,887	265,150	559,503	2,050,640
Singapore	535,795	386,629	2,353,244	2,065,467
South Africa, Union of	146,337	238,606	927,634	1,549,305
Other	297,202	525,382	412,961	452,661
TOTAL	7,081,562	7,049,822	21,103,373	21,321,185
EUROPEAN ECONOMIC COMMUNITY—				
Belgium-Luxembourg	199,694	439,765	653,829	901,390
France	276,336	256,793	3,348,473	4,421,102
Germany, Federal Republic of	1,073,484	1,420,018	4,613,968	6,387,560
Italy	461,419	651,504	1,985,690	4,259,228
Netherlands	206,711	601,640	491,399	826,986
TOTAL	2,222,644	3,369,720	11,093,359	17,296,266
OTHER COUNTRIES—				
Arabian States	3,224,351	9,593,574	960,177	1,188,758
Argentina	4,343	...	...	1,854,677
Burma	1,190	61	79,985	113,469
China, Republic of—Formosa .....	...	7,985	288,595	295,178
China, Republic of—Mainland	127,545	42,509	2,751,389	5,833,076
Czechoslovakia	46,829	52,719	877,594	1,161,340
Denmark	89,015	64,706	784,402	305,074
Germany, Eastern	15,638	22,182	23,219	258,357
Greece	12,148	14,705	33,358	112,587
Indonesia	489,311	894,151	147,235	470,487
Iran	13,403,266	7,643,308	271,779	822,007
Iraq	12,259	17,569	262,800	2,407,693
Japan	786,433	1,196,673	8,613,639	10,863,202
Korea, North .....	...	...	...	308,712
Korea, Republic of .....	...	1	397,009	562,011
Mexico	147,169	159,433	280,856	134,214
Mozambique .....	...	...	185,245	541,766
Philippines	7,003	22,185	297,747	496,691
Poland	1,329	1,251	1,323,551	1,412,136
Sweden	674,372	596,229	477,725	428,818
Switzerland	109,702	102,586	164,887	104,309
Turkey	3,177	4,778	232,549	753,689
Union of Soviet Socialist Republics	273	679	...	203,758
United Arab Republic	1,785	10,398	141,871	279,260
United States of America	2,100,320	2,362,324	6,602,465	9,421,266
Other	793,680	787,530	1,016,496	862,368
TOTAL	22,050,538	23,597,536	26,213,573	41,195,303
NOT STATED	28,325	34,881	1,677,747	1,222,817
SHIPS' STORES .....	...	...	4,741,121	4,476,925
GRAND TOTAL	146,200,948	169,529,312	126,492,928	158,998,460

The countries to which the Intermediate Tariff applies include those with which Australia has concluded trade agreements and countries which accord to Australia reciprocal most-favoured-nation tariff treatment by reason of agreement between those countries and the United Kingdom.

The General Tariff applies to goods other than those to which the British Preferential Tariff or Intermediate Tariff or special rates under trade agreements apply.

In addition to duties imposed by the Customs Tariff, *ad valorem* primage duties at rates of 4, 5 or 10 per cent. are charged on some goods according to type and origin.

Amending Customs Tariff Acts are passed by the Commonwealth Parliament as necessitated by changing economic conditions and are frequently the result of recommendations made to the Minister for Customs and Excise by the Tariff Board established under the Tariff Board Act 1921-1960. The purpose of the Board is to advise the Government on matters relating to the protection and encouragement of Australian industry and to the Customs and Excise Tariffs. The Board consists of eight members who are appointed for terms of not less than one year and not more than five years. The Tariff Board conducts public hearings in connexion with proposed changes in the Tariff, applications for a bounty, or complaints that a manufacturer is taking undue advantage of the protection afforded by the Tariff.

CUSTOMS AND EXCISE—NET COLLECTIONS IN WESTERN AUSTRALIA

Statistical Class and Excise Division		Year ended 30th June :—	
		1959	1960
CUSTOMS		£	£
I	Foodstuffs of Animal Origin	18,712	20,630
II	Foodstuffs of Vegetable Origin; Non-Alcoholic Beverages, etc.	93,179	104,226
III	Spiritous and Alcoholic Liquors	215,106	270,081
IV	Tobacco, Cigars, Cigarettes and Snuff	57,435	68,849
V	Live Animals	—	—
VI	Animal Substances, not foodstuffs	—99	108
VII	Vegetable Substances and Fibres	6,533	10,693
VIII	(A) Yarns and Manufactured Fibres	11,826	11,294
	(B) Textiles	283,223	321,899
	(C) Apparel	53,305	58,391
IX	Oils, Fats and Waxes—		
	Aviation Spirit	98,068	82,246
	Motor Spirit and Solvents	121,590	243,396
	Aviation Turbine Fuel	—	—617
	Diesel Fuel	16,690	25,545
	Other Oils, Fats and Waxes	105,534	154,996
X	Pigments, Paints and Varnishes	5,399	4,379
XI	Rocks, Minerals and Hydrocarbons	976	2,133
XII	(A) Metals and Metal Manufactures—		
	Motor Vehicles	144,020	133,168
	Other	158,922	170,645
	(B) Dynamo Electrical Machinery and Electrical Appliances, n.e.i. (a)	55,675	49,066
	(C) Machines and Machinery	213,486	348,608
XIII	(A) Rubber and Rubber Manufactures	19,983	21,869
	(B) Leather, Leather Manufactures, etc.	2,899	5,491
XIV	Wood and Wicker	36,808	42,089
XV	Earthenware, Cement, China, Glass and Stoneware	108,141	120,743
XVI	(A) Pulp, Paper and Board	12,994	25,710
	(B) Paper Manufactures and Stationery	13,870	16,061
XVII	Sporting Material, Toys, Fancy Goods, Jewellery and Timepieces	75,641	90,489
XVIII	Optical, Surgical and Scientific Instruments and Photographic Goods	17,451	24,061
XIX	Chemicals, Medicinal and Pharmaceutical Products, etc.	20,447	25,548
XX	Miscellaneous	85,302	102,038
	Primage	112,356	63,011
	Sundry Undistributed Duties	10,608	1,567
	Duties under Industries Preservation Act	131	305
	Other Miscellaneous Receipts	27,067	21,687
Total Net Customs Duties		2,202,278	2,664,410
EXCISE			
	Ale, Porter and Other Beer	7,195,503	7,394,731
	Spirits	329,872	333,594
	Tobacco, Cigars and Cigarettes	4,527,098	4,711,559
	Other Excise Duty	4,022,597	4,321,797
Total Net Excise Duties		16,075,070	16,761,681
TOTAL NET REVENUE		18,277,348	19,426,091

Minus sign (—) indicates excess of refunds over collections.

(a) n.e.i. denotes "not elsewhere included."

The following table shows the rates of excise duty applying to certain commodities, the quantities excised and the gross amounts of duty collected in Western Australia during each of the years 1958-59 and 1959-60.

EXCISE DUTY—WESTERN AUSTRALIA

Commodity	Unit of Quantity	Rate of Duty	Year ended 30th June :—			
			1959		1960	
			Quantity	Gross Collections	Quantity	Gross Collections
Beer	gal.	s. d. 9 10	14,681,150	£ 7,218,229	15,079,802	£ 7,414,235
Spirits, Potable—						
Brandy	pf. gal.	49 0	44,909	110,025	51,459	126,072
Gin	"	82 0	11,100	45,134	13,004	53,312
Whisky	"	80 0	30,592	122,365	24,599	98,377
Rum	"	82 0	6,592	27,030	7,472	30,629
Liqueurs	"	81 0	1,662	6,733	1,693	6,858
Vodka (a)	"	81 0	....	....	25	100
Flavoured Spirituous Liquors	"	81 0	126	510	51	209
Total	"	n.a.	94,891	311,797	98,303	315,557
Other Spirits for—						
Fortifying Wine	"	4 0	52,225	10,445	54,955	10,991
Industrial Purposes	"	25 0	4,077	5,096	4,129	5,164
Vinegar Making	"	2 0	13,385	1,337	7,210	721
Manufacture of—		s. d. s. d.				
Essences	"	10 0 to 12 0	2,068	1,158	2,137	1,201
Scents and Toilet Preparations	"	14 0 to 16 0	51	41	140	111
Petrol—		s. d.				
Aviation	gal.	11½	76,920,287	3,688,913	1,341,475	64,420
Other	"	1 0	4,833,376	241,697	80,851,389	3,874,156
Diesel Fuel	"	{ (b) 5	....	....	3,935,980	196,799
Coal	ton	{ (c) 8	897,372	29,913	650,064	13,543
Other (d)	n.a.	n.a.	n.a.	4,690,597	n.a.	8,443
TOTAL COLLECTIONS	....	....	n.a.	16,199,223	n.a.	16,817,136

n.a. = not applicable. (a) Included in "Flavoured Spirituous Liquors" up to 30th November, 1959. (b) Operative from 1st September, 1959. (c) Operative up to 31st August, 1959. (d) Includes excise duty paid on tobacco, cigars, cigarettes, cigarette papers and matches.

CHAPTER IX — *continued*

PART 2—TRANSPORT

Western Australia's main transport systems are based generally on Perth, the capital, and the principal port, at Fremantle. Subsidiary systems are centred on a number of outports north and south of Fremantle and on some inland towns.

Fremantle handles by far the greatest proportion of oversea and interstate cargoes and a considerable volume of the intrastate freight. The railway system extends from Fremantle, Perth and Midland for hundreds of miles into the mining, agricultural, pastoral and forest areas in the southern half of the State. There is also a well-developed road system in this area, and the coastal towns in the north-west and the north are connected by road with the south and with the pastoral and mining areas of the hinterland. International flights operate through the airport at Perth, which is also the centre of a comprehensive network of services to towns in Western Australia and to the capital cities of other States.

SHIPPING

Western Australia's sea-borne trade is concentrated on the Port of Fremantle, with a number of outports handling a smaller, though significant, volume of traffic. The outports are Geraldton, Bunbury, Busselton, Albany and Esperance in the more highly-developed south-western and southern part of the State, and Carnarvon, Onslow, Point Samson, Port Hedland, Broome, Derby, Yampi and Wyndham, which serve the less closely-settled areas of the north-west and the north.

The following table shows the tonnage of cargo discharged at and shipped from each of these ports during the years 1958-59 and 1959-60. Most of the cargo is recorded in terms of the ton weight of 2,240 lb. but some cargo, consisting mainly of bulky commodities, is recorded on the basis of the ton measurement, a unit equivalent to 40 cubic feet of space. As the total cannot be described accurately either as "tons weight" or "tons measurement," each part is recorded and published separately.

TONNAGE OF CARGO HANDLED AT PORTS

Port	Discharged				Shipped			
	Year ended 30th June:				Year ended 30th June :			
	1959		1960		1959		1960	
	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement
Port of Fremantle	3,174,088	321,330	3,448,287	319,255	2,387,353	172,529	2,732,201	158,485
Other Ports—								
Albany	134,201	3,243	111,865	3,727	118,628	20,286	213,483	10,849
Broome	2,174	6,536	3,524	9,099	2,202	2,688	1,744	2,908
Bunbury	75,795	....	108,050	....	186,859	76,119	244,626	82,670
Busselton ....	....	....	....	....	9,027	4,000	5,161	10,743
Carnarvon	10,888	529	7,269	3	18,100	8,996	9,157	1,212
Derby	6,434	11,016	6,600	10,895	8,131	4,681	5,743	4,660
Esperance	28,044	1,212	41,217	770	15,913	....	16,384	....
Geraldton	105,641	....	90,321	2	232,795	5,091	255,216	2,230
Onslow	6,828	310	6,180	470	3,416	....	2,717	102
Point Samson	6,351	2,339	4,166	5,495	17,616	1,008	14,796	794
Port Hedland	3,798	9,439	5,000	12,764	33,238	4,159	60,847	3,008
Wyndham	4,058	11,700	6,783	11,434	10,269	4,686	8,226	4,668
Yampi	2,797	....	4,909	117	571,238	....	790,018	....
Total	387,009	46,324	395,944	54,776	1,226,982	131,714	1,628,118	123,844
All Ports	3,561,097	367,654	3,844,231	374,031	3,614,335	304,243	4,360,319	282,329

The table on page 321 and the letterpress accompanying it relate to the oversea and interstate trade of Western Australian ports. It will be seen from the following table that there is, in addition, an appreciable volume of intrastate trade. Cargoes discharged at the ports on the north-west and northern coasts are predominantly, and in some cases entirely, of this category, as also are the shipments from some of them. The areas served by these ports are largely dependent for sea transport on the State Shipping Service. The Service was inaugurated by the State Government in 1912 to provide shipping facilities between ports within the State. Although it formerly operated to ports on the south-west and south coasts, as well as to those in the north-west and the north, its services are now confined to the northern routes and extend to Darwin in the Northern Territory. Some ships carry only freight, and others both passengers and freight. The operations of the Service are subsidized by the State Government to the extent that losses are made good from the Consolidated Revenue Fund. Besides general cargo, the freight discharged by ships of the Service at north-west and northern ports in 1960 consisted mainly of petrol, aviation spirit and other petroleum products, building materials, refrigerated cargo, vehicles and livestock. Regular freights include general household requirements and stores and equipment for the sheep and cattle stations of the pastoral areas of the north-west and the north. Cargoes carried south in 1960 included asbestos and other minerals from Point Samson and Port Hedland, whale products from Carnarvon, meats, skins and hides, blood and bone manures and tallow from Wyndham, Broome and Derby and wool from a number of ports. In addition, large numbers of cattle and sheep were transported to Fremantle, mainly for slaughter at metropolitan abattoirs.

TONNAGE OF OVERSEA, INTERSTATE AND INTRASTATE CARGO: 1959-60

Port	Oversea		Interstate		Intrastate		Total	
	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement	Tons Weight	Tons Measurement
DISCHARGED								
Port of Fremantle	3,018,970	119,590	397,690	182,545	31,627	17,120	3,448,287	319,255
Other Ports—								
Albany	55,781	1,096	1,536	2,631	54,548	....	111,865	3,727
Broome	124	121	....	....	3,400	8,978	3,524	9,099
Bunbury	89,199	....	2,051	....	16,800	....	108,050	....
Busselton	....	....	....	....	....	....	....	....
Carnarvon	3,308	....	....	3	3,961	....	7,269	3
Derby	....	....	....	....	6,660	10,895	6,660	10,895
Esperance	2,431	....	38,786	770	....	....	41,217	770
Geraldton	46,450	....	122	2	43,749	....	90,321	2
Onslow	....	....	....	....	6,180	470	6,180	470
Point Samson	2,601	35	....	....	1,505	5,460	4,166	5,495
Port Hedland	....	....	....	....	5,000	12,764	5,000	12,764
Wyndham	1,995	....	....	....	4,788	11,434	6,783	11,434
Yampi	....	....	3,181	20	1,728	97	4,909	117
Total	201,949	1,252	46,676	3,426	148,319	50,098	395,944	54,776
All Ports	3,220,919	120,842	443,366	185,971	179,946	67,218	3,844,231	374,031

SHIPPED

Port of Fremantle	1,488,488	70,945	1,104,711	35,822	139,002	51,718	2,732,201	158,485
Other Ports—								
Albany	211,934	10,043	1,549	806	....	....	213,483	10,849
Broome	830	....	....	....	914	2,908	1,744	2,908
Bunbury	221,715	61,076	22,911	20,694	....	....	244,626	82,670
Busselton	....	....	5,161	10,743	....	....	5,161	10,743
Carnarvon	4,305	....	....	1,212	4,852	....	9,157	1,212
Derby	705	....	2,741	466	2,297	4,194	5,743	4,660
Esperance	13,558	....	2,825	....	1	....	16,384	....
Geraldton	233,813	1,499	20,533	731	870	....	255,216	2,230
Onslow	....	....	....	....	2,717	102	2,717	102
Point Samson	6,140	....	....	....	8,656	794	14,796	794
Port Hedland	45,020	....	5,266	....	10,561	3,008	60,847	3,008
Wyndham	5,987	....	....	....	2,239	4,668	8,226	4,668
Yampi	....	....	789,755	....	263	....	790,018	....
Total	744,007	73,518	850,741	34,652	33,370	15,674	1,628,118	123,844
All Ports	2,232,495	144,463	1,955,452	70,474	172,372	67,392	4,360,319	282,329

The following table shows the numbers and net tonnage of vessels, excluding warships, entered at or cleared from each of the ports in Western Australia during the years 1958-59 and 1959-60. The "net ton" is synonymous with the "ton register," equivalent to 100 cubic feet, and the term "net tonnage" refers to the volume of the space available for passengers or cargo. It is derived from the gross tonnage, or total internal cubic capacity of the vessel including enclosed spaces above the tonnage deck, by deducting space such as that taken up by crew quarters, engine room, fuel or stores. Net tonnage in relation to a particular vessel is therefore not necessarily constant but may vary in accordance with changes in the volume of the space to be deducted in determining it.

VESSELS ENTERED AND CLEARED AT PORTS

Port	Year ended 30th June :							
	1959				1960			
	Entered		Cleared		Entered		Cleared	
	Vessels	Net Tons	Vessels	Net Tons	Vessels	Net Tons	Vessels	Net Tons
Port of Fremantle	1,182	6,068,553	1,181	6,089,590	1,273	6,602,440	1,272	6,590,418
Other Ports—								
Albany	118	483,902	120	492,157	134	562,250	134	559,372
Broome	86	135,192	85	134,031	87	130,740	86	129,902
Bunbury	111	346,896	108	333,215	119	409,034	120	412,596
Busselton	13	24,826	13	24,826	16	31,655	15	29,666
Carnarvon	92	140,680	93	142,322	76	116,715	76	115,253
Derby	133	129,982	133	130,228	144	156,175	144	154,862
Esperance	21	96,070	21	96,070	30	145,736	31	161,363
Geraldton	106	294,773	106	295,111	97	302,889	97	301,100
Onslow	79	123,245	79	123,245	76	116,943	76	117,252
Point Samson	112	185,136	113	184,251	105	170,403	106	172,345
Port Hedland	87	127,778	88	129,137	96	141,092	96	140,808
Wyndham	51	90,293	53	101,076	64	118,206	63	116,567
Yampl	130	318,730	125	318,459	142	413,187	144	421,093

In the next table the numbers of vessels cleared from Western Australian ports during the year ended 30th June, 1960 are dissected according to the categories "Oversea," "Interstate" and "Intrastate." These categories do not necessarily refer to the place of registration of the vessel concerned, as classification is made on the basis of the type of voyage on which the vessel is engaged. Vessels classified to the category "Intrastate" are those engaged on a voyage where each of the terminal ports is in Western Australia.

VESSELS CLEARED FROM PORTS : 1959-60

Port	Oversea—				Interstate—				Intrastate		Total	
	Via Ports within the State		For Ports outside the State		Via Ports within the State		Direct					
	Ves-sels	Net Tons	Ves-sels	Net Tons	Ves-sels	Net Tons	Ves-sels	Net Tons	Ves-sels	Net Tons	Ves-sels	Net Tons
Port of Fremantle....	16	52,450	673	3,797,730	90	203,330	413	2,272,117	80	264,791	1,272	6,590,418
Other Ports—												
Albany	40	173,845	48	209,822	2	5,316	23	87,619	21	82,770	134	559,372
Broome	2	4,279	5	8,586	38	56,680	1	1,134	40	59,223	86	129,902
Bunbury	45	162,894	31	127,967	15	28,789	16	33,022	13	59,924	120	412,596
Busselton ....	....	....	....	....	3	5,950	11	21,727	1	1,989	15	29,666
Carnarvon	1	2,032	3	7,513	36	53,118	1	1,656	35	50,934	76	115,253
Derby	4	8,343	1	1,571	38	53,093	5	9,361	96	82,494	144	154,862
Esperance	15	69,050	8	52,868	....	....	3	9,872	5	19,573	31	161,363
Geraldton	9	37,813	29	105,088	24	43,940	5	12,967	30	101,292	97	301,100
Onslow	1	2,120	1	4,815	37	55,418	....	....	37	54,899	76	117,252
Point Samson	9	24,611	3	6,103	41	62,036	....	....	53	79,595	106	172,345
Port Hedland	3	6,801	11	15,712	37	54,707	2	2,368	43	61,220	96	140,808
Wyndham	2	10,665	3	13,293	1	5,433	38	59,082	19	28,094	63	116,567
Yampl ....	....	....	....	....	3	5,540	69	371,759	72	43,794	144	421,093

Harbour Administration

The Port of Fremantle is controlled and operated by the Fremantle Harbour Trust, and those at Albany and Bunbury by Harbour Boards. The State Government is responsible for all other ports in Western Australia, their operations being under the direction of the Harbour and Light Department. Some ports were formerly under the control of the Western Australian Government Railways. Esperance, the last port remaining under Railways administration, was transferred to the control of the Harbour and Light Department from the 1st January, 1962.

RAILWAYS

Railways operating in Western Australia for general and passenger traffic comprise the State Government system, part of the Commonwealth Government system, and a private line. There are, in addition, private railways used for the haulage of timber. Timber railways formerly associated with State Government sawmilling activities passed from government ownership from the 30th June, 1961, when the trading concern known as State Building Supplies and the sawmill at Banksiadale operated by the Western Australian Government Railways were sold to private interests.

Origin and Development

The earliest railways in the Colony, built in 1871 from Busselton into the nearby jarrah forest and in 1872 between Rockingham and Jarrahdale, were private lines constructed for the transport of timber. In 1871 the Colony's first Loan Act was passed to finance, among other things, a survey for a railway in the Champion Bay district. This line, completed in 1879, was the first government railway and provided transport for lead and copper ores from Northampton to the port of Geraldton. Construction of the Eastern Railway began in 1879 and by March, 1881, Fremantle, Perth and Guildford had been connected. Extensions of the line were opened in 1884 to Chidlow, in 1885 to Spencers Brook and in 1886 to Northam. The first section of what is now the Great Southern Railway was completed in 1885 from Spencers Brook to York, and in the following year a second section, between York and Beverley, was opened to traffic. Meanwhile work on the Northern Railway system had been continued and Geraldton and Walkaway were connected in 1887. In 1888 a northward extension of the Eastern Railway from Clackline to Toodyay was completed. In 1889 Beverley and Albany were linked by a private railway built by the Western Australian Land Company under an agreement by which the company received a grant of 12,000 acres of Crown land adjacent to the line for every mile of track completed. By the end of 1890 there were 430 miles of railway open for general and passenger traffic, 188 miles being owned by the Government of the Colony and 242 miles by the Western Australian Land Company.

The South-Western Railway began operating in 1891 with the completion of a line from Bunbury to Boyanup. Perth was connected with Picton Junction in 1893 and Donnybrook with Boyanup in the same year. The system was extended from Boyanup to Busselton in 1895 and from Brunswick Junction to Collie and from Donnybrook to Bridgetown in 1898. The Eastern Goldfields Railway from Northam reached Southern Cross in 1894, Boorabbin and Kalgoorlie in 1896, and Menzies in 1899. Eastward extensions of the Northern Railway were completed between Narngulu and Mullewa in 1894 and between Mullewa and Cue in 1898. The Government enlarged its Great Southern Railway system in 1896 by purchasing the Western Australian Land Company's line from Beverley to Albany, and in 1898 by opening an eastward extension from York to Greenhills. A second private railway constructed on the land-grant principle, between Midland Junction and Walkaway, was completed by the Midland Railway Company in 1894. At the end of 1900, the Colony's railway system comprised 1,355 miles of government line and the 277 miles of the Midland Railway Company's line, representing a total increase of 1,202 miles in the ten years since 1890.

During the succeeding decade there began a greatly expanded programme of State Government railway construction, due partly to the extension of gold-mining activity but mainly associated with the spectacular development of Western Australia's wheat-growing lands. In 1903 the area sown to wheat, 138 thousand acres, was nearly half again as great as that in the previous year and the production, 1.88 million bushels, was almost double. Ten years later over one million acres were cropped for a harvest of 13.3 million bushels, and in 1915 the area sown was 1.73 million acres and production more than 18 million bushels. This increase had been made possible by the laying of many hundreds of miles of light, narrow-gauge railway, which could be built quickly and cheaply, to provide spur and loop lines

from the trunk system into the expanding wheat belt. There were 1,612 miles of government line open for traffic in 1906 and 3,332 miles in 1915, the increase of 1,720 miles in nine years being equivalent to an average annual rate of construction of almost 200 miles. In the next 25 years another thousand miles of route were added, bringing the total length of the State Government system to a maximum of 4,381 miles in 1940. Since that time restricted construction and the closure of some lines have resulted in a gradual decrease, and by the 30th June, 1960 the total mileage of the system had declined to 4,120.

The Commonwealth Government's Trans-Australian Railway covers a distance of 1,108 miles between Kalgoorlie and Port Pirie (South Australia), 454 miles being in Western Australia. Construction was begun at Port Augusta, the original South Australian terminus of the line, in 1912 and the work was completed in 1917.

At the 30th June, 1960 there were 4,851 route miles of railway open for general and passenger traffic in Western Australia. Of this total, 4,120 miles were owned and operated by the State Government, 454 miles by the Commonwealth Government and 277 miles by the Midland Railway Company. There were, in addition, 367 miles of timber railways, of which 127 miles were government-owned and 240 miles privately-owned.

Western Australian Government Railways

The operations of the Western Australian Government Railways are controlled by a Commissioner of Railways responsible to the Minister for Railways.

Financial procedure for the State Government Railways is basically the same as for other Departments. Receipts from railway services are paid into the Consolidated Revenue Fund, and finance for railway operations and the servicing of debt is provided from the Fund by statutory appropriations. Loan moneys, for the construction and improvement of permanent way, for the purchase of traction units and rolling stock and for other capital outlay, are advanced by the Parliament from the General Loan Fund.

Serious difficulties were experienced in the rehabilitation of the railway system during the years immediately following the second World War. Rolling stock had become depleted and much of it was obsolete. A programme of replacement of existing locomotives was necessary and considerable work on permanent way was essential to bring roadbeds to the standard required for heavy haulage at higher speeds. The liabilities imposed by an extensive rail network, constructed primarily to assist the development of the mining, agricultural, pastoral and forestry industries, increased with rising operating costs and growing competition from other forms of transport. A plan to improve country and suburban passenger services by the use of diesel-electric rail cars, first brought into service in December, 1937, was resumed and diesel-electric locomotives for long-distance haulage were introduced in May, 1954.

In recent years, work on the installation of centralized traffic control has been in progress on the South-Western Railway and by the 30th June, 1961 the system had been extended as far as Coolup.

In August, 1954, the Government appointed an interdepartmental committee to investigate the problems associated with rail and road transport. As a result of the report of this committee, the Government requested in 1956 that three of its members, namely the Chairman of the Western Australian Transport Board, the Commissioner of Railways and the Commissioner of Main Roads, form a committee to make a closer examination of non-paying lines. Their findings formed the basis of a submission to the Parliament that services be discontinued on several branch lines which for many years had earned comparatively little revenue to offset the high maintenance costs involved. A motion agreed to by the Parliament in December, 1956 gave authority for the suspension, for a trial period, of rail services on 842 miles of line and by October, 1957 services had been withdrawn on 820 miles. On some of the closed routes alternative road services were provided. During 1960 and 1961, certain of the branch lines on which services had been suspended were reopened on a seasonal basis for the carriage of grain and fertilizers. Legislative approval of the closure of 670 miles of line was given by the Railways (Cue-Big Bell and other Railways) Discontinuance Act, 1960, which was assented to on the 12th December, 1960.

In addition to its normal railway operations, the Department provides road services for the carriage of passengers and freight, to which reference is made later in this Part under the heading of Railways Road Services. The activities of the Railways Road Services are excluded from the following table. The figure of 4,120 given as the route mileage at the 30th June, 1960 includes the length of lines on which services had been suspended, as these railways had not been formally closed by Act of Parliament at that date.

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS (a)

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
Route Mileage at 30th June	4,119	4,117	4,117	4,117	4,120
Employees at 30th June	13,841	13,592	13,246	13,136	12,697
Number of—	'000	'000	'000	'000	'000
Train Miles Run	8,278	8,278	7,327	7,707	7,982
Passengers Carried—					
Suburban	11,481	12,497	13,353	13,880	13,171
Country	790	774	753	736	708
Total	12,271	13,271	14,106	14,616	13,879
Tonnage of Paying Goods Carried (b)	3,793	4,223	3,589	3,913	4,533
Operating Revenues—	£'000	£'000	£'000	£'000	£'000
Passenger Fares	1,040	1,076	1,090	1,087	1,143
Parcels and Mails	452	431	448	458	479
Paying Goods and Livestock	10,989	11,698	10,506	11,243	12,430
Miscellaneous	599	654	744	728	795
Total Operating Revenues	13,080	13,859	12,788	13,516	14,847
Operating Expenses	14,800	15,820	14,652	14,755	15,227
Excess of Operating Expenses over Revenues	1,720	1,961	1,864	1,239	380
Rehabilitation of Fully Depreciated Assets	43	....	....	....	....
Depreciation	1,120	1,256	1,439	1,552	1,680
Interest Charges	1,721	2,053	2,112	2,256	2,336
Total Deficit	4,604	5,270	5,415	5,047	4,396

(a) Excludes particulars of Railways Road Services (see page 331) and timber railways (see page 333). (b) Includes livestock.

The preceding table shows that more than four-fifths of the operating revenues of the Western Australian Government Railways are derived from the carriage of goods and livestock. As stated earlier, these railways were constructed primarily to assist the development of the agricultural, pastoral, forestry and mining industries. The continuing importance of the system to these industries will be readily appreciated from an examination of the following table, which shows the tonnage of paying goods and livestock carried during each year in the period from 1955-56 to 1959-60. The classification used in the table is that adopted by the Railways Department in dissecting its freight transport statistics.

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS
TONNAGE OF PAYING GOODS (†) CARRIED

Freight Classification	Year ended 30th June :				
	1956	1957	1958	1959	1960
Wheat	1,062,649	1,511,542	785,454	904,088	1,434,383
Other Grain	176,682	107,752	91,887	284,599	244,728
Grain Products	100,528	103,208	86,934	73,736	68,902
Chaff	10,586	10,459	9,419	7,344	7,229
Fertilizers	357,462	400,797	422,094	409,148	450,659
Fruit and Vegetables	102,071	111,474	102,826	101,271	97,665
Wool	61,083	59,791	62,152	67,201	68,249
Timber	323,201	326,891	334,816	329,664	330,993
Firewood	18,121	14,279	11,932	10,184	5,027
Coal, Coke, Shale and Charcoal (a)	520,851	471,529	538,861	544,362	565,739
Ores and Minerals	186,919	205,072	245,101	246,715	270,690
Oil in Tank Wagons	148,771	158,967	163,006	172,506	175,472
Other Classifications	580,403	593,576	600,786	613,830	651,799
Livestock (†)	137,529	147,994	133,646	148,519	161,079
Total	3,792,856	4,223,031	3,588,914	3,913,167	4,532,614
(†) Number of Livestock Carried—					
Sheep	1,983,593	2,324,489	2,094,873	2,291,583	2,701,689
Cattle	121,903	119,508	106,930	130,581	126,663
Pigs	131,650	130,248	155,758	131,706	120,358
Horses	3,894	3,087	3,046	2,392	2,397

(†) Including livestock.

(a) Predominantly local coal.

Commonwealth Government Railways

The Commonwealth Government Railways comprise four separate systems. These are the Trans-Australian Railway, operating partly in Western Australia and partly in South Australia; the Central Australia Railway, partly in South Australia and partly in the Northern Territory; the North Australia Railway, wholly in the Northern Territory; and the Australian Capital Territory Railway.

Of the total length of 1,108 miles in the Trans-Australian Railway system between Kalgoorlie and Port Pirie (South Australia), 454 miles are in Western Australia. Although statistical details of activities on each of the four systems are available, it is not possible to give separate particulars of the operations in Western Australia of the Trans-Australian Railway. Some statistics relating to the Commonwealth Government Railways as a whole are shown in the table on page 335.

Private Railways

The only private railway open for general and passenger traffic in Western Australia is that operated by the Midland Railway Company over 277 miles of route between Midland Junction and Walkaway. The following table gives details of the Company's railway activities in each of the years from 1955-56 to 1959-60. Particulars of its road service are not included but are summarized in the second table on page 333.

PRIVATE RAILWAYS

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
Number of—					
Route Miles Operated	277	277	277	277	277
Train Miles Run	333,803	355,142	329,182	290,183	292,941
Passengers Carried	3,804	3,701	3,809	4,215	4,469
Employees at 30th June	495	474	469	417	434
Tonnage of Paying Goods Carried (a)	218,614	258,382	217,413	225,247	268,882
Operating Revenues	£ 699,760	£ 765,166	£ 701,685	£ 722,284	£ 831,823
Operating Expenses	667,461	742,333	647,491	554,723	607,293

(a) Includes livestock.

Railways Road Services

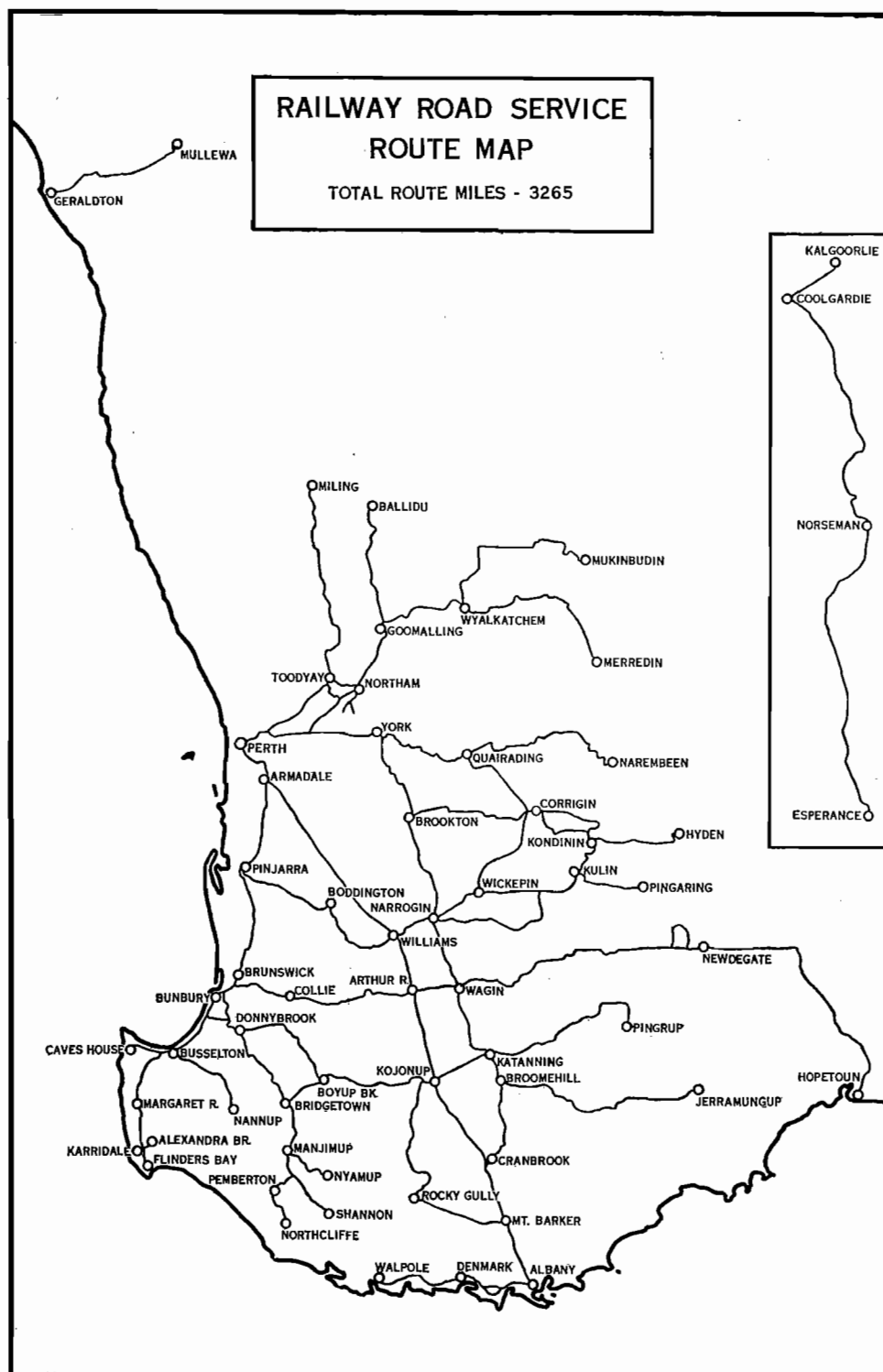
The road services operated by the Western Australian Government Railways were introduced in November, 1941 when, under the stress of wartime conditions, great difficulty was being experienced in the transport of essential goods, and it was therefore decided to transfer some of the passenger traffic from rail to road. This enabled a greater concentration of locomotive power on goods traffic and the haulage of heavier loads than were possible with mixed passenger and goods trains. Congestion on overloaded sections of railway was reduced and greater flexibility in train schedules resulted in more effective use of locomotives and wagons. Another advantage was the reduction in travelling time between points served by road vehicles.

The road passenger services expanded considerably after the war, reaching a peak in 1952-53, when 636,171 passengers were carried and the mileage travelled was 2,125,564. Since that year operations have shown a general decline partly attributable to the improvement in country rail services by the increased use of diesel-electric traction.

In 1946, the Midland Railway Company inaugurated a road service from Perth to Moora and Geraldton.

Both government and private services carry freight as well as passengers. Some of the omnibuses are dual-purpose vehicles equipped with a freight compartment, but vehicles used solely for the transport of goods are also in operation.

The following table gives a summary of the activities of the Western Australian Government Railways Road Services, together with financial results, in each year from 1955-56 to 1959-60.



**WESTERN AUSTRALIAN GOVERNMENT RAILWAYS ROAD SERVICES
ROUTES IN OPERATION—JULY, 1962**

WESTERN AUSTRALIAN GOVERNMENT RAILWAYS ROAD SERVICES

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
Number of—					
Route Miles Operated	2,670	2,843	2,709	2,822	3,012
Omnibuses at 30th June	52	52	51	51	49
Miles Run	1,505,382	1,458,833	1,371,695	1,291,157	1,328,167
Passengers Carried	312,202	305,315	277,943	261,874	260,625
Employees at 30th June	133	120	122	125	124
Operating Revenues—	£	£	£	£	£
Passenger Fares	155,584	148,013	194,486	129,421	131,726
Parcels and Mails	38,711	37,137	39,978	40,736	44,573
Goods ....	....	....	12,555	13,713	15,287
Total Operating Revenues	194,295	185,150	187,019	183,870	191,586
Operating Expenses	193,586	191,277	190,423	177,848	181,426
Excess of—					
Operating Revenues over Expenses	709	....	....	6,022	10,160
Operating Expenses over Revenues ....	....	6,127	3,404	....	....
Depreciation	10,263	1,562	2,011	3,386	6,927
Interest Charges	2,247	2,303	2,478	2,721	3,290
Deficit	11,801	9,992	7,893	85	57

The following table deals with the operations of the Midland Railway Company's road service during the period from 1955-56 to 1959-60. Financial details relating to the service are not available for publication.

PRIVATE RAILWAY ROAD SERVICES

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
Number of—					
Route Miles Operated	312	312	312	312	312
Omnibuses at 30th June	7	8	6	7	6
Miles Run	350,450	346,744	311,025	304,926	311,018
Passengers Carried	25,043	26,782	25,915	23,993	22,812
Employees at 30th June	25	25	25	23	21

Timber Railways

At the 30th June, 1960, there were four government and eleven private railways open for the haulage of timber. Of the government lines, three were operating in connexion with the sawmill activities of the State Building Supplies and the fourth was being worked by the Western Australian Government Railways for the supply of timber for railway purposes (see also letterpress at the beginning of the section *Railways* on page 328). Ten of the private lines were owned by timber companies and the remaining line by a mining company for use in the transport of mining timber.

TIMBER RAILWAYS

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
GOVERNMENT					
Number of—					
Lines Open at 30th June	6	4	4	4	4
Route Miles Operated	138	129	122	125	127
Locomotives at 30th June	9	10	8	7	10
Train Miles Run	97,760	94,125	87,792	92,491	95,239
Employees at 30th June	64	58	62	59	78
Tonnage of Timber and Other Goods Carried	128,010	120,104	129,329	135,687	124,763
PRIVATE					
Number of—					
Lines Open at 30th June	13	12	11	11	11
Route Miles Operated	449	429	298	298	240
Locomotives at 30th June	21	19	16	17	19
Train Miles Run	141,599	111,053	98,350	92,001	72,881
Employees at 30th June	127	105	83	80	65
Tonnage of Timber and Other Goods Carried	194,950	150,311	178,059	179,988	183,793

Railway Gauges

The gauge used in Western Australia on the government railway system and on the Midland Railway Company's line is 3 ft. 6 in. Of the total route mileage of government railways in Australia at the 30th June, 1960, almost one-half (12,747 miles) was of this gauge. There were 7,507 miles of the standard 4 ft. 8½ in. gauge and 5,930 miles of 5 ft. 3 in. gauge.

The following table shows the route mileage of government railways of each gauge in each of the Australian States and Territories at the 30th June, 1960.

GOVERNMENT RAILWAYS IN EACH STATE AND TERRITORY OF AUSTRALIA
30th JUNE, 1960

State or Territory	Route Miles of Gauge :—					Total Route Miles
	5 ft. 3 in.	4 ft. 8½ in.	3 ft. 6 in.	2 ft. 6 in.	2 ft. 0 in.	
State Systems in—						
New South Wales	(a) 241	6,108	....	....	....	(a) 6,349
Victoria	4,015	(a) 69	6,308	34	....	(a) 4,049
Queensland ....	....	....	859	....	30	6,407
South Australia	1,674	....	4,120	....	....	2,533
Western Australia ....	....	....	538	....	....	4,120
Tasmania ....	....	....	....	....	....	538
Commonwealth Systems in—						
South Australia ....	....	871	432	....	....	1,303
Western Australia ....	....	454	....	....	....	454
Northern Territory ....	....	....	490	....	....	490
Australian Capital Territory ....	....	5	....	....	....	5
Total Route Miles	5,930	7,507	12,747	34	30	20,248

(a) See following letterpress *Operations of Government Railways in Australia*.

Standardization of gauges on main trunk routes throughout Australia and on some other lines has been the subject of inquiries by the Commonwealth Government and of agreements between the Commonwealth and some States. The principle of standardization was accepted at a Premiers' Conference in August, 1945 following an investigation instituted by the Commonwealth Government in March, 1944 and the submission of a favourable report in March, 1945. The use of the 4 ft. 8½ in. gauge was recommended for adoption in a unification plan, one of the projects in which was to be the construction of a line from the port of Fremantle through Perth to Kalgoorlie. Approval was given to the making of a survey for a route, and field work began in October, 1945. The work was continued until December, 1947, when it was abandoned pending agreement between the Governments of the Commonwealth and the State on the provision of finance for the unification scheme. In the years immediately following the second World War it became apparent that considerable expenditure would be necessary on the rehabilitation of the Western Australian Government Railways. The urgency and the magnitude of this undertaking were such that all the Department's available resources of money, labour and materials were absorbed in the programme and, in these circumstances, works associated with the unification plan could not be contemplated but, where possible, works connected with the restoration of the 3 ft. 6 in. system were so designed as to make provision for later conversion to the standard gauge.

In March, 1956, a committee consisting of members of the Federal Parliament was appointed to re-examine the matter of standardization. Among its recommendations, submitted in October, 1956, was the provision of the standard gauge line between Fremantle and Kalgoorlie, but no immediate action was taken to carry out this work.

During the 1960 session, the Western Australian Parliament passed the Broken Hill Proprietary Company's Integrated Steel Works Agreement Act ratifying an agreement between the Government and the Company relating to the establishment of an integrated iron and steel industry at Kwinana on the coast south of Fremantle. The Act makes the operation of the agreement contingent upon the passage of legislation by the State and Commonwealth Parliaments to provide for the financing, construction and completion before the 31st December, 1968 of a standard gauge railway between the works site at Kwinana and the terminus of the Trans-Australian Railway at Kalgoorlie. Accordingly the Commonwealth Parliament passed the Railway Agreement (Western Australia) Act 1961 extending to the State financial assistance for the project. The State Parliament approved this agreement by the

Railway Standardisation Agreement Act, 1961 and gave authority for the construction of the railway by means of the Railways (Standard Gauge) Construction Act, 1961. Work on route surveys was begun in 1961.

Operations of Government Railways in Australia

The following table gives a summary of operations during the year ended 30th June, 1960 on each of the railway systems owned by State Governments and on that of the Commonwealth Government.

It will be noted that particulars of route miles shown for the New South Wales and Victorian systems differ from the details given for those States in the previous table, which is compiled according to the State or Territory in which the several lengths of line are situated. The Victorian system includes lines extending into New South Wales, the aggregate length of such lines in New South Wales being 241 miles.

A Uniform Gauge Railway of 4 ft. 8½ in. and 181 route miles in length between Grafton (New South Wales) and South Brisbane (Queensland) was completed in 1930. This line is operated by the New South Wales Railways, and details of operations on the New South Wales section (112 route miles) are included with those of the New South Wales system and particulars for the Queensland section (69 route miles) with those for the Queensland system.

GOVERNMENT RAILWAYS OF AUSTRALIA—SUMMARY OF OPERATIONS, 1959-60

Railway System of :—	Route Mileage at 30th June	Revenue Train Miles Run (‘000)	Passenger Journeys (‘000)	Goods and Livestock Carried (‘000 tons)	Gross Earnings (£‘000)	Working Expenses (£‘000)	Average Number of Employees
New South Wales	6,108	36,781	254,590	22,127	83,563	76,491	50,361
Victoria	4,290	18,282	158,294	9,687	39,190	39,542	29,473
Queensland	6,407	19,056	32,347	8,116	35,671	38,353	29,413
South Australia	2,533	6,887	17,038	4,036	12,758	(a) 15,325	10,246
Western Australia	4,120	7,962	13,879	4,533	14,846	(a) 16,907	12,957
Tasmania	538	1,550	2,292	1,191	2,808	(a) 3,363	2,590
Commonwealth	2,252	2,141	275	1,482	5,327	4,154	2,648
Australia	26,248	92,659	478,715	51,172	194,163	194,135	137,683

(a) Includes provision of reserves for depreciation.

ROADS AND ROAD TRAFFIC

Work connected with road construction and maintenance and associated projects in Western Australia is undertaken by the State Government, through the Main Roads Department, and by local government authorities, comprising City Councils, Town Councils and Shire Councils.

Under the provisions of the Main Roads Act, the Main Roads Department was established in 1930 to replace the Main Roads Board originally constituted as a central road authority in 1926. The Department operates under the Main Roads Act, 1930-1961 and is administered by a Commissioner of Main Roads responsible to the Minister for Works. The Act makes provision for public roads in the categories of "main" roads, "controlled-access" roads and "developmental" roads. An additional category, that of "important secondary" roads, is used by the Department in determining its works programme.

Main roads are those which provide communication between a large producing area, either actual or potential, and its market or nearest port or railway station; between two or more such areas; between large centres of population; or between the capital city and a large producing area or a large centre of population. Controlled-access roads are those which do not permit direct access from abutting property and may be entered or departed from only at certain selected road connexions located at points which are considered to serve best the traffic for which the controlled-access road was designed. Developmental roads are those which serve to develop an area or to increase its development. Important secondary roads are those which, though originally classified as developmental, have come to be used consistently by through traffic and therefore warrant a special allocation of funds by the Main Roads Department. The Act provides that, on the recommendation of the Commissioner, any road may be proclaimed a main road and any main road may cease to be a main road.

The construction and maintenance of main roads and controlled-access roads are the responsibility of the Main Roads Department. The Department also makes substantial financial provision for the construction and maintenance of important secondary roads and for the construction of developmental roads. The construction and maintenance of strategic roads and roads of access to Commonwealth property is undertaken by the Department for the Commonwealth Government.

Within its own district, each local government authority is responsible for the provision and upkeep of roads other than those provided by the Main Roads Department. In addition, the local authority is required by the Main Roads Act to maintain any developmental road situated in its district.

The following table shows the length of public roads of each type of surface, and of unsurfaced public roads, at the 30th June, 1960, classified according to Statistical Division (see map of Western Australia preceding Index). Included in the total are 3,466 miles of main roads, 5 miles of controlled-access road, 7,440 miles of important secondary roads and 21,157 miles of developmental roads.

ROADS OPEN FOR GENERAL TRAFFIC AT 30th JUNE, 1960
MILEAGE CLASSIFIED ACCORDING TO STATISTICAL DIVISION

Statistical Division	Surfaced				Unsurfaced			Grand Total
	Bitumen (a)	Gravel	Other (b)	Total	Formed (c)	Unformed (d)	Total	
Metropolitan (e)	1,490	103	2	1,595	4	86	90	1,685
Swan (e)	1,080	522	149	1,751	259	(f) 324	(f) 583	(f) 2,334
South-West	1,385	2,839	167	4,391	1,884	1,919	3,803	8,194
Southern Agricultural	930	2,698	174	3,802	6,599	2,391	8,990	12,792
Central Agricultural	1,604	5,654	75	7,333	9,831	(f) 3,902	(f) 13,733	(f) 21,066
Northern Agricultural	1,006	3,446	216	4,668	6,203	4,294	10,497	15,165
Eastern Goldfields	623	1,376	143	2,142	3,740	(f) 3,818	(f) 7,558	(f) 9,700
Central	26	53	746	825	5,191	(f) 2,859	(f) 8,050	(f) 8,875
North-West	137	16	68	221	2,332	(f) 2,496	(f) 4,828	(f) 5,049
Pilbara	70	130	5	205	2,245	(f) 423	(f) 2,668	(f) 2,873
Kimberley	68	247	397	712	1,610	(f) 1,212	(f) 2,822	(f) 3,534
Total	8,419	17,084	2,142	27,645	39,898	(f) 23,724	(f) 63,622	(f) 91,267

(a) Includes short lengths of concrete surface aggregating 4 miles, 59 chains. (b) Includes limestone and granite surfaces. (c) Comprises roads, mainly of natural surfaces, formed but not metalled or otherwise prepared. (d) Roads unprepared except for certain clearing. (e) The whole of the Swan Road District (now Shire of Swan-Guildford) has been included in the figures shown for the Swan Statistical Division although part of the area, for which separate details are not available, is in the Metropolitan Statistical Division. (f) Particulars are incomplete as information for some Road Districts (now Shires) is not available.

Vehicle Registration, Licences and Traffic Control

The Traffic Act, 1919-1961 provides for the registration of vehicles, the issue of licences and the regulation of traffic throughout the State, and prescribes the fees payable in respect of the several types of licences required.

In Western Australia there is no single authority responsible for the licensing of vehicles. The Traffic Branch of the Police Department issues licences in the Metropolitan Traffic Area, which comprises the whole of the Metropolitan Statistical Division (see map of Western Australia preceding Index) and that part of the Swan Division consisting of the Shires of Cockburn, Gosnells, Kwinana and Rockingham in their entirety and parts of the Shires of Armadale-Kelmscott, Mundaring and Swan-Guildford. Outside the Metropolitan Traffic Area each local government authority is responsible for the licensing of vehicles in its own district.

The Traffic Act provides that the issue of drivers' and riders' licences and used car dealers' licences throughout the State shall be the function of the Police Department.

The table on page 337 includes particulars of the number of motor vehicles, classified according to type, on the register at the 30th June in each of the years from 1956 to 1960. It also shows the net amounts collected from motor vehicle registrations and fees in the Metropolitan Traffic Area and in the rest of the State, as well as revenue from drivers', riders' and similar licences and fees throughout the State. Vehicles owned by the Commonwealth Government are not licensed under the Traffic Act and are excluded from the figures shown. At the 30th June, 1960 there were in Western Australia 1,120 Commonwealth-owned vehicles (excluding those of the Defence Services), comprising 112 motor cars, 1,004 utilities, vans and trucks, 3 omnibuses and 1 motor cycle.

Traffic control in general is exercised by the Police Department in the Metropolitan Traffic Area, except for certain powers in relation to the parking of vehicles conferred on the Perth City Council by the City of Perth Parking Facilities Act, 1956-1961. Outside the Metropolitan Traffic Area, control is vested by the Traffic Act in the local government authorities, each of which is required by the Act to appoint at least one traffic inspector for its district.

MOTOR VEHICLES ON REGISTER (†) AND FEES RECEIVED

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
METROPOLITAN TRAFFIC AREA (a)					
Number on Register at end of Year—					
Motor Cars (b)	61,835	65,013	69,414	75,203	81,636
Utilities, Vans and Trucks (b)	24,169	24,354	24,217	25,222	26,058
Omnibuses	548	560	553	584	554
Motor Cycles	9,253	8,770	8,580	9,080	9,422
Total	95,805	98,697	102,764	110,089	117,670
Revenue from Registrations and Fees (c) £	635,790	811,315	1,042,525	1,091,825	1,281,991
REST OF STATE					
Number on Register at end of Year—					
Motor Cars (b)	36,950	38,679	41,057	42,811	46,115
Utilities, Vans and Trucks (b)	39,441	39,653	39,978	40,466	42,069
Omnibuses	623	641	634	627	637
Motor Cycles	4,614	4,370	4,241	4,330	4,186
Total	81,628	83,343	85,910	88,234	93,007
Revenue from Registrations and Fees (c) £	670,450	791,573	960,359	1,030,091	1,169,379
WHOLE STATE					
Number on Register at end of Year—					
Motor Cars (b)	98,785	103,692	110,471	118,014	127,751
Utilities, Vans and Trucks (b)	63,610	64,007	64,195	65,688	68,127
Omnibuses	1,171	1,201	1,187	1,211	1,191
Motor Cycles	13,867	13,140	12,821	13,410	13,608
Total	177,433	182,040	188,674	198,323	210,677
Revenue from—					
Motor Vehicle Registrations and Fees (c) £	1,306,240	1,602,888	2,002,884	2,121,916	2,451,370
Drivers', Riders', etc. Licences and Fees £	103,639	110,588	128,314	137,562	182,032

(†) Excludes vehicles owned by the Commonwealth Government. (a) Comprises the Metropolitan Statistical Division and part of the Swan Statistical Division (see letterpress *Vehicle Registration, Licences and Traffic Control*). (b) In the figures shown for 1955-56 station wagons are included with Utilities, Vans and Trucks and, in those for later years, with Motor Cars. (c) Net revenue after payment of refunds; excludes fees for number plates.

Finance for Roads

The principal source of revenue for road works in Western Australia is in the form of Commonwealth financial assistance authorized by a series of Acts, the first of which, the Main Roads Development Act, was passed in 1923.

The Commonwealth Aid Roads Act of 1954 repealed earlier legislation and provided for distribution among the States, for a period of five years from the 1st July, 1954, of part of the moneys derived from customs and excise duties on petrol. Five per cent. of the total grant was payable to the State of Tasmania, the balance to be distributed among the other States on the basis of three-fifths according to population and two-fifths according to area. The Act required that forty per cent. of the moneys received by a State should be spent on roads in rural areas, other than highways, trunk roads and main roads. Additional payments to the States for each of the years 1957-58 and 1958-59 were authorized by a Commonwealth Aid Roads (Special Assistance) Act passed in 1957. With the expiry of these Acts in 1959, they were replaced by a new Commonwealth Aid Roads Act (No. 39 of 1959) with a currency of five years from the 1st July, 1959. By its provisions the funds available for distribution among the States cease to be related to taxation on petrol. They take the form of a basic grant aggregating £220 million for the five-year period, with an additional grant of £30 million. The basic grant increases uniformly from £40 million in the first year to £48 million in the fifth year and, after payment to Tasmania of five per cent. of the total in each year, the balance is allocated among the other States in the proportion of one-third according to population, one-third according to area and one-third according to the number of motor vehicles registered. The additional grant, increasing from £2 million in 1959-60 to £10 million in 1963-64, is a conditional one dependent on a State's expenditure on roads from its own re-

sources. Where this expenditure in any year exceeds the corresponding amount spent in 1958-59, the State is entitled to receive a grant equal to the amount of the excess, but not greater than its quota of the total additional grant for the year, this quota being determined on the same principle as that used in allocating the basic grant.

The receipt and distribution of State moneys for roads and associated works are dealt with in a number of accounts, among the more important of which are the Metropolitan Traffic Trust Account and the Central Road Trust Fund.

Before the Central Road Trust Fund was established by an amendment to the Traffic Act in 1959, all receipts from vehicle licence fees in the Metropolitan Traffic Area were paid to the Metropolitan Traffic Trust Account, while the local government authorities outside the Metropolitan Traffic Area retained the whole of their collections from this source. Income from drivers' and riders' licences throughout the State was formerly credited to the Consolidated Revenue Fund.

A Central Road Trust Fund account was opened at the Treasury on the 1st January, 1960, to record transactions in connexion with the additional grant provided for in the Commonwealth Aid Roads Act of 1959. The State moneys required to be paid into the Fund comprise metropolitan collections of vehicle licence fees in excess of the amount received in 1958-59 (£1,093,895), and revenue throughout the State from drivers' and riders' licences. Other revenues accruing to the Fund are those derived from local government authorities outside the Metropolitan Traffic Area, which may elect to contribute the amount of their collections of vehicle licence fees in excess of such receipts in 1958-59, as well as the State's quota of the additional grant from the Commonwealth.

The Central Road Trust Fund is administered by the Commissioner of Main Roads who is required to make certain payments from the Fund after the 30th June in each year. A contributing local authority outside the Metropolitan Traffic Area is entitled under the Act to receive a payment 50 per cent. greater than the amount of its contribution. The metropolitan local authorities share, in proportions determined by the Minister, an amount equal to three-quarters of the total sum paid to the credit of the Fund by the Commissioner of Police as the metropolitan vehicle-licensing authority. It is provided that the total disbursements to local government authorities from the Fund shall not in any year exceed twice the amount of the additional grant received from the Commonwealth for that year, and that moneys so paid must be spent by the local authorities on roads, road-making plant or research in connexion with road construction.

The revenue of the Metropolitan Traffic Trust Account consists of the amount received from vehicle licence fees in the Metropolitan Traffic Area, except for that portion which is required to be paid to the Central Road Trust Fund. The Act provides that, after payment of an annual charge of £120,000 for the costs of collection and administration, one-half of the net balance shall be shared by local government authorities in the Metropolitan Traffic Area in proportions determined by the Minister, and the remaining half paid to the Commissioner of Main Roads to be applied to the performance of specified works and services associated with road construction and maintenance and allied projects.

Other State moneys used for road purposes are the contributions paid to the Main Roads Trust Account by the Department of Transport to meet the cost of maintaining and improving roads used by omnibuses and commercial vehicles licensed by the Department.

Local government expenditure on roads is financed from a number of sources. These comprise vehicle licence fees, Commonwealth and State moneys received by way of disbursements made by the Commissioner of Main Roads, amounts levied in the form of general rates, and the proceeds of local government loans raised for road purposes.

METROPOLITAN (PERTH) PASSENGER TRANSPORT TRUST

The Metropolitan (Perth) Passenger Transport Trust is constituted under the Metropolitan (Perth) Passenger Transport Act of 1957 to provide, maintain and manage road passenger services and ferry services in the metropolitan area, and in this connexion to acquire any such existing service. For the purposes of the Act, the metropolitan area is defined by a proclamation of the 1st May, 1958 as being "all the land within a circle having a radius of 30 miles from the Perth Town Hall" and, in addition, an area bounded by the South Western Highway and the ocean, extending southward to an east-west line one mile south of the town of Pinjarra. It thus embraces an area comprising the whole of the Metropolitan Statistical Division, almost all of the Swan Statistical Division and a small area of each of the three adjoining Divisions (see map of Western Australia preceding Index). A brief summary of the main provisions of the Act is given on page 88 of the *Official Year Book of Western Australia*, 1960, No. 2 (*New Series*).

The Trust began transport operations on the 1st September, 1958 after having acquired two privately-owned omnibus services. Three more such services were taken over before the end of 1958 and another early in 1959. From the 1st July, 1960 the Trust assumed control of the trolley-bus, motor omnibus and ferry services formerly operated by the Western Australian Government Tramways and Ferries Department and, from the 1st September, 1960, the omnibus service of the Fremantle Municipal Transport Board. The Trust's acquisition of all metropolitan road passenger transport services and ferry services was completed when it assumed control, from the 29th April, 1962, of the last remaining non-government metropolitan omnibus service.

A summary of the operations of the Metropolitan (Perth) Passenger Transport Trust, which were confined to omnibus traffic, during the period from the 1st September, 1958 to the 30th June, 1960 is given in the following table.

METROPOLITAN (PERTH) PASSENGER TRANSPORT TRUST SERVICES

Particulars	Ten Months ended 30th June, 1959	Year ended 30th June, 1960	Particulars	Ten Months ended 30th June, 1959	Year ended 30th June, 1960
Number of—				£	£
Ombibuses at 30th June	211	211	Operating Revenues	709,861	916,783
Miles Run	5,343,000	6,444,696	Operating Expenses	623,800	825,407
Passengers Carried	13,466,171	16,550,056	Depreciation	68,332	103,418
Employees at 30th June	532	550	Interest	61,932	84,907

TRAM, TROLLEY-BUS AND FERRY SERVICES

The Western Australian Government Tramways and Ferries Department was the authority which, since its establishment in 1949 as a statutory body separate from Railways administration, controlled the State Government's tramway services until operations ceased on the 19th July, 1958, and trolley-bus, metropolitan omnibus and ferry services until their acquisition by the Metropolitan (Perth) Passenger Transport Trust on the 1st July, 1960.

Tramways

The only tramway service operating in Western Australia after 1952, when municipal services at Kalgoorlie and Fremantle were discontinued, was that provided by the State Government on routes confined to Perth and suburbs. When tramway services ceased altogether on the 19th July, 1958, alternative transport by trolley-bus and motor omnibus was provided.

A summary of operations during the five-year period ended 30th June, 1958 is given on page 329 of the *Official Year Book of Western Australia*, 1960, No. 2 (*New Series*). Between the 1st July and the 19th July, 1958, the number of passengers carried was 104,404 and the number of miles run, 11,532.

Trolley-Buses

Trolley-bus services in Perth and suburbs were operated by the State Government from their introduction on 4½ miles of route in 1933 until the 1st July, 1960, when the Metropolitan (Perth) Passenger Transport Trust assumed control of these services. The following table gives a summary of activities during each of the years from 1955-56 to 1959-60.

STATE GOVERNMENT TROLLEY-BUS SERVICES

Particulars	Year ended 30th June:				
	1956	1957	1958	1959	1960
Number of—					
Route Miles Operated	22	22	23	29	22
Trolley-buses at 30th June	90	90	90	90	75
Miles Run	1,280,874	973,411	974,668	1,302,391	1,194,382
Passengers Carried	7,330,306	5,521,624	5,550,009	7,252,495	6,760,129
Employees at 30th June	221	182	175	269	230
	£	£	£	£	£
Operating Revenues	219,147	194,354	200,664	265,138	245,720
Operating Expenses	266,625	240,075	242,816	326,924	323,985
Depreciation	21,304	20,047	19,813	21,593	26,360
Interest	24,336	27,156	26,481	28,090	27,802

Passenger Ferries

A passenger ferry service across the Swan River from Perth to South Perth, formerly conducted by the State Government, has been operated by the Metropolitan (Perth) Passenger Transport Trust since the 1st July, 1960. The activities of the service during the five-year period ended 30th June, 1960 are summarized in the following table. Particulars of private charter excursions are excluded from the figures, which therefore relate only to the regular transport of passengers.

STATE GOVERNMENT FERRY SERVICES

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
Number of—					
Miles Run	25,707	25,606	25,701	25,646	24,687
Boats at 30th June	4	4	4	4	4
Passengers Carried	437,168	444,638	442,259	407,276	362,316
Employees at 30th June	11	11	11	11	7
Operating Revenues	£ 9,944	£ 12,836	£ 13,520	£ 13,504	£ 12,219
Operating Expenses	15,410	15,022	15,868	15,119	14,466
Depreciation	1,095	1,018	1,019	1,018	1,018
Interest	387	392	352	312	271

MOTOR OMNIBUS SERVICES

Motor omnibus services in Western Australia are provided by the State Government, by local government authorities, by private operators and also, since the 1st September, 1958, by the Metropolitan (Perth) Passenger Transport Trust.

State Government Omnibus Services

Reference is made on page 331 to the Western Australian Government Railways Road Services, which cover long-distance routes between Perth and country centres. The State Government also provided metropolitan omnibus services, until their acquisition by the Metropolitan (Perth) Passenger Transport Trust on the 1st July, 1960. A summary of operations during the five-year period ended 30th June, 1960 is given in the following table.

STATE GOVERNMENT OMNIBUS SERVICES (a)

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
Number of—					
Route Miles Operated	131	133	140	147	149
Omnibuses at 30th June	127	133	141	141	136
Miles Run	4,414,694	5,016,111	5,047,868	5,275,598	5,273,872
Passengers Carried	17,729,016	18,429,555	17,887,430	19,012,211	18,185,770
Employees at 30th June	493	549	542	546	577
Operating Revenues	£ 552,264	£ 678,738	£ 678,945	£ 703,964	£ 699,338
Operating Expenses	592,424	722,486	749,104	798,701	815,434
Depreciation	58,002	56,051	62,163	62,361	58,665
Interest	17,160	18,092	20,377	18,870	16,323

(a) Excludes particulars of Western Australian Government Railways Road Services (see page 333).

Municipal Omnibus Services

The Fremantle Municipal Transport Board conducted an omnibus service in Fremantle and suburbs on behalf of the Fremantle and East Fremantle Municipal (now Town) Councils until the 31st August, 1960, after which the service passed to the control of the Metropolitan (Perth) Passenger Transport Trust.

The Eastern Goldfields Transport Board operates services in Kalgoorlie and suburbs under an agreement with the Kalgoorlie and Boulder Town Councils and the Kalgoorlie Shire Council.

The activities of the Boards in each year from 1955-56 to 1959-60 are summarized in the following table.

MUNICIPAL OMNIBUS SERVICES

Particulars	Financial Year (a)				
	1955-56	1956-57	1957-58	1958-59	1959-60
FREMANTLE MUNICIPAL TRANSPORT BOARD					
Number of—					
Route Miles Operated	37	35	37	35	35
Omnibuses at end of Year	37	40	39	39	39
Miles Run	1,006,278	999,090	989,705	1,005,469	999,890
Passengers Carried	6,417,446	6,127,154	5,965,563	5,776,119	5,477,918
Employees at end of Year	119	112	100	95	94
	£	£	£	£	£
Operating Revenue	165,341	158,092	155,341	151,402	154,322
Interest on Trust Funds and Fixed Deposits	24,714	26,614	31,219	32,618	32,931
Other Revenue	2,613	1,437	1,947	970	975
Operating Expenses	157,369	153,502	150,843	149,367	157,297
Depreciation	21,420	19,267	15,157	12,125	7,555
Contributions to Local Government Revenue (b).....	11,567	11,062	11,196	21,184	21,075
Other Appropriations	2,312	2,312	2,311	2,314	2,301

EASTERN GOLDFIELDS TRANSPORT BOARD

Number of—					
Route Miles Operated	18	18	18	18	18
Omnibuses at end of Year	11	11	15	15	15
Miles Run	296,299	287,007	287,780	278,870	274,845
Passengers Carried	1,352,738	1,290,949	1,216,828	1,142,497	1,125,114
Employees at end of Year	21	19	19	18	17
	£	£	£	£	£
Operating Revenue	35,167	35,843	35,554	33,438	32,098
Other Revenue	407	400	385	359	360
Operating Expenses	34,853	34,359	34,268	32,635	33,123
Renewals Reserve Fund	372	1,581	997	212	....
Other Charges (Interest)	349	274	557	491	557

(a) For the Fremantle Municipal Transport Board, year ended 31st August and for the Eastern Goldfields Transport Board, 30th November. (b) Paid to Fremantle City Council and East Fremantle Municipal (now Town) Council.

Private Omnibus Services

PRIVATE OMNIBUS SERVICES (a)

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960

METROPOLITAN SERVICES (b)

Number of—					
Omnibuses at 30th June	299	315	323	83	83
Miles Run	11,015,186	10,672,482	10,579,131	5,003,466	3,149,433
Passengers Carried	31,083,840	29,318,685	28,421,950	14,287,880	9,685,525
Employees at 30th June	730	755	719	205	200
	£	£	£	£	£
Operating Revenue	1,448,138	1,464,922	1,452,542	680,126	454,035
Operating Expenses (c)	1,388,049	1,386,115	1,382,654	672,280	425,464

OTHER SERVICES

Number of—					
Omnibuses at 30th June	73	63	60	63	54
Miles Run	1,156,418	1,128,343	1,064,786	1,024,767	992,378
Passengers Carried	1,523,164	1,482,908	1,458,925	1,558,531	1,497,458
Employees at 30th June	97	82	81	82	72
	£	£	£	£	£
Operating Revenue	132,006	120,342	123,968	124,131	131,228
Operating Expenses (c)	131,757	128,685	126,947	127,796	128,793

(a) Excludes tourist and school bus services and charter excursions. (b) Services operating wholly within the Metropolitan Statistical Division and its environs. Decrease in operations in years subsequent to 1957-58 due to acquisition of services by Metropolitan (Perth) Passenger Transport Trust. See letterpress and table on pages 338-9. (c) Includes depreciation.

Privately-owned omnibus services operate in and around country centres. Private services were conducted also in Perth and suburbs until the 29th April, 1962, when the last of these services passed to the control of the Metropolitan (Perth) Passenger Transport Trust (see letterpress on pages 338-9). The figures shown under the heading of Metropolitan Services in the preceding table relate to those private undertakings which provided transport facilities, during the period 1955-56 to 1959-60, on routes lying wholly within the Metropolitan Statistical Division and its environs. The activities of those operating in other parts of Western Australia are shown under Other Services. Details of the road passenger service of the Midland Railway Company, to which reference is made on page 333, are included in this section of the table, which therefore gives a summary of the operations of all private omnibus services during the five years from 1955-56 to 1959-60.

STATISTICAL SUMMARY OF RAIL, ROAD AND FERRY SERVICES

The following table, which is based on figures already shown in tables on the preceding pages, is designed to give a convenient summary of the operations of the several services during 1959-60 and to provide some significant totals for the services as a whole.

RAIL, ROAD AND FERRY SERVICES—SUMMARY FOR 1959-60

Service	Route Miles	Miles Run	Passengers Carried		Employees at end of Year	Operating Revenues	Operating Expenses
			Metropolitan	Other			
Railways—							
State Government (a)	4,120	7,961,880	13,170,875	708,454	12,697	£ 14,846,678	£ 15,226,777
Private	277	292,941	....	4,469	434	831,823	607,293
Total	4,397	8,254,821	13,170,875	712,923	13,131	15,678,501	15,834,070
Railways Road Services—							
State Government	3,012	1,328,167	....	260,625	124	191,586	181,426
Private	312	311,018	....	22,812	21	(b)	(b)
Total	3,324	1,639,185	....	283,437	145	(c)	(c)
Trolley-buses, State Government	22	1,194,382	6,760,129	....	230	245,720	323,985
Ferries, State Government	1	24,687	362,316	....	7	12,219	14,466
Omnibuses—							
State Government (a)	149	5,273,872	18,185,770	....	577	699,338	815,434
Metropolitan (Perth) Passenger Transport Trust	(d)	6,444,696	16,550,056	....	550	916,783	825,407
Municipal	53	1,274,735	5,477,918	1,125,114	111	186,420	190,420
Private (e)	(d)	3,830,793	9,685,525	1,474,646	251	585,263	(f) 554,257
Total	(d)	16,824,096	49,899,269	2,599,760	1,489	2,387,804	2,385,518
GRAND TOTAL	(d)	27,937,171	70,192,589	3,596,120	15,002	18,515,830	18,739,465

(a) Excluding Western Australian Government Railways Road Services. (b) Not available separately for publication; included in "Omnibuses, Private." (c) Not available; see note (b). (d) Not available. (e) Excluding private railway road services, except for figures shown under "Operating Revenues" and "Operating Expenses." (f) Includes depreciation.

ROAD TRAFFIC ACCIDENTS

Statistics of road traffic accidents are prepared from information contained in reports submitted by the police, or by traffic inspectors employed by local government authorities outside the Metropolitan Traffic Area. Accidents involving casualties are those which result in the death of any person within a period of 30 days after the accident, or in which any person suffers bodily injury to an extent requiring surgical or medical treatment.

The following table shows the number of accidents involving casualties which occurred in Western Australia and in Australia (excluding the Northern Territory, for which particulars are not available) during each year of the period from 1955-56 to 1959-60. Casualty rates per 100,000 of mean population and per 10,000 motor vehicles registered are also shown. It will be seen that the casualty rates experienced in Western Australia were higher than the corresponding Australian rates in each year, except for those relating to persons killed per 10,000 motor vehicles registered in the years 1956-57 to 1959-60, when the Western Australian and Australian rates were equal.

ROAD TRAFFIC ACCIDENTS AND CASUALTIES WESTERN AUSTRALIA AND AUSTRALIA (a)

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
WESTERN AUSTRALIA					
Accidents involving Casualties	3,211	3,082	3,338	3,450	3,656
Number of Persons Killed—					
Total	185	168	164	178	180
Per 100,000 of Mean Population (b)	28	25	24	25	25
Per 10,000 Motor Vehicles Registered (c)	11	9	9	9	9
Number of Persons Injured—					
Total	4,098	3,921	4,249	4,506	4,788
Per 100,000 of Mean Population (b)	614	576	613	638	667
Per 10,000 Motor Vehicles Registered (c)	236	217	229	231	232
AUSTRALIA (a)					
Accidents involving Casualties	37,766	39,066	41,170	41,766	44,919
Number of Persons Killed—					
Total	2,119	2,113	2,147	2,264	2,468
Per 100,000 of Mean Population (b)	23	22	22	23	24
Per 10,000 Motor Vehicles Registered (c)	10	9	9	9	9
Number of Persons Injured—					
Total	48,773	50,450	54,193	55,359	60,104
Per 100,000 of Mean Population (b)	525	530	557	558	593
Per 10,000 Motor Vehicles Registered (c)	221	216	219	214	223

(a) Excluding Northern Territory, for which particulars are not available. (b) Adjusted, where necessary, in accordance with preliminary results of the 1961 Census. (c) Based on annual average of number of motor vehicles on register.

In the next table road traffic accident casualties which occurred in Western Australia during the five years ended 30th June, 1960 are classified according to type of road user. The figures shown in the category "Other" refer to such persons as tram drivers, riders of horses and drivers of animal-drawn vehicles.

ROAD TRAFFIC ACCIDENTS—CASUALTIES ACCORDING TO TYPE OF ROAD USER

Type of Road User	Year ended 30th June :				
	1956	1957	1958	1959	1960
PERSONS KILLED					
Drivers of Motor Vehicles	46	42	36	41	48
Motor Cyclists	20	19	25	15	21
Pedal Cyclists	7	8	13	12	6
Passengers :					
Pillion	3	5	4	3	7
Other	59	38	38	51	50
Pedestrians	50	54	48	56	47
Other	....	2	....	....	1
Total	185	168	164	178	180
PERSONS INJURED					
Drivers of Motor Vehicles	853	874	973	1,128	1,280
Motor Cyclists	673	672	703	730	807
Pedal Cyclists	423	348	404	401	412
Passengers :					
Pillion	120	160	156	150	228
Other	1,305	1,289	1,329	1,454	1,438
Pedestrians	704	576	679	638	623
Other	20	2	5	5	....
Total	4,098	3,921	4,249	4,506	4,788

The following table gives a classification of casualties according to the ages of persons killed and persons injured during each year of the period from 1955-56 to 1959-60.

ROAD TRAFFIC ACCIDENTS—CASUALTIES CLASSIFIED ACCORDING TO AGE

Year ended 30th June :			Age last birthday (years)									Total	
			0-4	5-6	7-16	17-20	21-29	30-39	40-49	50-59	60 and over		Not stated
PERSONS KILLED													
1956	....	....	8	3	16	21	36	23	27	18	33	....	185
1957	....	....	9	9	14	21	33	15	14	14	38	1	168
1958	....	....	5	5	13	22	28	29	14	12	36	....	164
1959	....	....	9	6	19	17	18	30	21	18	40	....	178
1960	....	....	6	2	15	29	26	20	27	12	43	....	180
PERSONS INJURED													
1956	....	....	188	94	486	605	737	476	336	269	246	661	4,098
1957	....	....	145	78	480	644	691	482	373	268	241	519	3,921
1958	....	....	158	85	548	742	743	493	389	280	266	545	4,249
1959	....	....	151	100	587	851	802	531	392	360	280	402	4,506
1960	....	....	160	115	645	1,039	895	522	421	364	302	325	4,788

Road traffic accidents during the years ended 30th June, 1959 and 1960 are classified in the next table according to type of accident and type of vehicle involved. It should be noted that, as accidents and casualties may involve more than one type of vehicle and, in such cases, are classified to each type involved, totals cannot be derived by adding the figures in the second part of the table.

ROAD TRAFFIC ACCIDENTS TYPE OF ACCIDENT AND TYPE OF VEHICLE INVOLVED

Type of Accident and Type of Vehicle Involved	Year ended 30th June :					
	1959			1960		
	Accidents involving Casualties	Casualties		Accidents involving Casualties	Casualties	
		Persons Killed	Persons Injured		Persons Killed	Persons Injured
TYPE OF ACCIDENT						
Vehicle Colliding with—						
Moving Vehicle	1,703	59	2,380	1,817	61	2,496
Pedestrian	672	56	659	641	45	638
Stationary Vehicle	85	4	102	117	4	172
Other Fixed Object	21	....	21	16	....	24
Animal	42	....	51	47	....	63
Vehicle Overturning or Leaving Road	838	55	1,201	957	67	1,332
Passenger Accident	85	4	88	58	2	61
Other	4	....	4	3	1	2
Total	3,450	178	4,506	3,656	180	4,788
TYPE OF VEHICLE INVOLVED (a)						
Motor Vehicle, excluding Motor Cycle	3,020	167	4,004	3,217	161	4,275
Motor Cycle	363	21	1,017	957	29	1,138
Pedal Cycle	432	13	444	425	6	436
Animal-drawn Vehicle	6	....	6	6	....	9

(a) See letterpress immediately preceding table.

Motor Vehicle Third Party Insurance

Motor vehicle third party insurance became compulsory in Western Australia under the provisions of the Motor Vehicle (Third Party Insurance) Act of 1943. All such insurances are now effected through a Motor Vehicle Insurance Trust, a summary of whose operations is given in Chapter VI—Part 2, *Private Finance*.

AIR TRANSPORT

The supervision and control of civil air transport operations throughout Australia is the responsibility of the Department of Civil Aviation. Among its functions are the enforcement of safety regulations; the registration of aircraft and the issue of certificates of airworthiness; the licensing of members of air crews and of ground staffs; the provision, operation and maintenance of aeronautical communication systems and air navigation facilities; the authorization of sites for aerodromes; the design, operation and maintenance of aerodromes; the establishment and operation of air traffic control services; the specification of the requisite meteorological services; the approval of fares, freight rates and time tables; and the licensing of air service operations and co-operation with State Government transport licensing authorities.

An extensive system of air services operates in Western Australia for the transport of passengers, freight and mails. Perth has an international airport which is used by overseas services between Australia and the United Kingdom via Singapore and between Australia and South Africa via Cocos Island and Mauritius. Perth is also the western terminus of interstate flights connecting the capital cities of Australia and is the base for a comprehensive airline network serving many inland centres as well as coastal towns in the south, the north-west and the north of the State. From some of these towns regular services operate over many hundreds of miles of route to sheep and cattle stations and to native missions. Some stations and towns in the Kimberley are linked with Darwin and Alice Springs in the Northern Territory. (The air routes being flown in or through Western Australia at the 31st December, 1960 are shown on the map of the State preceding the index.) In addition to these regular services there are facilities for charter flights, and some operators undertake specific types of contracts such as the transport of beef carcasses from inland stations to the port of shipment, or work connected with the Royal Flying Doctor Service.

The principal function of the Royal Flying Doctor Service of Australia is to provide medical aid, dental care and air ambulance transport for residents, including aboriginal natives, in remote areas. Isolated townships, mining centres and sheep and cattle stations are usually equipped with two-way radio sets and, by this means, are linked with bases where doctors are available for radio consultation in the event of sickness or accident. In serious cases a doctor flies to the patient, who may then be flown to hospital for treatment. The Service provides first-aid books, as well as standard medicine chests with directions for the use of the drugs and medical supplies which they contain and, where necessary, the doctor gives additional instruction by radio.

The radio network of the Royal Flying Doctor Service is regularly used in the work of Schools of the Air conducted by the Education Department, and also for the transmission and receipt of telegrams. In addition, it may be used, as the need arises, in connexion with flood relief, in searching for lost parties and in co-ordinating movements of livestock.

The Service is financed by grants from the Commonwealth and State Governments and by private donations.

TRANSPORT CO-ORDINATION

The Western Australian Transport Board was established in 1934 under the provisions of the State Transport Co-ordination Act of 1933. The Board as originally constituted was dissolved by an amendment to the Act in 1961 and its powers and functions transferred to a Commissioner of Transport assisted by a Transport Advisory Board. The Transport Advisory Board, to which the first appointments were made by the Governor on the 19th February, 1962, comprises the Commissioner of Transport as chairman and four other members, two of whom are representative of rural industries and two of city interests. The functions of the Commissioner are to investigate and make inquiries into transport matters, including transport generally as related to service to the community, the needs of the State for its economic development, the industrial conditions under which all forms of transport are conducted, and the impartial and equitable treatment of all conflicting interests; to consider and determine all applications for licences in respect of public vehicles and the conditions to be imposed in granting such licences; and to call tenders and invite premiums in regard to the provision of transport, where he considers it desirable to do so after receiving the advice of the Transport Advisory Board.

The public vehicles licensed by the Commissioner are omnibuses, commercial goods vehicles and aircraft. In the licensing of omnibuses the Commissioner is empowered to prescribe the routes to be operated, the fares to be charged, the time tables to be observed and the maximum number of passengers to be carried in an omnibus. The Metropolitan (Perth) Passenger Transport Trust, to which reference is made on pages 338-9, is not subject to the State Transport Co-ordination Act and exercises these powers in relation to its own services. All commercial goods vehicles are required to be licensed, except those which operate solely in the area within a radius of 20 miles from the Perth General Post Office or within a radius of 20 miles from the owner's place of business, or those which are used in certain circumstances for the transport of specified types of goods, mainly primary produce including forest products, minerals and livestock. Aircraft licences issued by the Commissioner relate to regular services and charter flights. Aircraft exempted from the licensing provisions of the Act are those operated solely in connexion with the Royal Flying Doctor Service or in the course of aerial spraying, crop dusting, seed sowing, fertilizer distribution, photography, geophysical surveying, dingo baiting or whale or fish spotting.

In regard to railways the Commissioner of Transport may, with the concurrence of the Transport Advisory Board, recommend the closure of lines or the partial suspension of services where it is considered that a district is, or could be, better served by road or air transport. The Commissioner, if so directed by the appropriate Minister, is then required to call tenders for the provision of transport facilities to serve the district. Where the Parliament sanctions the cancellation or suspension of the existing rail service, the Minister may then accept a tender, which becomes subject to conditions imposed by the Commissioner relating to the service to be provided and the period during which it shall operate.

Financial transactions are recorded in a Transport Co-ordination Fund account as required by the Act. The principal revenues of the Fund are receipts from licence and permit fees and amounts received from the Treasury for distribution in the form of subsidy to transport operators and others in certain areas. The expenditure from the Fund includes amounts necessary to meet administration costs, disbursements to the Main Roads Department and to local government authorities for the maintenance and improvement of roads, moneys required to be held in trust for the provision and maintenance of landing grounds, and the payment of subsidies. Subsidies are paid principally on the cartage of grain and fertilizers, but also on the air transport of perishable goods to places in the northern part of the State and on air travel by students normally resident in that area.

CHAPTER IX—continued

PART 3—COMMUNICATION

POSTS, TELEGRAPHS AND TELEPHONES

The first postmasters in the Colony of Western Australia were appointed at Perth and Fremantle in 1830 and a Postal Department was established by the Colonial Government in 1834. Telegraphic communication, between Perth and Fremantle, was inaugurated in 1869 by means of a private line, which was purchased by the Government in 1871. A telephone exchange system, installed and operated by the Government, was opened at Perth in 1887.

In 1901, following the federation of the Australian Colonies, the post, telegraph and telephone services of the State Governments were transferred to the Commonwealth Government. The Post and Telegraph Act of 1901 placed the services under the control of a Commonwealth Minister to be known as the Postmaster-General.

The following table shows the number of persons employed by, or receiving allowances from, the Postmaster-General's Department in Western Australia, and the number of post offices throughout the State at the 30th June of each of the years from 1956 to 1960. "Non-official" post offices are those conducted by persons who are not full-time employees of the Department, but are paid an allowance for their services. These offices are situated mainly in country areas and are usually established at retail stores or other places of business. "Telephone offices" are those at which only telephone and telegraph business is transacted.

POSTMASTER-GENERAL'S DEPARTMENT—EMPLOYMENT AND POST OFFICES
WESTERN AUSTRALIA

Particulars	At 30th June :				
	1956	1957	1958	1959	1960
Full-time Employees—					
Permanent Officers	3,555	3,945	4,233	4,353	4,452
Temporary and Exempt Officers (a)	1,582	1,418	1,333	1,397	1,269
Total	5,117	5,363	5,566	5,750	5,721
Others (b)—					
Non-official Postmasters and Staff	516	519	523	527	526
Telephone Office Keepers	351	352	340	332	331
Mail Contractors (c)	291	279	289	274	295
Part-time Employees	86	90	96	114	159
Total	1,244	1,240	1,248	1,247	1,311
Total Employment	6,361	6,603	6,814	6,997	7,032
Post Offices—					
Official	151	151	150	148	148
Non-official	484	487	486	485	486
Telephone Offices	357	352	344	341	333
Total	992	990	980	974	967

(a) Exempt staff are persons exempt from the provisions of the Public Service Act.
tract or on piece-work.

(b) Persons employed under contract.

(c) Includes persons employed to drive vehicles.

Figures relating to the revenue and expenditure of the Department in Western Australia during each of the financial years from 1955-56 to 1959-60 are given in the following table. They represent the amounts actually collected or paid in each year, as shown by records kept for Treasury purposes. Some additional items of departmental revenue and expenditure are not apportioned to States and therefore do not appear in the table.

POSTMASTER-GENERAL'S DEPARTMENT—REVENUE AND EXPENDITURE (a)
WESTERN AUSTRALIA
(£'000)

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
REVENUE^{va} (a)					
Postage	1,004	1,821	1,902	1,924	2,338
Money Order Commission and Poundage on Postal Notes	56	52	58	53	63
Private Boxes and Bags	15	20	20	21	23
Miscellaneous	166	155	157	160	184
Total—Postal Revenue	1,901	2,048	2,137	2,158	2,608
Telegraphs	473	546	581	579	590
Telephones	2,541	2,802	3,124	3,372	4,004
GRAND TOTAL	4,915	5,396	5,842	6,109	7,202
EXPENDITURE (a)					
Expenditure from Ordinary Votes—					
Salaries and Payments in the Nature of Salary	2,318	2,440	2,579	2,642	2,935
General Expenses	236	301	291	291	307
Stores and Material	120	144	173	186	211
Mail Services	275	243	251	252	253
Engineering Services (other than Capital Works)	1,926	2,105	2,267	2,475	2,703
Total	4,875	5,233	5,561	5,846	6,409
Rent, Repairs and Maintenance	73	56	67	76	79
Proportion of Audit Expenses	2	3	3	3	4
Capital Works and Services—					
Telegraph and Telephone	1,567	1,920	2,230	2,303	2,395
New Buildings, etc., Fittings and Furniture	405	192	250	339	187
GRAND TOTAL	6,922	7,404	8,111	8,572	9,074

(a) The figures shown as Revenue represent revenue actually collected during the year, and those shown as Expenditure, actual payments made, as recorded for Treasury purposes.

As the figures shown in the preceding table relate to actual collections and payments made, they do not represent the net results of the Department's operations for the year. The net results of the operations throughout Australia of each branch, for the year ended 30th June, 1960 after providing for working expenses (including superannuation, pensions and depreciation) and interest charges including exchange, are shown in the following table. The amounts appearing under the heading of Interest represent interest on all capital. Prior to 1959-60, interest was payable on loan capital only.

POSTMASTER-GENERAL'S DEPARTMENT—PROFIT OR LOSS (†) OF BRANCHES
AUSTRALIA, 1959-60
(£'000)

Particulars	Postal	Telegraph	Telephone	All Branches
Earnings	43,261	6,975	75,351	125,587
Working Expenses	41,955	7,062	60,795	109,812
Net Earnings	1,306	—87	14,556	15,775
Interest (a)	578	342	14,427	15,347
Profit or Loss	728	—429	129	428

(†) Minus sign (—) denotes loss. (a) See letterpress immediately preceding table.

Posts

In the following table, postal matter handled in Western Australia during each year from 1955-56 to 1959-60 is dissected according to the type of article dealt with, and whether received from overseas or posted for delivery in Australia or to an overseas destination.

POSTAL ARTICLES HANDLED (thousands)

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
Posted for Delivery within Australia—					
Letters and Post Cards	90,928	89,960	97,500	99,904	97,875
Newspapers and Packets	9,734	9,945	8,839	9,129	9,676
Parcels (a)	1,179	1,127	1,129	1,169	934
Registered Articles (b)	908	833	707	678	598
Posted for Delivery Overseas—					
Letters and Post Cards	5,315	5,351	5,427	5,688	5,587
Newspapers and Packets	1,544	1,281	1,411	1,381	1,119
Parcels (a)	36	30	31	29	25
Registered Articles (b)	62	60	56	54	52
Received from Overseas—					
Letters and Post Cards	3,786	3,486	3,434	3,296	2,074
Newspapers and Packets	5,413	5,946	5,910	6,582	5,759
Parcels (a)	48	44	45	45	46
Registered Articles (b)	60	52	56	44	45

(a) Includes registered, cash on delivery and duty parcels.

(b) Excludes registered parcels; see note (a).

Telegraphs and Telephones

A brief account of the origin and extension of the telegraph system in Western Australia and of submarine cable installations is given on page 291 of the *Official Year Book of Western Australia, 1957, No. 1 (New Series)*, and the main developments are treated chronologically in Chapter I of the present issue.

Oversea telegraph and telephone services are now the responsibility of the Overseas Telecommunications Commission (Australia), to which reference is made in the next section *Radio Communication*.

The following table relates to telegraph and telephone services in Western Australia in each financial year from 1955-56 to 1959-60. It shows the numbers of telegraph offices and of telephone exchanges and lines and instruments connected at the 30th June of each year. The volume of telegraph traffic handled and the number of telephone calls made, classified according to the type of call, are also shown.

TELEGRAPHS AND TELEPHONES

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
TELEGRAPHS					
Number of—					
Offices (a)	994	1,002	978	967	970
Telegrams and Cables—	'000	'000	'000	'000	'000
Inland—Dispatched	2,100	1,915	1,827	1,796	1,768
Oversea—Dispatched	74	71	76	76	77
Received	74	72	68	88	73
Total	148	143	144	164	150
TELEPHONES					
Number of—					
Exchanges (a)	756	764	767	771	763
Lines Connected (a)	68,480	72,893	78,051	83,211	87,407
Instruments Connected (a)—					
Subscribers'	92,544	98,688	105,350	112,020	117,487
Public Telephones	1,204	1,363	1,448	1,521	1,620
Other	1,848	2,078	2,195	2,267	2,386
Paid Local Calls—	'000	'000	'000	} (b)	} (b)
Subscribers'	62,592	65,241	69,814		
From Public Telephones	7,361	6,707	6,967		
Trunk Line Calls	5,614	6,101	6,638		

(a) At 30th June. (b) Precise statistics distinguishing between local calls and trunk line calls are no longer available, following the introduction of a scheme of extended local service areas, as a result of which many telephone calls which would previously have been short-distance trunk calls became local calls.

At the 30th June, 1960, the single wire mileage of telegraph and telephone cables in Western Australia was 546,820. The duct mileage of conduits, which includes only ducts and conduits of an internal diameter of 2 inches or over, was 892. The single wire mileage of aerial wires was 120,732 and the mileage of pole routes was 15,839.

RADIO COMMUNICATION

The Overseas Telecommunications Commission (Australia) was established in 1946 under the provisions of the Overseas Telecommunications Act (Commonwealth) of 1946.

The Commission participates with other countries of the British Commonwealth in the maintenance and operation of a world-wide network of cable and radio circuits. The whole of Australia's international public telecommunications traffic is handled through this network which, on the 31st March, 1960, included 145,000 nautical miles of submarine cable, 98 cable stations and more than 120 radio transmitting and receiving stations.

The Commission operates telegraph services with overseas countries, traffic being routed over cable or radio circuits, or a combination of them, according to circumstances. Radio-telephone circuits are provided by the Commission for operation, by the Postmaster-General's Department, of services with overseas countries and with ships at sea. In addition, a coastal radio service is controlled by the Commission.

The licensing of civil radio-communication stations and the transmission of radio messages within Australia are the responsibility of the Postmaster-General's Department. The Royal Flying Doctor Service of Australia, to which reference is made in the section *Air Transport* in Part 2 of this Chapter, provides general telegraph facilities in remote areas through its extensive radio network.

The numbers of each type of radio-communication station authorized to operate in Western Australia at the 30th June, 1960 are given in the next table.

The following definitions are relevant in considering the figures shown in the table. *Fixed Stations*—Stations established at fixed locations for communication with other stations similarly established. *Outposts*—Stations established in outback areas for communication with control stations such as those of the Royal Flying Doctor Service. *Land Stations*—Stations established at fixed locations for communication with mobile stations. *Coast Stations*—Land stations for communication with ocean-going vessels. *Mobile Stations*—Equipment installed in aircraft (aeronautical), motor vehicles (land mobile services), harbour vessels (harbour mobile services) and ocean-going vessels (ship), and mobile equipment of organizations such as the Royal Flying Doctor Service.

RADIO-COMMUNICATION STATIONS (†) AUTHORIZED—30th JUNE, 1960

Type of Station	Number	Type of Station	Number
TRANSMITTING AND RECEIVING		TRANSMITTING AND RECEIVING— <i>contd.</i>	
Fixed Stations—		Mobile Stations—	
Aeronautical	14	Aeronautical	(†)
Services with Other Countries	9	Land Mobile Services	1,501
Outposts	324	Harbour Mobile Services	57
Other	72	Outpost	(†)
Land Stations—		Ship	(†)
Aeronautical	13	Amateur	275
Base Stations—			
Land Mobile Services	154	TOTAL—TRANSMITTING AND RE-	
Harbour Mobile Services	28	CEIVING	2,504
Coast	10	RECEIVING ONLY (Fixed)	35
Special Experimental	17		
		GRAND TOTAL (†)	2,500

(†) See letterpress immediately following table.

At the 30th June, 1960, there were 38,016 radio-communication stations authorized throughout Australia. This total includes 3,782 mobile stations which cannot be classified according to States, comprising 508 aeronautical, 963 outpost and 2,311 ship stations.

At the 31st March, 1960, Western Australian coastal radio stations at Perth, Broome, Esperance and Geraldton were operated by the Overseas Telecommunications Commission, and at Wyndham by the Department of Civil Aviation as agent for the Commission.

The Commission's coastal radio service provides, as its principal function, essential maritime communications, including distress signals, navigation warnings, air-sea rescue service and radio-medical service messages, meteorological messages and time signals, as well as naval traffic as required. It provides also, by radio-telegraph and radio telephone, commercial communications with ships at sea and,

by radio-telephone, message communication with small vessels. Certain coastal radio stations in remote locations also perform a dual function in providing a radio-telegraph service with extensive networks of mainland and island outpost stations.

The following table relates to traffic handled by coastal radio stations in Western Australia during each of the years 1958-59 and 1959-60.

COASTAL RADIO SERVICE TRAFFIC

Station	Paid Traffic		Free Traffic		Meteorological Traffic		Total	
	Messages	Words	Messages	Words	Messages	Words	Messages	Words
YEAR ENDED 31st MARCH, 1959								
Perth	19,542	441,701	1,940	35,559	14,828	527,234	36,310	1,004,494
Broome	7,505	147,213	287	8,675	7,784	164,098	15,576	319,986
Esperance	3,617	69,686	116	4,599	2,676	35,952	6,409	160,237
Geraldton	2,108	30,476	193	3,352	1,487	27,626	3,788	61,454
Wyndham	86	1,168	....	....	4	43	90	1,211
All Stations	32,358	690,244	2,536	52,185	26,779	804,953	62,173	1,547,382
YEAR ENDED 31st MARCH, 1960								
Perth	20,293	466,456	2,476	48,039	14,994	528,965	37,763	1,043,460
Broome	9,320	178,458	431	15,950	6,997	160,933	16,748	355,341
Esperance	5,643	154,658	235	5,993	4,292	148,416	10,170	309,067
Geraldton	3,031	45,381	479	8,455	1,990	33,149	5,500	86,985
Wyndham	91	1,223	....	....	3	26	94	1,249
All Stations	38,378	846,176	3,621	78,437	28,276	871,489	70,275	1,796,102

BROADCASTING AND TELEVISION

Broadcasting and television services throughout Australia are controlled by the Australian Broadcasting Control Board under the Ministerial direction of the Postmaster-General. The Board is established by a provision of the Broadcasting and Television Act 1942-1960, which places under its general control the National Broadcasting Service, the National Television Service, the Commercial Broadcasting Service and the Commercial Television Service. The Act prescribes the fees payable for broadcast listeners' licences and television viewers' licences, while the fees to be charged for licences to operate commercial broadcasting and television stations are provided for in the Broadcasting and Television Stations License Fees Act 1956.

The principal functions of the Australian Broadcasting Control Board are to ensure that services by broadcasting stations and television stations are in accordance with approved plans, that stations are operated in accordance with appropriate technical standards, and that adequate and comprehensive programmes are provided. Subject to the approval of the Minister and of the Treasurer, the Board may give financial and other assistance to commercial broadcasting stations for the purpose of ensuring that programmes of adequate extent, standard and variety are provided in the areas which they serve. The Board is required to hold public inquiries into applications for licences for commercial broadcasting and television stations in areas for which the Minister proposes to grant licences.

The Australian Broadcasting Commission, which is constituted under the Broadcasting and Television Act 1942-1960, controls the activities of, and provides programmes for, the National Broadcasting Service and the National Television Service. The operations of the Commission are financed by appropriations made by the Commonwealth Parliament.

The income of licensees of commercial broadcasting and television stations is derived from advertisements and other forms of publicity.

Broadcasting

The following list shows the call sign, the location, the frequency and the aerial power of each of the broadcasting stations operating in Western Australia at the 30th June, 1960.

BROADCASTING STATIONS AT 30th JUNE, 1960

Type and Location	Call Sign	Frequency (K/cs.)	Aerial Power (Watts)	Type and Location	Call Sign	Frequency (K/cs.)	Aerial Power (Watts)
NATIONAL STATIONS				COMMERCIAL STATIONS			
Medium Frequency				Perth			
Perth	6WF	690	5,000	6IX	1,080	2,000	
"	6WN	810	10,000	6KY	1,210	2,000	
Albany	6AL	650	400	6PM	1,000	2,000	
Kalgoorlie	6GF	720	2,000	6PR	880	2,000	
Geraldton	6GN	830	2,000	Northam	6AM	980	2,000
Northam	6NM	600	200	Bridgetown	6BY	900	2,000
Wagin	6WA	560	50,000	Collie	6CI	1,130	2,000
High Frequency				Geraldton	6GE	1,010	2,000
Perth	VLW	(a)	2,000	Kalgoorlie	6KG	860	2,000
"	VLX	(a)	10,000	Merredin	6MD	1,100	2,000
				Narrogin	6NA	920	2,000
				Bunbury	6TZ	960	2,000
				Albany	6VA	780	2,000
				Katanning	6VB	1,070	2,000

(a) The frequencies on which these stations transmit are varied as required to obtain optimum results.

The following table gives particulars of broadcast licences in force in Western Australia at the 30th June of each of the years from 1956 to 1960. The revenue received from broadcast listeners' licences in the State during each financial year from 1955-56 to 1959-60 is also shown. Licences are granted to certain classes of pensioners at a reduced fee and are issued free of charge to blind persons and to schools.

BROADCAST LICENCES

Particulars	Year ended 30th June :				
	1956	1957	1958	1959	1960
Broadcasting Licences (a)—					
National Stations	9	9	9	9	9
Commercial Stations	14	14	14	14	14
Total	23	23	23	23	23
Broadcast Listeners' Licences (a)—					
Ordinary	140,212	139,391	142,271	150,002	150,611
Pensioners	12,632	15,155	16,648	18,628	20,338
Blind Persons	373	379	336	380	395
Schools	228	241	296	262	349
Total	153,445	155,166	159,551	169,272	171,693
Revenue from Broadcast Listeners' Licences	£ 285,081	353,304	398,214	422,115	420,319

(a) Number in force at 30th June.

Television

Television services in Western Australia are provided by one national station and one commercial station, both of which transmit from Perth. The commercial station, TVW (Channel 7), began full-scale transmission on the 16th October, 1959 and the national station, ABW (Channel 2), on the 7th May, 1960.

Television viewers' licences in force in Western Australia at the 31st December, 1959 numbered 9,621. At the 30th June, 1960 there were 35,604 licences current in the classes, Ordinary (33,377), Pensioners' (2,168), Blind Persons' (53) and Schools' (6). As with broadcast listeners' licences, television viewers' licences are available at a reduced fee to certain pensioners and free of charge to blind persons and to schools.

The total number of licences in force in the State had increased to 77,610 at the 31st December, 1961.

CHAPTER X—EMPLOYMENT, WAGES AND PRICES

PART 1—EMPLOYMENT

NOTE—In addition to the employment data appearing in this Part, references to the numbers of persons engaged in particular activities are to be found elsewhere in the Year Book. In Chapter V, for example, Part 1—*Education* shows numbers engaged in teaching, while Part 3—*Health Services, Hospitals and Homes for the Aged* contains details of hospital staffs. In Chapter VIII, Part 1—*Primary Production* gives male employment on rural holdings, at mines and in fishing, and Part 2—*Secondary Production* includes tables relating wholly, or in part, to employment in factories. Chapter IX, Part 2—*Transport* shows numbers engaged in various types of transport undertakings.

The most detailed and comprehensive statistics of employment of the population are those which are derived from the periodic Population Census. Among the most useful of the tabulations based on these enumerations are those which classify the population according to work force and industry.

The census tables appearing in this Part relate to the 30th June, 1954. Some comparable data from the 1961 Census are given in the *Appendix*.

THE WORK FORCE

It is customary in modern census practice to distinguish between the economically active and inactive sectors of the community on the basis of those "In the Work Force" and those "Not in the Work Force."

The *work force* comprises all persons who are actively engaged in an industry, business, trade or service, as well as those who are normally engaged in such an activity but are not at work at the time of the investigation. It includes employers, the self-employed, wage and salary earners, persons helping in an activity without receiving wage or salary, and those not at work.

The *self-employed* comprise persons working on their own account but not employing others.

Persons *not at work* include those who, though usually working, were not actively engaged at the time of the census on account of sickness, accident or industrial dispute, were unable to secure employment, were temporarily laid off or inactive for any other reason.

Persons *not in the work force* include children not attending school, full-time students and children attending school, persons of independent means, those engaged in home duties, pensioners and annuitants, and inmates of institutions.

The comprehensive tables resulting from the census include detailed analyses of the work force according to such characteristics as age, conjugal condition, religion, birthplace and industry. For the purpose of this Chapter, only a selection of the tables relating to industry, in condensed form, have been included.

In 1848, at the time of the first systematic census in Western Australia, about 64 per cent. of the total male population of 2,818 were in the work force, largely engaged in agricultural and pastoral pursuits. This proportion reached a maximum at the Census of 1901 when more than three-quarters of the male population were in the work force. Later censuses show a general decline and in 1954 the proportion stood at 62 per cent.

In 1901 there were 13,068 females in the work force representing 18·34 per cent. of the female population. Although this proportion had declined to 17·25 per cent. at the 30th June, 1954, each census since 1901 has shown a large increase in the number of economically active females until in 1954 a total of 53,360, or more than four times the female work force of 1901, were found to be so engaged. The number of males in the work force had increased during the same period by 141 per cent. from 85,077 to 205,041.

In the following table the numbers and proportions of males, females and persons in the work force are shown for each census from 1901 to 1954.

WORK FORCE—NUMBERS AND PROPORTIONS OF POPULATION
(*Exclusive of full-blood aboriginals*)

Census Year (a)	In Work Force							Not in Work Force	Total Male Popula- tion	
	At Work					Not at Work	Total in Work Force			
	Em- ployers	Self- employed	Employees (on wage or salary)	Helpers (not on wage or salary)	Total					
MALES										
1901	7,792	10,322	61,848	1,920	81,882	3,195	85,077	27,798	112,875	
1911	13,734	12,484	81,206	2,497	109,921	3,647	113,568	47,997	161,565	
1921	8,656	20,434	77,589	1,413	108,092	7,752	115,844	61,434	177,278	
1933	15,572	25,677	87,561	2,770	131,580	21,478	153,058	80,879	233,937	
1947	14,028	24,222	118,501	1,713	158,464	5,473	163,937	94,139	258,076	
1954	16,871	26,165	158,413	1,515	202,964	2,077	205,041	125,317	330,358	

MALES

Proportion of Male Population (per cent.)

1901	6.90	9.15	54.79	1.70	72.54	2.83	75.37	24.63	100.00
1911	8.50	7.73	50.26	1.54	68.03	2.26	70.29	29.71	100.00
1921	4.88	11.53	43.77	0.80	60.98	4.37	65.35	34.65	100.00
1933	6.66	10.98	37.43	1.18	56.25	9.18	65.43	34.57	100.00
1947	5.43	9.39	45.92	0.66	61.40	2.12	63.52	36.48	100.00
1954	5.11	7.92	47.95	0.46	61.44	0.63	62.07	37.93	100.00

FEMALES

1901	651	1,814	9,173	951	12,589	479	13,068	58,181	71,249
1911	1,004	2,203	15,255	561	19,023	662	19,685	100,864	120,549
1921	661	3,011	19,290	85	23,047	1,405	24,452	131,002	155,454
1933	1,596	3,089	25,727	170	30,582	3,996	34,578	170,337	204,915
1947	1,555	2,733	36,786	228	41,302	1,161	42,463	201,941	244,404
1954	2,246	3,374	46,201	798	52,619	741	53,360	256,053	309,413

Proportion of Female Population (per cent.)

1901	0.91	2.55	12.87	1.34	17.67	0.67	18.34	81.66	100.00
1911	0.83	1.83	12.65	0.47	15.78	0.55	16.33	83.67	100.00
1921	0.43	1.94	12.41	0.05	14.83	0.90	15.73	84.27	100.00
1933	0.78	1.51	12.56	0.08	14.93	1.95	16.88	83.12	100.00
1947	0.64	1.12	15.05	0.09	16.90	0.47	17.37	82.63	100.00
1954	0.73	1.09	14.93	0.26	17.01	0.24	17.25	82.75	100.00

PERSONS

1901	8,443	12,136	71,021	2,871	94,471	3,674	98,145	85,979	184,124
1911	14,738	14,687	96,461	3,058	128,944	4,309	133,253	148,861	282,114
1921	9,317	23,445	96,879	1,498	131,139	9,157	140,296	192,436	332,732
1933	17,168	28,766	113,288	2,940	162,162	25,474	187,636	251,216	438,852
1947	15,583	26,955	155,287	1,941	199,766	6,634	206,400	296,080	502,480
1954	19,117	29,539	204,614	2,313	255,583	2,818	258,401	381,370	639,771

Proportion of Total Population (per cent.)

1901	4.59	6.59	38.57	1.56	51.31	1.99	53.30	46.70	100.00
1911	5.22	5.21	34.10	1.08	45.70	1.53	47.23	52.77	100.00
1921	2.80	7.05	29.11	0.45	39.41	2.75	42.16	57.84	100.00
1933	3.91	6.56	25.81	0.67	36.95	5.81	42.76	57.24	100.00
1947	3.10	5.37	30.90	0.39	39.76	1.32	41.08	58.92	100.00
1954	2.99	4.62	31.98	0.36	39.95	0.44	40.39	59.61	100.00

(a) For Census dates see the section *Censuses* in Chapter IV, Part 1—Population.

INDUSTRY OF THE POPULATION

The Census

For census purposes, industry may be defined as any single branch of productive activity, trade or service. It is concerned with the activities of persons, firms or businesses considered as a group producing the same commodity, performing the same process or providing the same service. All persons engaged in any such branch of economic activity are classified industrially as belonging to that particular branch irrespective of their personal occupation within the industry. Examples are :—Mining, which includes, in addition to miners and prospectors, such persons as laboratory technicians, transport workers and office staff employed by mining companies ; Shipping, which covers staff members of shipping companies and agencies, as well as ships' crews ; professional activities such as Medicine, Law and Architecture which include not only qualified practitioners but also persons employed by them as, for example, receptionists, law clerks and draftsmen.

In the following table, the population at the 30th June, 1954 is classified according to the main industrial groups such as Primary Production, Mining and Quarrying, Manufacturing and so on, and some component sub-groups such as Fishing, Hunting and Trapping, Agriculture and Mixed Farming. The table is an abridged form of a more detailed tabulation which appears in an appendix to Part I, *Population and Vital Statistics*, of the *Statistical Register of Western Australia* for 1954-55.

It should be noted that the particulars shown under Public Authority Activities (N.E.I.) are residual figures comprising those persons in the administrative sphere of general government, local government and foreign consular services who have not been classified elsewhere. They do not, therefore, represent the total numbers of persons engaged in or attached to all fields of government service, Commonwealth, State or Local. For example, employees of the Railways Commission have been assigned, in accordance with evidence contained in their census schedules, to Railway workshops in the sub-group Manufacture, Assembly and Repair of Ships, Vehicles, Parts and Accessories, to Motor bus services in the sub-group Road Transport, to Construction and maintenance of permanent way in the sub-group Construction Works and Maintenance (other than Buildings) or to Rail services under Rail and Air Transport. Further examples of this allocation of government workers to industries other than Public Authority Activities (N.E.I.) are provided by Departments such as Education, Public Works, Postmaster-General's, Repatriation, and local government authorities.

The total of 381,370 persons not in the work force comprised 82,963 children not attending school, 117,323 full-time students and children attending school, 7,412 persons of independent means, 130,880 engaged in home duties, 36,316 pensioners and annuitants, 4,479 inmates of institutions and 1,997 others not engaged in industry.

At the Census of 1848, almost one-third of the male population was recorded as being engaged in agricultural and pastoral pursuits. Although no specific data as to mining activity are available, it may be assumed that a small number were engaged in mining operations. In 1901, the proportion of males engaged in agriculture, grazing and mining was 26·35 per cent. and in 1954, 13·71 per cent. At the Census of 1954, after allocating to the appropriate category those cases where the industry was inadequately described or not stated, Primary Production and Mining and Quarrying together accounted for 51,217 persons, or 19·82 per cent. of the total work force. Manufacturing, with 49,733 persons (19·25 per cent.) and Commerce with 43,883 persons (16·98 per cent.) were next in order of importance.

The table on pages 358 and 359 shows the geographical distribution of the work force according to industry. It provides a useful summary of the industrial structure within each of the eleven Statistical Divisions of the State as well as indicating the relative importance of the several Divisions in a particular industry. (The Statistical Divisions and their component local government areas are shown on the map of the State at the back of the Year Book and are listed on the pages immediately preceding the map.) The migratory population comprises those who, at midnight between the 30th June and the 1st July, 1954, were on board ships or were travelling on long-distance trains or aircraft and had not been enumerated elsewhere. Of the total of 1,907 migratory persons in the work force, 1,303 gave their industry as Shipping, 55 were engaged in Rail and Air Transport, and 215 were naval personnel, most of them being on board war vessels in Western Australian waters.

Classification of the components of the work force according to industry, as in the table on page 361, furnishes much useful information. It is interesting to note, for example, the preponderance of employers and the self-employed in Primary Production. Of the 41,792 persons engaged in this industry almost 57 per cent. were in one or other of these categories.

POPULATION CLASSIFIED ACCORDING TO INDUSTRY
CENSUS 30th JUNE, 1954
(Exclusive of full-blood aboriginals)

Industry	Metropolitan Statistical Division			Rest of State (a)			Whole State		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
Primary Production—									
Fishing	352	2	354	1,088	15	1,083	1,420	17	1,437
Hunting and Trapping	6	.....	6	125	2	127	131	2	133
Agriculture and Mixed Farming	1,490	125	1,615	21,791	1,220	23,011	23,281	1,845	24,926
Grazing	346	29	375	6,197	551	6,748	6,543	560	7,123
Dairying	128	7	135	4,746	388	5,134	4,874	395	5,269
Poultry Farming	254	49	303	436	81	517	690	130	820
Forestry	96	2	98	909	5	914	1,005	7	1,012
Other	133	6	139	928	16	944	1,061	22	1,083
Total—Primary Production	2,805	220	3,025	36,200	2,278	38,478	39,005	2,498	41,503
Mining and Quarrying—									
Mining (including Open-Cut Mining)	187	21	188	8,670	106	8,776	8,837	127	8,964
Quarrying	152	12	164	222	2	224	374	14	388
Total—Mining and Quarrying	319	33	352	8,892	108	9,000	9,211	141	9,352
Manufacturing—									
Cement, Bricks, Glass and Stone	2,685	207	2,892	953	17	970	3,638	224	3,862
Founding, Engineering and Metal-working	7,546	626	8,172	1,469	65	1,534	9,015	691	9,706
Manufacture, Assembly and Repair of Ships, Vehicles, Parts and Accessories	5,534	133	5,667	1,857	25	1,882	7,391	158	7,549
Clothing and Knitted Goods (including Needleworking)	508	2,265	2,773	96	322	418	604	2,587	3,191
Boot and Shoe Making and Repairing (other than Rubber)	596	273	869	116	53	169	712	326	1,038
Food, Drink and Tobacco	3,640	1,037	4,677	1,938	345	2,333	5,628	1,382	7,010
Furniture and Fittings (other than Metal), Bedding and Sawmilling and Manufacture of Wood Products	2,130	51	2,181	4,496	41	4,537	6,626	92	6,718
Furnishing Drapery	1,680	188	1,868	198	15	213	1,878	203	2,081
Paper, Printing, Book-binding and Photography	2,178	782	2,960	361	93	454	2,539	375	2,914
Chemicals, Dyes, Explosives, Paints and Non-Mineral Oils	1,203	245	1,448	417	20	437	1,620	265	1,885
Other Manufacture (including inadequately defined)	1,773	489	2,262	474	167	641	2,247	656	2,903
Total—Manufacturing	29,473	6,296	35,769	12,425	1,163	13,588	41,898	7,459	49,357
Electricity, Gas, Water and Sanitary Services (Production, Supply and Maintenance)—									
Gas and Electricity	1,641	115	1,756	639	21	660	2,280	136	2,416
Water Supply, Sewerage, etc.	973	68	1,041	703	9	712	1,676	77	1,753
Total—Electricity, Gas, Water and Sanitary Services	2,614	183	2,797	1,342	30	1,372	3,956	213	4,169
Building and Construction—									
Construction and Repair of Buildings	11,962	168	12,130	4,888	33	4,921	16,850	201	17,051
Construction Works and Maintenance (other than Buildings)	4,477	88	4,565	6,593	72	6,665	11,070	160	11,230
Total—Building and Construction	16,439	256	16,695	11,481	105	11,586	27,920	361	28,281

INDUSTRY OF THE POPULATION IN STATISTICAL DIVISIONS

CENSUS 30th JUNE, 1954

(Exclusive of full-blood aboriginals)

Statistical Division	Primary Production	Mining and Quarrying	Manufacturing	Electricity, Gas, Water, and Sanitary Services	Building and Construction	Transport and Storage	Communication	Finance and Property	Commerce	Public Authority (n.e.l.) and Professional etc.	Amusement, Hotels, Personal Service, etc.	Other, Inadequately Described, and Not Stated	Total in Work Force	Not in Work Force	Grand Total
MALES															
Metropolitan ...	2,805	319	29,473	2,614	16,439	10,507	2,722	3,231	19,745	12,661	4,411	750	105,677	66,155	171,832
Swan ...	3,304	154	3,107	245	2,725	944	180	143	1,390	1,453	309	104	14,058	10,312	24,370
South-West ...	6,940	1,782	4,903	250	2,337	1,747	264	280	2,010	931	528	110	22,082	14,525	36,607
Southern Agricultural ...	5,818	4	1,035	81	1,672	671	176	208	1,314	691	265	88	12,018	7,122	19,140
Central Agricultural ...	9,647	75	1,655	371	1,992	1,541	303	284	1,854	1,092	455	162	19,431	11,071	30,502
Northern Agricultural ...	6,129	78	581	80	1,235	863	170	144	1,018	494	244	101	11,137	6,526	17,663
Eastern Goldfields ...	1,016	5,436	675	272	754	812	154	135	1,009	577	397	105	11,342	7,218	18,560
Central ...	814	639	26	22	192	145	30	12	91	95	41	4	2,111	819	2,930
North-West ...	1,410	110	51	9	176	101	28	16	92	123	31	20	2,167	584	2,751
Pilbara ...	505	480	18	4	123	117	25	3	50	84	23	6	1,438	357	1,795
Kimberley ...	583	123	321	6	241	104	27	9	66	248	30	23	1,781	522	2,303
Migratory (a) ...	34	11	53	2	34	1,341	3	3	34	260	19	5	1,799	106	1,905
TOTAL, WESTERN AUSTRALIA ...	39,005	9,211	41,898	3,956	27,920	18,893	4,082	4,468	28,673	18,709	6,753	1,473	205,041	125,317	330,358

FEMALES

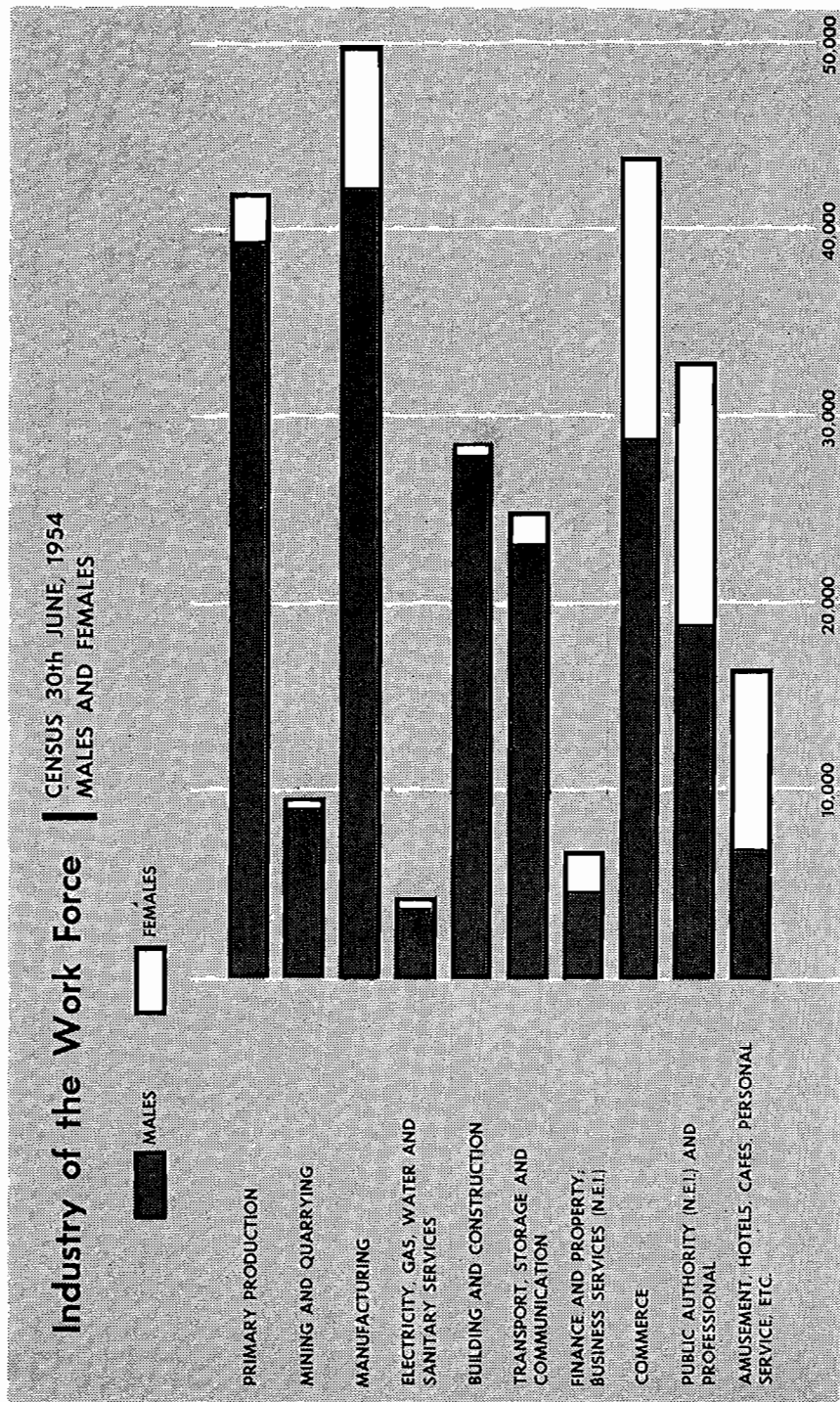
Metropolitan ...	220	38	6,296	183	256	708	850	1,776	10,439	9,790	5,598	312	35,961	140,854	176,815
Swan ...	254	2	396	3	50	66	54	84	727	650	329	30	2,645	19,387	22,032
South-West ...	461	7	213	10	20	17	143	51	1,039	840	896	46	3,743	28,203	31,946

Southern Agricultural...	324	...	221	1	6	14	65	38	597	475	482	19	2,242	14,743	16,985
Central Agricultural ...	551	...	144	7	11	29	120	57	813	745	814	31	3,322	22,100	25,422
Northern Agricultural	326	1	56	4	7	13	79	23	468	483	547	36	2,043	12,382	14,405
Eastern Goldfields ...	64	70	90	5	4	31	39	39	614	600	512	36	2,104	13,914	16,018
Central ...	87	15	2	...	2	2	14	1	44	72	113	2	354	1,510	1,864
North-West ...	129	...	7	...	1	3	6	4	42	55	76	10	333	1,136	1,469
Pilbara ...	37	7	...	...	...	3	4	...	20	35	60	...	166	689	855
Kimberley ...	45	6	24	...	4	4	9	1	32	134	79	1	339	901	1,240
Migratory (a) ...	...	...	10	...	...	23	4	5	16	80	16	4	108	254	362
TOTAL WESTERN AUSTRALIA ...	2,498	141	7,459	213	361	913	887	2,079	14,851	13,909	9,522	527	53,360	256,063	309,413

PERSONS

Metropolitan ...	3,025	352	35,769	2,797	16,695	11,215	3,072	5,007	30,184	22,451	10,009	1,062	141,638	207,009	348,647
Swan ...	3,558	156	3,503	248	2,775	1,010	284	227	2,117	2,103	638	134	16,703	29,699	46,402
South-West ...	7,401	1,789	5,116	260	2,357	1,764	407	331	3,049	1,771	1,424	156	25,825	42,728	68,553
Southern Agricultural ...	6,142	4	1,256	82	1,678	685	241	246	1,911	1,166	747	102	14,260	21,865	36,125
Central Agricultural ...	10,198	75	1,799	378	2,003	1,570	423	341	2,667	1,837	1,269	193	22,753	33,171	55,924
Northern Agricultural	6,455	79	637	84	1,242	876	249	167	1,436	977	791	137	13,180	18,888	32,068
Eastern Goldfields ...	1,080	5,506	765	277	758	843	193	174	1,623	1,177	909	141	13,446	21,132	34,578
Central ...	901	654	28	22	194	147	44	13	135	167	154	6	2,465	2,329	4,794
North-West ...	1,539	110	58	9	177	104	34	20	134	178	107	30	2,500	1,720	4,220
Pilbara ...	542	487	18	4	123	120	29	3	70	119	83	6	1,604	1,046	2,650
Kimberley ...	628	129	345	6	245	108	36	10	98	382	109	24	2,120	1,423	3,543
Migratory (a) ...	34	11	63	2	34	1,364	7	8	50	290	35	9	1,907	360	2,267
TOTAL WESTERN AUSTRALIA ...	41,503	9,352	49,357	4,169	28,281	19,806	4,969	6,547	43,524	32,618	16,275	2,000	258,401	381,370	639,771

(a) Comprises persons (both passengers and crew) not enumerated elsewhere who, at midnight between the 30th June and the 1st July, 1954, were on board ships or were travelling on long-distance trains or aircraft.



WORK FORCE CLASSIFIED ACCORDING TO INDUSTRY GROUPS

CENSUS 30th JUNE, 1954

(Exclusive of full-blood aborigines)

Industry Group	At Work				Not at Work	Total in Work Force	Proportion in each Industry Group (per cent.)
	Em- ployer	Self- employed	Employee (on Wage or Salary)	Helper (not on Wage or Salary)			
MALES							
Primary Production	6,104	16,202	15,357	1,265	340	39,268	19.15
Mining and Quarrying	80	450	8,623	10	121	9,284	4.53
Manufacturing	2,066	1,364	38,292	25	459	42,206	20.58
Electricity, Gas, Water and Sanitary Services	21	34	3,903	2	25	3,985	1.94
Building and Construction	2,075	2,255	23,414	22	359	28,125	13.72
Transport and Storage	537	1,503	16,798	12	178	19,028	9.28
Communication .....	.....	11	4,080	.....	20	4,111	2.01
Finance and Property ; Business Services (n.e.i.)	288	163	4,021	2	26	4,500	2.19
Commerce	3,671	2,835	22,026	74	277	28,883	14.09
Public Authority (n.e.i.) and Professional	903	447	17,309	56	133	18,848	9.19
Amusement, Hotels, Cafes, Personal Service, etc.	1,126	901	4,589	47	139	6,802	3.32
Other Industries .....	.....	.....	1	.....	.....	1	0.00
Total Males in Work Force	16,871	26,165	158,413	1,515	2,077	205,041	100.00
FEMALES							
Primary Production	596	899	684	328	17	2,524	4.73
Mining and Quarrying .....	.....	2	138	1	.....	141	0.26
Manufacturing	152	187	7,064	24	100	7,527	14.11
Electricity, Gas, Water and Sanitary Services	2	.....	212	.....	1	215	0.40
Building and Construction	10	6	341	5	1	363	0.68
Transport and Storage	37	17	847	8	13	922	1.73
Communication	3	6	873	9	7	898	1.68
Finance and Property ; Business Services (n.e.i.)	22	20	2,046	3	10	2,101	3.94
Commerce	817	774	13,080	136	193	15,000	28.11
Public Authority (n.e.i.) and Professional	84	181	13,483	140	165	14,053	26.34
Amusement, Hotels, Cafes, Personal Service, etc.	523	1,281	7,433	144	234	9,615	18.02
Other Industries .....	.....	1	.....	.....	.....	1	0.00
Total Females in Work Force	2,246	3,374	46,201	798	741	53,360	100.00
PERSONS							
Primary Production	6,700	17,101	16,041	1,593	357	41,792	16.17
Mining and Quarrying	80	452	8,761	11	121	9,425	3.65
Manufacturing	2,218	1,551	45,356	49	559	49,733	19.25
Electricity, Gas, Water and Sanitary Services	23	34	4,115	2	26	4,200	1.63
Building and Construction	2,085	2,261	23,755	27	360	28,488	11.03
Transport and Storage	574	1,520	17,645	20	191	19,950	7.72
Communication	3	17	4,953	9	27	5,009	1.94
Finance and Property ; Business Services (n.e.i.)	310	183	6,067	5	36	6,601	2.55
Commerce	4,488	3,609	35,106	210	470	43,883	16.98
Public Authority (n.e.i.) and Professional	987	628	30,792	196	298	32,901	12.73
Amusement, Hotels, Cafes, Personal Service, etc.	1,649	2,182	12,022	191	373	16,417	6.35
Other Industries .....	.....	1	1	.....	.....	2	0.00
Total in Work Force	19,117	29,539	204,614	2,313	2,818	258,401	100.00

Estimates of Employment

In addition to employment data provided by the census and similar enumerations, there are available monthly estimates of the number of wage and salary earners in civilian employment, excluding employees in rural industry (comprising agriculture, grazing and dairying) and female private domestics. These estimates are derived from three main sources, (i) monthly data relating to persons employed in factories as shown by the annual Census of Factories, (ii) monthly returns furnished by governmental authorities, and (iii) monthly Pay-roll Tax returns lodged by all employers paying more than £200 per week in wages, other than those specifically exempted under the Pay-roll Tax Assessment Act 1941-1961. The data thus derived are supplemented from other sources which provide information relating to employees not included in these three main categories.

WAGE AND SALARY EARNERS IN CIVILIAN EMPLOYMENT—INDUSTRY GROUPS

Excluding Wage Earners in Rural Industry and Female Private Domestic

(Personnel in Defence Forces and National Service Trainees in Camp are also excluded)

(thousands)

Industry Group	June, 1951	June, 1956	June, 1957	June, 1958	June, 1959	June, 1960
MALES						
Forestry, Fishing and Trapping	2.2	2.5	2.5	2.3	2.3	2.2
Mining and Quarrying	8.2	7.9	7.7	7.4	7.6	7.5
Manufacturing, etc. (a)	37.3	42.5	42.0	41.6	41.7	43.0
Building and Construction	15.3	14.9	14.3	14.9	14.5	13.6
Shipping and Stevedoring	3.6	4.9	5.2	5.3	5.5	5.4
Rail and Air Transport	9.5	11.1	10.8	10.5	10.4	10.2
Road Transport	4.8	4.7	4.5	4.7	4.7	4.7
Communication	3.9	4.4	4.6	4.8	4.9	4.9
Property and Finance	3.5	3.9	4.0	4.1	4.2	4.3
Retail Trade	9.2	9.5	9.6	9.7	10.0	10.8
Wholesale and Other Commerce	12.2	14.7	13.5	13.4	13.9	14.3
Public Authority Activity (n.e.i.)	7.1	7.4	7.4	7.6	7.6	7.5
Other Industries (a)	11.1	12.1	12.3	12.3	12.7	13.3
Total	127.9	140.5	138.4	138.6	140.0	141.7
Government (a)	44.6	50.3	50.3	52.4	53.3	51.8
Private	83.3	90.2	88.1	86.2	86.7	89.9
Total	127.9	140.5	138.4	138.6	140.0	141.7
FEMALES						
Mining and Quarrying	0.1	0.2	0.2	0.2	0.2	0.2
Manufacturing, etc. (a)	8.4	7.4	7.1	7.1	7.1	7.3
Building and Construction	0.2	0.3	0.3	0.3	0.3	0.3
Shipping and Stevedoring	0.2	0.2	0.2	0.2	0.2	0.2
Rail and Air Transport	0.4	0.4	0.4	0.4	0.4	0.4
Road Transport	0.4	0.3	0.3	0.3	0.4	0.4
Communication	0.9	1.0	1.0	1.0	1.0	1.0
Property and Finance	1.6	2.3	2.3	2.4	2.5	2.7
Retail Trade	9.3	10.1	10.2	10.6	11.0	11.7
Wholesale and Other Commerce	3.1	3.6	3.4	3.4	3.3	3.3
Public Authority Activity (n.e.i.)	2.0	2.0	2.0	2.0	2.1	2.2
Other Industries (a)	15.5	17.3	17.1	17.7	18.5	19.5
Total	42.1	45.1	44.5	45.6	47.0	49.2
Government (a)	7.6	9.0	9.3	9.8	10.2	10.9
Private	34.5	36.1	35.2	35.8	36.8	38.3
Total	42.1	45.1	44.5	45.6	47.0	49.2
PERSONS						
Forestry, Fishing and Trapping	2.2	2.5	2.5	2.3	2.3	2.2
Mining and Quarrying	8.3	8.1	7.9	7.6	7.8	7.7
Manufacturing, etc. (a)	45.7	49.9	49.1	48.7	48.8	50.3
Building and Construction	15.5	15.2	14.6	15.2	14.8	13.9
Shipping and Stevedoring	3.8	5.1	5.4	5.5	5.7	5.6
Rail and Air Transport	9.9	11.5	11.2	10.9	10.8	10.6
Road Transport	5.2	5.0	4.8	5.0	5.1	5.1
Communication	4.8	5.4	5.6	5.8	5.9	5.9
Property and Finance	5.1	6.2	6.3	6.5	6.7	7.0
Retail Trade	18.5	19.6	19.8	20.3	21.0	22.5
Wholesale and Other Commerce	15.3	18.3	16.9	16.8	17.2	17.6
Public Authority Activity (n.e.i.)	9.1	9.4	9.4	9.6	9.7	9.7
Other Industries (a)	28.6	29.4	29.4	30.0	31.2	32.8
Total	170.0	185.6	182.9	184.2	187.0	190.9
Government (a)	52.2	59.3	59.6	62.2	63.5	62.7
Private	117.8	126.3	123.3	122.0	123.5	128.2
Total	170.0	185.6	182.9	184.2	187.0	190.9

(a) See letterpress on page 363.

The monthly estimates of employment according to industry are compiled on an establishment or enterprise basis. They do not therefore correspond exactly to the relevant industry tabulations of the Population Census, which are based on personal information supplied by individual respondents in their census schedules.

The purpose of the estimates is to measure, as nearly as possible with the available data, current monthly trends in employment in the defined field. The industry groups are not identical in coverage with those used in the census tabulations.

The terms *employment*, *number employed*, *employees* and *wage earners* as used here are synonymous with, and relate to, wage and salary earners on pay-rolls or *in employment* in the latter part of each month, as distinct from numbers of employees *actually working* on a specific date. They include persons employed part-time.

The table on page 362 contains estimates of the numbers of wage and salary earners in civilian employment, excluding employees in rural industry (comprising agriculture, grazing and dairying) and female private domestics, for June in each of the years 1951 and from 1956 to 1960. It shows employment in each of the main industry groups and a division of total employment between employees of government authorities and private employers. The figures for the several industry groups include both private employees and government employees, where they occur.

The numbers in the group *Manufacturing, etc.* represent actual employment in factories as recorded at successive annual Censuses of Factories (*cf.* table on page 282) together with estimates of the number of employees in industrial establishments outside the scope of the definition of a factory (see page 277) as well as persons employed by factory proprietors but engaged in selling and distribution.

The figures shown for *Other Industries* comprise employment in the industries Law and Order; Religion and Social Welfare; Health; Education; Other Professional Services; Amusement, Sport and Recreation; and Personal Service, including Hotels, Restaurants, etc., but excluding females in private domestic service. In addition, female employees in Forestry, Fishing and Trapping have been included in *Other Industries*.

The numbers appearing as *Government* wage and salary earners comprise all employees in Western Australia of government authorities, whether Commonwealth, State, Local Government or Semi-Government. They include not only those engaged in administrative activities but also employees on services such as railways, road transport, air transport, shipping, education, health, hospitals, migrant hostels, banks, post office, broadcasting, police, factories, electricity generation and supply, water conservation, road and bridge construction, harbour works and other public works. In the following table, government employment so defined is shown for June in each of the years from 1951 to 1960.

GOVERNMENT AUTHORITIES—CIVILIAN EMPLOYEES IN WESTERN AUSTRALIA
(thousands)

Date	Commonwealth (a)			State (a)			Local Government			Total		
	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
June : 1951	9.4	2.4	11.8	32.2	4.9	37.1	3.0	0.3	3.3	44.6	7.6	52.2
1952	8.8	2.1	10.9	32.3	5.2	37.5	3.1	0.3	3.4	44.2	7.6	51.8
1953	8.7	2.0	10.7	33.6	5.7	39.3	3.0	0.3	3.3	45.3	8.0	53.3
1954	8.4	2.1	10.5	34.7	5.8	40.5	3.1	0.3	3.4	46.2	8.2	54.4
1955	9.0	2.2	11.2	37.1	6.1	43.2	3.4	0.3	3.7	49.5	8.6	58.1
1956	9.0	2.2	11.2	37.8	6.5	44.3	3.5	0.3	3.8	50.3	9.0	59.3
1957	9.1	2.2	11.3	37.8	6.8	44.6	3.4	0.3	3.7	50.3	9.3	59.6
1958	9.3	2.3	11.6	39.5	7.1	46.6	3.6	0.4	4.0	52.4	9.8	62.2
1959	9.7	2.3	12.0	39.9	7.6	47.5	3.7	0.3	4.0	53.3	10.2	63.5
1960	9.8	2.4	12.2	38.3	8.1	46.4	3.7	0.4	4.1	51.8	10.9	62.7

(a) Includes employees of semi-governmental authorities.

CHAPTER X—continued

PART 2—WAGES

THE BASIC WAGE

The concept of a "basic" or "living" wage occurs commonly in the determinations of wage-fixing authorities in Australia, although it may vary in definition. Originally the term was understood to mean the minimum or "basic" wage necessary to provide a reasonable standard of comfort for the average worker and his family. In later years, however, economic factors have been taken into account and, in determining specified minimum rates of wage, consideration has been given to the capacity of industry to pay those rates.

There are two tribunals, the Commonwealth Conciliation and Arbitration Commission and the State Court of Arbitration, which have authority to declare basic wage rates applicable in Western Australia.

By an amendment of 1949 to the Commonwealth Conciliation and Arbitration Act, the basic wage for an adult male worker is defined as "that wage, or that part of a wage, which is just and reasonable for an adult male, without regard to any circumstance pertaining to the work upon which, or the industry in which, he is employed." The Act contains a similar definition of a basic wage for females. Before the inclusion of this amendment, the Act empowered the Court to prescribe a "minimum rate of wage" but it neither defined, nor provided for the determination of, a specific "basic wage." In general terms, however, the basic wage was understood to be identifiable as the minimum wage, including "loadings," payable to an adult unskilled labourer. A "loading" may be defined as an addition to the "basic" wage as compensation for some peculiar condition of labour or environment or other circumstance, and not by way of "margin for skill."

The State Industrial Arbitration Act defines the basic wage as "a wage which the Court considers to be just and reasonable for the average worker to whom it applies." The Court must have regard to the needs of the worker to enable him to live in reasonable comfort. An amendment of 1950 requires that the Court shall take into consideration the economic capacity of industry but, in so doing, shall not reduce the basic wage below an amount which it deems necessary to maintain this reasonable standard of comfort.

The Commonwealth Conciliation and Arbitration Commission was established in 1956 by an amendment to the Conciliation and Arbitration Act which had the effect of allocating to the Commission the arbitral functions and to a Commonwealth Industrial Court the judicial functions formerly carried out by the Commonwealth Court of Conciliation and Arbitration. As prescribed in the Act, the Commission consists of a President, not less than two Deputy Presidents, a Senior Commissioner and not less than five Commissioners. At the 31st December, 1960 there were, in addition to the President and the Senior Commissioner, five Deputy Presidents and seven Commissioners. The Act also provides for the appointment of Conciliators. The Commonwealth Industrial Court, as originally constituted, comprised a Chief Judge and two other Judges. An amending Act of 1960 authorized the appointment of an additional Judge. Membership of the Bench was increased in June, 1960 to four Judges including the Chief Judge.

The State Court of Arbitration consists of a President, who must be a person qualified to be appointed a Judge of the Supreme Court, a representative of the employers' organizations registered with the Court, and a representative of the employees' unions.

Commonwealth Basic Wage

The first determination of a wage standard by a Court in Australia was made in 1907, when Mr. Justice Higgins, President of the Commonwealth Court of Conciliation and Arbitration, fixed an amount of £2 2s. per week for Melbourne as reasonable to meet the needs of "a family of about five." This determination is commonly referred to as the "Harvester Judgment" from the fact that it related to an application by the proprietors of the Sunshine Harvester Works that the wage paid to their employees was "fair and reasonable."

The "Harvester" standard was adopted by the Court for incorporation in its awards and the rates remained virtually unchanged until 1913. In that year the Court began to have regard to retail price index numbers the first of which, the "A" series, covering food and groceries and rent of all houses,

had recently been published by the Commonwealth Statistician. In general, the practice was to revise basic wage rates in direct proportion to variations in the retail price index. Until 1918 the Court, in computing "Harvester" equivalents, used the index numbers for the previous calendar year and, from 1918 to 1921, the figures for the next preceding four quarters.

During the period of application of this system, it was frequently contended that it failed to maintain the "Harvester" standard. Criticism became more general with the rise in prices towards the end of the first World War and led to the appointment in 1919 of a Royal Commission on the Basic Wage under the chairmanship of A. B. Piddington, K.C. The "Piddington Commission," as it came to be called, was required by its terms of reference to inquire into the actual cost of maintaining in a reasonable state of comfort a household comprising a man and his wife and three children under fourteen years of age, and also the means to be adopted for the automatic adjustment of the basic wage in order to maintain its purchasing power. The Commission presented its findings in two reports, the first of which was made in November, 1920, and the second in April, 1921. The recommendations in relation to a living wage were rejected by the Court as being so much in excess of existing wages as to cause doubt about the capacity of industry to pay such rates. The Commission's finding in regard to the automatic adjustment of the basic wage led to the creation of the "C" Series Index of Retail Prices, an index much more comprehensive in scope than the original "A" Series in that it included the additional groups Clothing and Miscellaneous Expenditure.

In 1921, the Court began to insert provisions in awards for the automatic adjustment of wages according to quarterly movements in the "A" Series index, and a loading of 3s. was added to the "Harvester" equivalent by Mr. Justice Powers to ensure that during a period of rapidly rising prices the worker would suffer no loss of real wages in the interval between the adjustment of rates.

The method of fixation and adjustment remained unaltered until the depression of the 1930's, when the Court, having satisfied itself that unfavourable economic conditions prevented the maintenance of real wages at their existing level, directed that, with certain exceptions, all wages under its jurisdiction should be reduced by ten per cent. as from the 1st February, 1931.

In its judgment of May, 1933, the Court concluded that the method of adjusting wages to conform to variations in the "A" Series index numbers had resulted in a decrease of real wages to a level below the prescribed percentage. To correct this decline, it adopted the use of the "D" Series index, derived by combining the "A" and the "C" Series indexes.

In a judgment delivered in April, 1934, the Court introduced an entirely new basis for the fixation of the basic wage. The "Harvester" standard supplemented by the Powers loading of 3s. was discarded and a fresh starting point selected. The new wage was largely founded upon a declaration of £4 4s. per week made by the New South Wales Board of Trade in August, 1925. As this amount took into consideration the upward tendency of prices, the Court regarded the rate as applicable to the year 1926. The "C" Series index number for Sydney for that year was 1033, and for the December quarter of 1933 stood at 829. Thus the 1933 equivalent in purchasing power of an amount of £4 4s. in 1926 was £3 7s., to the nearest shilling ($84s. \times 829 \div 1,033$), which became the rate applicable in Sydney from the 1st May, 1934. The equating of this wage to the index number 829 established the relationship '1,000 in the "C" Series Index = £4 1s. in the wage' ($67s. \times 1,000 \div 829$, to the nearest shilling) and by applying the multiplier 0.081 to the "C" Series index number for any town or group of towns at any time, the wage in shillings could be readily computed. Owing to adverse industrial conditions in South Australia and Tasmania, the new rates for Adelaide and Hobart were graduated so as not to come into full operation until the 1st June, 1935. The date on which future periodical adjustments were to become operative was altered to the beginning of the first pay-period in the months of June, September, December or March, and adjustments were continued on this basis until 1939. Thereafter they took effect from the beginning of the first pay-period commencing in the months of February, May, August or November, until their abolition by the Court in its judgment of the 12th September, 1953.

The hearing of a claim by the combined unions for an increase in the basic wage was concluded in June, 1937. The Court, in fixing a new rate, transferred the basis of the adjustment of wages from the "C" Series to a special "Court" Series based upon the relationship between wages and index numbers which had been established in 1934. This Court Series was, in effect, simply a table expressing in shillings the wage rates derived by the use of the conversion factor 0.081. The Court's judgment further provided for the addition of "prosperity loadings" to the rates so derived, which came to be designated the "needs portion" of the wage. The amount of the loading applied to the "needs" wage for Sydney, Melbourne and Brisbane was 6s., for Adelaide, Perth and Hobart, 4s. and for the Six Capital Cities as a whole, 5s.

In general, the method of the 1937 judgment was retained by the Court until its "interim" decision of the 13th December, 1946 when, in granting an increase of 7s. per week in the "needs" portion of the wage, it inaugurated a Court Index (Second Series). In fixing the base of this new series, the "C" Series index number (1146) for the Six Capital Cities as a whole in the September quarter, 1946 was equated to the "needs" portion (£5) of the new Six Capitals wage. This established the base, 1000 in the "C" Series index = £4 7s. in the wage. The immediate monetary effect was to increase by 7s. per week the "needs" wage in each of the capital cities with the exception of Hobart, where the increase was 6s. The prosperity loadings were retained at their original levels.

On the application early in 1949 of certain unions seeking, among other things, an increase in the basic wage the Court, after an exhaustive examination of the Australian economy, declared a general increase of £1 per week. Judgment was delivered on the 12th October, 1950, the new rates to be operative from the first pay-period in December. The Court also introduced a Court Index (Third Series), derived by equating 1572 (the "C" Series index number for the Six Capital Cities as a whole in the September quarter, 1950) to £8 2s., the increased weighted average wage for the Six Capitals (made up of the "needs" portion £6 17s., plus a uniform prosperity loading of 5s., plus the additional £1 awarded by the Court). In this way, 1000 in the "C" Series index became equal to £5 3s. in the wage. In determining the new rate of payment, a uniform amount of £1 5s. was added to the existing "needs" basic wage, with the concurrent discontinuance of the prosperity loading as a separate entity. This had the effect of increasing the basic wage in Sydney, Melbourne and Brisbane by 19s., in Adelaide, Perth and Hobart by £1 1s., and for the Six Capital Cities as a whole by £1. From, and including, the first pay-period in February, 1951, the rates so determined were to be subject in their entirety to quarterly adjustment in accordance with movements in the Court Index (Third Series). Thus the components "needs portion" and "prosperity loading" ceased to exist as separate and distinguishable parts of the wage.

Following applications by employers' organizations requesting, among other things, "that the system of adjusting the basic wages in accordance with variations occurring in retail price index numbers be abandoned" and counter claims by employees' organizations for increases in the basic wage for adult males, the Court on the 16th September, 1952 commenced hearing evidence in what has come to be known as the "Basic Wage and Standard Hours Inquiry, 1952-53." Submission of evidence continued intermittently until the 11th September, 1953, and on the following day the Court announced its decision. The application for discontinuance of the system of adjusting the basic wages in accordance with variations in the retail price index numbers was granted but all of the other applications were refused. On the 27th October, in stating the reasons for its decisions, the Court made it clear that, as in its opinion there should be no departure from "its now well-established principle that the basic wage should be the highest that the capacity of the community as a whole can sustain" and as it had "withdrawn from relating the basic wage to the fulfilment of any particular standard of needs," the Court "finds it impossible to justify the continuance of an 'automatic' adjustment system whose purpose is to maintain the purchasing power of a particular wage (assessed with regard to the capacity of industry to pay such wage in 1950)." In consequence, the wage rates which had applied from the beginning of the first pay-period commencing in August, 1953, continued to operate.

In November, 1955, application was made to the Court by certain employees' organizations seeking an alteration of the basic wage. Among matters included in the application were requests that the wage be increased to the amount which it would have reached if automatic quarterly adjustments, discontinued since September, 1953, had continued to apply, that the wage be raised by a further £1, and that automatic quarterly adjustments be restored. In the course of the hearing the Attorney-General, in exercise of powers conferred by the Conciliation and Arbitration Act, intervened in the public interest on behalf of the Commonwealth and each of the State Governments was represented by counsel or by a State official. In its judgment, delivered on the 25th May, 1956, the Court refused the first of the unions' claims and rejected the request for the restoration of the quarterly adjustments, but granted an increase of 10s. per week in the adult male basic wage to apply from the beginning of the first pay-period commencing in June, 1956.

The next basic wage hearing commenced before the newly-constituted Commonwealth Conciliation and Arbitration Commission on the 13th November, 1956. The unions' claims were substantially the same as in the previous case except that the clause relating to an increase of £1 in the basic wage was not included. Again the Commonwealth Government intervened in the public interest and representatives of the South Australian and Victorian State Governments appeared before the Commission. In

its judgment on the 29th April, 1957, the Commission rejected the claims made by the unions and granted a uniform increase of 10s. per week in the adult male basic wage to apply from the beginning of the first pay-period commencing on or after the 15th May, 1957.

COMMONWEALTH BASIC WAGE—VARIATIONS IN RATES FROM 1942

Date of Operation (a)	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted Average Six Capital Cities
1942—	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
February	4 11	4 9	4 6	4 6	4 6	4 7	4 8
May	4 13	4 12	4 8	4 8	4 7	4 8	4 10
August	4 15	4 14	4 9	4 11	4 9	4 11	4 13
November	4 17	4 17	4 11	4 13	4 11	4 12	4 15
1943—							
February	4 18	4 18	4 12	"	4 12	4 14	4 16
May	"	"	4 14	4 14	4 14	4 15	4 18
August	5 0	4 19	4 13	"	"	"	4 17
November	4 19	4 18	"	"	"	"	"
1944—							
February	"	4 17	"	4 13	4 13	4 14	4 16
May	"	"	"	"	"	4 13	"
August	"	4 18	"	"	4 14	4 14	"
November	"	"	"	"	"	"	"
1945—							
February	"	"	"	"	4 13	4 13	"
May	4 18	"	"	"	4 14	4 13	"
August	"	"	"	"	"	4 14	"
November	4 19	"	"	"	"	"	"
1946—							
February	"	"	4 14	4 14	"	4 15	4 17
May	5 0	4 19	"	4 15	4 15	4 16	4 18
August	5 1	"	"	"	"	4 17	"
November	5 8	5 6	5 1	5 2	5 2	5 3	5 5
December	"	"	"	"	"	"	"
1947—							
February	5 7	5 7	5 3	5 3	5 3	5 4	5 6
May	5 10	"	5 4	5 3	5 4	5 5	5 7
August	"	5 8	"	5 4	5 6	5 7	5 9
November	5 12	5 9	5 5	5 6	5 6	"	"
1948—							
February	5 14	5 13	5 7	5 8	5 7	5 10	5 11
May	5 16	5 15	5 10	5 11	5 10	5 12	5 14
August	6 0	5 17	5 13	5 14	5 12	5 15	5 16
November	6 2	6 0	5 15	5 16	5 16	5 18	5 19
1949—							
February	6 4	6 3	5 18	5 19	5 18	6 1	6 2
May	6 7	6 5	5 19	6 1	6 0	6 4	6 4
August	6 10	6 8	6 2	6 4	6 6	6 7	6 7
November	6 12	6 10	6 5	6 6	6 9	6 8	6 9
1950—							
February	6 15	6 14	6 7	6 9	6 11	6 11	6 13
May	6 18	6 17	6 9	6 11	6 13	"	6 15
August	7 2	7 0	6 12	6 14	6 16	6 15	6 18
November	7 6	7 3	6 15	6 17	6 19	6 19	7 2
December	8 5	8 2	7 14	7 18	8 0	8 0	8 2
1951—							
February	8 13	8 10	7 19	8 6	8 6	8 5	8 9
May	9 0	8 17	8 6	8 11	8 16	8 13	8 16
August	9 13	9 9	8 15	9 4	9 8	9 7	9 9
November	10 7	9 19	9 5	9 15	9 17	9 19	10 0
1952—							
February	10 16	10 9	9 19	10 5	10 5	10 8	10 10
May	11 3	10 12	10 7	10 11	10 14	10 14	10 16
August	11 15	11 4	10 13	11 4	11 2	11 2	11 7
November	11 17	11 8	10 16	11 9	11 8	11 10	11 11
1953—							
February	11 18	11 9	10 15	11 5	11 9	11 12	"
May	12 1	11 12	10 17	11 8	11 11	11 10	11 14
August	12 3	11 15	10 18	11 11	11 16	12 2	11 16
1954—							
June	12 13	12 5	11 8	12 1	12 6	12 12	12 6
1957—							
May (b)	13 3	12 15	11 18	12 11	12 16	13 2	12 16
1958—							
May (c)	13 8	13 0	12 3	12 16	13 1	13 7	13 1
1959—							
June (d)	14 3	13 15	12 18	13 11	13 16	14 2	13 16

(a) Beginning of first pay-period commencing in the month except where indicated otherwise. (b) Beginning of first pay-period commencing on or after the 15th May. (c) Beginning of first pay-period commencing on or after the 21st May. (d) Beginning of first pay-period commencing on or after the 11th June.

On the 18th February, 1958, the Commission began hearing an application by unions claiming that the basic wage be increased to the amount which it would have reached had the system of quarterly adjustments been retained plus an addition of 10s. per week, and that the resultant wage be subsequently varied by quarterly adjustment. The claims were opposed by the State of South Australia but Tas-

mania, the only other State represented, appeared in support of the unions' application. The Attorney-General of the Commonwealth intervened in the public interest. In delivering judgment on the 12th May, 1958, the Commission refused the claim for restoration of automatic quarterly adjustments but granted an increase of 5s. per week in the adult male basic wage, to come into effect from the beginning of the first pay-period commencing on or after the 21st May, 1958.

At the 1959 inquiry, which opened on the 24th February, the unions' claims were the same as those submitted in the previous year. The States of South Australia and Tasmania were again represented, South Australia opposing all the claims and Tasmania supporting those for an increase in the basic wage to the amount which it would have reached had the system of quarterly adjustments been retained and for restoration of the system. The Commonwealth Attorney-General intervened. On the 5th June, 1959 the Commission delivered judgment and granted an increase of 15s. per week in the basic wage for adult males, the new rate to operate from the beginning of the first pay-period commencing on or after the 11th June, 1959. All other claims were rejected. An application which had been made on behalf of employers in the pastoral industry seeking a reduction of £1 5s. in the basic wage payable to pastoral workers was also refused.

On the 16th February, 1960, the Commission began hearing an application by the unions for the restoration of quarterly adjustments to the basic wage and for an increase in the amount of the wage. On the six capital cities rate the increase sought was £1 2s. per week, representing an addition of 5s. to restore the real value of the wage to its 1953 level, and a further amount of 17s. being the unions' minimum estimate of the increase in productivity which had occurred since the automatic adjustment system was discontinued. The Commonwealth Government intervened and all States except New South Wales were represented. The State of South Australia opposed the unions' application. Victoria, Queensland and Western Australia, while presenting information to show how their finances would be affected by wage increases, neither supported nor opposed the claims. Tasmania supported the application for restoration of quarterly adjustments. In its judgment, delivered on the 12th April, 1960, the Commission refused the unions' application.

State Basic Wage

Under the provisions of an amendment of 1925 to the Industrial Arbitration Act, 1912, the State Court of Arbitration was required to declare a basic wage annually, to operate from the 1st July in each year. In 1930, the Court was empowered by another amendment to the Act to adjust the annual declaration each quarter in consonance with "the variation (if any) in the cost of living." A further amendment in 1950 removed the Court's obligation to make an annual declaration and gives the Court discretion to make basic wage determinations at any time, provided that such reviews are at intervals of not less than twelve months. The provision for quarterly adjustments was retained. Basic wage determinations of the Court are automatically applicable and thus become the minimum wage permissible by law to be paid to all male and female workers who are covered by industrial awards made by the State Court or by agreements registered with the Court and to those who come within the provisions of the Factories and Shops Act.

The first decision of the Court took effect on the 1st July, 1926, and prescribed a rate of £4 5s. for males and £2 5s. 11d. (or 54 per cent. of the male rate) for females throughout the whole of the State. In fixing the male rate, the Court divided the wage into four elements and allowed such amounts for each as to meet the requirements of a family unit of four, comprising a man, his wife and two children. For Food and Groceries the amount was the equivalent of the Piddington Commission's standard but reduced to provide for a family unit of four; for Rent, the average rental of four and five roomed houses; for Clothing, an amount approximating the sum fixed for such expenditure by the New South Wales Board of Trade in 1925, and for Miscellaneous Expenditure, an amount based on the Piddington Commission's findings.

These rates remained unaltered until the 1st July, 1929, when the amounts were increased to £4 7s. and £2 7s. respectively, with the exception of certain specified goldfields areas for which the previous wage was retained.

A revision by the Court following the 1930 inquiry resulted in the declaration of a separate wage for the metropolitan area of £4 6s. for males and £2 6s. 5d. for females. In this connexion, the metropolitan area is the area comprised within a radius of 15 miles from the General Post Office, Perth. Rates for all other parts of the State were fixed at £4 5s. and £2 5s. 11d. respectively.

Additional power was given to the Court under the provisions of the Industrial Arbitration Act Amendment Act, 1930, to enable quarterly adjustments to be made to the rates fixed by the annual

declaration and, on the 3rd March, 1931, rates of £3 18s. for males and £2 2s. 2d. for females were prescribed for the metropolitan area, and of £3 17s. and £2 1s. 8d. for all other parts of the State. The Court is empowered to make such quarterly adjustments only when a rise of one shilling or more per week is indicated in the "cost of living."

The annual declaration operative from the 1st July, 1931, did not vary these amounts, but a further quarterly adjustment on the 18th August, 1931, marked the inauguration of a separate wage for agricultural areas, which are taken to be those areas, other than the Court's metropolitan area, contained within the official South-West Land Division as described in the Land Act.

In 1938 an inquiry, which was the most comprehensive since the original declaration, gave special consideration to the factors of national income and standards of nutrition and as a result wage levels throughout the State were considerably increased from the 1st July in that year. The Rent and Miscellaneous Expenditure elements of the wage were based on the existing standards but Clothing was based on the Piddington standard, reduced to provide for a family unit of four, and Food and Groceries on the Piddington standard plus an amount of 1s.

Subsequent annual declarations until 1942 maintained in purchasing power the standard of the 1938 judgment.

At a sitting of the Court held on the 26th February, 1942, to consider the quarterly adjustment of the basic wage, the Court decided that, under the existing economic conditions, there should be no alteration to the rates then in force. This decision marked the first occasion upon which the Court, in the exercise of the discretionary powers conferred upon it under the Act, had refrained from making a quarterly adjustment to the wage to equate its purchasing power to the standards of the relevant annual declaration. It was followed, by a similar decision given on the 29th April, 1942, when the Court reaffirmed that no adjustment should be made to existing rates, despite further increases in retail prices.

On the 11th June, 1942, the Court, in its annual declaration, adopted as its new base the rates which had operated since the 28th July, 1941, and these remained in force until the 8th August, 1942, when they were superseded by a Basic Wage Adjustment Order made by the Premier under the authority of National Security (Economic Organization) Regulations. The rates established under this Order were substantially the current equivalents of the standards adopted by the Court in its annual declarations from 1938 to 1941.

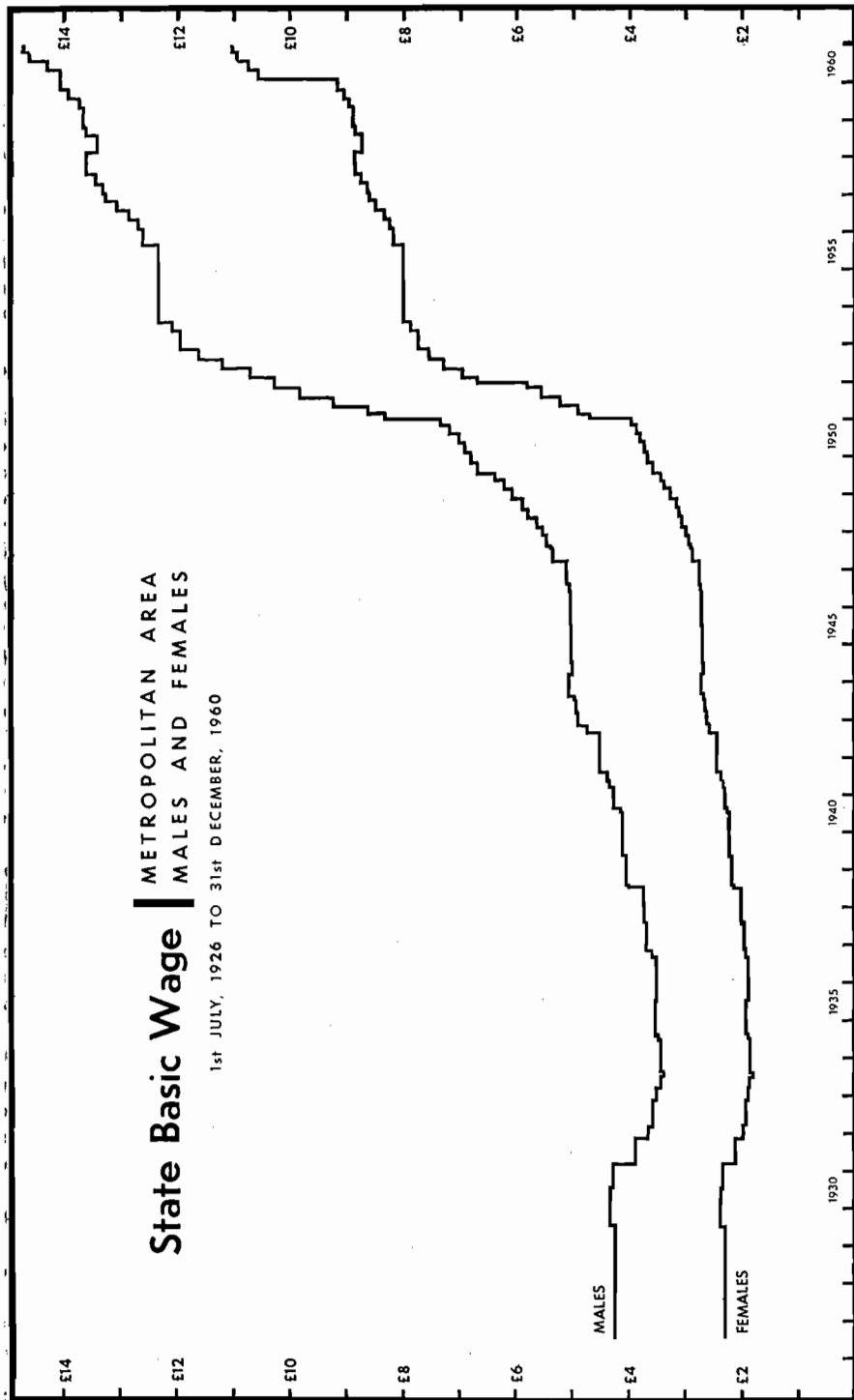
On the 30th October, 1942, these standards were readopted by the Court for the purposes of the quarterly adjustments and continued to apply until the Interim Basic Wage Declaration of the 26th February, 1947. In this declaration, made under powers conferred by an amendment in December, 1946, to National Security (Economic Organization) Regulations, the basic wage was increased by a loading of 5s. This loading was varied proportionately to the remainder of the basic wage in subsequent declarations and quarterly adjustments.

An amendment of 1950 to the Industrial Arbitration Act removed the Court's obligation to make annual declarations, empowers it to make basic wage determinations at any time during the year at intervals of not less than twelve months, subject only to quarterly adjustments, and requires that in such determinations the Court must give due consideration to the economic capacity of industry to pay any proposed increase in the basic wage.

Consequent on the judgment of the Commonwealth Court on the 12th October, 1950, the State Court declared a new wage, incorporating an increase of £1 for males and 15s. for females and consolidating the four elements and the loading previously mentioned, to have effect from the 18th December, 1950. This meant that the concept of a composite wage, which had applied since the initial declaration in 1926, was now abandoned. It also decided in January, 1951, that any quarterly adjustments should be based on variations in the "C" Series Retail Prices Index Numbers. On the 28th November, 1951, the Court raised the basic wage for females from 54 per cent. of the male rate to 65 per cent., the new rates to operate from the 1st December, 1951.

On the 13th November, 1953, the Court again exercised its discretionary powers, conferred by Section 127 of the Act, and determined that no change should be made in the basic wage, although there had been an appreciable increase in the "C" Series Retail Prices Index. This decision governed subsequent determinations until the 9th August, 1955, when the Court reverted to the practice of making quarterly adjustments.

On the 30th January, 1960 the Court raised the basic wage for females from 65 per cent. to 75 per cent. of the male wage, the new rates to operate from the beginning of the next succeeding pay-period.



STATE BASIC WAGE—VARIATIONS IN RATES FROM 1945 (a)

Date of Operation	Metropolitan Area (b)		South-West Land Division (b)		Goldfields Areas and other parts of State	
	Males	Females	Males	Females	Males	Females
1945—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
28th February (c)	4 19 11	2 13 11	4 19 7	2 13 9	5 7 1	2 17 10
1st July	5 0 1	2 14 1	"	"	5 7 5	2 18 0
1946—						
13th May (c)	5 1 1	2 14 7			5 9 0	2 18 10
1st July	"	"	5 0 6	2 14 3	"	"
22nd July (c)	5 2 1	2 15 1	5 1 6	2 14 10	"	"
1947—						
4th February (c)					5 10 4	2 19 7
26th February (b)	5 7 1	2 17 10	5 6 6	2 17 6	5 15 4	3 2 3
1st July	5 7 10	2 18 3	5 7 3	2 17 11	5 16 0	3 2 8
23rd July	5 9 3	2 19 0	5 8 9	2 18 9	5 17 6	3 3 5
30th October	5 10 9	2 19 10	5 10 6	2 19 8	5 19 0	3 4 3
1948—						
2nd February	5 12 9	3 0 11	5 12 6	3 0 9	6 1 4	3 5 6
26th April	5 15 9	3 2 6	5 15 2	3 2 2	6 4 9	3 7 4
1st July	"	"	"	"	"	"
26th July	5 17 5	3 3 5	5 17 1	3 3 3	6 5 10	3 7 11
1st November	6 1 7	3 5 8	6 1 3	3 5 6	6 9 6	3 9 11
1949—						
9th February	6 4 9	3 7 4	6 4 4	3 7 2	6 12 9	3 11 8
2nd May	6 7 1	3 8 8	6 6 9	3 8 5	6 15 1	3 12 11
1st July	"	"	"	"	"	"
21st July	6 13 2	3 11 11	6 12 11	3 11 9	7 0 5	3 15 10
24th October	6 15 11	3 13 5	6 15 4	3 13 1	7 2 11	3 17 2
1950—						
31st January	6 18 1	3 14 7	6 17 4	3 14 2	7 4 8	3 18 1
1st May	7 0 0	3 15 7	6 19 9	3 15 6	7 7 3	3 19 6
31st July	7 3 6	3 17 6	7 3 3	3 17 4	7 11 6	4 1 10
23rd October	7 6 6	3 19 1	7 6 7	3 19 2	7 14 8	4 3 6
18th December (d)	8 6 6	4 14 1	8 6 7	4 14 2	8 14 8	4 18 6
1951—						
29th January	8 12 11	4 17 9	8 12 11	4 17 9	9 0 5	5 1 9
30th April	9 4 3	5 4 1	9 4 1	5 4 1	9 8 5	5 6 3
23rd July	9 16 8	5 11 1	9 15 9	5 10 8	10 1 6	5 13 8
22nd October	10 5 8	5 16 3	10 4 7	5 15 8	10 10 11	5 18 11
1st December (e)	"	6 13 8	"	6 13 0	"	6 17 1
1952—						
29th January	10 14 1	6 19 2	10 13 8	6 18 11	10 19 8	7 2 9
28th April	11 3 10	7 5 6	11 2 5	7 4 7	11 8 10	7 8 9
28th July	11 12 3	7 11 0	11 12 5	7 11 1	11 18 0	7 14 8
27th October	11 18 6	7 15 0	11 19 2	7 15 6	12 4 2	7 18 9
1953—						
27th January	"	"	12 0 6	7 16 4	12 5 9	7 19 9
27th April	12 1 10	7 17 2	12 3 0	7 17 11	12 7 9	8 1 0
27th July	12 6 6	8 0 3	12 6 0	7 19 11	12 9 4	8 2 1
1955—						
9th August	12 12 5	8 4 1	12 11 8	8 3 7	12 14 1	8 5 2
1956—						
31st January	12 13 8	8 4 11	12 13 11	8 5 0	12 15 11	8 6 4
23rd April	12 17 1	8 7 1	"	"	"	"
23rd July	13 1 6	8 10 0	12 18 10	8 8 3	12 18 10	8 8 3
29th October	13 5 2	8 12 4	13 2 11	8 10 11	13 2 8	8 10 9
1957—						
25th January	13 6 3	8 13 1	13 6 5	8 13 2	13 6 7	8 13 3
26th April	13 8 10	8 14 9	"	"	"	"
19th July	13 12 9	8 17 3	13 9 11	8 15 5	13 7 10	8 14 1
28th October	"	"	13 11 5	8 16 5	13 6 7	8 13 3
1958—						
7th February	13 8 6	8 14 6	13 10 1	8 16 7	"	"
28th April	"	"	13 11 2	8 16 3	13 8 0	8 14 2
4th August	13 12 3	8 17 0	13 13 4	8 17 8	13 9 9	8 15 4
27th October	13 13 5	8 17 9	"	"	13 11 6	8 16 6
1959—						
27th April	13 15 1	8 18 10	13 14 6	8 18 5	"	"
27th July	13 18 7	9 1 1	13 17 5	9 0 4	13 13 6	8 17 9
26th October	14 1 6	9 3 0	14 1 3	9 2 10	13 17 4	9 0 3
1960—						
30th January (f)	"	10 11 2	"	10 10 11	"	10 8 0
2nd May	14 6 4	10 14 9	14 3 1	10 12 4	13 18 10	10 9 2
25th July	14 12 3	10 19 2	14 9 2	10 16 11	14 5 11	10 14 5
24th October	14 14 7	11 0 11	14 12 0	10 19 0	14 7 1	10 15 4

(a) A table showing variations from inception in 1926 to the end of 1958 appears on pages 362-3 of the *Official Year Book of Western Australia, 1960, No. 2—New Series*. (b) See letterpress on pages 368-9. (c) Beginning of next succeeding pay-period. (d) Special determination incorporating increase of £1 for males and 15s. for females. (e) Female rate increased to 65 per cent. of male rate. (f) Female rate increased to 75 per cent. of male rate from beginning of next succeeding pay-period. † Annual declaration.

MINIMUM RATES OF WAGE

The basic wage, as the term implies, establishes a "base" to which additions may be made to provide rates actually payable in certain industries and occupations and in particular areas. Minimum rates, incorporating these additional payments, may be prescribed by awards of the Commonwealth Conciliation and Arbitration Commission or of the State Court of Arbitration or may be negotiated by industrial agreement. These agreements are registered with the appropriate arbitration authority and are binding upon the parties.

It is estimated that awards, determinations and registered agreements of the Commonwealth authority apply to 13 per cent. of male and 19 per cent. of female workers in Western Australia, and of the State Court of Arbitration to 77 per cent. of male and 72 per cent. of female workers.

The additions made to the basic rate are principally margins for skill which vary according to the occupation or craft of workers to whom they apply. In general, the labourer receives no such margin, and the margin increases with the degree of training and experience necessary for the satisfactory performance of a particular operation. Clothing allowances are frequently paid to employees who are handling destructive or corrosive materials or who are required to work in excessively dirty situations. A tool allowance is often provided, as in the case of carpenters, cabinetmakers and painters. Some awards prescribe the payment of a district allowance to workers in uncongenial climates or in areas where amenities are lacking. Noxious trades sometimes carry a specific loading. "Service money" is payable, under some awards, to workers who have had a specified period of service in a particular industry. An "industry allowance" is paid to gold-mining workers. Further examples of special allowances are those paid to employees working in a confined space or at heights or in excessively wet conditions.

The following table shows the minimum rates of wage payable at the 31st December, 1960, to adult workers in a selection of industries and occupations. The data have been extracted from a much more comprehensive list appearing in the *Quarterly Statistical Abstract* and in Part VI of the *Statistical Register*. The rates relate generally to a working week of 40 hours.

MINIMUM RATES OF WAGES PAYABLE TO ADULT WORKERS UNDER AWARDS OF
ARBITRATION AUTHORITIES AND INDUSTRIAL AGREEMENTS
AS AT 31st DECEMBER, 1960

Rates relate generally to the metropolitan area and are shown to the nearest penny

Industry and Occupation	Wages	Industry and Occupation	Wages
AGRICULTURAL, PASTORAL AND DAIRY- ING—	£ s. d.	CLERICAL—	£ s. d.
Farming	Per week	Wholesale and Retail Trading—	Per week
Farm worker	14 18 0	Senior clerk	19 10 7
Pastoral Workers		Clerk (male)	15 19 7
Machine shearer	Per 100	to	18 11 7
Flock sheep	8 2 3	Clerk (female)	12 13 5
Rams	16 4 6	to	13 2 11
Wool presser	Per week	HAIRDRESSING—	
Wool shed hand	28 0 3	Hairdresser (male)	17 18 7
BUILDING—	24 18 9	Hairdresser (female)	11 12 9
Carpenter, Joiner	21 16 1	HOSPITALS (GOVERNMENT)—	
Bricklayer, Rubble waller	21 13 1	Matron—	
Stonemason	21 8 7	Less than 5 beds	18 10 11
Painter, Signwriter	21 10 4	5 and less than 10 beds	19 10 11
Plasterer	21 13 4	10 and less than 20 beds	20 10 11
Plumber	21 14 7	20 and less than 50 beds	21 10 11
CARTING AND CARRYING—		50 and less than 100 beds	23 10 11
Motor wagon driver		to	17 0 11
Vehicle 25 cwt. or less	17 0 7	Sister in charge	17 10 11
Vehicle over 25 cwt. and up to		to	16 0 11
3 tons	17 13 7	to	16 10 11
Vehicle over 3 and up to 6 tons	18 0 1	to	15 5 11
CLEANING, CARETAKING, ETC. (BUILD- INGS)—		to	15 10 11
Caretaker (male)	18 12 7	Wardsmaid, Kitchenmaid	12 0 11
Cleaner (male)	16 6 7	to	16 4 1
Cleaner (female)	12 2 11	to	16 10 7
Lift attendant (male)	12 5 11		
Window cleaner (male)	15 15 1		
	16 15 1		

MINIMUM RATES OF WAGES AT 31st DECEMBER, 1960—continued

Industry and Occupation	Wages	Industry and Occupation	Wages
HOTELS, HOSTELS—	£ s. d.	MANUFACTURING—continued	£ s. d.
Barman, Barmaid	Per week	COACHBUILDING—continued	Per week
Cook (male)	17 18 7	Wheelwright, Wheelmaker,	
Cook (female)	18 13 1	Painter, Spray painter, Trim-	
Waiter	to	mer, Grainer, Seatmaker, Sign-	
Waitress	18 11 7	writer	19 1 1
	12 19 5	ENGINEERING :	
	14 17 11	Blacksmith, Fitter, Turner	19 10 7
	16 0 1	Patternmaker	20 19 7
	12 6 5	Toolmaker	20 9 7
		Motor mechanic	19 10 7
		Electrical fitter, Armature	
		winder	19 10 7
		Electrical installer	19 1 1
MANUFACTURING—		SHEET METAL WORKING :	
Treatment of Non-Metalliferous Mine and		Bench hand, first class	19 10 7
Quarry Products—		Canister maker	16 13 1
ASBESTOS-CEMENT GOODS :		WIRE MAKING :	
Sheet machine driver, Magnani		Galvaniser	15 14 7
machine operator	17 5 7	Barbed wire maker	15 5 1
Moulder	16 1 7	Annealer	15 4 7
	16 10 7	Preious Metals, Jewellery, Plate—	
CEMENT GOODS :		JEWELLERS, WATCHMAKERS :	
Block making		Jeweller, Engraver, Setter	19 10 7
Mixer, Block machine operator	16 17 4	Watchmaker, Clockmaker	19 14 7
Pipe making		Textiles and Textile Goods (including	
Moulder	16 11 7	Knitted Goods)—	
Wiredrawer	16 9 1	BAG AND SACK MAKING :	
Tile making		Floor hand (female)	11 8 5
Hand presser, Ridge maker	16 16 1	Machinist, Hand cutter (female)	12 3 5
CEMENT WORKS :		Machinist (male)	16 4 7
Miller	16 19 7	KNITTING :	
Burner	18 8 7	Mechanic	17 14 7
FIBROUS PLASTER AND		Machine attendant, Presser	
PLASTER GOODS :		(male)	16 2 7
Bench hand	19 12 1	Female worker	11 8 11
Fixer	19 2 1	TEXTILES MAKING :	
LIMEWORKS :		Combing	
Dayflrer, Lime bagger, Crusher	15 9 7	Assistant foreman	18 1 0
Bricks, Pottery, Glass, etc.		Other male worker	15 19 0
BRICKWORKS :			to
Burner	16 15 1		16 10 6
	to		11 9 0
Moulder and presser	17 2 7		to
	17 8 7		11 11 6
GLASS WORKERS :		Drawing, Spinning, Twisting and	
Glass beveller and silverer	19 10 7	Winding	
Leadlight glazer	19 10 7	Assistant foreman	18 1 0
PIPE AND TILE WORKS :		Other male worker	15 2 6
Burner	16 19 7		to
Moulder, Presser, Trap maker	16 13 1		16 10 6
			11 0 0
Chemicals, Dyes, Explosives, Paints, Oils,			to
Grease			11 11 6
OIL REFINING :		Warping	
Plant attendant, leading hand	20 10 6	Assistant foreman	18 1 0
Plant attendant, first class	19 12 6	Other male worker	15 7 6
Plant attendant, second class....	18 13 0		to
Storeman	16 16 6		16 12 0
SOAP FACTORIES :			11 9 0
Soap crutcher	16 5 1		to
Tallow man, Soap cutter	16 1 7		11 18 0
Industrial Metals, Machines, Implements		Weaving	
and Conveyances—		Assistant foreman	18 14 0
AGRICULTURAL IMPLEMENT		Other male worker	15 2 6
MAKING :			to
Assembler	16 6 7		18 7 6
	to		11 0 0
Fitter	16 19 7		to
	17 12 1		12 9 6
	to	Skins and Leather (not Clothing or Foot-	
	17 18 7	wear)—	
AIRCRAFT WORKERS :		SADDLERY AND LEATHER	
Repair, Maintenance and Servicing		WORKING :	
Section—		Journeyman	16 14 7
Ground engineer, Aircraft mech-			to
anic			17 9 7
Holding prescribed certifi-	19 3 6		11 0 11
cates	to	TANNING :	
	21 3 0	Currier	18 11 6
Holding no certificate	18 12 0		to
COACHBUILDING :			16 16 6
Coachsmith, General smith, Far-		WOOLSCOURING :	
rier, Wheelwright smith,		Woolscourer in charge of machine	18 3 7
Spring maker, Bodymaker,		Other worker	17 9 1
Panel beater	19 10 7		
	15 6 7		
Welder	to		
	19 10 7		

MINIMUM RATES OF WAGES AT 31st DECEMBER, 1960—continued

Industry and Occupation	Wages	Industry and Occupation	Wages
MANUFACTURING—continued	£ s. d.	MANUFACTURING—continued	£ s. d.
Clothing (excluding Knitted)—	Per week	MILK PROCESSING :	Per week
BOOT AND SHOE MAKING :		Tester, Grader	17 5 1
Journeyman	16 16 6	Pasteuriser	16 4 1
Journeywoman	11 14 6	Man in charge of bottling machine	15 16 1
Repairer	17 18 7	PASTRY COOKING :	17 18 7
CLOTHING, MEN'S (READY-MADE) :		Pastrycook (male)	to
Cutter	18 17 6	Pastrycook (female)	18 12 7
Tailor	18 11 0	SUGAR REFINING :	11 19 5
Trimmer, Fitter-up (female)	17 15 6	Raw Sugar	
Journeywoman	to	Leading hand	17 14 7
	17 15 6	Melting house	
DRESSMAKING (ORDER) :		Fugal washer	16 7 7
Cutter (male)	19 14 0	Refined Sugar	
Cutter (female)	16 4 0	Drier, Grader	16 7 7
Head of a table (male)	18 19 0	Sawmilling, Woodworking and Basketware	
Machinist (male)	17 15 6	BOX AND CASE MAKING :	16 9 7
Journeywoman	10 14 0	Sawyer	to
	12 19 0	Machinist	18 0 7
DRESSMAKING (READY-MADE) :		Case maker	16 4 7
Cutter (male)	18 17 6	SAWMILLING :	
Cutter (female)	12 19 0	Faller	18 5 6
Tailor	18 11 0	Saw doctor	20 7 0
Machinist (male)	17 15 6		15 19 0
Journeywoman	10 14 0	Sawyer, Benchman	to
	12 19 0	Tractor driver	19 8 0
TAILORING, MEN'S (ORDER) :		TIMBER YARDS :	18 18 6
Cutter	20 8 0	Buzzer	16 1 7
Trimmer, Fitter-up, Presser	17 15 6		to
Journeywoman	10 14 0	Moulding machinist	19 0 7
	17 15 6		16 11 7
Food, Drink and Tobacco—			to
AERATED WATER AND		Sawyer, Benchman	19 0 7
CORDIAL MAKING :		Tenoner	19 10 7
Cordial maker	17 5 7		16 1 7
Bottler	15 13 7		to
BAKING :	21 7 1	Furniture, Bedding, etc.	19 0 7
Foreman in charge	to	Cabinetmaker, Chairmaker	19 9 1
Single hand baker, Doughmaker	21 15 7	Wood carver, Upholsterer, French	
Bread carter	20 18 7	pollisher	19 7 7
Bread carter in charge of motor	16 8 7	Paper, Stationery, Printing, Bookbinding,	
vehicle	16 18 7	etc.—	
BREWING :		PRINTING (JOBING) :	
Leading hand	19 1 7	Machine compositor	20 1 0
Bottle washer, Cask washer,		Proof reader and reviser	19 1 6
Packer, Sorter, Corker, Wirer,		PRINTING (NEWSPAPERS) :	
Labourer	17 16 1	Machine Compositor	
BUTTER MAKING :		Night	26 17 1
Butter maker	17 16 1	Day	25 4 1
Cream grader	17 18 1	General hand	
Factory hand	15 14 7	Night	21 15 7
CHEESE MAKING :		Day	20 2 7
Cheese maker	17 16 1	Miscellaneous Products—	
Factory hand	15 14 7	DENTAL :	
FLOUR MILLING :		Dental technician (male)	19 10 7
Foreman miller	21 8 0	Dental technician (female)	12 16 11
Shift miller, Rollerwoman	19 0 0	OPTICAL :	
	to	Optical mechanic	18 14 7
Wheat sampler	21 8 0	Leading hand	19 9 7
HAM AND BACON CURING :	17 6 0		to
Leading man	19 4 1	RADIO :	20 19 7
Trimmer	17 0 7	General serviceman	19 10 7
	to	Workshop serviceman	19 10 7
ICE MAKING AND COLD STORAGE :	18 1 7	Heat, Light and Power—	
Leading hand		ELECTRIC LIGHT WORKS :	
Puller, Stacker, Packer	16 16 1	Turbine driver	20 3 7
ICE-CREAM MAKING :	16 6 7	Auxiliary plant attendant	18 8 7
Freezing machine operator	16 2 1	GAS WORKS :	
	to	Retort operator in charge	18 16 7
Cone and wafer machine hand	16 15 1	Service layer, Main layer	17 2 7
JAM MAKING, FRUIT AND VEGETABLE CANNING :	16 11 7	MINING—	
Leading hand		Coal—	
Syrup maker, Jam boiler, Retort	16 15 7		Per shift (a)
attendant	15 15 1	Miner	3 8 9
		Loaderman (mechanical units)	3 18 11
		Faceman, Shiftman (mechanical units)	3 13 10

(a) Eleven shifts worked each fortnight; ten of 7 hours and one of 5 hours.

MINIMUM RATES OF WAGES AT 31st DECEMBER, 1960—*continued*

Industry and Occupation	Wages	Industry and Occupation	Wages
MINING—continued	£ s. d.	RETAIL TRADE—	£ s. d.
Gold—	Per shift (b)	Shop assistant (male)	Per week
Rock-drill man	3 14 0	Shop assistant (female)	17 7 7
Hand miner	to	Storeman	12 6 11
Shaft-timber man	3 19 5		17 1 1
QUARRYING—	3 9 11	STEVEDORING—	Per hour
Spaller, Man barring down, Machine	to	Lumper handling general cargo	0 11 3
man	3 15 3		
Crusher feeder	3 19 5	TRANSPORT (PASSENGER)—	Per week
Powder monkey	Per week	Omnibus driver	18 14 7
RAILWAYS (GOVERNMENT)—	Per shift (c)	Articulated vehicle driver	19 11 1
Engine driver	3 18 1	Conductor	18 3 7
Fireman	to	Body builder	to
Trainee engineman	4 13 6	Painter	17 2 7
Guard	3 5 0	Greaser	19 10 7
Porter	3 12 4	Fare collector (female)	19 1 1
	3 2 6		17 2 7
	3 12 0	WOOL STORES—	
	3 18 11	Head classer, Man in charge of store	19 10 7
	3 2 6	Assistant classer	18 14 1
	to	Wool sorter	18 3 7
	3 7 6		

(b) Five 7½-hour shifts per week.

(c) Five 8-hour shifts per week.

WAGE AND SALARY PAYMENTS

Statistics of wages and salaries paid and of average earnings for each quarter are prepared by the Commonwealth Statistician. The figures are derived from particulars of employment and wages and salaries recorded on Pay-roll Tax returns, from other direct collections and from estimates of the unrecorded balance. Pay of members of the armed forces is not included.

The following table shows the average weekly equivalent of the total wage and salary payments so derived and the corresponding average weekly earnings per employed male unit, together with the Commonwealth and State Basic Wage rates applying to adult male workers in the metropolitan area, during the period from the 1st July, 1955 to the 30th June, 1960. Male units represent the total number of males in civil employment plus a proportion of female employees based on the approximate ratio of female to male earnings. It is important to bear in mind, in reading the table, that the figures shown as "average weekly earnings per employed male unit" relate therefore to the total wage and salary earner field and comprise payments to all grades of employees throughout the State from junior workers to persons at the highest levels of executive and administrative activity. Overtime earnings, over-award and bonus payments are included. Particulars of basic wage rates applying to adult male workers in the metropolitan area are shown in the table to provide a summary of trend in those rates during the same period.

AVERAGE WEEKLY TOTAL WAGES PAID, AVERAGE WEEKLY EARNINGS AND BASIC WAGE RATES

Period	Average Weekly Total Wages Paid	Average Weekly Earnings per Employed Male Unit	Basic Wage Rates Metropolitan Area—Adult Male Workers			
			Commonwealth Basic Wage		State Basic Wage	
			At End of Period	Average for Period	At End of Period	Average for Period
Year ended 30th June :—	£'000	£	£	£	£	£
1956	3,104	16.92	12.80	11.84(a)	12.85	12.65
1957	3,177	17.48	12.80	12.36(b)	13.44	13.23
1958	3,284	18.05	13.05	12.83(c)	13.43	13.54
1959	3,347	18.19	13.80	13.09(d)	13.75	13.65
1960	3,618	19.46	13.80	13.80	14.32	14.06

(a) It has been assumed, in computing this average, that variations in the Commonwealth Basic Wage operated on and from the first day of the month in which they began to apply. (b) Variation (increase of 10s.) assumed to have operated on and from 15th May, 1957. (c) Variation (increase of 5s.) assumed to have operated on and from 21st May, 1958. (d) Variation (increase of 15s.) assumed to have operated on and from 11th June, 1959.

CHAPTER X — *continued*

PART 3—RETAIL PRICES

Prices of a limited range of commodities are recorded in the Blue Books of Western Australia from the early years of settlement. It was not until 1911, however, that a systematic collection of retail prices statistics, undertaken by the Commonwealth Statistician, was begun. The results of this inquiry were published in 1912 and thus, for the first time, particulars of retail prices in a selection of Western Australian towns became available. As well as providing data for each of five principal towns for the year 1911, the published information contained particulars for the capital city for each year from 1901 to 1910, the scope of the investigation having been specially extended for this purpose. The 46 commodities included in the collection, in addition to house rent, comprised a representative range of groceries, dairy produce and meat. The field of collection was later expanded to cover other groups of household expenditure.

Prices are now collected regularly for items of food; clothing and drapery; housing; household supplies and equipment; and miscellaneous commodities and services.

Representative and reputable retailers and service establishments are selected for each class of commodity and each service. These informants furnish regular returns of prices. Whenever necessary, particulars of prices are also obtained from other firms. For food items, prices are collected monthly, as at the 15th of each month, and are averaged for the three months of the quarter. For most other items prices are obtained quarterly as at the 15th of the middle month of the quarter. In general, prices are collected from actual vendors at retail selling outlets. The prices are those actually being charged for normal cash purchases of new articles. "Bargain" or "sale" prices of imperfect goods or discontinued lines are not used.

The information is collected, under authority of the Census and Statistics Act 1905-1949, for specified "standards" of the commodities and services priced. Specifications include the unit of quantity to be priced, the grade, quality, size, style, etc., and in some cases the particular brand and the manufacturer's "line" number. The standards selected are those with a considerable volume of sales and likely to remain representative over a long period.

The items and standards priced are revised from time to time to keep them in harmony with changing conditions. Before each quarterly collection the standards of all items are reviewed after extensive inquiries among manufacturers, wholesalers and retailers. Where changes in the items or standards priced become necessary, suitable adjustments are made in compiling price series to ensure that they reflect only changes in prices for representative goods of constant quality and not differences in prices of differing standards.

The actual collection of information is carried out by specially qualified field officers of the Commonwealth Bureau of Census and Statistics, who not only receive and check returns but visit the shops or other establishments concerned.

The following tables show the annual average retail prices of 40 items of groceries, dairy produce and meat in the metropolitan area for each of the five years from 1956 to 1960.

AVERAGE RETAIL PRICES OF GROCERIES—METROPOLITAN AREA

Commodity	Unit	1956	1957	1958	1959	1960
		pence	pence	pence	pence	pence
Bread (a)	2 lb.	14.92	15.50	16.00	16.50	17.21
Flour, plain	"	13.73	13.82	13.75	13.72	13.75
" self-raising	"	19.35	19.68	20.43	20.79	21.77
Tea	lb.	83.73	81.32	78.29	77.10	75.00
Sugar	"	9.62	10.00	10.00	10.00	10.60
Rice	"	11.75	11.93	11.85	11.83	11.86
Tapioca, seed	"	18.77	28.02	16.78	15.46	15.55
Jam, plum	1½ lb. tin	33.31	35.52	36.51	35.01	34.06
Golden Syrup	2 lb.	20.84	21.43	21.11	21.05	21.29
Oats, flaked	lb.	9.97	10.23	11.80	11.74	11.80
Raisins, seeded	"	30.22	30.55	31.21	34.38	35.25
Currants	"	24.13	25.13	26.00	27.46	27.71
Apricots, dried	"	60.95	61.67	68.03	70.44	72.29
Peaches, canned	29 oz.	40.75	43.61	46.75	41.43	38.40
Pears, canned	"	41.72	43.35	43.23	39.85	38.58
Potatoes	7 lb.	37.18	41.89	35.69	40.88	40.20
Onions, brown	lb.	12.19	8.70	7.62	12.05	10.18
Soap	"	19.27	19.42	19.71	19.70	19.43
Kerosene	quart	13.19	13.44	13.38	13.32	12.57

(a) Cash price delivered.

AVERAGE RETAIL PRICES OF DAIRY PRODUCE AND MEAT—METROPOLITAN AREA

Commodity	Unit	1956	1957	1958	1959	1960
		pence	pence	pence	pence	pence
<i>Dairy Produce</i>						
Butter	lb.	53.80	54.30	54.17	54.77	55.85
Cheese	"	43.42	44.97	46.05	47.72	49.43
Eggs, new laid	doz.	62.81	61.44	62.02	64.22	64.94
Bacon rashers	lb.	75.95	78.43	70.89	73.80	80.34
Milk, condensed	14 oz. tin	22.65	22.34	22.33	22.73	23.29
" fresh, bottled (a)	quart	18.25	19.00	19.00	19.00	20.17
<i>Meat</i>						
<i>Beef (fresh) :</i>						
Sirloin	lb.	40.32	42.16	42.30	45.25	49.36
Rib (without bone)	"	41.16	41.71	42.23	45.39	50.18
Steak, rump	"	56.38	59.03	59.28	62.66	71.74
" chuck	"	35.70	36.88	36.43	39.19	45.06
Sausages	"	22.68	23.62	22.99	22.66	22.55
<i>Beef (corned) :</i>						
Silverside	"	39.17	40.80	40.82	42.69	47.75
Brisket, rolled	"	30.20	30.34	29.30	31.01	35.30
<i>Mutton (fresh) :</i>						
Leg	"	30.05	29.47	27.11	26.76	28.72
Forequarter	"	18.87	17.83	16.22	15.59	17.48
Loin (trimmed)	"	29.60	27.65	24.54	24.41	26.69
Chops, loin	"	29.68	27.80	24.60	24.41	26.82
" leg	"	29.71	27.84	24.68	24.53	27.11
<i>Pork (fresh) :</i>						
Leg	"	59.73	55.80	49.58	59.79	64.56
Loin	"	60.02	55.94	49.47	59.82	65.14
Chops	"	60.15	55.94	49.48	59.84	65.14

(a) Cash price delivered.

RETAIL PRICE INDEX NUMBERS

The collected information relating to prices of goods and services may be summarized in the form of index numbers. Prices of items, selected as being representative of a high proportion of the expenditure of wage-earner households, are combined at regular intervals by the use of "weights" in approximate proportion to quantities actually used. The aim is to express as a single number the degree of change in prices for the selected field taken as a whole. In practice the application of this principle over a term of years presents great difficulty by reason of the numerous changes which occur in the type, grade and relative quantities of many of the items commonly used.

Basically in the simplest method of compiling retail price indexes the price of each item is multiplied by a fixed quantity or "weight", the product being an "expenditure". The sum of these products for all items at any given date represents an "aggregate expenditure". The "aggregate expenditures" for successive periods are converted into an index series by equating the aggregate for a selected or "base" period to 1,000 (or some other convenient number), and calculating all index numbers to this base according to the ratio which the several aggregates bear to that of the base period.

The "A" Series Index was first compiled in 1912 and although it was both rudimentary and of limited scope, covering only food, groceries and house rents, it was not discontinued until 1938. The "C" Series Index was first compiled in 1921, and retrospectively to 1914, to supply the need for a more adequate index. It was originally described as the "All Items" Index, to distinguish it from the "A" Series, because it included, in addition to food, groceries and house rents, many items of clothing, household drapery and utensils, fuel, lighting, fares, smoking and some other miscellaneous items.

The list of component items and the weighting pattern of the "C" Series Retail Price Index, first adopted in 1921, were revised by Conference of Statisticians in 1936, but from that time remained almost unchanged. From the outbreak of war in 1939 to late in 1948, periodic policy changes in regard to various war-time controls, including rationing, caused recurrent changes in consumption and in the pattern of expenditure. This rendered changes in the index desirable but made it impracticable either to produce a new index, or to revise the old one, on any basis that would render the index more representative than it already was of the changing pattern in those years.

When commodity rationing had virtually ceased in the latter part of 1948, action was taken by the Commonwealth Statistician to collect price data of about 100 additional items and to gather information as to current consumption and expenditure patterns. This was done to facilitate review of the component items and weighting system of the "C" Series Retail Price Index, in the light of the new pattern

of wage-earner expenditure and consumption that appeared to be then emerging. However, there supervened, in the next few years, conditions which caused wide price dispersion coupled with a very rapid rise in prices and a new sequence of changes in consumption and the pattern of wage-earner expenditure. Under these conditions it was not possible to devise any new weighting pattern likely to be more continuously representative of conditions then current than was the existing "C" Series Index on the 1936 revision. A Conference of Statisticians considered the matter in June, 1953, and resolved, in part, as follows:—

- "(a) That, in view of the persistence of recurrent changes in the pattern of consumer expenditure in the post-war period, it is undesirable to make a general revision of the list of items and weighting system of the "C" Series Retail Price Index at present, unless industrial tribunals expressly desire some revision for special purposes.
- (b) That an Interim Retail Price Index be compiled with putative weights and components representative, as nearly as may be, of the post-war pattern of consumer usage and expenditure."

The "C" Series Index continued to be compiled on its pre-war basis without significant change in procedures. The Interim Retail Price Index, with the year 1952-53 as its base, was introduced in 1954 and continued until the March quarter of 1960. This Interim Index was a transitional index designed to measure retail price variations on the "C" Series model in terms of post-war consumption weights, as emerging in the early 1950's. It embraced a wider range of commodities and services than did the "C" Series Index, but it did not take into account successive major changes in the pattern of expenditure and modes of living that began to occur early in 1950 and through to 1960. These changes could not, in fact, be detected and measured promptly, and incorporated into an index, concurrently with their happening in those years. Nor was it envisaged as desirable to adopt fundamentally new procedures in price index construction until it was fully evident that far-reaching procedural changes were necessary to meet the situation that had developed between about 1950 and 1960.

During this period home-owning largely replaced the renting of privately-owned houses, the numbers of government-owned rented houses increased appreciably, the use of the motor car greatly increased and partly replaced use of public transport, various items of electrical household equipment and television came into widespread use, household consumption of electricity greatly increased, and technological developments such as the introduction of new synthetic materials produced a number of changes in clothing and other groups of items. Through the impact of these continuing changes in usage, combined with disparate movements in prices, the Interim Retail Price Index became outmoded. As studies progressed and new data became available, it was clear that no single list of items and no single set of fixed weights would be adequately representative as a basis for measuring retail price changes at all times throughout the post-war period. In consequence, the situation was met by compiling the Consumer Price Index constructed as a chain of linked indexes with significant changes in composition and weighting effected at short intervals during the period 1950-1960.

THE CONSUMER PRICE INDEX

For current statistical purposes the Consumer Price Index has replaced both the "C" Series Retail Price Index and the Interim Retail Price Index in official statistical publications. The title "Consumer Price Index" is used for purposes of convenience and does not imply that the new index differs in definition or purpose from previous retail price indexes. The purpose of the Index is to measure quarterly variations in retail prices of goods and services representing a high proportion of the expenditure of wage-earner households. The weighting pattern relates to estimated aggregates of wage-earner household expenditures and not to estimated expenditures of an "average" or individual household of specified size, type, or mode of living. It is thus possible to give appropriate representation to owner-occupied houses as well as rented houses and to include motor cars, television sets, and other major expenditures which relate to some households and not to others.

Investigations revealed that the incidence and frequency of changes in the pattern of household expenditure since 1950 were such as to render it necessary to construct not one but a series of new indexes introducing additional items and changes in weighting patterns at short intervals during the following ten years. The Consumer Price Index therefore consists of a sequence of four short-term retail price indexes linked to form a continuous series, with reference base year 1952-53 = 100.0. It is envisaged that future links will be made in the index when significant changes in the pattern of household expenditure render it necessary to do so.

The Consumer Price Index covers a wide range of commodities and services arranged in the five major groups, Food ; Clothing and Drapery ; Housing ; Household Supplies and Equipment ; and Miscellaneous. It is designed only to measure the proportionate change in prices as combined in the individual groups, or the aggregate of the groups in the index. This is a basic principle of all price indexes, and failure to appreciate it gives rise to misconceptions concerning price indexes and their uses. Consumer (retail) price indexes are sometimes loosely called "cost of living indexes" and are thought to measure changes in the "cost of living." Neither the Consumer Price Index, nor any other retail price index, measures those changes in the cost of living that result directly from changes in the standard of living. Changes of that kind are matters for consideration apart from price indexes. But the change in prices of goods and services is a very important part of the change in any cost of living and this part is measured by consumer (retail) price indexes.

The following summary gives a general description of the nature of the items included in the several groups which together comprise the Consumer Price Index.

Food—Meat (fresh and processed) ; dairy produce ; cereal products ; soft drink, ice cream and confectionery ; potatoes, onions and preserved fruit and vegetables ; and other foods including sugar, jam, margarine, tea, coffee, baby foods, and sundry canned and other foods.

Clothing and Drapery—Men's, women's, boys' and girls' clothing ; men's, women's and children's footwear ; household drapery ; and piecegoods and knitting wool.

Housing—Costs (house price, rates, repairs and maintenance) involved in home ownership or purchase by instalments ; and rent paid to a private owner or government authority.

Household Supplies and Equipment—Household appliances ; fuel and light ; and household articles including floor coverings, kitchen and other utensils, gardening and small tools, household sundries, personal requisites, proprietary medicines and school requisites.

Miscellaneous—Transport (train, tram and bus fares and private motoring costs) ; beer ; tobacco and cigarettes ; services such as hairdressing, dry cleaning, shoe repairs and postal and telephone services ; and other expenditure including costs of radio and television operation, cinema admission and newspapers.

These groups do not include every item of household spending. It is both impracticable and unnecessary for them to do so. Prices are collected regularly for specified quantities and qualities of a large and representative selection of commodities and services. Movements in the prices of these items, when combined in suitable proportions, provide a representative measure of price change as affecting a high proportion of the expenditure of wage-earner households.

The sets of weights used have been derived from analyses of statistics of production and consumption, the Population Censuses of 1947 and 1954, the Censuses of Retail Establishments of 1948-49, 1952-53 and 1956-57 and the continuing Survey of Retail Establishments ; from information supplied by manufacturing, commercial, and other relevant sources ; and from special surveys.

The index has been compiled for each quarter from the September quarter of 1948, and for each financial year from 1948-49. "All Groups" index numbers, and group index numbers for each of the five major groups, are compiled and published regularly for the six State capital cities separately and combined. The reference base for *each* of these indexes is : Year 1952-53 = 100·0. Figures appearing after the decimal point possess little significance for general statistical purposes. They are inserted merely to avoid the minor distortions that would occur in rounding off the figures to the nearest whole number.

The separate city indexes measure price *movements* within each city individually. They enable comparisons to be drawn between cities as to differences in the degree of *price movement*, but not as to differences in the *actual price level* since the index for each city is independently based, on the prices recorded in *that city* during 1952-53. Similarly, the separate group indexes measure price movements of each group individually. They enable comparisons to be drawn as to differences in the degree of price change in the different groups, but do not show the comparative cost of the different groups.

The index for the six capital cities combined is a weighted average of price movement in the individual cities. The relative influence of the several cities on the combined index is determined by their populations at the 1954 Census.

CONSUMER PRICE INDEX—PERTH

(Base of Each Index Series : Year 1952-53 = 100)

Period	Group Index Numbers					Combined Index (All Groups)
	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	
Year—						
1948-49	55.0	59.6	62.7	66.5	67.7	60.6
1949-50	61.0	68.8	66.4	71.1	69.5	66.2
1950-51	70.0	78.6	74.5	78.1	75.1	74.4
1951-52	87.2	95.3	87.2	92.7	90.7	90.4
1952-53	100.0	100.0	100.0	100.0	100.0	100.0
1953-54	106.2	100.0	107.8	102.0	99.5	103.0
1954-55	109.3	100.1	119.2	102.0	99.5	105.2
1955-56	111.1	101.4	123.8	102.0	105.5	107.9
1956-57	116.0	103.1	123.6	104.5	117.0	112.9
1957-58	114.4	105.7	126.0	105.7	118.3	113.6
1958-59	115.2	107.2	130.3	105.9	118.7	114.7
1959-60	118.4	108.2	133.5	107.1	120.9	116.9
Quarter—						
1948—						
September	52.9	56.4	60.8	65.8	67.2	58.7
December	54.0	57.9	62.2	65.8	67.8	59.7
1949—						
March	55.5	59.4	63.5	66.8	67.9	60.8
June	57.7	64.7	64.4	67.4	67.9	63.1
September	58.6	66.9	64.7	69.7	68.3	64.3
December	59.9	67.5	65.8	70.3	68.8	65.2
1950—						
March	61.5	68.6	66.7	71.5	70.3	66.5
June	63.9	72.1	68.3	72.7	70.7	68.6
September	65.3	73.5	69.9	73.5	70.8	69.7
December	67.7	76.5	71.4	74.6	70.8	71.6
1951—						
March	71.2	78.5	77.4	80.4	78.5	76.0
June	75.8	85.9	79.2	83.7	80.2	80.3
September	80.6	91.1	81.5	86.4	81.1	84.0
December	85.0	94.9	84.1	91.7	88.9	88.8
1952—						
March	89.8	95.8	90.3	94.4	95.4	92.9
June	93.4	99.2	92.8	98.1	97.3	96.0
September	98.4	99.4	96.1	99.2	98.8	98.6
December	98.2	100.3	99.3	99.0	99.6	99.2
1953—						
March	100.2	100.0	101.5	100.6	100.8	100.5
June	103.1	100.3	103.1	101.1	100.8	101.7
September	104.9	100.4	104.0	102.2	100.6	102.5
December	103.9	100.2	106.2	101.8	99.7	102.1
1954—						
March	106.7	100.2	106.8	101.9	98.9	102.9
June	109.3	99.2	114.0	102.1	98.8	104.3
September	109.4	99.3	116.6	102.4	98.9	104.7
December	107.8	99.8	118.6	102.2	98.8	104.4
1955—						
March	108.8	100.0	119.9	102.3	99.1	105.0
June	111.1	101.3	121.8	101.2	101.2	106.6
September	109.5	101.3	122.5	101.4	102.4	106.4
December	109.5	101.5	123.8	101.6	103.1	106.8
1956—						
March	111.6	101.5	124.5	102.1	104.1	107.9
June	113.6	101.4	124.5	102.9	112.4	110.5
September	115.6	101.9	124.1	103.5	113.9	111.7
December	114.6	102.4	123.5	104.4	117.3	112.3
1957—						
March	115.9	103.4	123.4	104.8	118.2	113.2
June	117.8	104.6	123.2	105.3	118.4	114.2
September	116.5	105.0	123.9	105.9	118.4	114.0
December	113.0	105.3	125.3	106.2	118.4	113.0
1958—						
March	113.4	105.4	126.8	105.2	118.2	113.2
June	114.8	106.9	127.9	105.3	118.2	114.1
September	115.1	107.0	128.8	105.4	118.4	114.4
December	113.8	107.5	130.4	105.7	118.7	114.3
1959—						
March	114.8	107.2	130.5	106.1	118.9	114.7
June	117.1	106.9	131.4	106.4	118.9	115.5
September	117.8	107.3	131.5	106.8	118.8	115.9
December	115.7	107.7	132.6	107.0	120.4	115.7
1960—						
March	118.4	108.0	134.2	107.4	121.2	117.1
June	121.6	109.6	135.6	107.0	123.3	119.0
September	122.9	109.8	137.0	107.4	123.7	119.8
December	122.9	110.8	141.6	107.3	125.6	120.8

CONSUMER PRICE INDEX—SIX CAPITAL CITIES COMBINED

(Base of Each Index Series : Year 1952-53 = 100)

Period	Group Index Numbers					Combined Index (All Groups)
	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	
Year—						
1948-49	54.1	58.4	72.5	67.0	66.6	60.9
1949-50	58.6	67.4	76.1	71.1	69.6	66.0
1950-51	68.6	77.8	81.0	78.1	76.3	74.6
1951-52	89.9	93.5	89.1	92.9	92.3	91.4
1952-53	100.0	100.0	100.0	100.0	100.0	100.0
1953-54	103.5	100.7	104.8	101.6	99.9	102.0
1954-55	104.3	101.0	108.4	101.4	99.9	102.6
1955-56	110.2	102.0	115.1	101.6	105.9	106.9
1956-57	115.3	103.9	122.1	105.8	118.0	113.1
1957-58	113.3	107.0	127.3	107.5	119.7	114.2
1958-59	115.4	108.2	130.6	108.7	121.2	116.0
1959-60	119.8	109.4	135.2	109.8	123.9	118.9
Quarter—						
1948—						
September	52.3	55.6	70.9	66.2	65.7	59.2
December	53.5	57.0	72.1	66.5	66.0	60.2
1949—						
March	54.7	58.8	73.0	67.4	67.3	61.4
June	55.9	62.3	74.1	68.0	67.5	62.9
September	56.2	64.9	74.8	69.0	68.4	64.0
December	57.3	66.2	75.6	70.4	69.6	65.1
1950—						
March	59.2	67.5	76.5	71.6	70.0	66.4
June	61.5	71.0	77.6	73.2	70.4	68.4
September	62.9	72.2	78.8	73.9	71.0	69.5
December	66.0	75.4	80.2	75.4	74.4	72.3
1951—						
March	69.9	77.6	81.6	79.3	79.2	75.8
June	75.5	85.9	83.5	83.7	80.7	80.7
September	81.7	89.9	85.6	86.4	82.0	84.6
December	87.6	93.0	87.8	92.0	93.6	90.5
1952—						
March	91.8	94.1	89.8	95.5	96.3	93.4
June	98.3	97.1	93.1	97.6	97.1	97.2
September	99.8	98.4	96.3	99.3	99.1	98.9
December	98.5	99.8	99.2	99.4	100.1	99.4
1953—						
March	100.1	100.3	101.3	100.4	100.4	100.4
June	101.7	101.5	103.1	100.9	100.4	101.4
September	103.7	100.9	103.5	101.9	100.3	102.1
December	103.2	100.6	104.6	101.3	99.3	101.7
1954—						
March	103.7	100.8	104.9	101.6	100.1	102.1
June	103.5	100.4	106.2	101.7	100.0	102.1
September	102.9	100.4	106.8	101.8	99.7	101.8
December	103.3	100.9	108.0	101.7	99.5	102.2
1955—						
March	105.0	100.9	108.7	101.3	100.0	102.9
June	106.1	101.9	110.1	100.6	100.4	103.6
September	107.9	101.9	111.3	100.7	101.3	104.5
December	108.6	102.1	113.7	100.8	104.8	105.9
1956—						
March	110.3	102.0	116.8	101.6	105.1	106.9
June	114.0	102.0	118.5	103.2	112.4	110.2
September	119.0	102.3	119.7	103.6	116.0	112.9
December	115.6	103.3	121.7	105.5	118.0	113.0
1957—						
March	112.9	104.2	122.3	107.0	118.6	112.6
June	113.8	105.6	124.5	107.1	119.3	113.7
September	113.4	106.2	125.6	107.6	119.6	113.9
December	112.1	106.7	127.0	108.0	119.6	113.7
1958—						
March	113.9	106.7	127.6	107.1	119.6	114.3
June	113.9	108.2	128.8	107.3	119.8	114.8
September	113.7	108.2	129.2	107.9	120.1	114.9
December	114.6	108.4	130.4	108.7	121.3	115.8
1959—						
March	116.3	108.1	130.9	108.9	121.5	116.3
June	117.1	107.9	131.9	109.1	121.9	116.8
September	117.9	108.3	132.5	109.4	122.3	117.3
December	118.4	109.2	133.9	109.6	123.0	118.0
1960—						
March	120.3	109.5	134.8	110.0	123.8	119.0
June	122.6	110.5	139.4	110.2	126.4	121.1
September	126.0	110.7	141.4	110.6	126.7	122.5
December	126.7	111.6	144.1	111.0	127.2	123.3

**CONSUMER PRICE INDEX: ALL GROUPS INDEX NUMBERS
SIX CAPITAL CITIES, SEPARATELY AND COMBINED**

(Base of Each Index Series: Year 1952-53 = 100)

NOTE: The separate city indexes measure price movements within each city individually. They enable comparisons to be drawn between cities as to differences in degree of price movement, but not as to differences in price level.

Period	Sydney	Melbourne	Brisbane	Adelaide	Perth	Hobart	Weighted Average of Six Capital Cities
Year—							
1948-49	60.5	61.0	62.1	61.6	60.8	60.7	60.9
1949-50	65.6	66.2	67.1	66.2	66.2	64.7	66.0
1950-51	74.5	74.6	75.1	74.7	74.4	73.3	74.6
1951-52	91.9	91.0	91.8	91.4	90.4	90.4	91.4
1952-53	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1953-54	101.6	102.0	102.0	102.3	103.0	105.0	102.0
1954-55	102.3	102.0	102.9	103.5	105.2	104.9	102.6
1955-56	105.7	108.1	106.3	106.9	107.9	110.2	106.9
1956-57	112.9	114.0	112.0	111.1	112.9	116.9	113.1
1957-58	114.5	114.4	114.4	111.9	113.6	117.0	114.2
1958-59	115.3	116.6	118.2	114.5	114.7	118.7	116.0
1959-60	117.8	120.0	121.2	118.0	116.9	120.8	118.9
Quarter—							
1948—							
September	58.7	59.3	60.5	59.8	58.7	58.8	59.2
December	59.4	60.4	61.6	61.1	59.7	59.9	60.2
1949—							
March	61.2	61.4	62.3	62.1	60.8	61.3	61.4
June	62.6	62.0	63.8	63.2	63.1	62.8	62.9
September	63.8	63.5	65.4	64.5	64.3	63.6	64.0
December	64.6	65.5	66.4	65.4	65.2	64.3	65.1
1950—							
March	65.9	66.9	67.4	66.3	66.5	64.5	66.4
June	68.0	68.8	69.0	68.7	68.6	66.3	68.4
September	69.2	69.6	70.4	69.8	69.7	68.0	69.5
December	72.5	72.1	72.9	72.4	71.6	70.5	72.3
1951—							
March	75.4	76.1	76.6	75.5	76.0	74.5	75.8
June	80.7	80.7	80.5	81.2	80.3	79.0	80.7
September	84.8	84.3	84.5	85.0	84.0	84.1	84.6
December	90.7	90.7	91.2	89.8	88.8	89.3	90.5
1952—							
March	94.0	92.6	94.8	93.2	92.9	92.5	93.4
June	98.0	96.4	96.8	97.5	96.0	95.5	97.2
September	98.8	98.8	99.4	99.4	98.6	98.1	98.9
December	99.5	99.3	99.6	99.0	99.2	98.8	99.4
1953—							
March	100.4	100.3	100.1	100.2	100.5	100.8	100.4
June	101.2	101.6	100.9	101.4	101.7	102.3	101.4
September	101.8	102.2	101.4	102.3	102.5	105.2	102.1
December	101.1	101.7	102.1	102.0	102.1	105.5	101.7
1954—							
March	101.8	102.0	102.5	102.4	102.9	105.0	102.1
June	101.5	102.0	102.1	102.4	104.3	104.4	102.1
September	101.4	101.3	101.8	102.8	104.7	104.2	101.8
December	102.0	101.5	102.4	102.8	104.4	104.1	102.2
1955—							
March	102.6	102.2	103.3	103.6	105.0	105.2	102.9
June	103.0	103.1	103.9	104.7	106.6	105.9	103.6
September	103.7	104.7	104.4	105.2	106.4	107.4	104.5
December	104.7	107.3	104.9	106.0	106.8	109.1	105.9
1956—							
March	105.5	108.4	106.4	106.5	107.9	110.5	106.9
June	108.8	112.0	109.5	109.9	110.5	113.6	110.2
September	112.7	114.1	111.9	111.6	111.7	116.2	112.9
December	112.6	114.2	111.7	111.4	112.3	117.2	113.0
1957—							
March	112.6	113.3	111.7	110.2	113.2	116.7	112.6
June	113.7	114.2	112.6	111.3	114.2	117.5	113.7
September	114.0	114.4	112.8	111.9	114.0	116.7	113.9
December	113.9	114.2	113.7	111.6	113.0	116.9	113.7
1958—							
March	115.0	114.2	115.0	111.5	113.2	117.1	114.3
June	115.1	114.6	115.9	112.7	114.1	117.3	114.8
September	114.8	114.9	116.7	113.5	114.4	117.7	114.9
December	115.2	116.4	117.9	114.2	114.3	118.7	115.8
1959—							
March	115.5	117.1	119.0	115.0	114.7	119.1	116.3
June	115.8	117.9	119.1	115.3	115.5	119.3	116.8
September	116.3	118.2	120.2	116.3	115.9	119.7	117.3
December	117.2	118.8	120.8	116.9	115.7	120.1	118.0
1960—							
March	118.2	119.8	121.6	118.3	117.1	120.8	119.0
June	119.6	123.0	122.3	120.6	119.0	122.6	121.1
September	120.8	124.9	123.6	121.5	119.8	125.8	122.6
December	121.6	125.6	125.1	122.4	120.8	127.1	123.8

STATISTICAL SUMMARY FROM 1829

POPULATION AND MIGRATION

(Excluding full-blood aborigines)

Year	Population at 31st December				Mean Population (a)		Migration (b)	
	Whole State (a)			Metropoli- tan (a)	Year ended—		Arrivals	Departures
	Males	Females	Persons	Persons	30th June	31st December		
1829	769	234	1,003			(c)	652	
1830	877	295	1,172			(c)	1,125	
1840	1,434	877	2,311			(c)	123	
1850	3,576	2,310	5,886			(c)	203	
1860	9,529	5,698	15,227	(c)	(c)	15,092	461	450
1870	15,474	9,610	25,084			24,894	268	303
1880	16,559	12,460	29,019			29,350	577	777
1890	28,854	19,648	48,502			47,081	3,567	1,996
1900	110,088	69,879	179,967			175,113	24,921	19,078
1901	117,885	75,716	193,601	70,700	180,856	188,135	32,762	20,780
1902	128,370	83,603	211,973	77,860	195,791	204,705	37,860	21,001
1903	134,140	90,608	224,748	83,020	212,968	219,643	30,948	20,216
1904	141,694	97,714	239,408	88,940	226,471	233,963	31,517	19,563
1905	146,498	103,640	250,138	93,450	240,896	246,681	28,791	22,934
1906	148,061	107,112	255,173	95,870	251,112	254,362	25,396	25,077
1907	146,244	108,276	254,520	96,170	255,840	255,510	22,326	27,740
1908	148,447	111,224	259,671	98,650	255,933	257,822	24,594	24,339
1909	151,325	114,350	265,675	101,490	260,355	263,279	24,643	23,537
1910	157,971	118,861	276,832	106,330	266,686	271,019	31,403	25,091
1911	167,993	125,930	293,923	111,400	278,043	286,712	41,359	29,436
1912	173,897	131,724	305,621	116,000	294,364	301,040	38,326	31,982
1913	180,554	139,401	319,955	121,700	307,145	313,383	37,637	29,607
1914	178,978	143,111	322,089	122,400	319,014	322,668	27,270	31,277
1915	170,890	145,773	316,663	122,000	322,906	321,247	20,734	32,187
1916	159,237	147,643	306,880	124,110	317,867	313,066	19,322	34,583
1917	157,532	149,306	306,838	130,000	308,756	306,339	17,822	22,977
1918	159,865	150,318	310,183	133,000	306,804	308,198	24,262	25,190
1919	174,981	152,879	327,860	142,000	311,835	319,965	32,561	18,231
1920	176,895	154,428	331,323	152,000	327,162	330,023	29,930	31,228
1921	178,968	157,580	336,548	155,590	331,973	334,084	29,333	28,435
1922	184,471	161,073	345,544	161,770	337,269	341,375	31,141	27,109
1923	191,131	165,728	356,859	173,770	345,891	350,772	33,835	27,444
1924	197,676	170,648	368,324	180,790	356,751	363,152	35,195	28,768
1925	202,554	174,973	377,527	183,500	368,525	372,970	32,920	28,587
1926	206,797	178,436	385,233	188,260	376,933	380,930	30,732	27,977
1927	215,851	184,046	399,897	195,080	385,780	392,071	35,275	25,700
1928	225,072	189,549	414,621	200,520	399,777	407,576	36,039	26,379
1929	231,361	195,276	426,637	206,310	414,489	420,756	32,847	25,952
1930	232,868	198,742	431,610	211,640	425,785	429,079	22,457	22,910
1931	232,397	201,289	433,686	215,800	431,022	432,347	14,192	16,984
1932	233,049	203,271	436,320	214,880	433,596	435,041	15,446	17,062
1933	234,744	205,898	440,642	209,000	436,798	438,780	17,261	17,401
1934	236,140	207,589	443,729	211,000	440,736	442,354	17,609	18,988
1935	238,739	210,884	449,623	214,000	444,275	446,874	19,733	18,599
1936	240,827	213,373	454,200	217,000	449,728	452,294	20,590	21,027
1937	244,050	216,492	460,542	220,000	454,532	457,328	22,571	21,561
1938	246,943	219,741	466,684	223,000	460,642	463,808	23,227	22,784
1939	249,065	223,315	472,380	227,000	466,896	469,780	21,195	20,980
1940	248,734	225,342	474,076	230,000	472,060	473,397	(c)	(c)
1941	246,842	226,371	473,213	234,000	474,180	473,988	(c)	(c)
1942	246,816	229,839	476,655	239,000	474,833	476,619	(c)	(c)
1943	246,389	231,875	478,264	245,000	476,989	476,745	(c)	(c)
1944	249,301	235,474	484,775	253,000	478,271	481,498	(c)	(c)
1945	251,590	238,498	490,088	260,000	484,720	487,510	20,831	21,482
1946	255,310	241,663	496,973	268,000	489,982	492,771	35,547	35,746
1947	261,653	247,109	508,762	276,000	497,006	502,951	54,001	50,640
1948	268,304	253,695	521,999	283,000	508,747	514,621	63,183	57,980
1949	280,273	263,911	544,184	296,000	521,932	532,603	72,127	58,363
1950	294,758	277,891	572,649	313,000	545,134	557,878	83,272	63,586
1951	304,454	285,885	590,339	322,000	570,346	580,317	79,254	70,829
1952	316,700	296,235	612,935	335,000	589,887	600,615	82,663	69,986
1953	326,372	305,371	631,743	345,000	611,191	621,034	82,063	73,805
1954	334,342	314,365	648,707	355,000	630,705	639,963	82,970	75,742
1955	343,838	324,771	668,609	368,000	648,222	657,323	89,201	79,110
1956	350,333	330,935	681,268	377,000	666,898	674,459	86,808	84,067
1957	356,195	339,039	695,234	388,000	680,949	687,448	84,397	80,645
1958	361,441	345,755	707,196	397,000	693,568	699,915	87,522	85,330
1959	366,253	352,438	718,691	406,000	705,869	711,737	95,046	93,754
1960	372,665	358,368	731,033	416,000	717,316	722,900	99,715	97,188
1961	380,420	365,754	746,174	425,000	729,770	737,370	101,935	97,443

(a) Estimated. Figures from 1954 have been adjusted in accordance with the results of the 1961 Census. Figures for 1961 are subject to revision after the next Census. (b) Figures shown for 1933 and later years represent recorded migration and have not been adjusted to conform with Census results. (c) Not available. (d) Figures represent excess of arrivals over departures.

VITAL STATISTICS
(Excluding full-blood aboriginals)

Year	Numbers			Rates per 1,000 of Mean Population*			Infant Mortality	
	Marriages	Births	Deaths (a)	Marriages	Births	Deaths (a)	Number	Rate (b)
1840	25	54	20	(c)	(c)	(c)	(c)	(c)
1850	37	186	54	(c)	(c)	(c)	(c)	(c)
1860	151	588	209	10.01	38.96	13.85	(c)	(c)
1870	153	615	281	6.15	34.27	15.18	100	117.23
1880	214	933	382	7.29	31.79	13.02	72	77.17
1890	278	1,561	540	5.90	33.16	11.47	140	89.69
1900	1,781	5,454	2,240	10.17	31.15	12.79	688	126.15
1901	1,821	5,718	2,519	9.68	30.39	13.39	737	128.89
1902	2,024	6,232	2,823	9.89	30.44	13.79	885	142.01
1903	2,064	6,699	2,788	9.40	30.50	12.69	946	141.22
1904	2,088	7,176	2,817	8.92	30.67	12.04	811	113.02
1905	2,123	7,582	2,709	8.61	30.74	10.98	790	104.19
1906	2,261	7,800	3,084	8.89	30.66	12.12	858	110.00
1907	2,114	7,712	2,931	8.27	30.18	11.47	752	97.51
1908	2,012	7,755	2,879	7.80	30.08	11.17	657	84.72
1909	1,997	7,602	2,704	7.59	28.87	10.27	593	78.01
1910	2,107	7,585	2,740	7.77	27.99	10.11	593	78.18
1911	2,421	8,091	2,923	8.44	28.22	10.19	615	76.01
1912	2,524	8,689	3,335	8.38	28.66	11.08	713	82.06
1913	2,572	9,218	2,934	8.21	29.41	9.36	648	70.30
1914	2,660	9,204	3,043	8.24	28.52	9.43	627	68.12
1915	2,580	9,017	2,992	8.03	28.07	9.31	600	66.54
1916	2,365	8,563	3,085	7.55	27.35	9.85	567	66.22
1917	1,621	7,882	2,769	5.29	25.73	9.04	450	57.09
1918	1,612	7,106	2,883	5.23	23.06	9.19	406	57.13
1919	2,194	6,937	3,590	6.86	21.68	11.22	424	61.12
1920	2,931	8,149	3,388	8.88	24.69	10.27	538	66.02
1921	2,656	7,807	3,480	7.95	23.37	10.42	611	78.26
1922	2,446	8,131	3,167	7.17	23.82	9.28	452	55.59
1923	2,376	7,854	2,930	6.77	22.39	8.35	442	56.02
1924	2,596	8,301	3,263	7.15	22.86	8.99	414	49.87
1925	2,746	8,185	3,315	7.36	21.95	8.89	463	56.57
1926	2,844	8,301	3,350	7.47	21.79	8.79	409	49.27
1927	3,107	8,482	3,393	7.93	21.63	8.65	389	45.86
1928	3,309	8,704	3,640	8.12	21.36	8.93	419	48.14
1929	3,367	9,051	3,930	8.00	21.51	9.34	508	56.13
1930	3,205	9,200	3,774	7.47	21.44	8.80	430	46.74
1931	2,741	8,549	3,681	6.34	19.77	8.51	355	41.53
1932	2,904	7,965	3,715	6.68	18.31	8.54	355	44.57
1933	3,374	7,874	3,790	7.69	17.95	8.64	290	36.83
1934	3,682	7,801	4,076	8.32	17.64	9.21	319	40.89
1935	3,940	8,119	4,118	8.82	18.17	9.22	326	40.15
1936	4,242	8,479	4,230	9.38	18.76	9.35	358	42.22
1937	4,169	8,609	4,065	9.12	18.82	8.89	323	37.52
1938	4,153	9,141	4,234	8.95	19.71	9.13	309	33.80
1939	4,195	9,036	4,336	8.93	19.23	9.23	369	40.84
1940	5,234	9,121	4,486	11.06	19.27	9.48	403	44.18
1941	5,074	10,118	4,769	10.71	21.35	10.06	357	35.28
1942	5,441	9,901	5,076	11.42	20.77	10.65	365	36.86
1943	4,528	10,481	4,587	9.50	21.98	9.62	342	32.63
1944	4,506	10,870	4,478	9.36	22.58	9.30	354	32.57
1945	3,788	10,672	4,712	7.77	21.89	9.67	315	29.52
1946	5,171	12,105	4,753	10.49	24.57	9.65	376	31.06
1947	5,282	12,874	4,723	10.50	25.60	9.39	398	30.92
1948	5,186	12,931	4,685	10.08	25.13	9.10	331	25.60
1949	4,951	13,511	4,790	9.30	25.37	8.99	357	26.42
1950	5,434	14,228	5,058	9.74	25.50	9.07	386	27.13
1951	5,390	14,794	5,288	9.29	25.49	9.11	425	28.73
1952	5,389	15,413	5,209	8.97	25.66	8.67	384	24.91
1953	5,032	15,862	5,072	8.10	25.54	8.17	373	23.83
1954	5,204	15,928	5,364	8.13	24.89	8.38	359	22.54
1955	5,145	16,623	5,379	7.83	25.29	8.18	373	22.44
1956	5,080	16,916	5,572	7.53	25.08	8.20	384	22.70
1957	4,897	16,924	5,297	7.12	24.62	7.71	357	21.09
1958	5,038	16,731	5,554	7.20	23.90	7.94	360	21.52
1959	5,387	17,111	5,497	7.57	24.04	7.72	345	20.16
1960	5,323	16,926	5,697	7.36	23.41	7.88	366	21.62
1961	5,150	17,078	5,729	6.98	23.16	7.77	336	19.67

(a) Excludes deaths of defence personnel from September, 1939 to June, 1947. (b) Deaths under one year of age per 1,000 live births. (c) Not available. * Rates from 1954 to 1960 have been revised in accordance with the results of the 1961 Census. Figures for 1961 are subject to revision after the next Census.

PUBLIC REVENUE AND EXPENDITURE

Year (a)	Consolidated Revenue Fund								
	Revenue from—			Total Revenue	Expenditure on—				Total Expendi- ture
	Land (Including Land Tax)	Mining	Timber		Lands and Surveys	Agricul- ture Generally	Mining	Woods and Forests (b)	
	£	£	£	£	£	£	£	£	£
1840	2,639	.....	.....	16,827	769	.....	.....	.....	15,098
1850	1,994	.....	82	19,138	2,105	.....	.....	.....	16,657
1860	16,712	.....	631	69,863	2,194	.....	.....	.....	61,745
1870	19,428	26	649	98,132	5,803	.....	.....	.....	113,046
1880	34,693	207	852	180,049	7,670	.....	.....	.....	204,337
1890	103,244	4,029	1,140	414,314	15,702	.....	3,522	.....	401,737
1900	118,462	106,589	11,064	2,875,396	45,307	6,304	63,069	2,571	2,615,075
1901	138,654	94,632	18,006	3,080,580	56,316	11,093	66,437	2,724	3,164,147
1902	128,746	113,644	16,992	3,600,585	58,986	12,104	62,231	3,363	3,491,016
1903	130,123	47,532	21,444	3,996,470	69,441	45,442	64,432	4,153	3,886,802
1904	147,723	44,026	20,152	3,978,468	114,084	49,087	156,647	3,938	4,127,973
1905	160,042	36,112	18,688	4,019,066	131,259	39,596	168,699	4,864	4,145,625
1906	170,384	34,674	21,122	3,973,050	112,793	49,310	75,344	5,785	4,047,461
1907	197,798	34,067	21,482	3,837,604	102,775	42,646	69,867	6,271	3,931,715
1908	222,286	31,434	23,499	3,893,863	102,147	46,077	71,572	8,802	3,898,003
1909	263,252	32,024	26,616	3,816,271	112,759	50,306	64,655	9,031	3,906,679
1910	298,990	32,227	27,705	4,274,424	72,297	47,481	80,598	8,531	4,060,610
1911	366,138	38,189	34,668	3,850,440	80,382	54,028	68,161	8,861	3,734,448
1912	360,874	29,294	40,983	3,966,673	90,792	63,205	70,553	10,409	4,101,082
1913	364,693	26,420	43,439	4,596,669	83,150	87,122	68,190	11,463	4,787,063
1914	379,334	26,000	44,929	5,206,343	71,904	59,892	66,333	12,093	5,340,754
1915	366,305	23,669	43,003	5,140,725	62,093	48,863	59,940	10,458	5,706,542
1916	370,387	23,408	35,366	5,366,978	45,565	46,275	62,694	8,665	5,705,201
1917	324,654	20,546	27,379	4,577,007	46,286	57,600	64,698	10,087	5,276,764
1918	320,766	19,291	30,248	4,622,536	46,326	54,438	60,030	11,230	5,328,279
1919	334,786	17,643	26,818	4,944,850	44,703	62,455	57,302	10,873	5,596,865
1920	377,155	24,060	54,010	5,863,501	59,816	68,410	69,958	36,119	6,531,725
1921	400,153	24,108	70,796	6,789,565	90,182	65,863	73,551	50,128	7,476,291
1922	381,278	22,929	73,630	6,907,107	108,192	58,974	65,684	58,142	7,639,242
1923	391,343	19,880	72,095	7,207,492	101,056	56,398	66,447	56,846	7,612,856
1924	401,683	17,376	115,947	7,865,594	100,897	59,656	63,002	81,050	8,094,753
1925	447,975	16,328	151,787	8,381,446	82,963	63,225	61,481	85,410	8,439,844
1926	482,621	16,305	188,641	8,808,166	72,689	70,487	68,492	112,978	8,907,309
1927	497,946	16,689	183,692	9,750,833	72,191	77,963	86,160	110,173	9,722,588
1928	558,189	18,812	197,026	9,807,949	69,141	85,881	102,066	113,061	9,834,415
1929	539,526	17,724	153,533	9,947,951	71,843	93,851	102,148	95,489	10,223,919
1930	618,727	16,380	148,822	9,750,515	72,823	98,465	105,116	109,321	10,268,518
1931	404,020	17,557	85,762	8,686,756	64,306	77,547	105,141	37,582	10,107,295
1932	355,865	16,906	52,220	8,035,316	52,045	64,918	102,252	32,794	9,593,212
1933	328,375	20,304	61,435	8,332,153	48,001	65,061	87,424	31,651	9,196,234
1934	320,829	27,768	83,194	8,481,697	46,616	66,640	109,985	42,165	9,270,609
1935	372,583	45,049	110,504	9,331,430	47,823	75,535	120,665	53,794	9,498,525
1936	324,513	42,242	134,318	10,033,721	51,094	87,254	145,720	65,323	9,945,343
1937	306,360	41,838	155,469	10,185,433	51,743	100,419	144,092	73,227	10,556,638
1938	294,683	38,884	165,126	10,819,042	52,237	118,174	142,504	83,080	10,829,735
1939	253,405	41,201	137,395	10,949,660	56,765	117,049	144,103	76,708	11,170,102
1940	232,637	39,863	143,585	11,119,943	56,077	112,640	139,698	79,230	11,266,768
1941	255,253	34,559	151,079	11,432,068	56,585	108,885	129,847	83,160	11,420,957
1942	263,612	32,579	105,083	11,940,149	54,202	107,559	123,341	80,797	11,938,381
1943	289,832	21,708	137,596	13,151,078	55,353	105,370	112,264	117,659	13,127,242
1944	321,774	21,873	128,733	13,589,176	61,392	112,529	113,507	163,841	13,551,154
1945	308,747	20,089	137,840	13,963,830	65,122	132,920	128,016	199,440	13,949,340
1946	304,758	26,306	134,749	14,407,557	85,028	168,518	133,482	199,900	14,407,557
1947	364,646	37,750	236,442	14,980,875	119,910	182,292	162,539	216,649	15,028,427
1948	433,148	36,606	242,363	17,710,310	159,884	211,863	185,657	208,294	18,062,392
1949	460,347	42,318	182,654	20,560,466	186,163	257,363	193,802	182,616	21,377,907
1950	481,359	43,512	248,684	25,810,961	283,834	345,789	208,362	241,083	25,787,203
1951	465,169	43,242	287,141	28,156,181	295,370	400,394	246,789	280,389	27,996,834
1952	466,936	46,258	346,962	33,955,157	407,321	492,686	281,905	385,287	34,546,768
1953	520,709	51,444	453,287	38,884,236	437,517	551,697	349,160	525,819	39,392,119
1954	648,586	62,498	550,180	43,145,840	541,390	612,574	392,321	536,749	43,248,519
1955	768,327	66,477	563,702	45,719,846	560,750	697,655	357,224	594,989	46,203,889
1956	833,008	78,808	866,424	49,612,406	618,431	750,801	379,170	1,075,688	51,443,237
1957	1,280,325	68,832	875,361	54,330,934	726,226	862,224	408,652	1,077,657	56,243,302
1958	1,707,178	74,392	898,361	57,053,977	764,361	881,423	412,702	1,149,031	58,177,307
1959	1,625,139	92,266	911,711	60,068,237	770,334	920,794	414,175	1,144,547	61,752,970
1960	1,707,274	108,158	923,035	64,387,912	826,819	1,031,145	461,400	1,167,302	65,793,726
1961	1,432,949	121,004	938,023	69,332,710	879,977	1,118,067	528,104	1,194,355	70,537,286

(a) From 1900, year ended 30th June.

(b) Includes expenditure under Special Acts.

NET EXPENDITURE FROM LOAN FUNDS; PUBLIC DEBT

Year (a)	Net Expenditure from Loan Funds on Public Works and Services (b)							Public Debt (as at end of year)	
	Railways, Tramways and Omnibuses	Electricity Supply	Harbours, Rivers, Light- houses, etc.	Water Supplies, Sewerage and Irrigation	Public Buildings	Other	Total	Gross Amount Outstand- ing	Sinking Fund
	£	£	£	£	£	£	£	£	£
1860 ....	.....	.....	.....	.....	.....	.....	.....	1,750	.....
1870 ....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1880	(d) 274,320	.....	(e) 19,016	.....	.....	(e) 400,856	(e) 400,856	361,000	(e) 85,107
1890	1,497	.....	3,011	760	(f) 37,837	(e) 15,906	15,906	1,367,445	85,107
1900	151,111	.....	197,488	474,616	.....	55,115	878,329	11,674,640	377,161
1901	332,729	.....	214,830	872,800	.....	74,933	1,495,292	12,709,430	431,478
1902	578,985	.....	182,962	731,989	.....	51,887	1,545,823	14,942,310	486,737
1903	1,059,418	.....	138,422	413,435	.....	54,626	1,665,901	15,627,298	655,069
1904	443,339	.....	84,145	130,442	.....	52,703	710,629	16,090,288	864,752
1905	348,327	.....	96,296	469	.....	209,261	654,353	16,642,773	1,073,844
1906	219,937	.....	28,455	18,681	3,248	102,121	372,442	18,058,553	1,320,603
1907	329,527	.....	96,050	91,708	112,098	271,581	900,964	19,222,638	1,600,043
1908	305,817	.....	73,464	127,886	106,595	119,983	733,745	20,493,618	1,904,434
1909	547,639	.....	81,185	114,640	97,171	171,673	1,012,208	21,951,753	2,233,385
1910	454,121	.....	86,792	99,268	75,894	312,920	1,028,995	23,287,453	2,569,707
1911	(g) 908,968	.....	(g) 33,275	(g) 153,592	(g) 52,909	(g) 408,168	g1,556,912	23,703,953	2,544,812
1912	1,320,309	.....	185,764	124,989	130,846	547,644	2,309,552	26,283,523	2,918,734
1913	1,993,901	.....	150,499	395,115	70,132	799,571	3,409,218	30,276,436	3,309,345
1914	1,166,584	.....	89,870	332,110	44,166	1,280,280	2,913,010	34,420,181	3,692,103
1915	693,118	.....	165,360	248,142	81,004	1,333,984	2,521,608	37,022,622	4,068,888
1916	447,553	.....	109,228	165,543	40,661	821,657	1,584,642	39,139,676	4,528,432
1917	337,472	.....	121,858	76,486	23,350	296,018	855,183	40,914,826	5,035,961
1918	207,973	.....	84,933	68,248	17,537	675,487	1,054,178	42,304,001	5,570,853
1919	187,345	.....	69,948	46,637	21,570	724,236	1,049,736	43,637,076	6,139,008
1920	121,149	.....	102,177	47,080	10,603	2,382,311	2,663,320	46,822,003	6,827,878
1921	198,926	.....	118,333	213,608	24,963	2,030,574	2,586,404	49,039,067	7,641,564
1922	603,476	.....	91,641	217,579	44,440	1,497,789	2,454,925	54,959,778	8,370,160
1923	679,375	.....	120,140	200,856	18,680	2,370,248	3,389,299	58,486,854	8,781,051
1924	651,519	.....	139,014	436,666	88,595	2,622,040	3,936,833	62,765,782	9,737,571
1925	621,335	.....	181,012	650,295	91,140	2,555,239	4,099,021	64,493,261	9,986,031
1926	769,774	.....	219,303	678,461	77,795	2,333,353	4,078,686	70,010,921	10,654,493
1927	779,421	.....	191,187	441,845	117,483	2,450,265	3,980,201	70,606,175	8,756,936
1928	951,134	.....	264,860	566,021	127,764	2,288,583	4,198,362	76,427,764	8,899,080
1929	912,481	.....	263,847	545,839	91,079	2,127,506	3,940,752	(h) 69,355,449	(h) 991,276
1930	909,370	.....	264,360	305,056	54,108	2,112,831	3,645,725	71,194,325	1,040,463
1931	439,015	.....	128,599	209,964	Cr. 41	728,309	1,505,846	76,564,885	1,310,369
1932	131,448	.....	77,490	575,903	.....	527,401	1,312,242	79,707,953	1,308,906
1933	187,014	.....	242,279	677,622	34,628	918,987	2,060,530	83,514,698	1,346,549
1934	329,440	.....	246,068	803,201	98,009	1,171,783	2,648,501	85,847,802	371,412
1935	498,344	.....	304,941	1,077,273	106,399	551,256	2,538,213	88,590,176	523,815
1936	472,779	.....	300,955	1,243,406	84,422	350,145	2,451,707	90,344,055	569,184
1937	245,422	.....	175,991	1,151,369	89,126	370,316	2,032,224	92,332,855	645,906
1938	474,861	.....	100,640	921,550	91,678	571,851	2,160,480	93,711,941	307,211
1939	220,644	.....	92,014	888,708	114,788	320,030	1,636,184	95,472,601	359,656
1940	100,205	.....	51,758	807,293	366,017	486,806	1,812,079	96,230,399	303,976
1941	106,958	8,801	76,098	824,290	153,047	240,120	1,409,314	97,791,724	573,576
1942	55,250	12,578	55,668	302,547	35,043	218,634	679,720	97,359,245	267,426
1943	78,593	46,137	66,258	49,857	27,432	108,615	376,892	96,988,206	173,515
1944	24,340	15,357	Cr. 71,613	37,661	82,979	17,121	105,845	96,478,295	70,159
1945	69,985	5,381	30,519	74,836	120,395	245,786	546,902	95,894,885	127,093
1946	70,924	104,060	37,609	236,486	225,298	137,886	812,263	96,925,931	503,996
1947	267,740	166,054	86,436	726,741	386,101	410,555	2,043,627	99,002,301	546,284
1948	338,062	735,697	158,232	693,878	548,505	62,628	2,537,002	100,274,741	154,496
1949	456,477	1,065,343	224,499	813,227	549,572	471,176	3,580,294	103,688,743	62,822
1950	2,248,183	2,345,719	401,853	1,001,043	678,299	1,429,599	8,104,696	109,550,142	70,980
1951	1,861,324	3,295,712	582,213	2,045,312	1,001,696	1,540,338	10,326,594	123,186,766	8,346
1952	7,599,037	3,341,916	1,346,808	2,401,331	1,364,556	1,704,647	17,758,295	138,288,531	323,313
1953	6,766,730	89,576	1,210,975	2,429,186	2,716,163	4,393,707	17,606,337	153,072,170	930,677
1954	5,647,407	703,104	1,163,776	1,969,720	1,672,045	3,137,922	14,193,974	165,782,545	410,841
1955	4,875,814	705,000	960,011	2,830,321	1,996,618	3,363,208	14,730,970	177,881,349	221,058
1956	3,069,649	1,024,690	819,147	2,758,108	2,093,645	3,549,076	13,314,315	188,732,740	122,377
1957	2,759,379	2,100,000	475,057	3,559,439	2,799,502	4,584,634	16,278,011	205,145,043	55,918
1958	2,104,682	1,240,000	699,109	3,847,128	2,945,308	3,299,658	14,135,785	218,428,445	73,659
1959	2,855,615	1,100,000	713,790	4,197,363	3,704,970	3,599,387	16,171,125	232,118,579	86,437
1960	2,476,645	776,506	686,717	4,773,572	4,361,260	3,177,322	16,252,022	246,787,292	85,529
1961	2,110,724	200,000	983,061	5,164,258	5,232,145	4,018,618	17,708,806	261,535,019	46,901

(a) From 1900, year ended 30th June. Sinking Fund at 31st March from 1900 to 1928. (b) From 1928 includes expenditure from Loan Suspense Account. (c) Not available. (d) Total amount for the years 1877 to 1881. (e) Total amount for the years 1872 to 1881. (f) Includes expenditure prior to 1890. (g) Including readjustments for previous years. (h) Reduction due to operation of Financial Agreement Act of 1928.

BANKING AND INSURANCE

Year	Trading Banks (Weekly Average over Year) (a)			Savings Banks (c)		Insurance			
	De- positors' Balances	Loans (other than Loans to Authorized Dealers in the Short- term Money Market), Advances and Bills Discounted	Bank Clearings (b)	Number of accounts open at end of Year	Amounts due to Depositors at end of Year	Life		General (d) (e)	
						Policies Existing at end of Year		Gross Premiums	Gross Claims
						Sum Assured			
						Ordinary	Industrial		
	£'000	£'000	£'000		£	£'000	£'000	£	£
1870	(f)	(f)		895	13,582	(f)	(f)		
1880	(f)	(f)		1,299	22,724	(f)	(f)		
1890	952	1,404		3,014	34,616	(f)	(f)		
1900	4,391	2,757		33,646	1,299,144	3,458	220		
1901	4,437	3,061		39,318	1,618,359	3,816	238		
1902	4,796	3,224		45,108	1,889,082	4,337	261		
1903	4,792	3,651		48,008	1,988,624	4,925	264		
1904	4,734	3,855		54,873	2,079,763	5,344	266		
1905	5,098	4,111		59,764	2,207,296	5,557	353		
1906	5,551	4,614		63,573	2,316,161	5,626	365		
1907	5,348	5,062		66,737	2,633,135	5,621	355	(f)	(f)
1908	4,985	5,451		70,340	2,881,189	5,773	445		
1909	5,116	5,488		75,852	3,055,575	5,937	481		
1910	6,314	6,114		84,262	3,477,708	6,359	585		
1911	7,165	7,500		97,147	4,088,800	6,998	684		
1912	6,697	8,412	(f)	108,622	4,400,398	7,462	831		
1913	6,420	8,176		121,201	4,675,067	7,638	1,009		
1914	6,894	8,317		134,510	4,925,454	7,921	1,134		
1915	7,615	8,709		144,777	5,142,291	8,029	1,225		
1916	8,049	9,317		150,458	5,333,463	8,330	1,365		
1917	8,589	9,143		171,207	5,841,611	8,620	1,521	360,648	98,065
1918	9,687	9,585		182,140	6,290,028	9,051	1,728	391,380	151,673
1919	10,803	10,414		196,584	7,002,474	9,925	1,953	401,706	147,620
1920	12,371	10,797		211,415	7,257,840	10,820	2,045	539,944	184,067
1921	12,002	10,916		226,468	7,716,529	12,091	2,349	556,185	341,919
1922	12,260	10,766		237,505	7,759,317	12,793	2,594	597,675	328,867
1923	12,674	10,398		250,214	8,033,420	13,772	2,854	620,861	217,530
1924	13,122	11,656		264,842	8,218,147	14,655	3,180	764,152	271,565
1925	13,000	12,048		277,701	8,303,934	15,870	3,405	834,380	361,979
1926	(g) 14,444	(g) 12,872		292,353	8,969,824	16,985	3,658	916,006	450,389
1927	14,051	14,617		309,176	9,694,396	18,139	4,021	(g) 415,329	(g) 216,226
1928	15,513	15,296		330,284	10,645,373	19,463	4,375	1,055,624	600,194
1929	13,405	17,240		350,046	11,609,190	20,634	4,683	1,195,626	602,706
1930	12,762	20,886	1,707	367,665	11,728,617	20,828	4,502	1,226,101	581,607
1931	12,228	20,818	1,368	371,662	10,867,422	19,953	4,177	957,008	485,620
1932	14,281	19,046	1,446	206,997	10,217,739	19,501	4,293	846,498	327,445
1933	14,892	19,217	1,528	194,095	10,064,464	19,724	4,459	893,218	397,817
1934	16,426	19,371	1,622	192,915	10,398,972	20,315	4,697	872,956	400,446
1935	18,103	20,531	1,815	197,611	10,929,010	21,449	4,973	964,609	454,809
1936	19,366	21,616	1,947	208,990	11,517,220	22,704	5,344	1,087,779	507,335
1937	19,732	22,266	2,011	217,247	11,834,794	24,428	5,687	1,205,146	682,812
1938	20,615	22,571	2,092	225,118	12,037,486	25,826	5,972	1,320,314	762,869
1939	20,590	23,887	2,059	232,564	12,396,191	26,926	6,304	1,372,956	730,778
1940	21,110	23,765	2,293	233,649	11,860,151	27,354	6,543	1,441,950	729,969
1941	23,549	22,809	2,234	238,820	12,521,159	27,921	6,938	1,395,903	618,153
1942	25,959	21,819	2,398	250,153	13,821,138	27,940	7,656	1,402,777	622,303
1943	30,568	18,914	2,638	279,469	18,884,330	28,932	8,328	1,173,589	507,033
1944	35,764	16,731	2,774	301,225	25,790,714	30,690	8,981	1,184,443	448,445
1945	37,423	15,752	2,907	316,565	31,763,170	33,127	9,512	1,282,270	577,196
1946	(h) 33,326	(h) 16,863	3,637	340,737	38,289,087	38,804	10,518	1,444,946	611,433
1947	36,245	22,694	4,341	349,091	36,625,137	44,008	11,527	1,751,278	868,571
1948	41,016	24,377	5,519	358,709	36,182,591	49,446	12,569	2,093,779	1,044,528
1949	50,486	24,952	6,607	365,130	37,534,968	55,606	13,563	2,535,463	1,026,541
1950	58,229	27,650	8,829	378,670	39,612,361	63,166	14,752	2,956,479	1,220,179
1951	74,622	33,340	11,403	392,790	44,672,327	74,362	16,230	3,679,886	1,670,488
1952	85,461	41,676	11,466	403,678	47,170,835	85,504	17,628	4,678,956	2,630,471
1953	85,117	43,676	12,341	414,288	49,794,288	97,750	19,055	5,368,019	2,726,318
1954	90,932	53,214	13,692	422,480	52,614,379	110,784	20,120	5,713,329	2,637,919
1955	90,448	68,915	13,793	426,037	63,628,939	125,772	20,744	6,281,459	3,140,600
1956	* 87,035	* 71,078	14,538	446,419	57,933,790	141,069	21,057	6,772,858	3,562,896
1957	92,789	67,537	15,569	473,548	62,693,286	158,632	21,267	6,896,208	4,101,225
1958	93,239	70,599	15,163	497,690	65,948,351	176,180	21,502	7,800,541	3,903,656
1959	90,150	73,553	17,250	527,079	71,499,134	198,161	21,639	8,584,513	4,582,351
1960	96,038	71,032	22,462	550,966	78,622,269	229,870	22,162	9,975,554	5,335,269
1961	95,047	73,123	23,639	594,555	85,515,601	(i)	(i)	10,803,666	6,384,893

(a) Average based on amounts as at close of business each week. From 1927, year ended 30th June. (b) Average for calendar year. (c) From 1900, year ended 30th June. (d) From 1927, year ended 30th June. (e) Excludes transactions of the Motor Vehicle Insurance Trust, which became the sole insurer in respect to motor vehicle (third party) insurance from 1st July, 1949. (f) Not available. (g) Six months ended 30th June. (h) Average for nine months to 30th June. (i) Not available at time of publication. * Revised.

TRANSPORT AND COMMUNICATION

Year	State Government Railways (a)				Private Railways	Posts and Telegraphs			Shipping (h)	
	Route Mileage at end of Year (b)	Operating Revenues (c)	Operating Expenses (c)	Tonnage of Paying Goods and Livestock Carried (e)	Route Miles open at end of Year (d)	Tele-graph and Tele-phone Lines (e)	Post, Telegraph and Telephone (f) (g)		Vessels—Cleared to Ports outside the State	
							Revenue	Expendi-ture	Number	Net Tonnage
		£	£			miles	£'000	£'000		
1870	....	....	....	....	....	....	4	7	131	67,730
1880	.... 34	2,626	3,851	2,465	38	1,568	13	30	168	126,444
1890	.... 188	45,113	51,640	60,692	385	2,961	27	37	267	420,327
1900	.... 1,355	1,259,512	861,470	1,384,040	623	6,053	206	249	747	1,606,332
1901	.... 1,355	1,353,704	1,044,920	1,719,720	629	6,173	219	251	901	1,872,027
1902	.... 1,360	1,621,429	1,256,370	1,888,146	629	6,112	233	259	765	1,686,905
1903	.... 1,516	1,553,485	1,247,373	1,795,019	627	6,079	221	277	703	1,662,741
1904	.... 1,541	1,588,084	1,179,624	2,057,270	655	6,199	236	305	655	1,777,186
1905	.... 1,605	1,610,129	1,256,003	2,154,275	694	6,389	264	302	656	1,828,256
1906	.... 1,612	1,634,444	1,201,753	2,096,514	743	6,451	260	295	609	1,792,176
1907	.... 1,764	1,537,333	1,135,907	2,091,376	765	6,686	261	319	597	1,760,338
1908	.... 1,943	1,601,925	1,007,732	2,058,741	798	6,868	272	346	592	1,816,805
1909	.... 2,045	1,608,436	973,871	1,997,100	842	6,719	277	336	650	2,054,189
1910	.... 2,145	1,637,334	1,096,908	2,241,859	902	7,480	306	376	726	2,372,260
1911	.... 2,376	1,844,419	1,216,477	2,488,844	948	7,580	314	452	781	2,566,090
1912	.... 2,598	1,884,604	1,343,977	2,542,087	981	7,758	321	494	765	2,614,127
1913	.... 2,854	2,037,853	1,506,600	2,866,241	952	8,513	336	633	873	3,022,958
1914	.... 2,967	2,257,011	1,672,008	3,170,144	960	8,804	344	571	(i) 527	1,794,670
1915	.... 3,332	2,058,244	1,497,326	2,523,859	976	(j)	346	544	655	2,384,122
1916	.... 3,332	2,088,110	1,511,655	2,554,858	993	8,791	367	526	689	2,492,875
1917	.... 3,425	1,877,382	1,448,451	2,400,246	1,010	8,342	380	487	731	2,567,986
1918	.... 3,491	1,816,388	1,451,334	2,259,070	983	8,313	389	445	315	1,102,295
1919	.... 3,539	1,872,897	1,567,591	2,379,403	998	8,328	452	463	636	2,111,894
1920	.... 3,539	2,291,876	2,000,473	2,613,606	918	8,270	443	534	729	2,659,302
1921	.... 3,539	2,720,032	2,422,004	2,604,068	895	8,318	542	618	789	2,825,586
1922	.... 3,539	2,827,856	2,328,843	2,548,258	878	8,413	592	737	874	3,231,366
1923	.... 3,555	2,915,985	2,210,348	2,624,320	865	8,706	608	863	709	3,087,946
1924	.... 3,629	3,227,371	2,297,980	3,023,299	812	10,098	608	1,306	673	3,101,166
1925	.... 3,733	3,359,501	2,355,087	3,284,915	860	11,031	635	971	805	3,657,529
1926	.... 3,865	3,337,292	2,509,049	3,237,496	884	11,402	680	1,027	685	3,256,132
1927	.... 3,918	3,607,989	2,685,693	3,438,587	872	11,858	740	937	799	3,796,504
1928	.... 3,977	3,858,051	2,910,811	3,697,648	838	11,526	799	963	812	3,806,078
1929	.... 4,079	3,799,764	3,055,446	3,670,147	842	11,691	846	915	808	3,674,298
1930	.... 4,111	3,659,203	3,112,895	3,530,188	847	11,804	909	920	794	3,932,476
1931	.... 4,181	3,198,913	2,610,839	3,153,525	826	11,812	836	813	742	3,686,229
1932	.... 4,235	2,922,385	2,123,281	2,847,568	830	11,699	788	617	694	3,530,279
1933	.... 4,338	2,932,140	2,111,588	2,840,077	845	11,723	820	633	691	3,563,679
1934	.... 4,360	2,919,315	2,186,506	2,652,247	854	11,785	848	668	683	3,567,884
1935	.... 4,359	3,311,839	2,382,744	2,903,481	869	11,505	922	734	730	3,775,102
1936	.... 4,358	3,446,161	2,488,117	2,886,648	880	11,532	975	827	725	3,831,105
1937	.... 4,357	3,462,037	2,620,093	2,798,448	873	12,090	1,039	889	761	3,753,586
1938	.... 4,376	3,677,850	2,709,914	3,061,921	854	12,057	1,082	922	866	4,111,171
1939	.... 4,378	3,599,143	2,911,570	2,859,141	844	12,071	1,108	1,017	930	4,326,529
1940	.... 4,381	3,555,982	2,828,329	2,658,876	831	12,040	1,117	991	805	3,751,135
1941	.... 4,381	3,571,828	2,757,891	2,603,857	815	12,080	1,150	995	556	3,087,389
1942	.... 4,381	3,996,312	3,025,919	2,638,469	818	12,118	1,301	1,043	492	2,507,742
1943	.... 4,381	4,417,907	3,447,512	2,504,682	849	12,164	1,542	1,129	312	1,467,495
1944	.... 4,381	4,386,523	3,795,929	2,560,137	829	12,523	1,639	1,285	385	1,579,656
1945	.... 4,381	4,276,250	3,764,290	2,904,431	798	12,435	1,682	1,301	382	1,528,336
1946	.... 4,381	4,106,718	4,026,706	2,727,702	706	12,429	1,731	1,457	490	2,472,948
1947	.... 4,348	4,045,935	4,423,801	2,576,936	759	12,423	1,845	1,663	572	2,646,285
1948	.... 4,348	4,508,896	5,570,000	2,857,573	739	12,661	1,961	2,209	752	3,431,319
1949	.... 4,321	5,214,844	6,702,254	2,736,720	734	12,874	2,066	2,896	950	4,677,867
1950	.... 4,252	6,472,049	7,501,395	2,843,292	774	14,439	2,369	3,238	1,006	5,271,814
1951	.... 4,228	7,196,214	8,618,863	3,033,213	752	14,120	2,756	4,151	1,060	5,552,156
1952	.... 4,113	9,163,532	10,601,917	3,062,641	752	14,598	3,645	4,925	1,045	5,523,959
1953	.... 4,108	7,972,260	12,087,333	2,618,806	724	14,904	3,896	5,462	1,027	5,413,420
1954	.... 4,111	11,374,307	13,756,109	3,205,958	758	14,946	4,181	5,873	1,003	5,315,041
1955	.... 4,111	12,630,410	13,935,329	3,406,634	748	15,149	4,544	5,927	1,138	6,154,422
1956	.... 4,119	13,274,166	14,993,054	3,792,856	726	15,284	4,915	6,922	1,258	6,754,321
1957	.... 4,117	14,044,111	16,011,316	4,223,031	705	15,482	5,396	7,404	1,248	6,543,365
1958	.... 4,117	12,975,176	14,842,662	3,588,914	575	15,579	5,842	8,111	1,222	6,502,096
1959	.... 4,117	13,699,803	14,932,503	3,913,167	575	15,690	6,109	8,572	1,284	6,613,454
1960	.... 4,120	15,038,264	15,408,204	4,532,614	517	15,839	7,202	9,074	1,403	7,233,753
1961	.... 4,123	16,537,848	15,551,297	4,833,228	460	16,082	7,912	9,283	1,598	8,546,731

(a) From 1900, year ended 30th June. (b) Excludes length of lines used by government timber mills which at 30th June, 1961, totalled 124 miles. (c) From 1942, includes operations of Railway Road Services, which began in November, 1941. (d) From 1900, includes 277 miles of line open for general and passenger traffic. (e) At end of year: from 1916, at 30th June. From 1935, figures represent pole route mileage. (f) From 1920, year ended 30th June. (g) Figures represent revenue actually collected, and actual payments made, as recorded for Treasury purposes. (h) From 1915, year ended 30th June. (i) Six months ended 30th June. (j) Complete records not available.

MOTOR VEHICLE REGISTRATIONS ; EXPORTS OF WOOL

Year (a)	Motor Vehicles—Effective Registrations (b)				Wool Exports			
	Motor Cars (c)	Utilities, Vans and Trucks (d)	Omnibuses	Motor Cycles	Greasy (e)		Scoured	
					Quantity	Value	Quantity	Value
					lb.	£	lb.	£
1840					50,000	2,500		
1850					309,640	15,482		
1860					656,815	49,261	(f)	(f)
1870					1,787,812	89,390		
1880					4,342,606	271,412		
1890					6,969,380	261,352		
1900					8,658,343	252,535	436,400	18,183
1901					12,867,770	348,502	711,193	29,633
1902					12,484,361	429,150	447,910	28,928
1903					12,501,804	416,726	405,261	27,017
1904					11,914,085	399,498	299,550	19,897
1905	n.a.				17,033,579	571,632	349,509	23,240
1906					14,678,076	578,364	363,528	24,716
1907					19,914,451	791,485	295,782	20,603
1908					20,302,976	619,715	440,069	17,293
1909					26,430,526	975,287	714,053	37,353
1910		n.a.	n.a.	n.a.	25,777,153	946,976	420,056	19,894
1911					24,981,375	917,517	175,818	7,933
1912					27,901,770	1,026,041	225,330	9,625
1913					25,504,884	966,513	227,465	10,305
1914					(g) 4,845,635	(g) 180,421	(g) 35,436	(g) 1,618
1915					23,905,597	812,869	99,210	4,761
1916					28,668,646	1,258,577	234,808	14,606
1917					24,327,307	1,415,519	77,976	4,772
1918	2,538				10,519,055	528,192	112,967	7,627
1919	2,938				29,022,006	1,887,635	622,550	64,506
1920	3,404				56,284,119	3,608,849	3,316,416	328,257
1921	4,181				42,047,567	2,296,593	1,083,810	91,520
1922	4,403				54,511,990	2,836,610	4,180,513	365,535
1923	7,280				39,275,458	2,993,029	2,650,590	239,567
1924	11,162				42,358,624	4,014,014	1,516,384	223,138
1925	15,261				33,722,363	3,514,835	1,293,383	221,465
1926	20,011				48,023,588	3,351,405	1,665,500	176,460
1927	19,451	5,741	78		52,130,709	3,347,220	1,656,846	171,093
1928	24,205	7,971	133		60,401,951	4,866,755	838,905	95,802
1929	27,174	9,516	251		56,202,277	3,807,439	843,409	103,302
1930	31,130	11,096	262	7,707	61,777,499	2,711,016	1,024,994	68,097
1931	27,741	10,571	309	6,777	69,397,449	2,325,894	1,385,684	60,644
1932	28,608	11,802	292	6,700	64,591,198	2,269,826	1,965,598	75,744
1933	27,969	12,344	282	6,700	68,191,868	2,435,668	2,695,264	117,924
1934	28,761	13,642	295	6,284	69,997,609	4,565,408	2,728,112	245,438
1935	30,578	15,179	351	6,597	80,550,382	3,239,585	3,451,156	174,004
1936	32,329	17,028	334	6,861	78,487,989	4,446,016	3,081,405	225,720
1937	34,180	19,600	319	6,977	58,323,998	3,926,932	2,447,923	237,501
1938	36,386	22,273	323	7,079	53,451,966	2,938,571	2,705,782	222,969
1939	38,039	24,163	278	7,199	68,408,797	3,035,899	3,605,920	234,681
1940	38,907	24,745	281	6,789	65,279,119	3,801,266	3,648,086	330,609
1941	36,965	24,493	295	6,704	19,982,826	1,300,647	2,798,895	258,938
1942	29,022	21,341	284	4,057	75,738,857	4,918,206	4,927,597	514,835
1943	29,750	20,869	320	3,935	28,513,716	2,081,357	2,731,336	297,170
1944	30,295	22,183	276	4,324	68,663,427	5,420,995	4,618,630	458,592
1945	30,635	23,649	294	4,501	52,057,795	4,041,137	4,885,497	512,302
1946	31,408	28,590	314	6,790	108,180,425	8,567,873	11,746,396	1,389,157
1947	32,879	31,762	335	8,199	75,186,771	7,780,467	17,456,798	2,479,906
1948	35,596	34,822	463	8,877	80,204,830	13,900,549	16,072,580	2,721,435
1949	40,119	38,247	654	10,974	85,919,353	18,358,654	13,588,435	3,176,250
1950	48,632	42,370	836	12,897	83,405,237	20,035,466	17,490,562	5,426,116
1951	56,235	46,964	944	14,535	80,731,643	48,246,541	11,054,717	8,032,936
1952	64,277	51,645	982	16,047	91,455,408	28,645,328	11,352,904	5,194,466
1953	69,917	56,420	1,025	15,565	100,908,701	33,879,266	12,603,629	5,681,628
1954	78,312	59,257	1,105	15,243	100,701,099	35,672,828	11,918,274	5,467,140
1955	90,255	62,753	1,117	14,662	96,554,322	29,648,228	13,261,323	5,633,302
1956	98,875	64,430	1,175	13,873	113,289,040	28,947,217	16,744,513	6,209,713
1957	103,788	64,806	1,204	13,146	108,581,711	35,625,655	18,746,141	8,129,332
1958	110,573	65,046	1,190	12,827	96,452,609	28,612,208	18,567,014	7,730,971
1959	118,112	66,617	1,213	13,411	111,130,597	23,156,358	21,763,475	6,112,115
1960	127,863	69,131	1,194	13,609	111,103,757	29,068,444	27,429,926	9,910,131
1961	138,187	70,908	1,237	12,680	131,902,870	29,644,979	26,127,998	7,775,992

(a) From 1915, year ended 30th June. (b) From 1929, at 30th June; for earlier years, at various dates. For years before 1946, excludes Commonwealth-owned vehicles; from 1946, includes Commonwealth-owned vehicles other than those of defence services. (c) From 1957 includes station wagons, previously included with utilities, vans and trucks. (d) See note (c). (e) For 1890 and earlier years includes scoured wool for which figures are not available separately. (f) See note (e). (g) Six months ended 30th June. "n.a." denotes "not applicable" or "not available."

EXPORTS OF CERTAIN COMMODITIES—continued

Year (a)	Wheat		Meats, Frozen and Chilled					
			Beef and Veal		Mutton and Lamb		Pork	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	bushels	£	lb.	£	lb.	£	lb.	£
1860	37	10	.....	.....	.....	.....	.....	.....
1870	.....	.....	.....	.....	.....	.....	.....	.....
1880	15,400	3,850	.....	.....	.....	.....	.....	.....
1890	.....	.....	.....	.....	.....	.....	.....	.....
1900	1,074	181	(b)	(b)	(b)	(b)	(b)	(b)
1901	105	21	(b)	(b)	(b)	(b)	(b)	(b)
1902	.....	.....	.....	.....	.....	.....	.....	.....
1903	.....	.....	.....	.....	.....	.....	.....	.....
1904	9,680	1,580	.....	.....	.....	.....	.....	.....
1905	46,733	7,973	(b)	(b)	(b)	(b)	(b)	(b)
1906	38	7	.....	.....	15,812	292	.....	.....
1907	490,850	96,675	.....	.....	369,953	5,580	.....	.....
1908	211,800	45,005	.....	.....	95,235	1,366	.....	.....
1909	624,660	129,025	.....	.....	.....	.....	722	23
1910	2,014,552	406,326	.....	.....	.....	.....	.....	.....
1911	2,231,393	386,922	.....	.....	.....	.....	.....	.....
1912	502,475	100,148	.....	.....	.....	.....	.....	.....
1913	4,105,900	763,798	.....	.....	.....	.....	48	.....
1914(c)	7,286,118	1,343,856	.....	.....	.....	.....	.....	.....
1915	20	10	.....	.....	.....	.....	.....	.....
1916	3,930,900	1,023,362	4,311,087	87,831	40,912	802	.....	.....
1917	7,036,262	1,619,630	.....	.....	.....	.....	.....	.....
1918	1,693,937	437,709	1,187,915	17,920	114,820	1,969	323,041	7,407
1919	1,651,182	399,079	239,033	3,247	138,224	2,123	132,062	3,237
1920	9,151,125	2,641,698	661,965	16,431	.....	.....	.....	.....
1921	6,576,405	2,930,179	5,762,126	123,978	117,816	3,652	44,807	2,386
1922	10,357,245	3,037,997	2,478,848	39,400	.....	.....	.....	.....
1923	5,362,817	1,471,100	9,954,698	152,349	865,510	27,432	1,413	82
1924	10,925,377	2,642,626	10,646,717	135,938	445,926	12,825	.....	.....
1925	14,985,953	5,168,020	7,106,375	99,052	.....	.....	.....	.....
1926	13,174,678	4,186,714	8,118,705	120,117	.....	.....	.....	.....
1927	16,329,668	4,667,095	6,696,652	99,020	.....	.....	.....	.....
1928	26,193,707	6,994,628	11,026,131	136,082	227,261	7,675	.....	.....
1929	26,091,098	6,692,046	9,313,392	112,765	.....	.....	.....	.....
1930	24,953,238	6,129,218	11,381,415	136,242	.....	.....	.....	.....
1931	42,440,195	5,288,252	11,815,154	122,143	854,608	17,298	208,960	3,540
1932	30,867,683	5,323,740	11,239,948	117,649	2,113,217	51,315	1,220,708	26,502
1933	30,694,720	4,661,276	14,406,036	138,141	333,855	7,271	948,667	18,331
1934	23,359,760	3,417,230	12,602,428	117,189	1,352,172	24,428	667,564	14,749
1935	24,935,638	3,921,897	12,072,230	116,327	4,978,521	118,228	1,193,912	27,345
1936	14,897,053	2,803,358	17,030,178	160,323	5,557,094	141,230	1,550,285	32,313
1937	13,780,400	3,627,352	11,226,986	124,567	4,554,709	123,485	1,305,864	33,549
1938	22,038,207	4,533,666	11,444,720	157,004	8,704,973	234,764	822,723	26,106
1939	22,613,525	3,027,703	16,501,339	248,321	11,774,994	318,927	1,278,045	39,883
1940	15,330,423	2,334,344	10,638,900	164,476	10,284,974	266,329	4,990,211	161,758
1941	14,855,703	2,928,876	12,308,601	203,581	9,691,373	248,231	13,260,644	425,718
1942	9,774,348	2,010,536	7,883,141	163,331	8,122,379	217,309	10,295,031	341,049
1943	5,137,852	1,055,423	408	29	8,785,353	228,860	2,320,707	77,376
1944	12,056,630	2,906,348	3,184,931	94,923	14,691,304	381,370	3,456,855	119,123
1945	23,589,598	7,477,402	2,651,186	84,146	8,824,161	204,844	3,740,724	127,203
1946	13,510,257	5,848,105	9,517,061	278,907	6,001,813	137,530	7,497,152	272,570
1947	6,802,465	4,481,773	14,016,681	345,301	8,997,059	204,434	2,879,609	123,915
1948	19,311,637	16,904,259	14,000,848	301,938	11,197,846	292,167	668,757	26,604
1949	18,401,445	14,049,810	17,760,205	420,214	10,156,809	364,124	1,374,622	89,564
1950	21,510,390	16,692,007	19,015,413	591,603	5,274,277	242,556	358,571	29,646
1951	30,510,360	25,843,951	16,973,192	610,600	2,070,449	108,603	616,359	56,424
1952	26,822,885	22,864,041	13,289,965	567,712	2,300,953	150,526	933,788	116,212
1953	23,318,935	20,173,406	11,058,476	718,691	14,527,244	731,536	1,019,862	161,736
1954	6,800,140	5,635,764	13,555,097	873,785	7,294,910	437,440	474,349	76,077
1955	19,334,742	13,738,962	14,939,112	1,018,832	7,108,748	664,048	2,313,361	266,129
1956	22,773,235	14,429,864	16,757,378	1,171,613	14,566,055	1,077,932	1,636,927	241,145
1957	46,796,467	30,645,638	(d) 9,099,452	(d) 610,557	12,761,112	870,612	1,614,923	293,885
1958	26,643,941	20,430,624	(d) 24,304,729	(d) 1,651,190	11,204,637	950,096	5,123,833	730,755
1959	23,503,275	16,556,265	23,226,399	2,171,044	21,923,136	1,588,442	4,371,464	589,144
1960	36,713,317	24,720,769	29,977,441	3,370,933	19,258,489	1,188,829	2,617,978	476,409
1961	52,480,005	35,639,958	27,365,093	3,070,662	25,059,136	1,950,668	4,175,737	750,361

(a) From 1915, year ended 30th June. (b) Separate particulars not available. Total exports of fresh meats were 184,379 lb. valued at £4,582 in 1900; 244,009 lb. valued at £8,154 in 1901; 8,775 lb. valued at £198 in 1905.
 (c) Six months ended 30th June. (d) Figures for 1956-57 exclude, and those for 1957-58 include, a shipment of 6,776,366 lb. valued at £446,551 exported overseas during 1956-57 but not recorded until 1957-58.

EXPORTS OF CERTAIN COMMODITIES—continued

Year (a)	Flour (b)		Butter (b)		Potatoes (b)		Fresh Fruit(c)(d)	Cattle	Sheep	Hides
	Quantity	Value	Quantity	Value	Quantity	Value	Value	Value	Value	Value
	short tons (e)	£	lb. (f)	£	tons (f)	£	£	£	£	£
1850	....	....	....	18	....	96	....	24	118	....
1860	12	220	....	....	70	630	....	....	2,200	....
1870	....	....	....	....	26	172	....	....	240	....
1880	(f)	1,231	....	....	....	....	....	....	102	826
1890	....	....	....	....	....	....	....	483	831	196
1900	48	400	....	....	111	649	414	18	1,039	20,803
1901	44	413	....	....	74	641	682	10	1,054	22,337
1902	....	....	....	....	24	148	20	10,836	2,328	24,082
1903	....	....	....	....	2	20	15	....	65	24,878
1904	5	41	240	8	1	6	12	....	922	24,204
1905	114	877	....	....	9	80	121	100	1,313	25,197
1906	24	199	....	....	35	388	238	113	931	25,846
1907	4,087	34,565	....	....	....	....	925	600	42	25,055
1908	528	5,066	326	18	61	448	2,262	315	155	25,443
1909	1,088	10,575	547	32	126	941	2,157	117	436	27,362
1910	3,082	25,427	124	9	81	709	5,506	7,845	4,363	35,788
1911	7,270	54,565	11,844	500	64	844	16,103	33,283	8,441	39,065
1912	15,591	121,730	39,943	2,205	712	7,396	33,396	61,358	11,076	42,800
1913	29,851	239,840	48,505	2,546	242	2,162	32,274	72,950	15,430	59,407
1914g	18,273	158,066	20,893	1,138	135	960	8,280	29,677	3,111	25,485
1915	2,986	27,186	25,533	1,613	301	2,806	46,417	37,468	5,676	33,811
1916	17,309	218,389	33,719	2,353	906	10,352	22,236	70,845	4,359	86,781
1917	37,972	424,362	53,061	3,920	399	3,848	82,014	22,533	2,016	57,839
1918	58,066	693,577	313,140	25,607	165	2,107	35,689	88,597	14,590	58,486
1919	105,453	1,294,482	199,415	17,766	555	7,027	57,021	9,016	21,948	30,580
1920	129,491	2,526,620	137,370	13,785	1,982	34,934	150,087	36,517	13,839	51,234
1921	53,452	1,075,082	86,745	10,396	712	8,583	121,335	21,907	11,510	19,116
1922	56,248	1,024,632	61,003	5,793	859	8,533	176,104	47,917	34,766	54,607
1923	59,875	670,909	27,176	2,544	2,097	23,075	237,940	59,065	22,474	52,624
1924	78,217	824,743	45,947	3,887	4,011	53,989	188,947	30,170	19,772	50,275
1925	75,407	968,501	33,334	2,765	919	6,547	246,535	2,255	3,976	55,006
1926	92,097	1,294,311	37,700	3,400	2,056	28,549	232,149	14,848	15,635	37,390
1927	94,329	1,161,324	29,876	2,833	2,004	29,528	334,272	16,199	24,922	46,350
1928	85,398	1,008,168	23,418	2,364	801	10,489	191,915	34,917	29,102	75,428
1929	79,865	892,323	99,505	9,101	1,641	20,938	533,354	18,959	25,753	81,885
1930	69,274	772,715	66,899	5,517	5,387	81,070	156,194	343	22,963	43,653
1931	85,966	635,518	41,944	2,082	5,301	26,925	302,085	1,435	12,590	52,311
1932	88,631	580,729	1,455,042	89,199	1,065	10,467	430,738	1,394	13,768	29,373
1933	86,434	554,519	2,297,431	139,917	850	4,880	332,273	680	17,574	32,974
1934	64,830	392,269	2,220,130	98,435	2,000	10,853	369,615	35	13,024	38,787
1935	86,160	564,945	2,316,638	75,111	2,694	28,091	448,058	466	21,963	40,186
1936	66,987	487,353	2,301,397	124,501	8,713	63,497	501,988	501	23,461	53,054
1937	86,291	832,860	1,652,308	93,230	7,301	62,741	362,020	667	27,984	76,054
1938	81,336	804,706	3,651,258	238,232	5,500	30,933	328,124	177	37,055	74,585
1939	89,245	584,397	4,165,717	233,542	15,297	148,427	648,985	341	36,588	61,509
1940	91,843	652,163	4,157,400	247,379	12,487	114,358	422,885	125	32,360	53,499
1941	118,710	1,093,982	3,883,233	232,158	19,000	196,273	187,332	1,057	56,163	46,944
1942	86,156	842,687	3,722,340	216,753	10,940	114,149	122,565	297	48,266	22,707
1943	77,802	792,778	477,150	32,770	7,081	81,018	135,670	473	218	21,712
1944	107,808	1,183,517	2,144,544	142,588	1,641	23,407	100,012	13,375	69	25,819
1945	104,444	1,284,658	2,214,548	192,822	18,377	302,081	119,194	945	348	16,188
1946	117,136	2,339,327	2,887,169	255,952	13,768	234,059	406,453	1,085	45,385	26,555
1947	129,842	3,818,727	2,089,858	196,769	13,404	250,903	793,621	13,622	181,002	31,063
1948	140,306	5,678,840	4,572,333	506,814	18,924	349,876	945,244	4,771	173,565	44,081
1949	131,614	5,271,572	4,682,378	535,602	14,529	231,288	882,943	5,542	186,973	82,116
1950	116,199	4,178,932	3,527,571	463,601	11,164	217,172	1,116,588	2,714	213,250	70,300
1951	160,228	5,900,046	1,285,022	184,056	12,306	284,830	1,404,698	4,373	308,016	123,495
1952	161,974	6,851,709	448,120	69,751	15,073	419,979	1,649,465	11,507	315,363	173,724
1953	176,630	7,566,057	421,937	78,875	13,568	405,380	2,490,580	11,408	250,749	120,640
1954	148,467	5,867,669	442,111	83,953	17,186	699,583	1,841,714	14,285	284,146	120,410
1955	120,711	3,623,031	441,157	84,096	9,667	281,648	2,145,042	33,912	306,201	140,107
1956	130,519	3,907,810	649,696	122,559	3,354	135,278	2,045,049	88,492	312,345	187,203
1957	127,712	3,745,512	445,590	90,412	8,598	428,632	2,499,800	121,370	461,569	(h) 222,334
1958	111,946	3,456,983	477,856	92,036	14,266	434,002	1,909,399	154,128	420,598	(h) 224,734
1959	104,754	3,171,608	417,259	89,343	9,172	205,650	1,995,119	197,992	382,125	337,071
1960	87,789	2,548,108	421,511	91,580	9,460	217,857	1,421,679	162,420	422,741	422,099
1961	135,375	3,918,199	668,777	123,742	7,697	218,537	2,540,449	158,872	440,325	325,055

(a) From 1915, year ended 30th June. (b) Includes ships' stores for 1958-59 and earlier; from 1959-60 ships' stores are excluded. (c) Includes ships' stores. (d) Includes tomatoes. (e) Short ton = 2,000 lb. (f) Not available. (g) Six months ended 30th June. (h) Figure for 1956-57 excludes, and that for 1957-58 includes, an amount of £11,006 representing the value of a consignment of cattle hides exported during 1956-57 but not recorded until 1957-58.

EXPORTS OF CERTAIN COMMODITIES—continued

Year (a)	Skins	Timber (b)		Crayfish Tails, Frozen (c)		Pearl-shell		Petroleum Oils and Spirits (d)	
	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	£	'000 sup. ft.	£	lb.	£	cwt.	£	gal.	£
1850	329	126	1,048	....	....	....	....	....	....
1860	56	658	4,932	....	....	....	....	....	....
1870	195	2,566	17,571	....	....	1,480	9,431	....	....
1880	2,947	7,950	66,253	....	....	14,380	39,710	....	....
1890	24,207	14,066	82,052	....	....	24,745	86,293	....	....
1900	54,099	68,705	458,036	....	....	14,747	86,513	....	....
1901	64,222	85,807	572,047	....	....	16,350	105,730	....	....
1902	87,374	75,082	500,533	....	....	18,936	138,689	....	....
1903	103,747	95,794	638,867	....	....	19,071	174,322	....	....
1904	102,068	96,868	654,120	....	....	23,275	124,505	....	....
1905	143,083	104,514	689,011	....	....	29,654	146,832	....	....
1906	159,854	105,761	707,789	....	....	23,515	142,682	....	....
1907	158,623	76,826	504,985	....	....	27,881	169,815	....	....
1908	112,488	118,435	813,618	....	....	30,693	190,741	....	....
1909	170,293	129,868	866,758	....	....	23,412	174,960	....	....
1910	205,436	144,868	972,325	....	....	29,281	246,068	....	....
1911	134,275	149,390	986,187	....	....	27,471	240,764	....	....
1912	139,635	135,565	903,396	....	....	31,915	421,609	....	....
1913	197,010	163,438	1,089,486	....	....	30,419	274,724	....	....
1914 (e)	78,990	75,357	502,183	....	....	10,143	85,922	....	....
1915	116,120	119,622	808,392	....	....	22,806	161,389	....	....
1916	165,041	65,188	442,014	....	....	25,045	158,597	....	....
1917	164,667	46,688	310,893	....	....	24,000	196,977	....	....
1918	150,252	41,230	273,783	....	....	17,267	143,779	....	....
1919	241,371	49,629	332,584	....	....	13,253	117,816	....	....
1920	571,795	60,784	465,734	....	....	33,505	335,283	....	....
1921	360,558	117,795	1,137,223	....	....	23,056	234,936	....	....
1922	310,542	99,707	1,041,047	....	....	30,440	253,779	....	....
1923	493,353	94,935	997,471	....	....	25,477	214,534	....	....
1924	469,973	133,648	1,367,517	....	....	28,479	243,680	....	....
1925	422,431	142,132	1,477,997	....	....	23,264	234,349	....	....
1926	403,913	144,017	1,522,958	....	....	25,762	232,647	....	....
1927	329,654	157,355	1,657,976	....	....	24,502	212,337	....	....
1928	477,716	124,617	1,265,383	....	....	19,066	166,065	....	....
1929	468,439	91,623	960,435	....	....	21,515	172,376	....	....
1930	325,436	78,957	807,425	....	....	19,378	165,700	....	....
1931	217,348	49,534	507,382	....	....	20,313	167,218	....	....
1932	168,186	36,752	361,155	....	....	12,237	97,237	....	....
1933	206,954	26,826	261,477	....	....	20,653	147,025	....	....
1934	346,578	48,730	486,023	....	....	16,854	97,930	....	....
1935	279,613	63,913	635,222	....	....	19,435	94,336	....	....
1936	477,221	67,178	677,903	....	....	19,363	106,948	....	....
1937	495,480	68,087	698,261	....	....	18,261	123,388	....	....
1938	417,829	90,549	929,872	....	....	24,781	168,106	....	....
1939	306,430	68,451	718,010	....	....	22,621	105,880	....	....
1940	319,121	60,595	625,304	....	....	16,859	76,306	....	....
1941	242,918	73,094	772,959	....	....	13,704	76,433	....	....
1942	363,302	62,697	684,561	....	....	11,616	70,846	....	....
1943	152,119	42,272	594,467	....	....	120	710	....	....
1944	314,314	43,744	607,986	....	....	37	304	....	....
1945	252,511	34,218	566,737	....	....	....	....	....	....
1946	610,433	40,476	714,621	....	....	260	3,789	....	....
1947	1,034,539	41,505	859,636	....	....	2,491	60,048	....	....
1948	980,070	43,349	1,115,211	....	....	6,733	169,896	....	....
1949	984,926	38,379	993,152	(f)	(f)	8,169	183,439	....	....
1950	1,094,251	34,295	974,493	1,143,235	231,659	6,997	123,898	....	....
1951	2,523,395	28,110	891,522	3,165,055	758,706	6,797	137,190	....	....
1952	1,423,207	28,659	1,037,688	2,890,663	930,722	8,205	202,968	....	....
1953	1,840,181	47,585	2,073,593	2,930,255	1,042,296	10,538	305,992	....	....
1954	1,527,033	46,318	2,240,042	3,222,166	1,171,221	12,271	353,780	....	....
1955	1,320,174	41,748	1,923,618	3,376,571	1,244,988	13,785	409,827	64,638,372	3,032,080
1956	1,449,702	54,591	2,799,170	3,529,076	1,510,756	15,954	499,727	332,098,020	16,700,717
1957	2,102,440	56,147	3,107,513	3,565,789	1,757,138	21,671	695,728	335,032,510	18,691,677
1958	1,724,491	66,872	3,747,932	4,708,161	1,982,535	22,580	690,286	435,461,273	24,377,292
1959	1,407,237	77,561	4,207,482	6,116,632	2,640,650	15,521	386,031	396,537,335	21,597,166
1960	1,961,334	73,601	3,880,226	6,603,858	3,249,611	12,535	353,657	427,135,606	23,733,508
1961	1,589,185	66,406	3,575,647	5,105,607	2,940,348	11,283	251,173	557,264,317	27,459,422

(a) From 1915, year ended 30th June. (b) Excluding plywood and veneers and small quantities of timber for which no super footage is recorded. For the years 1906 to 1921, figures are approximate. (c) Figures for the years 1949-50 to 1951-52 represent overseas exports only and exclude small consignments to other Australian States. Those for 1952-53 and later years include small consignments of cooked whole crayfish to other Australian States. (d) A major oil refinery began production in 1954-55. In some earlier years there were small consignments of re-exported products which were of little significance and are not shown. (e) Six months ended 30th June. (f) Precise information not available, but it is known that the value of exports was about £250,000.

EXPORTS OF CERTAIN COMMODITIES—continued

Year (a)	Gold Bullion (b)		Lead (inc. Silver-Lead-Zinc) Ores and Concentrates	Tin Ore and Concentrates	Asbestos		Manganese Ore		Iron Ore	
	Quantity	Value (c)	Value	Value	Quantity	Value	Quantity	Value	Quantity	Value
	fine oz.	£	£	£	cwt.	£	tons	£	tons	£
1850	....	....	55	....	....	....	....	....	....	....
1860	....	....	985	....	....	....	....	....	....	....
1870	....	....	14,514	....	....	....	....	....	....	....
1880	....	....	15,368	....	....	....	....	....	....	....
1890	22,806	86,664	2,135	5,400	....	....	....	....	....	....
1900	999,770	3,799,116	242	38,178	....	....	....	....	....	....
1901	1,023,864	3,941,797	....	39,495	....	....	....	....	....	....
1902	897,434	3,318,958	....	22,568	....	....	....	....	....	....
1903	1,106,436	4,061,767	....	22,856	4	10	....	....	....	....
1904	1,061,491	3,939,333	....	27,118	....	....	....	....	....	....
1905	777,844	3,292,807	....	76,778	....	....	....	....	....	....
1906	691,822	2,930,458	....	138,634	....	....	....	....	....	....
1907	538,269	2,272,396	1,866	151,414	....	....	....	....	....	....
1908	485,245	2,052,400	5,006	83,594	....	....	....	....	200	140
1909	511,620	2,164,187	2,168	62,989	....	....	....	....	....	....
1910	333,832	1,417,562	2,058	46,261	....	....	....	....	....	....
1911	308,720	1,306,272	15,389	55,220	....	....	....	....	....	....
1912	268,973	1,142,523	22,663	79,738	....	....	2	4	....	....
1913	198,421	841,384	59,724	72,142	....	....	....	....	....	....
1914 (d)	60,452	256,271	28,697	24,623	....	....	....	....	....	....
1915	100,064	413,560	47,391	25,665	....	....	....	....	....	....
1916	182,670	773,419	10,813	46,183	....	....	3	....	....	....
1917	....	....	3,717	56,519	....	....	....	....	....	....
1918	....	....	4,540	55,132	20	25	....	....	....	....
1919	....	....	3,794	55,850	60	97	....	....	....	....
1920	41,296	226,001	51,087	64,401	....	....	....	....	....	....
1921	66	371	33,385	20,590	2,592	6,666	1	10	....	....
1922	....	....	5,087	1,747	....	4,195	15	135	....	....
1923	....	....	23,479	9,080	....	....	12	120	....	....
1924	90,523	383,445	53,942	18,770	....	....	10	80	2	9
1925	36,117	152,609	93,180	14,635	....	....	20	160	....	....
1926	49,619	193,218	92,849	11,740	....	....	....	....	....	....
1927	91,080	355,426	54,633	13,987	....	....	82	503	....	....
1928	14,361	60,651	3,928	12,193	....	....	30	303	....	....
1929	10,353	40,283	5,315	14,889	....	....	....	....	1	1
1930	143	565	9,734	14,612	....	....	80	230	....	....
1931	....	....	1,183	5,173	....	....	....	....	....	....
1932	515,491	3,668,221	400	3,079	....	....	1	2	....	....
1933	624,910	4,688,074	32	3,407	....	....	....	....	....	....
1934	652,604	5,311,904	116	5,643	....	....	....	....	....	....
1935	588,917	5,129,010	25	8,454	....	....	....	....	....	....
1936	770,561	6,692,639	....	9,051	....	....	....	....	....	....
1937	908,818	7,909,423	....	7,846	....	....	....	....	....	....
1938	1,074,840	9,298,855	483	9,926	5,533	18,270	....	....	....	....
1939	1,169,151	10,620,221	543	5,523	5,352	12,866	....	....	....	....
1940	1,167,720	12,027,762	950	6,973	3,703	8,388	....	....	....	....
1941	1,202,348	12,547,760	948	5,890	2,911	7,404	....	....	....	....
1942	974,835	10,295,050	1,134	2,970	1,460	3,443	....	....	....	....
1943	756,349	7,872,227	467	2,551	1,748	4,017	....	....	....	....
1944	349,278	3,624,948	436	3,075	1,809	4,220	....	....	....	....
1945	....	....	742	2,519	7,588	18,221	....	....	....	....
1946	....	....	179	4,021	21,281	52,192	....	....	....	....
1947	....	....	2,714	6,060	12,542	32,724	....	....	....	....
1948	355,649	3,827,850	72,924	8,523	23,643	74,224	....	....	....	....
1949	....	....	117,362	15,478	23,200	89,607	1,649	10,863	....	....
1950	76	1,177	135,755	24,659	17,586	102,124	9,550	63,100	....	....
1951	....	....	131,607	30,757	30,859	189,063	11,488	77,069	....	....
1952	394,984	6,571,284	684,346	53,471	51,570	354,508	57,741	51,622	51,191	51,191
1953	759,291	12,399,246	840,623	70,655	59,165	494,953	14,330	128,027	543,725	539,275
1954	418,067	6,615,109	137,674	48,507	62,975	492,839	26,839	414,361	583,462	578,602
1955	618,495	9,668,885	58,681	73,189	74,645	394,060	34,085	401,942	579,526	574,653
1956	410,278	6,420,786	448,429	160,836	148,302	719,928	54,905	635,309	472,058	468,127
1957	770,061	12,059,597	489,057	146,327	211,169	1,069,889	58,495	775,672	328,588	324,650
1958	207,665	3,255,698	211,622	82,987	231,142	1,459,827	74,563	1,250,647	438,624	435,182
1959	131,634	2,058,944	125,521	152,008	211,365	1,082,924	56,073	813,874	589,369	584,430
1960	599,571	9,369,203	122,699	207,270	303,261	1,556,747	78,547	1,111,879	796,125	800,706
1961	2,532,438	39,635,738	48,417	162,706	220,023	1,181,959	46,978	633,665	1,508,784	1,273,715

(a) From 1915, year ended 30th June. (b) Gold sold abroad before consignment is not recorded as an export until actually shipped. (c) Australian currency value, including additional premiums on sales of industrial gold. (d) Six months ended June.

EXTERNAL TRADE

Year (a)	Imports			Exports (b)			Excess of—	
	Oversea	Interstate	Total	Oversea	Interstate	Total	Imports	Exports
	£	£	£	£	£	£	£	£
1850	(c)	(c)	62,351	(c)	(c)	22,135	40,216	....
1860	159,068	10,007	169,075	80,892	8,355	89,247	79,828	....
1870	129,948	83,311	213,259	177,217	23,768	200,985	12,274	....
1880	174,542	179,127	353,669	371,594	127,589	499,183	....	145,514
1890	512,608	361,839	874,447	484,623	187,190	671,813	202,634	....
1900	3,287,022	2,675,166	5,962,178	5,727,023	1,125,031	6,852,054	....	889,876
1901	3,895,151	2,559,020	6,454,171	7,941,001	574,622	8,515,623	....	2,061,452
1902	5,171,651	2,046,701	7,218,352	8,252,608	798,750	9,051,358	....	1,833,006
1903	4,228,554	2,541,368	6,769,922	9,458,125	866,607	10,324,732	....	3,554,810
1904	4,021,953	2,650,527	6,672,480	9,912,432	359,057	10,271,489	....	3,599,009
1905	3,769,395	2,712,479	6,481,874	9,059,162	811,857	9,871,019	....	3,389,145
1906	3,780,495	3,040,438	6,820,933	9,059,290	773,389	9,832,679	....	3,011,746
1907	3,587,548	2,935,450	6,522,998	8,655,279	1,249,581	9,904,860	....	3,381,862
1908	3,212,021	2,966,176	6,178,197	8,603,129	914,891	9,518,020	....	3,339,823
1909	3,322,390	3,084,570	6,406,960	6,799,957	2,060,537	8,860,494	....	2,453,534
1910	4,375,118	3,533,268	7,908,386	5,486,178	2,813,603	8,299,781	....	391,395
1911	4,485,369	4,160,569	8,645,938	9,307,894	1,298,969	10,606,863	....	1,960,925
1912	5,317,468	4,232,989	9,550,457	7,779,653	1,161,355	8,941,008	609,449	....
1913	5,407,714	4,484,991	9,892,705	5,256,160	3,872,447	9,128,607	764,098	....
1914 (d)	2,556,145	2,127,796	4,683,941	2,968,415	2,241,133	5,209,548	....	525,607
1915	3,986,198	4,315,082	8,301,280	3,255,046	2,097,094	5,352,140	2,949,140	....
1916	4,169,109	4,813,891	8,983,000	4,659,232	3,381,252	8,040,484	942,516	....
1917	4,386,387	4,998,623	9,385,010	4,922,261	9,760,766	14,683,027	....	5,298,017
1918	2,505,271	5,143,962	7,649,233	4,402,337	1,404,998	5,807,335	1,841,898	....
1919	3,140,514	4,883,476	8,023,990	9,752,107	1,170,568	10,922,675	....	2,898,685
1920	4,959,062	7,409,269	12,368,331	14,864,356	1,204,434	16,068,790	....	3,700,459
1921	7,219,538	7,619,703	14,839,241	10,887,099	1,371,540	12,258,639	2,580,602	....
1922	4,308,141	7,729,638	12,037,779	11,360,651	2,268,232	13,628,883	....	1,591,104
1923	6,500,386	7,277,343	13,777,729	9,973,545	1,131,675	11,105,220	2,672,459	....
1924	6,662,729	7,681,416	14,344,145	12,651,541	1,471,748	14,123,289	220,856	....
1925	8,026,452	8,047,583	16,074,035	13,344,297	1,320,251	14,664,548	1,409,487	....
1926	7,896,174	8,566,398	16,462,572	13,136,284	1,445,423	14,581,657	1,880,915	....
1927	9,447,035	8,929,028	18,376,063	13,736,608	1,415,351	15,151,959	3,224,104	....
1928	9,011,304	9,276,329	18,287,633	16,895,934	1,344,841	18,240,775	46,858	....
1929	9,453,177	10,600,595	20,053,772	15,970,043	1,215,911	17,185,954	2,867,818	....
1930	8,878,894	9,902,762	18,781,656	16,657,297	1,112,232	17,769,529	1,012,127	....
1931	4,582,259	6,819,593	11,401,852	17,156,569	818,933	17,975,502	....	6,573,650
1932	3,463,042	7,926,858	11,389,900	15,344,910	951,176	16,296,086	....	4,906,186
1933	4,770,809	8,370,113	13,140,922	14,541,835	995,577	15,537,412	....	2,396,490
1934	4,444,451	9,276,956	13,721,407	16,041,255	1,250,322	17,291,577	....	3,570,170
1935	5,101,564	10,145,154	15,246,718	15,530,079	1,349,089	16,879,168	....	1,632,450
1936	6,343,756	11,036,626	17,380,382	17,032,041	1,859,638	18,891,679	....	1,511,297
1937	7,071,953	12,370,797	19,442,750	17,066,822	3,224,311	20,291,133	....	1,548,383
1938	7,992,928	12,939,671	20,932,599	20,014,725	3,085,812	23,100,537	....	2,167,938
1939	6,137,429	12,664,528	18,801,957	17,506,632	5,439,778	23,006,410	....	4,204,453
1940	6,283,825	13,724,895	20,008,720	10,286,137	14,290,617	24,576,754	....	4,568,034
1941	4,855,208	13,759,522	18,614,730	9,423,498	15,415,981	24,839,479	....	6,224,749
1942	5,195,617	13,054,920	18,250,537	12,709,012	12,642,472	25,351,484	....	7,100,947
1943	3,691,342	12,401,738	16,093,080	6,275,884	10,086,119	16,362,003	....	268,923
1944	3,885,219	13,314,118	17,199,337	12,756,612	6,775,534	19,532,146	....	2,332,809
1945	4,607,621	13,431,736	18,039,357	13,569,364	5,833,669	19,403,033	....	1,363,676
1946	5,509,155	16,118,994	21,628,149	20,666,776	5,878,104	26,544,880	....	4,916,731
1947	9,464,393	21,126,704	30,591,097	23,939,584	5,780,431	29,720,015	871,082	....
1948	17,155,304	25,664,477	42,819,781	49,909,804	5,821,426	55,731,230	....	12,911,449
1949	22,037,601	30,591,245	52,628,846	50,819,268	4,774,572	55,593,840	....	2,964,994
1950	34,421,791	35,021,886	69,443,677	55,528,101	6,337,535	61,865,636	7,578,041	....
1951	40,258,414	47,914,007	88,172,421	102,196,423	9,661,458	111,857,881	....	23,685,460
1952	60,237,006	62,104,414	122,341,420	79,550,994	18,141,533	97,692,527	24,648,893	....
1953	29,874,195	68,606,336	98,480,531	87,851,541	25,281,263	113,132,804	....	14,652,273
1954	42,525,263	82,687,077	125,212,340	71,648,690	20,003,918	91,652,608	33,559,732	....
1955	50,647,713	91,054,828	141,702,541	72,039,222	24,054,872	96,094,094	45,608,447	....
1956	46,481,702	88,975,963	135,457,665	81,035,350	34,636,448	115,671,798	19,785,867	....
1957 (e)	40,211,566	94,339,914	134,551,480	114,327,916	41,194,941	155,522,857	....	20,971,377
1958 (e)	45,887,718	97,551,686	143,439,404	95,193,051	40,283,618	135,476,669	7,962,735	....
1959	44,985,964	101,214,984	146,200,948	91,800,931	34,691,997	126,492,928	19,708,020	....
1960	46,181,555	123,347,757	169,529,312	120,068,508	38,929,952	158,998,460	10,530,852	....
1961	55,265,529	122,736,906	178,002,435	159,538,482	45,230,638	204,769,120	....	26,766,685

(a) From 1915, year ended 30th June. (b) Includes ships' stores. (c) Not available. (d) Six months ended 30th June. (e) An amount of £504,450, representing the value of a shipment of goods exported overseas in 1956-57 but not recorded until 1957-58, is excluded from 1956-57 and included in 1957-58.

LAND TENURE ; LIVESTOCK ; WOOL PRODUCTION

Year	Land Alienated and Land in Process of Alienation (a)	Land held under Lease or Licence (a) (b)	Livestock (c)				Wool Production (d)	
			Horses	Cattle	Sheep	Pigs	Quantity	Gross Value (e)
	acres	acres					lb.	£
1829	525,000	.....	57	204	1,469	109	(f)	.....
1830	633,345	.....	101	583	7,981	66	(f)	.....
1840	1,597,697	.....	506	2,318	30,961	1,533	(f)	.....
1850	1,329,821	(f)	2,635	13,074	128,111	3,190	(f)	.....
1860	1,515,700	5,563,023	9,555	32,476	260,136	10,991	657,000	(f)
1870	1,465,118	12,239,111	22,174	45,213	608,892	12,927	1,788,000	.....
1880	2,124,701	44,919,631	34,568	63,719	1,231,717	24,232	4,343,000	.....
1890	5,333,611	104,742,419	44,384	130,970	2,524,913	28,985	6,969,000	.....
1900	6,619,288	87,375,981	68,253	338,590	2,434,311	61,740	9,531,000	.....
1901	9,585,144	97,455,927	73,710	398,547	2,625,855	61,052	15,305,000	414,510
1902	9,856,592	112,137,932	80,158	437,136	2,704,880	52,883	14,633,000	503,009
1903	10,548,057	135,678,571	82,747	497,617	2,600,633	50,209	14,645,000	488,167
1904	11,558,308	139,854,318	90,225	561,490	2,853,424	70,299	13,964,000	468,376
1905	12,380,035	145,769,592	97,397	631,825	3,120,703	74,567	19,523,000	654,834
1906	12,575,902	152,527,740	104,922	690,011	3,340,745	56,203	17,438,000	687,348
1907	13,070,006	160,180,142	113,330	717,377	2,684,974	53,399	22,014,000	875,057
1908	14,002,939	161,218,973	116,795	741,788	4,097,324	46,652	22,651,000	685,691
1909	16,252,397	166,857,911	125,315	793,217	4,731,737	47,062	30,048,000	1,109,272
1910	17,329,521	167,207,804	134,114	825,040	5,158,516	57,628	29,123,000	1,070,270
1911	19,045,932	169,937,588	140,277	843,638	5,411,542	55,635	29,644,000	1,081,887
1912	20,793,298	175,620,991	147,629	806,294	4,596,958	47,351	25,380,000	934,830
1913	21,362,546	188,547,364	156,636	834,265	4,421,375	47,966	25,026,000	950,988
1914	21,648,949	184,220,512	161,625	863,835	4,456,186	59,816	24,419,000	909,608
1915	22,087,323	189,742,326	163,016	821,048	4,803,850	58,231	29,713,000	1,303,660
1916	21,709,705	196,706,909	169,730	863,930	5,529,960	90,756	33,093,000	1,963,050
1917	21,560,805	192,437,243	178,151	927,086	6,384,191	11,844	40,334,743	2,417,649
1918	21,567,713	208,048,942	180,094	943,847	7,183,747	85,863	45,733,978	3,077,307
1919	21,843,426	245,404,541	174,910	880,644	6,697,951	58,155	41,594,124	2,684,695
1920	23,022,820	257,609,971	178,664	849,803	6,532,965	60,581	41,772,372	2,275,772
1921	24,232,047	258,503,929	180,334	893,108	6,506,177	63,001	43,081,960	2,240,786
1922	25,756,107	267,619,560	181,159	939,596	6,664,135	67,561	40,861,683	3,146,871
1923	27,064,666	262,146,805	181,944	953,764	6,595,867	61,478	45,285,052	4,332,628
1924	28,342,629	209,936,847	175,116	891,564	6,396,564	66,375	43,423,989	4,575,624
1925	28,901,792	232,991,598	170,563	835,911	6,861,795	74,316	48,288,461	3,369,856
1926	30,277,669	230,562,420	166,463	827,303	7,458,768	69,798	55,131,972	3,573,815
1927	31,740,177	234,160,075	165,021	846,735	8,447,480	59,810	62,702,013	5,084,870
1928	33,322,223	237,428,216	160,876	837,527	8,943,002	49,243	58,865,734	4,013,385
1929	35,398,760	243,723,857	159,528	836,646	9,556,823	64,522	67,150,720	2,976,144
1930	36,039,118	245,380,756	156,973	812,844	9,882,761	100,664	71,541,885	2,414,433
1931	36,208,840	216,626,973	156,489	826,532	10,098,104	120,521	71,614,145	2,503,280
1932	35,869,310	206,162,014	157,443	857,473	10,417,031	117,529	75,147,012	2,598,930
1933	35,546,902	198,325,118	159,646	885,669	10,322,350	91,213	78,424,200	4,701,766
1934	35,089,664	200,587,868	161,636	911,940	11,197,156	97,997	89,991,658	3,210,784
1935	34,117,635	203,601,662	160,181	882,761	11,082,972	98,026	85,706,700	4,443,118
1936	32,995,173	203,961,422	155,177	792,508	9,007,535	76,451	63,537,200	3,652,879
1937	33,002,808	205,059,057	151,067	740,241	8,732,076	64,598	64,739,400	2,915,858
1938	33,008,899	205,992,155	143,679	767,680	9,177,531	82,922	72,475,000	2,724,967
1939	32,767,548	205,705,440	139,207	799,175	9,574,433	149,604	75,400,000	3,790,436
1940	32,437,094	209,379,761	130,057	788,928	9,516,272	217,910	71,347,000	3,944,264
1941	32,109,627	209,958,332	124,402	839,731	9,772,780	163,196	77,627,000	4,164,150
1942	31,863,907	211,535,790	112,782	831,231	10,424,385	151,958	95,718,000	5,967,440
1943	31,657,609	212,038,518	106,743	870,939	11,012,936	163,876	102,759,000	6,370,720
1944	31,621,961	212,696,361	96,528	852,563	10,049,587	163,993	84,140,600	5,255,927
1945	31,719,182	212,330,824	88,180	833,567	9,765,983	137,872	82,067,200	5,211,793
1946	31,781,189	212,162,893	80,746	811,949	9,787,002	101,719	80,524,106	8,046,766
1947	32,082,825	213,884,634	74,537	815,610	10,443,798	93,180	89,527,502	14,638,444
1948	31,856,991	217,806,958	68,521	864,131	10,872,540	80,689	93,769,073	18,860,207
1949	32,279,956	223,691,026	59,166	864,936	10,923,167	79,126	92,750,214	23,618,672
1950	32,777,616	226,005,162	55,340	841,204	11,361,908	89,910	102,910,530	59,033,937
1951	33,981,017	(b) 203,939,527	53,347	851,534	12,187,752	86,224	116,142,000	32,013,526
1952	34,765,922	205,606,700	50,241	846,261	12,474,672	76,195	120,726,000	37,560,721
1953	35,860,812	206,437,832	48,770	829,694	13,087,108	100,912	128,964,000	41,283,337
1954	37,236,541	206,566,189	46,886	860,574	13,411,282	107,039	124,173,000	33,992,564
1955	37,825,582	208,640,147	45,491	896,897	14,128,168	99,097	149,764,000	34,820,947
1956	38,220,558	216,317,679	44,660	957,175	14,886,549	139,982	148,374,000	45,141,623
1957	38,564,232	216,810,793	43,930	997,173	15,723,963	150,783	151,026,000	37,614,085
1958	39,258,847	221,763,493	41,286	999,832	16,215,244	115,446	157,358,000	29,703,679
1959	39,717,801	227,600,085	40,740	1,030,469	16,411,589	130,933	160,892,000	37,650,791
1960	40,102,709	227,649,863	40,397	1,100,430	17,151,384	175,675	182,217,000	36,931,411

(a) From 1906, at 30th June; for earlier years, at 31st December. (b) Comprises allocations by Lands Department and certain leases and licences issued by Mines and Forests Departments. Apparent decrease in 1951 due mainly to revisions in records of Lands Department. (c) At 31st December for 1941 and earlier years; from 1942, the figures shown relate to 31st March in the following year. (d) Includes felled and dead wool but excludes wool exported on skins. For 1947 and earlier, year ended 31st December; figures shown for 1948 and later are for the year ended 31st March in the following year. (e) Figures for 1949 and 1951 to 1955 exclude distributions of profits under the 1939-1945 War-time Wool Disposals Plan aggregating £0,934,967. Separate State figures are not available for distributions made in later years. (f) Not available.

AGRICULTURE

Year (a)	Total Area under all Crops (b)	Area and Production of Principal Grain Crops							
		Wheat				Oats		Barley	
		Area	Production		Total	Area	Produc- tion	Area	Produc- tion
			Per Acre	Quantity						Gross Value
	acres	acres	bushels	bushels	£	acres	bushels	acres	bushels
1840	2,921	1,670	20-00	33,400					
1850	7,419	4,416	(c)	(c)					
1860	24,705	13,584	15-34	208,322		507	11,925	2,412	43,465
1870	54,527	26,640	11-89	316,769	(c)	2,095	39,974	5,439	87,750
1880	63,902	27,686	12-00	257,174		1,319	21,104	6,363	89,082
1890	69,678	33,820	13-82	467,389		1,934	38,791	5,322	85,451
1900	201,338	74,308	10-42	774,653	154,931	4,790	86,433	2,536	29,189
1901	217,441	94,709	10-10	956,886	179,416	9,751	163,654	2,669	34,723
1902	229,992	92,398	10-67	985,559	172,473	10,334	167,882	3,783	46,255
1903	283,752	137,946	13-60	1,876,252	304,891	14,568	258,503	3,609	53,227
1904	327,391	182,080	11-06	2,013,237	343,928	13,864	226,318	3,251	37,332
1905	364,704	195,071	11-83	2,308,305	425,594	15,713	283,987	3,665	49,497
1906	460,825	250,283	11-02	2,758,587	543,093	28,363	457,155	3,590	48,827
1907	493,837	279,609	10-46	2,925,690	522,925	46,667	721,753	6,019	76,205
1908	585,339	285,011	8-63	2,460,823	1,216,368	59,461	739,303	7,308	74,433
1909	722,086	448,918	12-48	5,602,368	1,380,562	73,342	1,248,162	8,022	101,673
1910	855,024	581,862	10-14	5,897,540	1,081,216	61,918	776,233	3,369	33,566
1911	1,072,653	612,104	7-12	4,358,904	867,240	77,488	961,385	3,664	37,011
1912	1,199,991	793,096	11-56	9,168,594	1,804,504	127,645	2,015,812	5,626	93,418
1913	1,537,923	1,097,193	12-15	13,331,350	2,332,986	133,625	1,655,681	11,502	167,915
1914	1,867,547	1,376,012	1-91	2,624,190	940,335	96,085	464,943	6,986	24,090
1915	2,189,456	1,734,117	10-52	18,236,355	3,267,347	104,086	1,538,092	10,069	130,870
1916	2,004,944	1,566,608	10-28	16,103,216	3,052,901	122,220	1,689,352	11,105	134,055
1917	1,679,772	1,249,762	7-44	9,303,787	2,209,649	95,666	908,592	5,028	35,761
1918	1,605,088	1,146,103	7-72	8,845,387	2,211,347	141,459	1,499,689	7,982	81,451
1919	1,628,163	1,041,827	10-77	11,222,950	5,330,901	191,931	2,486,918	9,167	116,037
1920	1,804,986	1,275,675	9-60	12,248,080	5,511,636	193,486	2,022,031	10,686	111,405
1921	1,901,680	1,336,228	10-41	13,904,721	3,765,862	162,866	2,019,603	7,894	85,857
1922	2,274,998	1,552,868	8-92	13,857,432	3,493,228	214,269	2,261,863	9,243	107,804
1923	2,323,070	1,656,915	11-42	18,920,271	4,493,564	241,608	2,846,670	8,673	97,779
1924	2,710,866	1,867,614	12-79	23,887,397	7,265,750	318,982	4,241,074	11,006	177,537
1925	2,932,210	2,112,032	9-69	20,471,177	6,418,587	278,344	2,939,380	13,306	158,300
1926	3,324,523	2,571,187	11-68	31,068,600	8,608,591	234,826	2,716,436	13,826	128,136
1927	3,720,100	2,998,523	12-12	36,370,219	9,921,039	235,469	2,922,865	12,138	126,835
1928	4,259,269	3,343,530	10-10	33,790,040	8,236,322	325,827	3,554,609	14,429	189,590
1929	4,566,001	3,568,225	10-95	39,081,183	8,860,518	385,134	4,058,160	23,649	261,870
1930	4,792,017	3,955,763	13-53	53,504,149	6,100,588	274,874	3,292,560	17,236	185,301
1931	3,963,172	3,158,888	13-14	41,521,245	7,215,043	267,894	3,549,636	14,533	164,580
1932	4,262,884	3,389,352	12-33	41,791,866	6,777,190	285,850	3,803,447	13,772	135,243
1933	4,217,260	3,183,216	11-72	37,305,100	6,002,101	342,642	3,949,905	24,534	324,846
1934	3,840,530	2,764,373	9-76	26,985,000	5,061,500	408,810	4,244,322	26,589	237,765
1935	3,726,324	2,540,696	9-18	23,315,417	4,873,641	448,156	4,557,774	31,568	417,627
1936	3,851,876	2,575,283	8-37	21,549,000	5,950,936	463,129	3,445,167	40,092	449,235
1937	4,168,021	3,026,420	11-97	36,224,800	7,414,763	386,112	4,364,370	44,930	584,055
1938	4,683,333	3,412,818	10-79	36,843,600	4,492,003	426,110	4,068,036	74,928	946,287
1939	4,286,935	2,970,411	13-76	40,861,000	7,763,190	452,764	5,315,292	82,721	971,733
1940	3,988,308	2,625,401	8-02	21,060,000	4,323,953	429,177	3,250,314	65,623	725,352
1941	3,816,522	2,653,419	14-13	37,500,000	7,807,300	407,259	5,325,456	68,388	959,364
1942	2,784,034	1,753,178	11-75	20,600,000	5,039,970	342,309	3,611,991	49,502	533,433
1943	2,744,007	1,567,016	10-56	16,550,000	4,765,639	358,129	3,964,032	61,400	723,984
1944	2,756,022	1,515,762	10-51	15,929,000	4,169,287	401,958	3,844,965	76,164	884,433
1945	2,875,048	1,835,780	11-40	20,929,000	7,935,371	396,285	4,080,948	66,386	665,949
1946	3,532,445	2,425,780	9-81	23,800,000	11,024,015	425,032	3,660,792	65,886	519,252
1947	3,936,118	2,760,446	12-50	34,500,000	25,132,282	494,589	5,410,533	63,136	744,522
1948	4,102,348	2,867,517	12-64	36,260,000	21,061,007	531,638	6,998,295	64,205	981,426
1949	4,292,730	2,894,020	13-30	38,500,000	25,669,588	584,003	7,267,965	67,965	967,815
1950	4,532,756	3,185,389	15-66	49,900,000	32,664,123	585,701	7,913,973	59,114	924,741
1951	4,507,924	3,094,536	12-93	40,000,000	29,492,155	656,559	7,689,222	56,574	695,085
1952	4,636,654	2,999,475	11-82	35,458,000	27,596,965	832,170	10,439,880	106,961	1,742,376
1953	4,477,102	2,885,114	13-76	39,700,000	27,711,647	733,122	9,590,643	209,291	2,733,177
1954	5,042,856	2,979,151	11-51	34,300,000	21,827,313	873,588	9,584,559	259,688	2,804,706
1955	5,233,501	2,889,585	18-43	53,250,000	34,419,861	1,090,991	16,515,679	336,966	4,653,050
1956	5,139,098	2,764,486	11-61	32,100,000	22,027,312	1,051,486	10,441,534	343,590	3,760,511
1957	5,510,867	2,957,206	11-19	33,100,000	22,956,217	1,153,492	13,793,026	307,404	3,556,041
1958	6,015,387	3,291,858	17-61	67,660,000	38,819,613	1,329,742	22,585,050	321,493	5,410,217
1959	6,382,121	3,718,596	15-78	58,670,000	41,180,693	1,240,357	19,568,005	421,293	7,079,828
1960	6,766,637	4,021,225	15-89	63,900,000	46,145,119	1,329,804	21,809,848	540,646	8,495,909

(a) Figures shown for 1942 and earlier are for the year ended last day of February in the following year; those shown for 1943 and later are for the season ended 31st March in the following year. (b) Excludes meadow hay.
(c) Not available.

PRIMARY PRODUCTION — MISCELLANEOUS

Year	Hay (all kinds)		Gold Production (a)		Coal Production		Average Values f.o.b.	
	Area	Production	Quantity	Value (b)	Quantity	Value	Wool (greasy) per lb. (c)	Wheat per bushel (d)
	acres	tons	fine oz.	£	tons	£	pence	s. d.
1860	6,286	8,090	....	....	....	....	(e)	5 4½
1870	17,173	20,833	....	....	....	....		5 0
1880	19,663	19,663	....	....	....	....		1 6
1890	23,183	25,014	20,402	85,664	....	....
1900	104,254	103,813	1,414,311	6,007,611	118,410	54,835		
1901	92,654	89,729	1,703,417	7,235,653	117,836	68,561	6-50	4 0
1902	105,791	94,007	1,371,037	7,947,661	140,834	86,188	8-25	(f) 5 2
1903	109,002	121,934	2,064,801	8,770,719	133,427	69,128	8-00	(f) 6 4½
1904	106,247	113,794	1,983,230	8,424,226	138,550	67,174	8-05	3 3
1905	124,906	139,380	1,955,316	8,305,654	127,364	55,312	8-05	3 5
1906	149,830	158,112	1,794,547	7,622,740	149,755	57,998	9-46	3 8½
1907	131,056	137,511	1,697,554	7,210,749	142,373	55,158	9-54	3 1½
1908	201,874	170,008	1,647,911	6,999,882	175,248	75,694	7-33	4 3
1909	158,629	195,182	1,595,269	6,776,274	214,302	90,965	8-86	4 1½
1910	176,432	178,891	1,470,632	6,246,848	262,166	113,699	8-82	4 0½
1911	344,032	299,695	1,370,867	5,823,075	249,899	111,154	8-84	3 5½
1912	231,690	255,751	1,282,658	5,448,385	295,070	135,857	8-84	3 11½
1913	246,640	278,585	1,314,043	5,581,701	313,818	153,614	9-12	3 5½
1914	332,037	156,932	1,232,977	5,237,353	319,210	148,684	8-94	3 8½
1915	290,036	395,172	1,210,112	5,140,228	286,666	137,859	8-16	(f) 6 11½
1916	240,728	236,989	1,061,398	4,508,532	301,528	147,823	8-46	4 10½
1917	265,899	267,163	970,317	4,121,645	326,550	191,822	13-06	4 8
1918	249,796	250,014	876,511	3,723,183	337,039	204,319	12-05	5 0½
1919	327,498	379,025	734,066	3,748,882	401,713	260,355	15-61	5 4½
1920	266,824	264,244	617,842	3,475,392	462,021	350,346	15-39	7 2
1921	335,561	368,720	553,731	2,953,693	468,817	407,117	13-11	7 4
1922	431,633	457,371	538,246	2,525,811	438,443	381,555	12-49	5 6
1923	329,534	368,122	504,512	2,232,186	420,714	368,949	18-29	5 0½
1924	397,591	448,525	485,035	2,255,927	421,864	363,255	22-74	4 9
1925	391,142	355,289	441,252	1,874,320	437,461	363,203	25-01	6 1
1926	358,487	423,839	437,343	1,857,716	474,819	394,400	18-75	6 3½
1927	357,065	416,707	408,352	1,734,571	501,505	407,967	15-41	5 6½
1928	414,866	421,504	393,408	1,671,093	528,420	420,145	19-34	5 5½
1929	418,698	428,328	377,176	1,602,142	544,720	426,706	16-26	5 0½
1930	398,411	491,595	417,518	1,864,442	501,423	384,758	10-53	4 6½
1931	381,447	453,353	510,572	2,998,137	432,400	336,178	8-04	2 3½
1932	417,435	485,368	605,561	4,403,642	415,720	270,630	8-43	3 1½
1933	479,768	512,439	637,207	4,886,254	458,398	289,806	8-57	3 0½
1934	413,138	462,947	651,338	5,558,873	500,343	278,704	15-65	2 1½
1935	494,495	504,571	649,049	5,702,140	537,188	318,013	9-65	3 2½
1936	478,099	412,982	846,208	7,373,539	565,075	331,565	13-59	3 11½
1937	432,399	450,419	1,000,647	8,743,755	553,509	340,444	16-16	5 6½
1938	408,276	437,809	1,167,791	10,363,023	604,792	375,083	13-19	4 1½
1939	395,639	475,677	1,214,238	11,842,964	557,535	362,811	10-65	2 5½
1940	418,486	375,143	1,191,481	12,696,503	539,427	364,500	13-98	3 0½
1941	325,266	414,115	1,109,318	11,851,445	556,574	389,278	15-62	3 11½
1942	253,150	277,957	848,181	8,865,495	581,176	461,495	15-58	4 1½
1943	282,456	314,359	546,475	5,710,669	531,546	489,721	17-52	4 1½
1944	323,729	338,912	466,265	4,899,997	558,322	583,076	18-05	4 9½
1945	281,410	287,476	468,550	5,010,541	543,363	572,896	18-63	6 4
1946	277,489	280,252	616,964	6,640,069	642,287	730,104	19-01	8 8
1947	229,172	267,901	703,886	7,575,574	730,506	840,249	24-83	13 2
1948	226,779	277,329	664,986	7,156,900	732,938	880,236	41-60	17 6
1949	216,320	272,052	648,426	7,962,808	750,594	972,245	51-28	15 3½
1950	176,990	226,703	610,333	9,466,270	814,352	1,287,740	57-65	15 6½
1951	173,855	211,629	627,779	9,725,343	848,475	1,716,788	143-43	16 11½
1952	227,082	290,296	729,975	11,847,917	830,461	2,457,296	75-17	17 0½
1953	219,171	293,936	823,912	13,299,092	886,182	3,073,073	80-58	17 3½
1954	289,329	305,052	850,540	13,313,618	1,018,343	3,588,818	85-02	16 7
1955	269,439	383,784	842,005	13,374,688	903,792	3,089,311	73-70	14 2½
1956	242,217	288,479	812,380	13,202,400	830,007	2,723,981	61-32	12 8
1957	338,983	386,992	896,681	14,550,893	838,661	2,552,657	78-74	13 1½
1958	332,613	455,160	867,188	14,178,328	870,882	2,280,649	71-20	15 4
1959	319,486	433,201	866,609	14,194,195	911,435	2,356,534	50-01	14 1
1960	284,038	381,010	855,759	14,069,903	922,393	2,439,195	62-79	13 5½
1961	293,249	395,552	871,845	14,292,196	765,740	1,680,259	53-94	13 7

(a) Comprises gold refined at the mint and gold contained in gold-bearing materials exported. (b) Australian currency value including amounts, totalling £1,288,519 for the years 1952 to 1961, distributed by the Gold Producers' Association Ltd. from premiums on sales of Western Australian gold. Also includes not subsidy payments by the Commonwealth Government, under the Gold-Mining Industry Assistance Act 1954-1961, totalling £3,767,864 in the years 1955 to 1961. (c) From 1915 figures relate to year ended 30th June. (d) Prior to 1940 averages generally are based on exports of the previous season's wheat; from 1940 they relate to exports during the year ended 30th June. (e) Not available. (f) Exports negligible; average Metropolitan Market price shown. (g) For six months ended 30th June.

VALUES OF PRIMARY PRODUCTION

Year (a)	Gross Value of Primary Production (b)						Net Value of all Recorded Primary Production (c) (d)
	Agriculture	Dairying, Poultry and Bee Keeping	Pastoral and Trapping (e)	Mining and Quarrying	Forestry	Fishing	
	£	£	£	£	£	£	£
1914	3,097,140	560,766	2,057,735	5,577,097			
1915	6,529,633	586,549	3,030,234	5,528,405			
1916	5,889,663	691,366	3,670,066	5,968,341			
1917	4,256,661	665,963	4,479,482	4,682,723			
1918	4,757,763	698,038	4,544,144	4,303,482			
1919	9,066,281	843,719	4,771,768	3,592,238	(e)	(e)	(e)
1920	8,732,984	1,032,507	4,504,150	3,296,062			
1921	6,926,532	1,132,257	4,016,045	2,922,664			
1922	6,495,948	1,174,851	5,292,235	2,869,254			
1923	7,537,964	1,241,422	6,513,581	2,722,824		320,980	
1924	11,183,727	1,362,914	6,709,662	2,670,086		382,160	
1925	9,574,956	1,253,464	5,768,524	2,505,170	2,063,174	485,250	15,070,085
1926	12,093,686	1,251,495	5,631,168	2,466,581	1,683,505	289,850	16,255,928
1927	13,034,025	1,343,673	7,343,577	2,348,913	1,453,021	258,155	18,114,117
1928	11,942,067	1,467,753	6,750,319	2,294,254	1,231,490	280,453	15,980,365
1929	12,251,902	1,721,388	5,400,037	2,247,942	1,079,265	272,194	13,372,828
1930	8,877,875	1,584,978	4,422,575	2,347,588	904,701	242,633	8,633,090
1931	10,492,701	1,655,262	4,011,531	3,455,446	655,923	213,496	11,911,099
1932	10,247,311	1,669,074	4,028,270	4,845,554	591,410	215,077	12,356,975
1933	9,511,096	1,657,318	6,684,416	5,303,171	823,941	202,970	14,987,947
1934	8,167,869	1,963,338	4,727,974	5,969,261	1,199,693	186,626	14,087,710
1935	8,622,428	1,948,386	6,319,427	6,201,012	1,326,715	185,970	16,175,921
1936	9,435,736	2,084,770	5,718,359	7,913,650	1,515,852	232,272	18,223,562
1937	10,635,740	2,246,941	5,069,745	9,422,688	1,478,636	296,130	19,410,324
1938	8,638,688	2,358,189	4,728,565	11,102,334	1,440,716	280,301	17,987,859
1939	11,598,791	2,427,580	5,800,989	12,517,427	1,329,823	280,914	23,149,838
1940	7,379,974	2,614,995	5,850,496	13,352,883	1,580,207	269,515	20,532,258
1941	11,109,603	2,979,965	6,116,767	12,421,298	1,475,248	239,398	23,229,353
1942	9,052,786	3,831,973	8,172,499	9,487,594	1,638,701	127,355	22,624,032
1943	9,252,670	3,985,399	9,190,361	6,400,676	1,574,929	173,276	21,247,515
1944	10,428,229	4,236,364	7,799,991	5,764,391	1,575,877	165,109	21,138,230
1945	13,155,180	4,354,613	8,114,158	5,898,368	1,678,763	219,068	23,921,207
1946	16,317,320	4,466,485	11,225,456	7,702,257	1,652,657	317,394	30,175,358
1947	32,349,539	4,894,796	18,715,106	8,863,798	1,824,300	567,740	53,603,107
1948	29,392,579	5,981,981	23,385,628	8,771,506	2,012,180	689,438	54,090,950
1949	34,843,016	6,487,739	29,539,689	9,853,665	2,250,678	715,872	65,863,820
1950	43,875,771	7,077,385	66,209,026	12,087,322	3,370,294	824,673	111,022,903
1951	43,395,573	9,388,982	40,221,535	13,487,712	4,258,405	1,252,545	85,501,208
1952	43,563,257	10,644,635	45,549,700	17,084,292	3,577,440	1,642,876	90,561,270
1953	43,266,693	11,163,967	51,087,795	20,498,158	3,839,062	1,903,752	97,103,780
1954	38,582,102	10,880,776	43,884,930	21,325,541	4,057,889	2,191,660	85,175,331
1955	54,854,648	11,216,389	44,826,886	20,599,437	5,236,982	2,457,393	100,213,822
1956	40,085,122	11,620,153	56,580,939	21,367,559	5,152,544	2,781,749	98,374,504
1957	43,646,459	11,750,073	47,146,667	22,191,062	5,523,006	3,264,846	91,538,258
1958	63,335,990	11,418,878	40,882,021	21,797,530	5,451,306	3,909,190	99,995,371
1959	65,525,778	12,347,840	50,271,747	23,243,700	5,459,529	4,310,626	111,947,473
1960	70,001,730	12,958,730	50,814,759	23,551,424	5,541,144	4,284,324	116,234,042

(a) Figures generally are for the season or financial period ending in the following year. (b) Represents the estimated value of recorded production based on wholesale prices realized at the principal market. (c) In addition, the following amounts were paid as interim distribution of profits under the 1939-1945 War-time Wool Disposals Plan: in 1949, £1,814,739; in 1951, £1,814,739; in 1952, £1,162,662; in 1953, £184,052; in 1954, £1,060,230; and in 1955, £898,545. Separate State figures are not available for distributions made in subsequent years. (d) Net value of production is derived by deducting from the gross value all marketing costs and the cost of certain goods (seed, fertilizer, pickling, sprays, dips, fodder, fuel and oil, etc.) used in the processes of production. (e) Not available.

FACTORIES (a)

Year (b)	Number of Factories	Number of Persons Em- ployed (c)	Salaries and Wages Paid (d)	Output (e)	Net Pro- duction (f)	Certain Items of Factory Production							
						Bricks (g)	Cement	Timber from Local Logs (h)	Bacon and Ham	Butter (i)	Beer and Stout	Flour	Elec- tricity Dis- tributed
			£'000	£'000	£'000	'000	tons	'000 sup. ft.	tons	tons	'000 gal.	short tons (j)	'000 kwh.
1897	487	9,689	(k)			36,564	....	85,053		121	2,818	7,314	
1898	595	9,895	(k)			26,811	....	103,043		118	3,278	8,460	
1899	603	10,206	1,248			18,565	....	118,052		132	3,374	10,042	
1900	632	11,166	1,294			25,234	....	112,693		130	4,015	12,539	
1901	662	12,198	1,455			30,160	....	122,414		150	4,225	10,278	
1902	702	12,520	1,521	(k)	(k)	37,722	....	124,005		144	4,780	11,840	
1903	693	12,458	1,480			45,576	....	126,730		157	4,943	13,711	(k)
1904	793	13,427	1,604			50,332	....	143,595		157	5,404	20,185	
1905	777	13,481	1,555			44,045	....	137,250		189	5,144	26,420	
1906	802	13,739	1,622			37,893	....	136,295		170	5,100	26,977	
1907	791	13,545	1,479			28,666	....	110,394	(k)	195	4,652	28,353	
1908	774	13,276	1,558	4,479	2,607	23,842	....	168,414		163	4,312	31,424	
1909	773	13,606	1,590	4,405	2,482	17,833	....	171,825		185	4,600	24,878	
1910	822	14,894	1,766	5,079	2,736	23,162	....	174,528		286	4,711	36,818	
1911	880	16,754	2,086	5,932	3,283	28,687	....	198,977		222	5,113	40,642	23,227
1912	891	17,425	2,290	6,826	3,582	34,432	....	217,696		200	5,419	49,319	24,704
1913	954	18,372	2,338	7,299	3,782	35,085	....	218,908		231	5,360	61,997	25,716
1914	989	18,799	2,474	7,222	3,833	34,854	....	227,297		201	5,544	61,922	27,680
1915	983	15,882	1,936	7,063	3,234	21,667	....	123,494		320	5,340	32,396	28,131
1916	953	13,844	1,800	7,346	3,147	18,585	....	100,356		482	5,299	70,912	26,043
1917	944	13,550	1,743	7,662	3,099	17,488	....	85,213		608	5,018	102,300	30,252
1918	862	13,849	1,863	8,399	3,159	15,672	....	94,900	1,028	397	5,362	119,876	30,402
1919	922	16,358	2,318	10,287	3,323	21,092	....	131,477	1,000	445	5,775	141,516	28,083
1920	998	16,942	3,037	13,141	4,854	31,838	....	137,934	837	544	5,736	120,125	33,336
1921	1,099	18,151	3,568	12,844	5,240	23,548	(m)	183,663	772	684	5,532	82,148	36,086
1922	1,323	18,743	3,713	12,871	5,790	28,509	(m)	179,059	801	678	4,988	94,316	40,556
1923	1,307	19,805	3,865	13,704	6,129	34,864	(m)	192,547	969	766	4,893	107,990	47,973
1924	1,293	21,671	4,337	15,726	6,958	34,930	(m)	207,137	1,164	741	5,196	122,192	55,440
1926	1,170	20,667	6,588	21,450	9,611	53,336	15,636	328,935	1,875	836	7,593	190,369	99,853
1927	1,216	19,403	4,151	15,672	6,907	45,204	17,050	229,195	1,123	1,100	5,615	133,919	78,139
1928	1,398	20,435	4,501	16,908	7,690	52,992	19,645	227,631	1,157	1,111	6,011	127,246	84,450
1929	1,469	20,913	4,676	17,454	7,969	60,568	20,769	174,324	1,089	1,017	5,934	119,550	92,460
1930	1,466	19,643	4,155	16,891	7,488	47,720	23,276	159,643	1,161	2,109	6,008	120,595	102,411
1931	1,455	14,619	2,887	12,353	5,281	13,630	15,565	112,484	1,300	3,171	5,028	132,090	98,100
1932	1,490	13,392	2,336	11,188	4,606	15,101	16,863	57,690	1,297	3,727	4,366	131,165	119,833
1933	1,499	14,810	2,541	12,328	5,062	25,673	24,357	59,254	1,542	4,221	4,689	127,574	138,094
1934	1,606	16,154	2,753	12,877	5,444	31,717	27,746	96,428	1,901	4,386	5,450	122,000	152,028
1935	1,658	17,769	3,111	14,642	6,285	37,552	40,408	130,497	2,035	4,992	5,976	124,130	163,561
1936	1,946	20,972	3,704	17,529	7,504	50,498	48,539	154,989	2,373	4,896	7,260	118,340	194,603
1937	2,032	22,712	4,158	18,313	7,947	53,270	48,804	176,321	1,941	4,751	6,076	122,723	228,699
1938	2,066	23,133	4,401	19,644	8,562	57,598	59,694	176,718	1,945	6,117	6,792	125,472	250,368
1939	2,129	23,211	4,574	19,549	8,776	53,062	56,520	161,315	1,881	6,542	7,269	137,553	277,517
1940	2,129	22,967	4,575	20,307	9,028	43,786	57,775	152,453	2,073	6,251	8,009	140,849	305,999
1941	2,056	22,734	4,721	21,825	9,017	45,505	48,704	146,847	2,288	6,352	8,162	149,925	320,296
1942	1,938	23,980	5,500	23,952	10,101	34,247	43,367	146,013	2,729	6,991	8,384	155,338	313,625
1943	1,799	25,813	6,478	26,738	11,453	8,926	32,750	138,878	4,106	6,446	9,063	126,274	283,215
1944	1,807	28,101	7,418	29,209	12,512	6,296	29,783	121,600	4,322	6,155	9,071	159,799	279,359
1945	1,931	29,146	7,614	31,741	12,960	10,003	29,090	116,330	4,971	5,676	9,178	161,090	291,585
1946	2,280	30,256	7,884	34,023	13,827	24,150	25,195	117,095	4,573	5,604	10,552	166,791	302,025
1947	2,615	33,806	9,105	38,270	15,748	37,758	43,575	139,842	4,603	5,956	11,802	176,726	338,820
1948	2,788	35,967	10,736	45,626	18,384	44,986	56,450	148,695	3,955	6,974	11,999	195,497	358,221
1949	2,925	38,354	12,928	53,417	21,474	50,378	59,130	142,285	3,553	6,966	13,207	181,466	353,875
1950	3,023	40,733	15,293	63,978	26,044	58,043	60,000	153,813	3,542	6,769	15,250	159,495	368,371
1951	3,111	43,761	19,658	84,431	34,220	67,312	72,075	176,207	3,558	6,797	16,479	217,345	401,556
1952	3,267	45,097	25,385	106,572	42,745	76,884	74,680	199,447	3,680	6,705	17,433	221,846	428,056
1953	3,424	45,188	28,344	119,310	49,191	86,043	97,418	223,325	3,693	6,480	17,794	224,330	469,209
1954	3,523	47,459	31,500	134,587	55,147	101,240	125,466	241,011	3,448	6,142	17,844	187,958	520,301
1955	3,727	49,314	34,738	149,584	60,956	115,412		251,493	3,316	7,145	17,411	195,707	582,688
1956	3,871	50,108	37,206	175,146	69,733	102,359		245,138	3,231	7,404		179,932	620,928
1957	3,935	48,748	36,016	187,636	73,442	101,209		228,427	3,054	7,462	(m)	169,535	652,438
1958	3,941	48,462	37,935	196,263	75,312	111,082	(m)	233,173	2,952	6,807	(m)	148,148	688,990
1959	4,126	48,417	38,732	196,203	78,762	101,521		237,779	2,955	6,166		139,792	731,546
1960	4,279	49,651	41,643	215,582	86,373	110,359		225,461	3,177	7,376		150,774	785,147
1961	4,334	50,666	45,128	240,570	96,631	119,998		210,316	3,163	7,661		168,237	870,075

(a) For the purpose of these statistics the term "Factories" comprises industrial establishments in which four or more hands were employed or motive power was used in the processes of manufacturing, assembling, treating or repairing.

(b) For 1924 and earlier, calendar year; from 1927, year ended 30th June. See also note (j).

(c) Average over the full twelve months and includes working proprietors and, up to and including 1925-26, fallers and hauliers employed by sawmills. (d) Figures for 1929-30 and later years exclude amounts drawn by working proprietors.

(e) Selling value "At Factory Door". (f) Value added in course of manufacture, representing sum available for payment of wages, rent, interest, depreciation, advertising, insurance, etc., and profit.

(g) Comprises standard bricks of all types. Prior to 1925-26 firebricks and blocks were included. (h) Includes plywood veneers in terms of super, feet and heavy timber produced by agencies other than "Factories".

(i) For 1917 and earlier years, includes butter made on farms. (j) Short ton = 2,000 lb. (k) Not available.

(l) Eighteen months ended 30th June. (m) Not available for publication.

CONSUMER PRICE INDEX (a)

(Base of each Index Series : Year 1952-53 = 100)

Year (b)	Group Index Numbers— Perth (Metropolitan Area)					Combined Index (All Groups)— Capital Cities						
	Food	Clothing and Drapery	Housing	Household Supplies and Equipment	Miscellaneous	Perth	Sydney	Melbourne	Brisbane	Adelaide	Hobart	Six Capital Cities (c)
1949	55.0	59.6	62.7	66.5	67.7	60.6	60.5	61.0	62.1	61.6	60.7	60.9
1950	61.0	68.8	66.4	71.1	69.5	66.2	65.6	66.2	67.1	66.2	64.7	66.0
1951	70.0	78.6	74.5	78.1	75.1	74.4	74.5	74.6	75.1	74.7	73.3	74.6
1952	87.2	95.3	87.2	92.7	90.7	90.4	91.9	91.0	91.8	91.4	90.4	91.4
1953	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1954	106.2	100.0	107.8	102.0	99.5	103.0	101.6	102.0	102.0	102.3	105.0	102.0
1955	109.3	100.1	119.2	102.0	99.5	105.2	102.3	102.0	102.9	103.5	104.9	102.6
1956	111.1	101.4	123.8	102.0	105.5	107.9	105.7	108.1	106.3	106.9	110.2	106.9
1957	116.0	103.1	123.6	104.5	117.0	112.9	112.9	114.0	112.0	111.1	116.9	113.1
1958	114.4	105.7	126.0	105.7	118.3	113.6	114.5	114.4	114.4	111.9	117.0	114.2
1959	115.2	107.2	130.3	105.9	118.7	114.7	115.3	116.6	118.2	114.5	118.7	116.0
1960	118.4	108.2	133.5	107.1	120.9	116.9	117.8	120.0	121.2	118.0	120.8	118.9
1961	124.4	110.8	141.7	107.3	125.2	121.2	122.1	125.9	125.4	122.9	127.5	123.8

(a) The index numbers shown are so designed as to measure periodically the movement in retail prices of the specified groups of items in each city individually. They do not provide a measure of differences in absolute price level as between cities, nor of comparative costs of the groups of items. (b) Year ended June. (c) Weighted average.

CIVILIAN EMPLOYMENT

NEW BUILDINGS COMPLETED

Year (a)	Wage and Salary Earners in Civilian Employment (b)			New Buildings Completed				
	Males	Females	Persons	Houses		Flats (d)		All Buildings
				Number	Value (c)	Number	Value (c)	Value (c) (e)
1939	'000 82.9	'000 26.2	'000 109.1		£'000		£'000	£'000
1940	(f)	(f)	(f)					
1941	82.4	31.2	113.6					
1942	71.7	33.5	105.2	(f)	(f)	(f)	(f)	(f)
1943	70.4	35.5	105.9					
1944	71.7	35.9	107.6					
1945	75.9	35.6	111.5					
1946	93.9	34.5	128.4					
1947	103.9	35.6	139.5	1,792	1,758	2	2	2,116
1948	109.2	37.0	146.2	2,771	2,892			3,328
1949	114.0	38.3	152.3	3,244	3,796			4,706
1950	122.2	40.4	162.6	3,509	4,487	101	97	5,352
1951	127.9	42.1	170.0	5,160	7,516	305	303	8,948
1952	129.6	41.1	170.7	6,577	12,233	215	150	14,426
1953	133.5	41.4	174.9	7,965	18,094	100	167	22,018
1954	139.1	43.4	182.5	7,627	19,884	212	417	25,785
1955	141.5	44.3	185.8	8,792	24,211	316	588	34,096
1956	140.5	45.1	185.6	7,760	22,542	584	1,282	33,678
1957	138.4	44.5	182.9	5,030	14,527	365	751	23,424
1958	138.6	45.6	184.2	6,196	18,263	171	356	27,262
1959	140.0	47.0	187.0	5,846	17,205	212	420	30,262
1960	141.7	49.2	190.9	5,997	17,727	263	493	30,120
1961	142.2	49.9	192.1	5,973	19,051	440	790	36,025

(a) Employment figures relate to July in 1939 and 1941, and to June in 1942 and later years; figures for New Buildings Completed are for the year ended 30th June. (b) Excludes wage earners in rural industry and female private domestics. (c) Excludes the value of land. (d) Individual dwelling-units. (e) Includes value of houses and flats shown in preceding columns. (f) Not available.

STATE AND COMMONWEALTH BASIC WAGE RATES

At 31st December	State Basic Wage		Commonwealth Basic Wage—Male Rates (a)							
	Perth		Perth	Sydney	Mel- bourne	Brisbane	Adelaide	Hobart	Weighted Average Six Capital Cities	
	Male	Female								
1923	£ s. d. (b)	£ s. d. (b)	£ s. d. 3 18 0	£ s. d. 4 9 0	£ s. d. 4 11 6	£ s. d. 3 16 0	£ s. d. 4 5 6	£ s. d. 4 9 0	£ s. d. 4 7 6	
1924	(b)	(b)	3 19 0	4 4 6	4 4 6	3 15 0	4 4 0	4 8 0	4 3 0	
1925	(b)	(b)	4 1 0	4 8 0	4 7 6	3 17 0	4 6 0	4 5 6	4 6 0	
1926	4 5 0	2 5 11	4 1 6	4 11 6	4 9 0	4 2 6	4 5 6	4 8 6	4 8 6	
1927	4 5 0	2 5 11	3 19 6	4 10 6	4 10 0	3 19 6	4 8 0	4 5 0	4 8 0	
1928	4 5 0	2 5 11	4 5 0	4 10 6	4 6 0	3 19 0	4 5 0	4 2 6	4 7 0	
1929	4 7 0	2 7 0	4 5 6	4 15 0	4 10 0	4 0 6	4 8 6	4 6 0	4 10 6	
1930	4 6 0	2 6 5	3 19 0	4 8 0	4 3 0	3 10 6	3 18 0	4 2 0	4 3 0	
1931	3 13 6	1 19 8	3 2 1	3 10 8	3 3 5	2 18 6	2 18 1	3 4 4	3 5 3	
1932	3 10 6	1 18 1	2 19 5	3 7 6	3 1 8	2 16 8	2 17 2	3 4 4	3 3 0	
1933	3 9 3	1 17 5	3 0 3	3 6 11	3 2 10	2 19 4	2 19 7	3 3 11	3 3 4	
1934	3 11 0	1 18 4	3 8 0	3 8 0	3 4 0	3 2 0	3 3 0	3 6 0	3 6 0	
1935	3 10 6	1 18 1	3 8 0	3 10 0	3 6 0	3 4 0	3 7 0	3 9 0	3 8 0	
1936	3 13 9	1 19 10	3 11 0	3 10 0	3 9 0	3 6 0	3 9 0	3 9 0	3 8 0	
1937	3 14 11	2 0 5	3 15 0	3 18 0	3 17 0	3 14 0	3 14 0	3 15 0	3 16 0	
1938	4 1 1	2 3 9	3 16 0	4 1 0	3 19 0	3 15 0	3 16 0	3 16 0	3 18 0	
1939	4 2 2	2 4 4	3 17 0	4 2 0	4 0 0	3 16 0	3 17 0	3 17 0	3 19 0	
1940	4 5 4	2 6 1	4 0 0	4 5 0	4 4 0	3 19 0	4 0 0	4 1 0	4 3 0	
1941	4 10 5	2 8 10	4 5 0	4 9 0	4 8 0	4 4 0	4 4 0	4 5 0	4 7 0	
1942	4 17 9	2 12 9	4 11 0	4 17 0	4 17 0	4 11 0	4 13 0	4 12 0	4 15 0	
1943	5 1 1	2 14 7	4 14 0	4 19 0	4 18 0	4 13 0	4 14 0	4 15 0	4 17 0	
1944	4 19 11	2 13 11	4 14 0	4 19 0	4 18 0	4 13 0	4 13 0	4 14 0	4 16 0	
1945	5 0 1	2 14 1	4 14 0	4 19 0	4 18 0	4 13 0	4 13 0	4 14 0	4 16 0	
1946	5 2 1	2 15 1	5 2 0	5 8 0	5 6 0	5 1 0	5 2 0	5 3 0	5 5 0	
1947	5 10 9	2 19 10	5 6 0	5 12 0	5 9 0	5 5 0	5 6 0	5 7 0	5 9 0	
1948	6 1 7	3 5 8	5 16 0	6 2 0	6 0 0	5 15 0	5 16 0	5 18 0	5 19 0	
1949	6 15 11	3 13 5	6 9 0	6 12 0	6 10 0	6 5 0	6 6 0	6 8 0	6 9 0	
1950	8 6 6	4 14 1	8 0 0	8 5 0	8 2 0	7 14 0	7 18 0	8 0 0	8 2 0	
1951	10 5 8	6 13 8	9 17 0	10 7 0	9 19 0	9 5 0	9 15 0	9 19 0	10 0 0	
1952	11 18 6	7 15 0	11 8 0	11 17 0	11 8 0	10 16 0	11 9 0	11 10 0	11 11 0	
1953	12 6 6	8 0 3	11 16 0	12 3 0	11 15 0	10 18 0	11 11 0	12 2 0	11 16 0	
1954	12 6 6	8 0 3	11 16 0	12 3 0	11 15 0	10 18 0	11 11 0	12 2 0	11 16 0	
1955	12 12 5	8 4 1	11 16 0	12 3 0	11 15 0	10 18 0	11 11 0	12 2 0	11 16 0	
1956	13 5 2	8 12 4	12 6 0	12 13 0	12 5 0	11 8 0	12 1 0	12 12 0	12 6 0	
1957	13 12 9	8 17 3	12 16 0	13 3 0	12 15 0	11 18 0	12 11 0	13 2 0	12 16 0	
1958	13 13 5	8 17 9	13 1 0	13 8 0	13 0 0	12 3 0	12 16 0	13 7 0	13 1 0	
1959	14 1 6	9 3 0	13 16 0	14 3 0	13 15 0	12 18 0	13 11 0	14 2 0	13 16 0	
1960	14 14 7	11 0 11	13 16 0	14 3 0	13 15 0	12 18 0	13 11 0	14 2 0	13 16 0	
1961	14 18 9	11 4 1	14 8 0	14 15 0	14 7 0	13 10 0	14 3 0	14 14 0	14 8 0	

(a) Since December, 1950, the female basic wage has been 75 per cent. of the male rate; previously it had ranged between 54 per cent. and 75 per cent. (b) The first State basic wage operated from 1st July, 1926.

APPENDIX

CHAPTER I—HISTORICAL REVIEW

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Summary of Events of 1961

Demography—Sixth Commonwealth census, 30th June. State population 736,629 (males 375,452, females 361,177), an increase of 96,858 persons or 15.1 per cent. since previous census in 1954. Metropolitan population 420,133 compared with 348,647 seven years earlier, an increase of 71,486 persons or 20.5 per cent. Infant mortality rate, 19.67 per thousand live births, the lowest ever recorded.

Public Finance—State deficit for year ended 30th June, £1.2 million (expenditure £70.5 million, revenue £69.3 million). Budget for 1961–62 presented 28th September; estimated deficit £1.2 million (expenditure £75.1 million, revenue £73.9 million). From 22nd February, sales tax on motor cars and station wagons reduced from 40 per cent. to 30 per cent., and on motor cycles and motor scooters from 25 per cent. to 16½ per cent., thus restoring rates of tax to levels applying prior to 16th November, 1960. Amendment to Pay-roll Tax Assessment Act operative from 19th May providing for rebates of tax as an incentive to increase exports. From 1st June, abolition of excise duty on coal exported and reduction from 5d. to 4d. per ton in levy on coal consumed in Australia. From 16th August, exemption from sales tax of specified goods used by industries engaged in public transport services and of road trains and other vehicles and equipment used in prescribed areas for the transport of livestock; reduction from 8½ per cent. to 2½ per cent. in rate of tax on household furniture, furnishings and appliances. Increases in age, invalid, widows', war and service pensions, unemployment and sickness benefits and tuberculosis allowances. Grants and subsidies amounting to £36,853 paid during year ended 30th June to public authorities and other organizations from Tourist Fund established under the Tourist Act, 1959.

Private Finance—From 1st January savings bank interest rates increased to 3½ per cent. per annum on deposits up to £2,500 held by Rural and Industries Bank and 3¼ per cent. per annum on those held by other banks. Further increase of ¼ per cent. per annum in each of these rates from 1st July and maximum interest-bearing deposit raised from £2,500 to £3,000. E.S. & A. Savings Bank Limited commenced operations 29th September. From 24th November, Saturday trading by banks (other than savings bank agencies) discontinued, with extension of trading hours to 5 p.m. on Fridays; similar arrangement adopted by insurance companies. Housing finance, provided jointly by Rural and Industries Bank and State Government, made available in July in first of a series of "One Hundred Small Homes" plans; maximum loan £3,500 with minimum deposit of 10 per cent. Value of retail sales £261.7 million, the same as in previous year. Balances outstanding on instalment credit agreements in relation to retail sales amounted to £45.6 million at 31st December, a decrease of £0.6 million during the year.

External Trade—Value of imports for year ended 30th June £178.0 million and of exports £204.8 million resulting in favourable trading balance, the first since 1956–57, amounting to £26.8 million. Oversea exports valued at £159.5 million, 32.9 per cent. higher than in previous year, and interstate exports worth £45.2 million, an increase of 16.2 per cent. Reduction from £123.3 million to £122.7 million in value of imports from other Australian States; interstate trade deficit £77.5 million, compared with £84.4 million in 1959–60. Quantity of gold bullion shipped, 2,532,438 fine ounces, and value, £39.6 million, the greatest ever recorded. Other export items showing considerable increases in quantity since previous year were wheat 42.9 per cent., oats 82.2 per cent., greasy wool 18.7 per cent., frozen and chilled meats 7.7 per cent., apples 105 per cent., iron ore 89.5 per cent., ilmenite concentrates 47.1 per cent., and petroleum products 30.5 per cent., and among those which decreased in volume were sawn timber 9.8 per cent., crayfish tails 22.7 per cent., asbestos 27.6 per cent. and manganese ore 40.2 per cent. Average f.o.b. value of greasy wool exported 53.94 pence per lb. compared with 62.79 pence per lb. in 1959–60, and of wheat 13s. 7d. per bushel, a slight improvement on the average of 13s. 5½d. per bushel for 1959–60. First overseas export of rice grown in Kimberley.

Transport and Communication—Provision in Federal budget for expenditure by Commonwealth Government of an amount of £150,000 to meet cost of surveying proposed route of standard gauge railway between Kalgoorlie and Kwinana; survey begun in September. Passage by Commonwealth Parliament of Railway Agreement (Western Australia) Act providing for financial assistance to the State in constructing and equipping the railway; agreement ratified by State Parliament by means of Railway Standardisation Agreement Act and authority for construction given by Railways (Standard Gauge) Construction Act. Western Australian Government Railways deficit (including depreciation and interest charges) for year ended 30th June £3.25 million, almost £1.15 million less than for previous year;

operating revenues exceeded operating expenses for first time since 1945-46. Last remaining passenger ship on interstate coastal service, m.v. *Manoora*, sold to Indonesian interests; liberalization from 1st March of conditions applying to carriage of passengers by oversea liners between Australian coastal ports. Inauguration in August of new shipping service providing direct route between Western Australia and ports in south-east Asia; in November trade display, organized by Department of Industrial Development, sent to these ports by freighter engaged in the service. Following adverse comments by Commonwealth Grants Commission on State Shipping Service deficits, investigation of operations of Service begun in November for State Government by Captain J. P. Williams, Chairman of Australian Coastal Shipping Commission. Western Australia Grant (Beef Cattle Roads) Act passed by Commonwealth Parliament authorizing payment of grant of £500,000 subject to expenditure by the State Government of the same amount during 1961-62 on improvement of roads and construction of bridges to facilitate access to port of Wyndham from Nicholson and other cattle stations in eastern part of Kimberley. Sealing of North-West Coastal Highway completed as far as Carnarvon, 612 miles by road from Perth. Contribution by Commonwealth Government of one-half of expenditure of £320,000 necessary to restore roads damaged by floods in the North-West between January and March. First pile driven 24th November for new railway bridge across Swan River at Fremantle. Metropolitan (Perth) Passenger Transport Trust assumed control of three of the four remaining privately-operated metropolitan omnibus services. Official opening 27th November of new telephone service between Perth, Marble Bar, Port Hedland and Roebourne. Television viewers' licences at 31st December numbered 77,610, an increase of almost 20,000 since the end of 1960. Official opening 24th March of satellite-tracking station at Muchea, one of a series constructed at sites around the world by the United States Government in connexion with its Project Mercury for manned orbital flights.

Rural Industry—Excellent opening rains in most agricultural districts in April. Rainfall in May below normal, in June above average in most areas, in July and August generally below average. Conditions in September were warm and dry and, although good finishing rains were lacking in October, fairly frequent light falls brought an end to a very satisfactory season. Production of wheat 65.7 million bushels and wool 192.2 million lb. the highest ever recorded; production of oats 20.2 million bushels and barley 7.3 million bushels, lower than in previous season. Collapse of tobacco market at annual auction sales held at Fremantle in August, more than one-half of the leaf offered remaining unsold and average price realized being 63 pence per lb. compared with 101 pence per lb. in 1960; approval given by Western Australian Potato Marketing Board to the planting by tobacco growers of 250 acres of potatoes as an alternative crop. In November, visit of Dutch agricultural consultant at invitation of State Government to report on possibilities of improving the yield and quality of flax straw and methods of processing.

Fisheries—Crayfish catch for year ended 30th June, 18.0 million lb., lower than in previous year but equivalent to two-thirds of total Australian catch. New plant at Jurien Bay for processing crayfish and other fish officially opened 3rd November. Additional licences issued for pearl culture on West Kimberley coast. Commencement in August of one-year survey of waters between Doubtful Island Bay and Jurien Bay to examine prospects for establishment of commercial tuna fishing. Commonwealth and State Ministers responsible for fisheries decided at conference in Canberra on 1st September to establish an Australian Fisheries Council at Ministerial level.

Mining—Production of iron ore, 1,359,548 tons, the highest ever recorded and almost 50 per cent. greater than in 1960. Announcement in March of decision by State Government to subdivide iron-ore deposits, other than those reserved for the domestic iron and steel industry, into three categories. The first category includes known high-grade deposits, not covered by lease agreements, which are to be retained by the Crown. The second category, being known medium and low-grade deposits, and the third category, comprising deposits as yet undiscovered, may be made the subject of temporary reservations. As a result, 87 temporary reserves granted in July over an area of 4,130 square miles with exclusive rights to prospect for iron ore for a period of two years. Passage by State Parliament of Iron Ore (Scott River) Agreement Act, ratifying an arrangement with Mineral Mining and Exports (W.A.) Pty. Ltd. for the establishment of an industry to process iron ore in Scott River area near Augusta, and Iron Ore (Tallering Peak) Agreement Act incorporating an agreement with Western Mining Corporation Limited for mining and export of iron ore from Tallering Peak area. Announcement by Minister for National Development in November of existence of extensive iron-ore deposits in the Pilbara. Amendment to Gold-Mining Industry Assistance Act (Commonwealth) enabling a producer whose annual output is in the range of 501 to 1,075 ounces to elect to be treated as a "small" producer in order to qualify

for assistance on more advantageous terms. Continued search for oil over wide area, and drilling begun in Perth Basin on 15th June at Eneabba near Three Springs; considerable quantities of fresh water encountered in course of drilling, as well as coal seams up to 100 feet in thickness at depths of between 6,000 and 7,000 feet. Amendment to Petroleum Search Subsidy Act passed by Commonwealth Parliament extending the duration of the Act and broadening the scope of assistance to operators engaged in oil exploration.

Secondary Industry—Employment in factories for year ended 30th June, 50,666 persons, the highest ever recorded; net factory production £96·6 million, an increase of almost 12 per cent. over 1959-60. Butter production, 17·2 million lb., the greatest ever recorded but decline in quantity of cheese made. Continued increase in output of pig-iron. Further decrease, to 186·9 million superficial feet, in timber sawn from local logs. Increase in production of bricks, plaster, lime and fibrous plaster sheets. Electricity generated, 1,035 million kwh., more than 10 per cent. greater than in previous year. Completion of power station at Bunbury; last of four units, each of 30,000 kilowatts capacity, brought into operation in July. Contracts let in September for construction of first section of major power station at Muja on the Collie coalfield. Construction of lubricating oil refinery at Kwinana begun in November. Ratification of agreements between State Government and two companies for the establishment of large industrial enterprises, one at Kwinana for the production of alumina from Darling Range bauxite and the other at Bunbury for the manufacture of titanium oxide pigments and acids, alkalis and other chemicals. Sale to private interests on 30th June of the trading concern formerly known as State Building Supplies, engaged in sawmilling and brickmaking, and of the Western Australian Government Railways sawmill at Banksiadale. Value of all new buildings completed during year ended 30th June, £36·0 million, almost 20 per cent. greater than in 1959-60.

Water Supplies—Official opening 20th October of Serpentine Main Dam, with 39,000 million gallons capacity, for supply of water to metropolitan area. Plaque unveiled at Mundaring Weir 24th November to commemorate completion of modified Comprehensive Water Supply Scheme. Following Commonwealth Government's rejection of further submission for financial assistance in extending the Scheme, plans made by State Government for expenditure from its own funds in supplying towns of Dalwallinu, Pithara, Ballidu, Wongan Hills, Kojonup and Wickepin, as well as a limited area of farmlands adjacent to pipelines. Contract let in September for earthworks in connexion with Logue Brook Dam, with planned capacity of 6,000 million gallons, to augment supply of water to Harvey Irrigation District. Pouring of concrete for construction of wall of diversion dam on Ord River at Kununurra begun in June.

Health—Appointment in January of first members of Maternal Mortality Committee constituted under the Health Act Amendment Act of 1960. First students enrolled at School of Occupational Therapy established by Royal Perth Hospital. Institute of Radiotherapy, adjacent to Perth Chest Hospital at Hollywood, officially opened 16th March. Completion in May of report of special committee appointed in November, 1960 to investigate future metropolitan hospital development. Introduction in October of system of payment for services of consultant medical practitioners at Princess Margaret Hospital for Children; system to operate for trial period with provision that practitioners electing to work without fee may continue to do so.

Education—Approval by University Senate of new system of enrolment fees, to apply from beginning of 1962 academic year, at rates considerably higher than faculty service charges previously levied; increase necessary to assist in meeting rising costs of operation and to enable University to take full advantage of Commonwealth financial aid available under States Grants (Universities) Act. Faculty of Economics reconstituted as Faculty of Economics and Commerce; appointment of first Professor of Commerce. Opening of John Thomson Agricultural Economics Centre at University as a research unit of the Institute of Agriculture for the study of economic aspects of agricultural problems. Opening in February of Carlisle Technical School as centre of instruction in automotive trades. Kimberley School of the Air, to supplement correspondence tuition given by Education Department, began regular transmission from Derby in April after trial period of operation in previous year. Additional hostels opened by State Government, at Yalgoo 18th March, Onslow 20th April, and Cue 3rd June, to provide living accommodation for aboriginal native children while attending school. Construction begun at Morredin of first hostel to be built for Country High School Hostels Authority.

Prices, Wages and Employment—Consumer Price Index for Perth for year ended 30th June, 121·2, an increase of 3·7 per cent. over that for previous year, and greatest proportional increase in any year since 1956-57. Reduction from 1st March in charges for electricity and gas supplied by State Electricity

Commission. Further increase, from 2s. 3d. to 2s. 9d. per thousand gallons, in charge for excess water supplied to domestic consumers in metropolitan area. In judgment delivered 4th July, Commonwealth Conciliation and Arbitration Commission increased by 12s. per week the basic wage payable to adult males; rejection of employers' claim for increase in standard hours of work from 40 to 42 with concomitant increase in the weekly wage by an amount equivalent to two hours' pay at ordinary rates. In October, decrease of 1s. 9d. in State basic wage for adult males in metropolitan area, the first decrease since 1958; total increase in wage during year 4s. 2d., the smallest annual increase since 1958. Coal mine workers at Collie resumed work 31st January after a series of stoppages, extending over a period of almost four months from 12th October, 1960, in protest against proposed reallocation of State Government's coal orders involving an increase in open-cut production and consequent contraction in labour force. Three-year contracts operative from 1st January for supply of coal to Western Australian Government Railways and State Electricity Commission at average prices approximately 12s. per ton lower than previously. Coal production for year 765,740 tons, of which 33.9 per cent. won from open cuts, compared with 922,393 tons, 13.5 per cent. from open cuts, in 1960. Average number of men working at coal mines during year 582, a reduction of more than 400 from the average for 1960. From 28th October ten-shift fortnight introduced at Collie coal mines by agreement between workers and employers; eleventh shift, of five hours on alternate Saturdays, eliminated without loss of pay in each fortnight where coal quota attained in ten working days. Average number of wage and salary earners in civilian employment (excluding rural industry and female private domestics) 193,400, an increase of 1,500 over previous year. Average number of persons receiving unemployment benefit during year 2,879, an increase of 883, or more than 44 per cent., over average for previous year; persons on benefit at end of year 3,187 compared with 1,890 at end of 1960. Industrial disputes resulted in loss of 23,233 working days, of which 16,326 occurred in stevedoring and 5,025 in coal mining.

Legislation and Administration—Parliamentary session opened 3rd August, ended 15th November. Legislation included the Alumina Refinery Agreement Act ratifying an agreement between the Government and Western Aluminium No Liability relating to the establishment by the Company of a refinery at Kwinana for the production of alumina; the Banana Industry Compensation Trust Fund Act establishing a Trust Fund financed by contributions from growers and appropriations by Parliament to cover losses from cyclones, floods or any other cause, including pests and diseases, constituting a threat to the existence of the industry; the Bank Holidays Act Amendment Act authorizing the closure on Saturdays of banks other than savings bank agencies and extending trading hours to 5 p.m. on Fridays; the Builders' Registration Act Amendment Act providing for the registration of only one class of builder by eventually eliminating the "B"-class builder; the Building Societies Act Amendment Act revising the requirements for registration of approved societies, creating an office of Registrar of Building Societies separate from that of Registrar of Friendly Societies and establishing a Building Societies Advisory Committee; the Commonwealth and State Housing Agreement Act ratifying amendments to the 1956 Agreement and extending to 30th June, 1966 the period of operation of the Agreement as amended; the Companies Act based on a draft of proposed uniform legislation prepared by Commonwealth and State Ministers and repealing the Companies Act, 1943–1960, except as it relates to co-operative companies and co-operative and provident societies; the Criminal Code Amendment Act abolishing the death penalty for the crime of murder but retaining it in the case of wilful murder; the Entertainments Tax and Assessment Acts Repeal Act abolishing entertainments tax by repealing the Entertainments Tax Assessment Act, 1925–1959 and the Entertainments Tax Act, 1925–1959; the Explosives and Dangerous Goods Act consolidating and amending the law relating to explosives and regulating the import, manufacture, storage, sale, use and carriage of explosives (including fireworks) and the storage of dangerous goods; the Fisheries Act Amendment Act redefining the term "crayfish tail," and amending provisions relating to the seizure and measurement of fish and the labelling of consignments; the Industry (Advances) Act Amendment Act authorizing advances to the Midland Railway Company of Western Australia Limited; the Iron Ore (Scott River) Agreement Act ratifying an agreement between the Government and Mineral Mining and Exports (W.A.) Pty. Ltd. relating to the establishment by the Company of a processed iron-ore industry in the Scott River-Flinders Bay area, subject to land acquisition and provision of roads and electric power by the Government and guarantees by Heine Brothers (Australasia) Pty. Limited; the Iron Ore (Tallering Peak) Agreement Act ratifying an agreement between the Government and Western Mining Corporation Limited for the mining and export by the Company of iron ore, pyrites and concentrates from the Tallering Peak area subject to construction by the Company of a railway between its workings and the railhead at Mullewa; the Kwinana-Mundijong-Jarrahdale Railway

Act authorizing the construction by the Government of a railway in terms of the agreement ratified by the Alumina Refinery Agreement Act ; the Laporte Industrial Factory Agreement Act ratifying an agreement between the Government and Laporte Industries Limited for the establishment near Bunbury of a chemical factory ; the Licensing Act Amendment Act extending prescribed hours for sale and consumption of liquor in licensed restaurants ; the Medical Act Amendment Act permitting the registration as medical practitioners of qualified persons engaged in teaching, research or post-graduate study at recognized institutions, and allowing medical officers employed solely by the Commonwealth to register as medical practitioners without payment of certain fees ; the Metropolitan Region Improvement Tax Act Amendment Act reducing the rate of tax from $\frac{1}{2}$ d. to $\frac{3}{4}$ d. in the £ after 30th June, 1962 ; the Mines Regulation Act Amendment Act requiring underground mine workings to be managed and supervised only by holders of specified certificates of competency and permitting Sunday work at Yampi Sound ; the Motor Vehicle (Third Party Insurance) Act Amendment Act reconstituting the Premiums Committee and clarifying and amending its reporting functions ; the Public Moneys Investment Act authorizing the investment of public moneys with approved dealers in the short-term money market and in other ways ; the Railways (Standard Gauge) Construction Act authorizing construction of railways between Kalgoorlie and Kwinana and between other centres cited in the Railway Standardisation Agreement Act ; the Railway Standardisation Agreement Act ratifying an agreement between the Commonwealth and the State providing for Commonwealth financial assistance in the construction of specified standard gauge railways and the provision of certain rolling stock and other equipment ; the Registration of Births, Deaths and Marriages Act consolidating and amending the law relating to registration and repealing the Registration of Births, Deaths and Marriages Act, 1894-1948 ; the Stamp Act Amendment Act exempting from stamp duty transactions in the official short-term money market ; the State Housing Act Amendment Act reconstituting the State Housing Commission by reducing from three to two the number of members who are employed in the State Public Service and substituting "a person with a wide knowledge of and experience in housing conditions" ; the State Transport Co-ordination Act Amendment Act dissolving the Western Australian Transport Board and assigning its powers and functions to a Commissioner of Transport assisted by a Transport Advisory Board ; the Talling Peak-Mullewa Railway Act authorizing Western Mining Corporation Limited to construct a railway between Talling Peak and Mullewa in terms of the Iron Ore (Talling Peak) Agreement Act ; the Traffic Act Amendment Act limiting the number of taxi-car licences which may be issued in respect of the Metropolitan Traffic Area to one licence for every 700 of the population instead of one for every 600 as formerly ; and the Welfare and Assistance Act authorizing and regulating financial assistance to be extended by the State to indigent persons and providing for the recovery of moneys used for the purpose. Among Bills introduced but not passed were the Criminal Code Amendment Bill (No. 2) designed to require the attendance of at least two Ministers of the Crown at executions ; the Mental Health Bill seeking to consolidate and amend the law relating to the treatment of mental disorder ; the Natives (Citizenship Rights) Act Amendment Bill aiming to grant citizenship rights by birth to aboriginal natives born after the 1st January, 1955 ; the Totalisator Agency Board Betting Act Amendment Bill (No. 2) designed to prevent credit betting, to enable the Auditor-General to prescribe and inspect the accounts kept, and to increase the proportion of the Board's money invested on racecourse totalizators ; and the Western Australian Marine Act Amendment Bill seeking to require the licensing of private power-boats.

Local Government Act of 1960, consolidating and amending the law relating to local government, operative from 1st July. Matrimonial Causes Act 1959 (Commonwealth), providing a uniform divorce law applicable throughout Australia, operative from 1st February. Enactment by Commonwealth Parliament of a Marriage Act to provide uniform marriage law.

Appointment of Royal Commission to inquire into handling, marketing and shipping of apples. Presentation to Parliament of reports of Royal Commissions to investigate allegations that Members of Parliament had been offered bribes to oppose the Totalisator Agency Board Betting Bill ; to inquire into the causes, origins and development of bush fires during the period from December, 1960 to March, 1961 ; on Builders' Registration ; and of honorary Royal Commission to inquire into the practice of natural therapy.

Electoral Commissioners appointed in June to consider reallocation of boundaries of Electoral Districts and Electoral Provinces for State parliamentary elections ; report published in *Government Gazette* 14th December creating one additional metropolitan District and abolishing one District in the agricultural, mining and pastoral area.

Death in February of Rt. Hon. Viscount Dunrossil after one year in office as Governor-General of Australia. Appointment of Rt. Hon. Viscount De L'Isle, V.C., P.C., G.C.M.G., K.St.J. as Governor-General; oath of office administered 3rd August.

At Federal elections held 9th December, Liberal-Country Party Government returned to office with majority in House of Representatives reduced from 32 to two seats; from 1st July, 1962, Government representation in Senate reduced from 32 to 30.

Select Committee appointed in April by House of Representatives to consider the extension of voting rights to aboriginal natives; report presented in October recommending that voting rights be conferred, that enrolment be voluntary, and that voting be compulsory for enrolled aboriginals.

Miscellaneous—Unusually intense cyclonic activity in northern and north-western areas early in year. At Onslow extensive damage to jetty, and town inundated by sea; damage to houses and installations at Yampi Sound and Port Hedland; banana plantations destroyed by cyclones at Carnarvon and town evacuated as result of serious flooding. Disastrous bush fires over a large area of jarrah and karri forests in the south-west during January, February and March; settlement at Nanga Brook burnt out and townships of Dwellingup and Holyoake almost wholly destroyed.

Official opening 24th March of 12-storey building in Barrack Street, Perth as headquarters of Rural and Industries Bank.

Contract signed 5th October for erection of administration building for Perth City Council as first unit of a group to incorporate a new Perth Town Hall; work begun on foundations in November.

First two agencies operated by Totalisator Agency Board for off-course betting on totalizators opened in Perth 18th March.

Visit in July of the Right Honourable the Lord Mayor of London, Sir Bernard Waley-Cohen, the first Lord Mayor of London to visit Australia while in office.

Death in February of Professor F. R. E. Mauldon, Professor of Economics at the University from 1941 to 1958 and first Dean of the Faculty of Economics; in July, of Mr. H. D. Andrew, M.L.A. for Victoria Park; and in November, of Hon. C. C. Perkins, Minister for Transport, Police, Labour and Native Welfare.

CHAPTER III—CONSTITUTION AND GOVERNMENT

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The Federal Parliament

Elections for the Senate and the House of Representatives of the Federal Parliament were held on the 9th December, 1961.

As a result of the election, Western Australian membership of the Senate from the 1st July, 1962 has been as shown in the following table.

WESTERN AUSTRALIAN MEMBERS OF THE SENATE

Name	Political Party	Due Date of Retirement
Paltridge, Hon. Shane Dunne	Lib.	30th June : 1968
Prowse, Edgar Wylie	C.P.	1968
Tangney, Dorothy Margaret	A.L.P.	1968
Vincent, Victor Seddon	Lib.	1968
Willesee, Donald Robert	A.L.P.	1968
Branson, George Howard	Lib.	1965
Cant, Hartley Gordon James	A.L.P.	1965
Cooke, Joseph Alfred	A.L.P.	1965
Drake-Brockman, Thomas Charles, D.F.C.	C.P.	1965
Scott, Malcolm Fox	Lib.	1965

A.L.P. = Australian Labor Party.

C.P. = Country Party.

Lib. = Liberal Party.

Western Australian membership of the House of Representatives after the election of the 9th December, 1961 is shown in the following table.

WESTERN AUSTRALIAN MEMBERS OF THE HOUSE OF REPRESENTATIVES

Electoral Division	Name	Political Party
Canning	McNeill, Neil	Lib.
Curtin	Hasluck, Hon. Paul Meernaa Caedwalla	Lib.
Forrest	Freeth, Hon. Gordon	Lib.
Fremantle	Beazley, Kim Edward	A.L.P.
Kalgoorlie	Collard, Frederick Walter	A.L.P.
Moore	Leslie, Hugh Alan	C.P.
Perth	Chaney, Frederick Charles, A.F.C.	Lib.
Stirling	Webb, Charles Harry	A.L.P.
Swan	Cleaver, Richard	Lib.

A.L.P. = Australian Labor Party.

C.P. = Country Party.

Lib. = Liberal Party.

In a statement made to the House of Representatives on the 22nd February, 1962 the Minister for the Interior announced that, on the basis of population figures as disclosed by the Census of the 30th June, 1961, Western Australia's representation would be reduced from nine to eight in a House of Representatives of 120 members, excluding the member for the Northern Territory and the member for the Australian Capital Territory. The appointment of Distribution Commissioners to consider the necessary reallocation of Electoral Divisions, as required by the Commonwealth Electoral Act 1918-1961, was notified in the *Commonwealth of Australia Gazette* of the 12th April, 1962.

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The State Parliament

By a proclamation made in accordance with the provisions of the Electoral Districts Act, 1947-1955, and published in the *Government Gazette* of the 16th June, 1961, Electoral Commissioners were appointed to adjust the boundaries of the Electoral Districts and Electoral Provinces for representation in the State Parliament. The report of the Commissioners was published in the *Government Gazette* of the 14th December, 1961.

The Commissioners found that, in accordance with the statutory provisions for determining the number of Districts in areas other than the North-West Area as defined by the Act, it was necessary to increase from 21 to 22 the number of Districts in the Metropolitan Area and to reduce from 26 to 25 the number in the Agricultural, Mining and Pastoral Area. The Act fixes the number of Districts in the North-West Area at three, and no alteration was made to the existing boundaries of the component Districts. In dealing with the Provinces, adjustments were made in compliance with the provisions of the Act requiring that each Province should contain complete and contiguous Districts.

Elections for the Legislative Assembly, on the basis of the Electoral Districts as redefined, were held on the 31st March, 1962. The Liberal-Country Party Government, led by the Honourable David Brand, was returned to office and political party representation remained unaltered. The composition of the Legislative Assembly as a result of the election is shown on page 412. The members of the Ministry took the oath of office on the 12th April, 1962. The names of the Ministers and the portfolios held by them are shown in the following list.

THE MINISTRY FROM 12th APRIL, 1962

Name of Minister	Title of Office
Hon. David Brand, M.L.A.	Premier, Treasurer and Minister for Tourists
Hon. Crawford David Nalder, M.L.A.	Deputy Premier and Minister for Agriculture and Electricity
Hon. Charles Walter Michael Court, O.B.E., M.L.A.	Minister for Industrial Development, Railways and the North-West
Hon. Edgar Henry Mead Lewis, M.L.A.	Minister for Education and Native Welfare
Hon. Gerald Percy Wild, M.B.E., M.L.A.	Minister for Works, Water Supplies and Labour
Hon. Arthur Frederick Griffith, M.L.C.	Minister for Mines, Housing and Justice, and Leader of the Government in the Legislative Council
Hon. William Stewart Bovell, M.L.A.	Minister for Lands, Forests and Immigration
Hon. Ross Hutchinson, D.F.C., M.L.A.	Chief Secretary and Minister for Health and Fisheries
Hon. Leslie Arthur Logan, M.L.C.	Minister for Local Government, Town Planning and Child Welfare
Hon. James Frederick Craig, M.L.A.	Minister for Transport and Police

The Legislative Council

The biennial elections for the Legislative Council took place on the 12th May, 1962. Five members, Hon. E. M. Davies (Australian Labor Party) West Province, Hon. L. C. Diver (Country Party) Central Province, Hon. A. R. Jones (Country Party) Midland Province, Hon. H. C. Strickland (Australian Labor Party) North Province, and Hon. J. M. Thomson (Country Party) South Province, were returned unopposed. Three members, Hon. E. M. Heenan (Australian Labor Party) North-East Province, Hon. G. C. MacKinnon (Liberal and Country League) South-West Province, and Hon. H. K. Watson (Liberal and Country League) Metropolitan Province, were re-elected. Hon. J. M. A. Cunningham (Liberal and Country League) was defeated by Mr. (now Hon.) R. H. C. Stubbs (Australian Labor Party) in the South-East Province, and Hon. G. E. Jeffery (Australian Labor Party) by Mr. (now Hon.) H. R. Robinson (Liberal and Country League) in the Suburban Province. The strengths of the political parties in the Legislative Council therefore remained unaltered.

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The Legislative Assembly

MEMBERS OF THE LEGISLATIVE ASSEMBLY
AFTER GENERAL ELECTIONS OF 31st MARCH, 1962

Name	Political Party	Electoral District
Bickerton, Arthur William (a)	A.L.P.	Pilbara
Bovell, Hon. William Stewart (a)	L.C.L.	Vasse
Brady, John Joseph	A.L.P.	Swan
Brand, Hon. David	L.C.L.	Greenough
Burt, Richard Paull Septimus	L.C.L.	Murchison
Cornell, George Meredith (a)	C.P.	Mount Marshall
Court, Hon. Charles Walter Michael, O.B.E.	L.C.L.	Nedlands
Craig, Hon. James Frederick	C.P.	Toodyay
Crommelin, Harold William	L.C.L.	Claremont
Curran, Henry	A.L.P.	Cockburn
Davies, Ronald	A.L.P.	Victoria Park
Dunn, Kenneth Wathen (b)	L.C.L.	Darling Range
Evans, Thomas Daniel	A.L.P.	Kalgoorlie
Fletcher, Harry Arthur	A.L.P.	Fremantle
Gayfer, Harry Walter (b)	C.P.	Avon
Graham, Hon. Herbert Ernst	A.L.P.	Balcatta
Grayden, William Leonard	L.C.L.	South Perth
Guthrie, Hugh Norman	L.C.L.	Subiaco
Hall, Jack	A.L.P.	Albany
Hart, Thomas George (b)	C.P.	Roe
Hawke, Hon. Albert Redvers George (a)	A.L.P.	Northam
Heal, Stanley	A.L.P.	Perth
Hearman, Hon. John Merrifield	L.C.L.	Blackwood
Hegney, James	A.L.P.	Belmont
Hegney, Hon. William, A.A.S.A.	A.L.P.	Mount Hawthorn
Henn, Guy Gavin, M.R.C.S., L.R.C.P. (a)	L.C.L.	Wembley
Hutchinson, Hon. Ross, D.F.C.	L.C.L.	Cottesloe
Jamieson, Colin John	A.L.P.	Beeloo
Kelly, Hon. Lionel Francis	A.L.P.	Merredin-Yilgarn
Lewis, Hon. Edgar Henry Mead (a)	C.P.	Moore
McLarty, Hon. Sir Duncan Ross, K.B.E., M.M.	L.C.L.	Murray
Manning, Iven Wemyss (a)	L.C.L.	Wellington
Manning, William Allan, A.A.S.A., A.C.I.S. (a)	C.P.	Narrogin
May, Donald George (b)	A.L.P.	Canning
May, Harry	A.L.P.	Collie
Mitchell, Clayton Clealand Bickley (b)	C.P.	Stirling
Moir, Arthur McAlister	A.L.P.	Boulder-Eyre
Nalder, Hon. Crawford David (a)	C.P.	Katanning
Nimmo, Leslie Charles	L.C.L.	Karinyup
Norton, Daniel (a)	A.L.P.	Gascoyne
O'Connor, Raymond James	L.C.L.	Mount Lawley
Oldfield, Edward Peate	A.L.P.	Maylands
O'Neil, Desmond Henry	L.C.L.	East Melville
Rhatigan, John Joseph	A.L.P.	Kimberley
Roberts, George Frederick	L.C.L.	Bunbury
Rowberry, Joseph Neon	A.L.P.	Warren
Sewell, William Hawkins	A.L.P.	Geraldton
Toms, John Mervin (a)	A.L.P.	Bayswater
Tonkin, Hon. John Trezise	A.L.P.	Melville
Wild, Hon. Gerald Percy, M.B.E.	L.C.L.	Dale

SUMMARY

Australian Labor Party (A.L.P.)	24
Country Party (C.P.)	8
Liberal and Country League (L.C.L.)	18

(a) Returned unopposed.

(b) New member.

It was announced by the Premier on the 18th May, 1962 that Sir Ross McLarty had resigned as Member of the Legislative Assembly for Murray. A by-election was held on the 23rd June, 1962 and Mr. Ewart Runciman (Liberal and Country League) was elected to fill the vacancy.

Mr. G. F. Roberts, Member of the Legislative Assembly for Bunbury, died on the 22nd July, 1962. Mr. Maurice Clifford Williams (Liberal and Country League) was elected to succeed him at a by-election held on the 1st September, 1962.

Neither of these by-elections affected the strengths of the political parties in the Legislative Assembly.

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The Supreme Court of Western Australia

Mr. O. J. Negus, Q.C. took the oath of office as a Judge of the Supreme Court on the 23rd March, 1962. His appointment increased to six the number of Judges in addition to the Chief Justice, as authorized by the Supreme Court Act Amendment Act, 1960.

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Local Government Districts at 1st July, 1961

Local Government District		Statistical Division in which Situated	Local Government District		Statistical Division in which Situated
Name	City (C.) Town (T.) Shire (S.)		Name	City (C.) Town (T.) Shire (S.)	
ALBANY	T.	Southern Agricultural	Meekatharra	S.	Central
Albany	S.	Southern Agricultural	Melville	S.	Metropolitan
Armada-Kelmscott	S.	Swan	Menzies	S.	Eastern Goldfields
Ashburton	S.	North-West	Merredin	S.	Central Agricultural
Augusta-Margaret River	S.	South-West	MIDLAND	T.	Metropolitan
Balingup	S.	South-West	Mingenew	S.	Northern Agricultural
Bassendean	S.	Metropolitan	Moora	S.	Northern Agricultural
Bayswater	S.	Metropolitan	Morawa	S.	Northern Agricultural
Belmont	S.	Metropolitan	Mosman Park	S.	Metropolitan
Beverley	S.	Central Agricultural	Mount Magnet	S.	Central
Boddington	S.	South-West	Mount Marshall	S.	Central Agricultural
BOULDER	T.	Eastern Goldfields	Mukinbudin	S.	Central Agricultural
Bridgetown	S.	South-West	Mullewa	S.	Northern Agricultural
Brookton	S.	Central Agricultural	Mundaring	S.	Swan
Broome	S.	Kimberley	Murchison	S.	Central
Broomehill	S.	Southern Agricultural	Murray	S.	South-West
Bruce Rock	S.	Central Agricultural	Nannup	S.	South-West
BUNBURY	T.	South-West	Narembeen	S.	Central Agricultural
Busseton	S.	South-West	NARROGIN	T.	Central Agricultural
Canning	S.	Metropolitan	Narrogin	S.	Central Agricultural
Capel	S.	South-West	NEDLANDS	C.	Metropolitan
Carnamah	S.	Northern Agricultural	NORTH FREMANTLE	T.	Metropolitan
CARNARVON	T.	North-West	NORTHAM	S.	Central Agricultural
Chapman Valley	S.	Northern Agricultural	Northampton	S.	Central Agricultural
Chittering	S.	Northern Agricultural	Nullagine	S.	Pilbara
CLAREMONT	T.	Metropolitan	Nungarin	S.	Central Agricultural
Cockburn	S.	Swan	Nyabing-Pingrup	S.	Southern Agricultural
Collie	S.	South-West	Peppermint Grove	S.	Metropolitan
Coolgardie	S.	Eastern Goldfields	Perenjori	S.	Northern Agricultural
Corrigin	S.	Central Agricultural	PERTH	C.	Metropolitan
COTTESLOE	T.	Metropolitan	Perth	S.	Metropolitan
Cranbrook	S.	Southern Agricultural	Pingelly	S.	Central Agricultural
Cuballing	S.	Central Agricultural	Plantagenet	S.	Southern Agricultural
Cue	S.	Central	Port Hedland	S.	Pilbara
Cunderdin	S.	Central Agricultural	Qualtrading	S.	Central Agricultural
Dalwallinu	S.	Northern Agricultural	Ravensthorpe	S.	Eastern Goldfields
Dandaragan	S.	Northern Agricultural	Rockingham	S.	Swan
Dardanup	S.	South-West	Roebourne	S.	Pilbara
Denmark	S.	Southern Agricultural	Sandstone	S.	Central
Donnybrook	S.	South-West	Serpentine-Jarrahdale	S.	Swan
Dowerin	S.	Central Agricultural	Shark Bay	S.	North-West
Dumbleyung	S.	Southern Agricultural	SOUTH PERTH	C.	Metropolitan
Dundas	S.	Eastern Goldfields	SUBIACO	C.	Metropolitan
EAST FREMANTLE	T.	Metropolitan	Swan-Guildford	S.	(a)
Esperance	S.	Eastern Goldfields	Tableland	S.	Pilbara
FREMANTLE	C.	Metropolitan	Tambellup	S.	Southern Agricultural
Gascoyne-Minilya	S.	North-West	Tamblin	S.	Central Agricultural
GERALDTON	T.	Northern Agricultural	Three Springs	S.	Northern Agricultural
Geraldton-Greenough	S.	Northern Agricultural	Toodyay	S.	Central Agricultural
Gingin	S.	Northern Agricultural	Trayning-Kununoppin- Yelbeli	S.	Central Agricultural
Gnowangerup	S.	Southern Agricultural	Upper Blackwood	S.	South-West
Goomalling	S.	Central Agricultural	Upper Gascoyne	S.	North-West
Gosnells	S.	Swan	Victoria Plains	S.	Northern Agricultural
Greenbushes	S.	South-West	Wagin	S.	Southern Agricultural
Halls Creek	S.	Kimberley	Wandering	S.	Central Agricultural
Harvey	S.	South-West	Wanneroo	S.	Swan
Irwin	S.	Northern Agricultural	Waroona	S.	South-West
Kalamunda	S.	Swan	West Arthur	S.	Southern Agricultural
KALGOORLIE	T.	Eastern Goldfields	West Kimberley	S.	Kimberley
Kalgoorlie	S.	Eastern Goldfields	Westonia	S.	Central Agricultural
Katanning	S.	Southern Agricultural	Wickepin	S.	Central Agricultural
Kellerberrin	S.	Central Agricultural	Williams	S.	Central Agricultural
Kojonup	S.	Southern Agricultural	Wiluna	S.	Central
Kondinin	S.	Central Agricultural	Wongan-Ballidu	S.	Northern Agricultural
Koorda	S.	Central Agricultural	Woodanilling	S.	Southern Agricultural
Kulin	S.	Central Agricultural	Wyalkatchem	S.	Central Agricultural
Kwinana	S.	Swan	Wyndham-East Kimber- ley	S.	Kimberley
Lake Grace	S.	Southern Agricultural	Yalgoo	S.	Central
Laverton	S.	Eastern Goldfields	Yilgarn	S.	Eastern Goldfields
Leonora	S.	Eastern Goldfields	YORK	T.	Central Agricultural
Mandurah	S.	South-West	York	S.	Central Agricultural
Manjimup	S.	South-West			
Marble Bar	S.	Pilbara			

(a) Guildford Ward and South Ward in Metropolitan Statistical Division, remainder in Swan Statistical Division.

CHAPTER V—SOCIAL CONDITION

PART 5—SOCIAL BENEFITS, RELIEF PAYMENTS AND CHILD WELFARE

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Commonwealth Benefits

The following tables and letterpress relate to the more important variations in social service, repatriation and health benefits which became operative during 1961 and 1962.

RATES OF BENEFIT—INCREASES DURING 1961

Benefit	Rate per week at 31st December, 1960	Increase during 1961		Rate per week at 31st December, 1961
		Amount per week	Date of Operation	
	£ s. d.	s. d.		£ s. d.
Pensions—				
Age	5 0 0	5 0	5th October	5 5 0
Invalid—				
Pensioner	5 0 0	5 0	"	5 5 0
Wife	1 15 0	12 6	"	2 7 6
First child under 16 years of age	11 6	3 6	"	15 0
Widows—				
Widow with one or more dependent children	5 5 0	5 0	10th October	5 10 0
Each child, other than the first, under 16 years of age	10 0	5 0	"	15 0
Widow aged 50 years or over	4 7 6	5 0	"	4 12 6
Widow aged under 50 years in necessitous circumstances	4 7 6	5 0	"	4 12 6
War—				
Incapacitated ex-serviceman—				
Special Rate	12 15 0	10 0	28th September	13 5 0
Attendant's Allowance—Maximum rate	4 10 0	15 0	"	5 5 0
Full General Rate	5 10 0	5 0	"	5 15 0
Widows—				
First child under 16 years of age	5 10 0	5 0	"	5 15 0
Each other child under 16 years of age	1 11 6	7 6	"	1 19 0
Domestic Allowance	1 2 6	5 0	"	1 7 6
Orphans under 16 years of age	3 0 0	2 6	"	3 2 6
Service—				
Ex-serviceman	3 3 0	8 6	"	3 11 6
Wife	5 0 0	5 0	"	5 5 0
First child under 16 years of age	1 15 0	12 6	"	2 7 6
Unemployment and Sickness Benefits (a)—				
Unmarried beneficiary 21 years of age and over	11 6	3 6	"	15 0
Married beneficiary	3 5 0	10 0	21st September	3 15 0
Dependent spouse	3 5 0	10 0	"	3 15 0
First child under 16 years of age	2 7 6	5 0	"	2 12 6
Tuberculosis Allowance—				
Sufferer without dependants	10 0	2 6	"	12 6
Married sufferer with dependent wife	7 2 6	5 0	5th October	7 7 6
First child under 16 years of age	11 12 6	10 0	"	12 2 6
	10 0	5 0	"	15 0

(a) The rates shown apply also to Special Benefits as the Social Services Act provides for the payment of a special benefit at a rate not exceeding the rate of unemployment or sickness benefit.

Age and Invalid Pensions—By an amendment to the Social Services Act operative from the 1st March, 1962 the residential qualifications applying to payment of age and invalid pensions were modified.

To qualify for an age pension, a person must have lived in Australia at any time continuously for a period of 10 years, instead of 20 years as formerly. In the case of invalid pensions the general requirement of five years' continuous residence remained unaltered but, where the incapacity or blindness first occurred outside Australia (except during a temporary absence), the qualifying period was reduced from 20 years to 10 years. A person who has completed five years' but not 10 years' continuous residence and has lived in Australia for periods which, in total, exceed 10 years may be eligible for either age or invalid pension. Residence in New Zealand or the United Kingdom counts as residence in Australia. Certain absences do not affect eligibility.

RATES OF BENEFIT—INCREASES DURING 1962

Benefit	Rate per week at 31st December, 1961	Increase during 1962		Rate per week from 1st March, 1962
		Amount per week	Date of Operation	
	£ s. d.	s. d.		£ s. d.
Unemployment and Sickness Benefits (a)—				
Unmarried beneficiary 21 years of age and over	3 15 0	7 6	1st March	4 2 6
Married beneficiary	3 15 0	7 6	"	4 2 6
Dependent spouse	2 12 6	7 6	"	3 0 0
First child under 16 years of age	12 6	2 6	"	15 0
Each other child under 16 years of age	<i>Nil</i>	15 0	"	15 0

(a) See footnote to previous table.

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State Relief Payments

Where the wife of an age pensioner is not eligible to receive a wife's allowance from the Commonwealth and there are dependent children, she may receive monetary assistance from the Child Welfare Department. From the 5th October, 1961 the amount of this assistance was increased from £2 6s. 6d. to £3 2s. 6d. per week.

Prior to the 18th April, 1962 the State allowance in cases where Commonwealth unemployment and sickness benefits were payable to a married man was 7s. 6d. per week for the wife, £1 4s. per week for the first dependent child and 15s. per week for each additional child. From that date the allowance for the wife was discontinued and the weekly amount payable on account of dependent children became £1 10s. where there are one or two children, £1 5s. where there are three or four children and £1 where there are five or more children.

CHAPTER VI—FINANCE**PART 2—PRIVATE FINANCE**

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Bank Charges

From the 1st October, 1962 the charges levied by trading banks in the form of exchange on transfers, both interstate and within a State, were abolished and a new system of bank service charges introduced.

Savings Banks

The Bank of Adelaide Savings Bank Limited and The National Bank Savings Bank Limited commenced business on the 31st May, 1962, and The Commercial Savings Bank of Australia Limited on the 2nd July, 1962.

CHAPTER X—EMPLOYMENT, WAGES AND PRICES

PART 1—EMPLOYMENT

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The Work Force

The following table contains comparative details of the occupational status of the population of Western Australia as disclosed by the Censuses of 30th June, 1954 and 1961. It shows the capacity in which persons were engaged in the work force and gives a dissection into categories of persons not in the work force.

OCCUPATIONAL STATUS OF POPULATION—CENSUSES, 1954 AND 1961

(Exclusive of full-blood aboriginals)

Occupational Status	Census, 30th June, 1954			Census, 30th June, 1961			
	Males	Females	Persons	Males	Females	Persons	
						Total	Increase or Decrease (—) since 1954
IN WORK FORCE—							
At Work—							
Employer	16,871	2,246	19,117	17,402	3,129	20,531	1,414
Self-employed	26,165	3,374	29,539	25,961	3,866	29,827	288
Employee	158,413	46,201	204,614	164,176	53,443	217,619	13,005
Helper (not on wage or salary)	1,515	798	2,313	1,061	599	1,660	— 653
Total	202,964	52,610	255,583	208,600	61,037	269,637	14,054
Not at Work (a)—							
Unable to secure employment	479	188	667	5,218	1,433	6,651	5,984
Temporarily laid off	170	60	230	531	139	670	440
Sickness or accident	606	169	775	1,254	313	1,567	792
Changing jobs	468	180	657	599	262	861	204
Other and Not Stated	354	135	489	317	97	414	— 75
Total	2,077	741	2,818	7,919	2,244	10,163	7,345
TOTAL IN WORK FORCE	205,041	53,360	258,401	216,519	63,281	279,800	21,399
NOT IN WORK FORCE—							
Child not attending school	42,137	40,826	82,963	46,976	44,455	91,431	8,468
Full-time student or child attending school	60,041	57,282	117,323	83,636	78,611	162,247	44,924
Independent means, including "Retired (so described)"	3,843	3,569	7,412	3,958	3,594	7,552	140
Home duties .....	...	130,880	130,880	...	138,551	138,551	7,671
Pensioner or annuitant	15,543	20,773	36,316	20,337	28,825	49,162	12,846
Inmates of institutions	2,568	1,911	4,479	2,863	2,549	5,412	933
Others not in Work Force	1,185	812	1,997	1,163	1,311	2,474	477
TOTAL NOT IN WORK FORCE	125,317	256,053	381,370	158,933	297,806	456,829	75,459
GRAND TOTAL	330,358	309,413	639,771	375,452	361,177	736,629	96,858

(a) The category "Not at Work" includes those who stated that they were usually engaged in work but were not actively seeking a job at the time of the Census by reason of sickness, accident, etc., or because they were on strike, changing jobs or temporarily laid off, etc. It includes also persons able and willing to work but unable to secure employment, as well as casual and seasonal workers not actually in a job at the time of the Census. The numbers shown as "Not at Work" therefore do not represent the number of unemployed available for work and unable to obtain it.

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Industry of the Population

The following table shows the industry of the population of Western Australia at each of the Censuses of 30th June, 1954 and 1961, according to main industry groups. For the groups *Finance and Property*; *Public Authority (n.e.i.) and Defence Services*; and *Community and Business Services (including Professional)* the figures derived from the 1954 classification have been adjusted to accord with the classification used in 1961.

INDUSTRY OF THE POPULATION—CENSUSES, 1954 AND 1961
(Exclusive of full-blood aboriginals)

Industry Group	Census, 30th June, 1954			Census, 30th June, 1961			
	Males	Females	Persons	Males	Females	Persons	
						Total	Increase or Decrease (—) since 1954
Primary Production	39,005	2,498	41,503	38,038	3,116	41,154	— 349
Mining and Quarrying	9,211	141	9,352	7,727	154	7,881	— 1,471
Manufacturing	41,898	7,459	49,357	43,825	7,150	50,975	1,618
Electricity, Gas, Water and Sanitary Services (Production, Supply and Maintenance)	3,956	213	4,169	4,442	260	4,702	533
Building and Construction	27,920	361	28,281	24,984	432	25,416	— 2,865
Transport and Storage and Communication	22,975	1,800	24,775	25,029	2,063	27,092	2,317
Finance and Property	4,109	1,927	6,036	5,468	2,977	8,445	2,409
Commerce	28,673	14,851	43,524	33,727	17,056	50,783	7,259
Public Authority (n.e.i.) and Defence Services	9,258	2,073	11,331	9,287	2,145	11,432	101
Community and Business Services (including Professional) (a)	9,810	11,988	21,798	13,636	17,351	30,987	9,189
Amusement, Hotels and Other Accommodation, Cafes, Personal Service, etc.	6,753	9,522	16,275	7,449	9,205	16,654	379
Other Industries and Industry Inadequately Described or Not Stated	1,473	527	2,000	2,907	1,372	4,279	2,279
TOTAL IN WORK FORCE	205,041	53,360	258,401	216,510	63,281	279,800	21,399
Persons not in Work Force ...	125,317	256,053	381,370	158,933	297,896	456,829	75,459
GRAND TOTAL	330,358	309,413	639,771	375,452	361,177	736,629	96,858

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

NOTE ON STATISTICAL DIVISIONS

Western Australia is divided into a number of municipal districts for the purposes of local government administration. At the 31st December, 1960 there were 146 such districts, which are used as the basis of presentation of data derived not only from the population census but also from many of the regular statistical collections. Information presented in this way is valuable when considering activities in particular local government areas but is often more detailed than is required for a broader geographical assessment. For this reason, the municipal districts are combined into eleven Statistical Divisions which provide significant areas for the publication of statistics in a convenient and readily appreciable summary form.

The Statistical Divisions and their component local government districts as at the 31st December, 1960 are listed on the following pages and are shown on the accompanying map of the State. The area and the population of each of the Divisions at the Census of 30th June, 1961 are given below, together with the proportions which they bore to the State total.

STATISTICAL DIVISIONS—AREA AND POPULATION AT 30th JUNE, 1961

Statistical Division	Area	Proportion of State Total	Population	Proportion of State Total
	square miles	per cent.	persons	per cent.
Metropolitan	192	0·02	420,133	57·03
Swan	1,885	0·19	55,265	7·50
South-West	11,025	1·13	71,637	9·73
Southern Agricultural	22,050	2·26	41,623	5·65
Central Agricultural	29,077	2·98	57,594	7·82
Northern Agricultural	36,840	3·77	35,785	4·86
Eastern Goldfields	250,224	25·64	34,142	4·63
Central	215,070	22·04	3,959	0·54
North-West	75,732	7·76	4,563	0·62
Pilbara	171,462	17·57	3,243	0·44
Kimberley	162,363	16·64	5,668	0·77
Total—All Divisions	975,920	100·00	733,612	99·59
Migratory (a) ....	....	....	3,017	0·41
WHOLE STATE	975,920	100·00	736,629	100·00

(a) Comprises persons (both passengers and crew) not enumerated elsewhere who, at midnight on Census night, were on board ships or were travelling on long-distance trains, motor-coaches or aircraft.

LIST OF STATISTICAL DIVISIONS

with component Local Government Districts at 31st December, 1960

METROPOLITAN**Municipalities**

CLAREMONT
COTTESLOE
EAST FREMANTLE
FREMANTLE
MIDLAND JUNCTION
NEDLANDS
NORTH FREMANTLE
PERTH
SOUTH PERTH
SUBIACO

Road Districts

Bassendean
Bayswater
Belmont Park
Canning
Melville
Mosman Park
Peppermint Grove
Perth
Swan-Guildford (Guildford
Ward and South Ward)

SWAN**Road Districts**

Armada-Kelmscott
Cockburn
Darling Range
Gosnells
Kwinana
Mundaring
Rockingham
Serpentine-Jarrahdale
Swan-Guildford (except
Guildford Ward and
South Ward)
Wanneroo

SOUTH-WEST**Municipality**

BUNBURY

Road Districts

Augusta-Margaret River
Balingup
Bridgetown
Busselton
Capel
Collie Coalfields
Dardanup
Drakesbrook
Greenbushes
Harvey
Mandurah
Manjimup
Marradong
Murray
Nannup
Preston
Upper Blackwood

SOUTHERN AGRICULTURAL**Municipalities**

ALBANY
WAGIN

Road Districts

Albany
Broomfield
Cranbrook
Dennmark
Dumbleyung
Gnowangerup
Katanning
Kojonup
Lake Grace
Nyabing-Pingrup
Plantagenet
Tanbullah
Wagin
West Arthur
Woodanilling

CENTRAL AGRICULTURAL**Municipalities**

NARROGIN
NORTHAM
YORK

Road Districts

Beverley
Brookton
Bruce Rock
Corrigin
Cuballing
Cunderdin
Dowerin
Goomalling
Kellerberrin
Kondinin
Koorda
Kullu
Kununoppin-Trayning
Merredin
Mount Marshall
Mukinbudin
Naremburn
Narrogin
Northam
Nungarin
Pingelly
Quairading
Tammin
Toodyay
Wandering
Westonia
Wickepin
Williams
Wyalkatchem
York

NORTHERN AGRICULTURAL**Municipality**

GERALDTON

Road Districts

Carnamah
Chapman Valley
Chittering
Dalwallinu
Dandaragau
Geraldton-Greenough
Gingin
Irwin
Mingenew
Moora
Morawa
Mullewa
Northampton
Perenjori
Three Springs
Victoria Plains
Wongan-Ballidu

EASTERN GOLDFIELDS**Municipalities**

BOULDER
KALGOORLIE

Road Districts

Coolgardie
Dundas
Esperance
Kalgoorlie
Laverton
Leonora
Menzies
Phillips River
Yilgarn

CENTRAL**Road Districts**

Black Range
Cue
Meekatharra
Mount Magnet
Murchison
Wiluna
Yalgoo

NORTH-WEST**Municipality**

CARNARVON

Road Districts

Ashburton
Gascoyne-Minilya
Shark Bay
Upper Gascoyne

PILBARA**Road Districts**

Marble Bar
Nullagine
Port Hedland
Roebourne
Tableland

KIMBERLEY**Road Districts**

Broome
Halls Creek
West Kimberley
Wyndham

LIST OF LOCAL GOVERNMENT DISTRICTS

at 31st December, 1960

Local Government District	Municipality (M.) Road District (R.D.)	Statistical Division in which Situated	Local Government District	Municipality (M.) Road District (R.D.)	Statistical Division in which Situated
ALBANY	M.	Southern Agricultural	Marble Bar	R.D.	Pilbara
Albany	R.D.	Southern Agricultural	Marradong	R.D.	South-West
Armadale-Kelmscott	R.D.	Swan	Meekatharra	R.D.	Central
Ashburton	R.D.	North-West	Melville	R.D.	Metropolitan
Augusta-Margaret River	R.D.	South-West	Menzies	R.D.	Eastern Goldfields
Balingup	R.D.	South-West	Merredin	R.D.	Central Agricultural
Bassendean	R.D.	Metropolitan	MIDLAND JUNCTION	M.	Metropolitan
Bayswater	R.D.	Metropolitan	Mingenew	R.D.	Northern Agricultural
Belmont Park	R.D.	Metropolitan	Moora	R.D.	Northern Agricultural
Beverley	R.D.	Central Agricultural	Morawa	R.D.	Northern Agricultural
Black Range	R.D.	Central	Mosman Park	R.D.	Metropolitan
BOULDER	M.	Eastern Goldfields	Mount Magnet	R.D.	Central
Bridgetown	R.D.	South-West	Mount Marshall	R.D.	Central Agricultural
Brookton	R.D.	Central Agricultural	Mukinbudin	R.D.	Central Agricultural
Broome	R.D.	Kimberley	Mullewa	R.D.	Northern Agricultural
Broomehill	R.D.	Southern Agricultural	Mundaring	R.D.	Swan
Bruce Rock	R.D.	Central Agricultural	Murchison	R.D.	Central
BUNBURY	M.	South-West	Murray	R.D.	South-West
Busselton	R.D.	South-West	Nannup	R.D.	South-West
Canning	R.D.	Metropolitan	Narembene	R.D.	Central Agricultural
Capel	R.D.	South-West	NARROGIN	M.	Central Agricultural
Carnamah	R.D.	Northern Agricultural	Narrogin	R.D.	Central Agricultural
CARNARVON	M.	North-West	NEDLANDS	M.	Metropolitan
Chapman Valley	R.D.	Northern Agricultural	NORTH FREMANTLE	M.	Metropolitan
Chittering	R.D.	Northern Agricultural	NORTHAM	M.	Central Agricultural
CLAREMONT	M.	Metropolitan	Northam	R.D.	Central Agricultural
Cockburn	R.D.	Swan	Northampton	R.D.	Northern Agricultural
Collie Coalfields	R.D.	South-West	Nullagine	R.D.	Pilbara
Coolgardie	R.D.	Eastern Goldfields	Nungarin	R.D.	Central Agricultural
Corrigin	R.D.	Central Agricultural	Nyabing-Pingrup	R.D.	Southern Agricultural
COTTESLOE	M.	Metropolitan	Peppermint Grove	R.D.	Metropolitan
Cranbrook	R.D.	Southern Agricultural	Perenjori	R.D.	Northern Agricultural
Cuballing	R.D.	Central Agricultural	PERTH	M.	Metropolitan
Cue	R.D.	Central	Perth	R.D.	Metropolitan
Cunderdin	R.D.	Central Agricultural	Phillips River	R.D.	Eastern Goldfields
Dalwallinu	R.D.	Northern Agricultural	Pingelly	R.D.	Central Agricultural
Dandaragan	R.D.	Northern Agricultural	Plantagenet	R.D.	Southern Agricultural
Dardanup	R.D.	South-West	Port Hedland	R.D.	Pilbara
Darling Range	R.D.	Swan	Preston	R.D.	South-West
Denmark	R.D.	Southern Agricultural	Quairading	R.D.	Central Agricultural
Dowerlu	R.D.	Central Agricultural	Rockingham	R.D.	Swan
Drakesbrook	R.D.	South-West	Roebourne	R.D.	Pilbara
Dumbleyung	R.D.	Southern Agricultural	Serpentine-Jarrahdale	R.D.	Swan
Dundas	R.D.	Eastern Goldfields	Shark Bay	R.D.	North-West
EAST FREMANTLE	M.	Metropolitan	SOUTH PERTH	M.	Metropolitan
Esperance	R.D.	Eastern Goldfields	SUBIACO	M.	Metropolitan
FREMANTLE	M.	Metropolitan	Swan-Guildford	R.D.	(a)
Gascoyne-Minilya	R.D.	North-West	Tableland	R.D.	Pilbara
GERALDTON	M.	Northern Agricultural	Tambellup	R.D.	Southern Agricultural
Geraldton-Greenough	R.D.	Northern Agricultural	Tammin	R.D.	Central Agricultural
Gingin	R.D.	Northern Agricultural	Three Springs	R.D.	Northern Agricultural
Gnowangerup	R.D.	Southern Agricultural	Toodyay	R.D.	Central Agricultural
Goomalling	R.D.	Central Agricultural	Upper Blackwood	R.D.	South-West
Gosnells	R.D.	Swan	Upper Gascoyne	R.D.	North-West
Greenbushes	R.D.	South-West	Victoria Plains	R.D.	Northern Agricultural
Halls Creek	R.D.	Kimberley	WAGIN	M.	Southern Agricultural
Harvey	R.D.	South-West	Wagin	R.D.	Southern Agricultural
Irwin	R.D.	Northern Agricultural	Wandering	R.D.	Central Agricultural
KALGOORLIE	M.	Eastern Goldfields	Wanneroo	R.D.	Swan
Kalgoorlie	R.D.	Eastern Goldfields	West Arthur	R.D.	Southern Agricultural
Katanning	R.D.	Southern Agricultural	West Kimberley	R.D.	Kimberley
Kellerberrin	R.D.	Central Agricultural	Westonia	R.D.	Central Agricultural
Kojonup	R.D.	Southern Agricultural	Wickepin	R.D.	Central Agricultural
Kondinin	R.D.	Central Agricultural	Williams	R.D.	Central Agricultural
Koorda	R.D.	Central Agricultural	Wiluna	R.D.	Central
Kulin	R.D.	Central Agricultural	Wongan-Ballidu	R.D.	Northern Agricultural
Kununoppin-Trayning	R.D.	Central Agricultural	Woodanilling	R.D.	Southern Agricultural
Kwinana	R.D.	Swan	Wyalkatchem	R.D.	Central Agricultural
Lake Grace	R.D.	Southern Agricultural	Wyndham	R.D.	Kimberley
Laverton	R.D.	Eastern Goldfields	Yalgoo	R.D.	Central
Leonora	R.D.	Eastern Goldfields	Yilgarn	R.D.	Eastern Goldfields
Mandurah	R.D.	South-West	YORK	M.	Central Agricultural
Manjimup	R.D.	South-West	York	R.D.	Central Agricultural

(a) Guildford Ward and South Ward in Metropolitan Statistical Division, remainder in Swan Statistical Division.

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Information on the same subject appearing on succeeding pages, whether in letterpress, tabular or diagrammatic form, has generally been indexed only to the first of such pages.

Several references to a particular subject may be found at intervals throughout the section *Chronological Notes from 1829*, pages 2-24 of Chapter I. Generally, in these cases, only the first reference appearing there has been indexed.

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