

This page was added on 03 December 2012 to included the Disclaimer below.  
No other amendments were made to this Product

#### DISCLAIMER

Users are warned that this historic issue of this publication series may contain language or views which, reflecting the authors' attitudes or that of the period in which the item was written, may be considered to be inappropriate or offensive today.

## CHAPTER 29

### THE TERRITORIES OF AUSTRALIA

The internal Territories of Australia are the Northern Territory and the Australian Capital Territory. External Territories under the control of Australia are: Norfolk Island; the Territory of Papua (formerly British New Guinea); the Territory of New Guinea (under Trusteeship Agreement with the United Nations); the Territory of Heard and McDonald Islands; the Australian Antarctic Territory; the Territory of Cocos (Keeling) Islands; and the Territory of Christmas Island. There is also the Territory of Ashmore and Cartier Islands, deemed to form part of the Northern Territory.

Information on all except Ashmore and Cartier Islands is contained in the following pages, and details of the acquisition of all the Territories will be found on pages 5, 22, and 23 of Chapter 1. More detailed statistics and additional descriptive matter are to be found in the Annual Reports of the Administrations of the various Territories and in the *Northern Territory Statistical Summary* and the *Australian Capital Territory Statistical Summary* issued by this Bureau. Statistics for the Northern Territory and the Australian Capital Territory are also included in chapters dealing with particular subjects. The Statistician, Territory of Papua and New Guinea, issues a number of publications containing statistics relative to these two Territories, separate and combined.

Responsibility for the general administration of the Territories of Norfolk Island, Papua, New Guinea, Cocos (Keeling) Islands and Christmas Island is vested with the Commonwealth Department of External Territories; for the Northern Territory (including Ashmore and Cartier Islands) and the Australian Capital Territory with the Department of the Interior; and for Antarctica and Heard and McDonald Islands with the Department of Supply. Matters excepted are defence and civil aviation, and, in the Northern Territory and the Australian Capital Territory, public health, justice, education (excluding Aborigines) and the provision of the basic physical services, which are the responsibility of the Department of Health, the Attorney-General's Department, the Department of Education and Science, and the Department of Works, respectively.

### THE NORTHERN TERRITORY

#### General description

##### Area

Upon the extension of New South Wales westwards to the 129th east meridian in 1825, the Northern Territory was incorporated in that colony, but in 1863 it was annexed by Royal Letters Patent to the province of South Australia. With the adjacent islands, it was transferred to the Commonwealth on 1 January 1911. The total area is 520,280 square miles.

##### Legislation and administration

On 1 January 1911 the Territory was transferred from South Australia to the Commonwealth. The terms were outlined in Year Book No. 15, page 940.

The *Northern Territory (Administration) Act 1910-1969* provides for an Administrator, appointed by the Governor-General, to administer the Territory on behalf of the Commonwealth.

It provides for a Legislative Council for the Northern Territory to make ordinances for the peace, order and good government of the Territory. This Council consists of six official members and eleven elected members. A President of the Council is elected from among the elected members. Money votes may be proposed in the Council only upon recommendation by message of the Administrator.

Ordinances are presented to the Administrator for assent. He is obliged to reserve ordinances relating to certain matters, including Crown lands and Aborigines, for the Governor-General's pleasure. Others he may assent to, withhold assent from, or return to the Legislative Council with recommended amendments. The Governor-General may within six months, disallow any ordinance assented to by the Administrator and, in respect of an ordinance reserved for his pleasure, he may assent, withhold assent, withhold assent to part of the ordinance and assent to the remainder, or recommend to the Administrator any amendments to the laws of the Territory that he considers desirable arising out of his consideration of the ordinance.

The Act also provides for an Administrator's Council to advise the Administrator on any matter referred to it, either by the Administrator, or in accordance with the provisions of any ordinance of the Northern Territory. The Council consists of the Administrator, and two official and three elected members of the Legislative Council.

The Territory elects one member to the House of Representatives.

The Corporation of the City of Darwin, established in 1957, consisting of a Mayor and eight Aldermen elected by adult franchise, provides municipal administration in Darwin. Alice Springs was constituted as a municipality on 25 June 1971, and the first election was held on 26 June 1971. The Alice Springs Council consists of a Mayor and eight Aldermen elected by adult franchise and provides municipal administration in that town. Elsewhere in the Territory, municipal services are provided by the Administration. Town Management Boards are established in Katherine and Tennant Creek. Members are appointed by the Administrator and the function of the Boards is to advise the Administrator on local matters.

### Physical geography

The Territory is within the torrid zone, with the exception of a strip about 180 miles wide which lies south of the Tropic of Capricorn.

The low flat coastline seldom reaches a height of 100 feet. Sandy beaches and mud flats, thickly fringed with mangroves, prevail. Sandstone, marl and laterite form the occasional cliffy headlands. The sea frontage of more than 1,000 miles is indented by bays and inlets and intersected by numerous rivers, many of which are navigable for considerable distances from their estuaries. The only practicable deep-water port for general use, however, is Darwin.

Inland the country generally is devoid of conspicuous landmarks. From the coast there is a general rise southwards to the vicinity of the seventeenth or eighteenth parallel of south latitude, where the higher lands form the watershed between the rivers that flow northwards to the sea and those that form the scanty supply for the interior system. Towards the centre of the continent the land over a wide area is of considerable elevation, and there are several mountain ranges, generally with an east and west trend.

### Climate, fauna and flora

There are two main climatic divisions, the wet season, November to April, and the dry season, May to October, with uniform and regular changes of weather. Nearly all the rainfall occurs in the summer months. Further particulars appear in Year Book No. 6, Page 1116.

The ordinary types of native Australian fauna inhabit the Territory. As elsewhere on the continent, the higher *Theria* are rare, but marsupials, birds, crocodiles, fresh-water tortoises, snakes (mostly non-venomous), and frogs abound. There are many varieties of fresh-water fish and littoral *Mollusca*. Butterflies and beetles are strongly represented. The termite is a pest which is capable of serious damage to wooden buildings unless special preventive measures are taken. Mosquitoes and sandflies are very troublesome in the "top end" particularly in the wet season. Most types of native fauna are protected and buffaloes exist in large herds on the northern coastal plains.

The vegetation is north Australian in type but a number of forms belong to the Malayan and Oceanic regions. The climate and generally poor soils associated with it give rise to tropical savannah vegetation, with the size and volume of woody material present being closely related to rainfall and the quality of the forests decreasing strikingly as one proceeds inland from the northern coastline. In the north, cypress pine which is termite resistant, ironwood, bloodwood and paperbark timbers are cut and milled for local building purposes. Further inland particularly on the Barkly Tableland and parts of the Victoria River district there are better grazing grasses and some shrubs, while the wide belt of sandy plain between the Barkly Tableland and the ranges in the Alice Springs area, carries mainly spinifex grass and low scrub. The Alice Springs ranges and uplands carry chiefly a dwarf acacia scrub known as mulga, spinifex and other sparse grasses. The principal orders represented in the interior are *Euphorbiaceae*, *Compositae*, *Convolvulaceae*, *Rubiaceae*, *Goodeniaceae*, *Leguminosae* and *Utricaceae*.

## Population

See also the chapters Population and Vital Statistics.

The estimated population of the Northern Territory at 30 June 1970, including Aborigines, was 38,479 males, 32,904 females, 71,383 persons. The Aboriginal population at the census of 30 June 1966 totalled 10,651 males, 10,468 females, 21,119 persons. While few Aborigines now live outside

settled areas and not all choose to live on reserves, a large area of reserved land totalling 94,196 square miles has been maintained to provide economic resources from which the Aborigines may benefit either directly or from royalty payments.

## Advancement of Aborigines

### Policy

The Commonwealth and State governments have adopted a common policy of assimilation which seeks that all persons of Aboriginal descent will choose to attain a similar manner and standard of living to that of other Australians and live as members of a single Australian community, enjoying the same rights and privileges, accepting the same responsibilities and influenced by the same hopes and loyalties as other Australians.

### Legal status

Under the *Nationality and Citizenship Act* 1948–1966, all Aborigines are British subjects and Australian citizens. Since the commencement of the *Social Welfare Ordinance* 1964 in September 1964, Aborigines in the Northern Territory have been equal at law with all other residents, although some special benefits have been retained for them or have been introduced since then. The Ordinance enables assistance to be given to any person who is socially or economically in need.

### Special schools for Aborigines

While the Department of Education and Science is now responsible for community education in the Northern Territory, special schools and pre-schools for Aboriginal children remain the responsibility of the Welfare Branch of the Administration. These special schools and pre-schools are intended as an interim measure only, policy being that all Aboriginal children should eventually receive their education in the community schools. Following expert inquiries, however, it was decided that schools should be established having a syllabus and school texts which take account of the social and cultural background of the Aborigines. In these schools there is a shift of emphasis from theoretical to practical subjects, but where progress warrants it, the child transfers to the ordinary curriculum leading to the general community schools. A transitional school system has also been established, and one of its main objectives is to provide a bridge between the special schools and the community high schools.

Fifty-seven special schools for Aboriginal children had been established by the middle of 1970. Forty-eight of these were conducted by the Administration, eight by missions and one by the managements of pastoral properties. Government subsidies were provided to the missions and pastoral managements concerned. Twenty-four pre-school centres had also been established. Nineteen of these were conducted by the Administration and five by the missions.

### Assistance to Aborigines

There are very few Aborigines following a fully nomadic way of life and most choose to live at settlements run by the Government or by religious missions on the Aboriginal reserves which cover a total area of 94,196 square miles. Land within reserves is available for leasing only to Aborigines for pastoral and agricultural purposes. Significant mining ventures have been established within reserves at Groote Eylandt and Gove, and mineral and timber royalties received from activities carried on within reserves are paid into the Aborigines Benefits Trust Fund. This Fund was established in 1952 and the Minister for the Interior may authorise loans or grants from the Fund to Aborigines. In this matter the Minister has the advice of a special Committee which includes five Aboriginal representatives. Moneys in the Fund may be used for a wide variety of purposes which would benefit the Aboriginal people, e.g. to establish business enterprises, to provide community facilities such as Council houses and sporting ovals, and to assist people to purchase houses and furniture. Approved disbursements from the Fund totalled \$766,600 at 30 June 1971.

An intensive welfare programme to prepare Aborigines for the demands of modern living is being carried out, and twenty Government settlements or welfare centres and thirteen mission stations have been established where Aborigines are assisted to acquire new employment skills and the women receive instruction on home management, etc. Health services (including infant clinics), education, housing, vocational training and employment are provided, and Aborigines are encouraged to take part in the social activities of the community.

Financial and technical assistance is available to Aborigines who wish to develop their own commercial or industrial enterprises. In addition to the Aborigines Benefits Trust Fund, financial assistance is also available from the Capital Fund for Aboriginal Enterprises controlled by the Minister for the Environment, Aborigines and the Arts.

### Consultation with Aborigines

An Aboriginal Advisory Council of eleven Aborigines, each representing a district of the Northern Territory, was established in early 1971 to advise the Minister for the Interior on Aboriginal issues in the Territory.

## Production

*See also* the chapters dealing with particular subjects.

### Land tenure

Nearly 60 per cent of the total area of land in the Territory is held under various forms of lease or licence which are described in Year Book No. 48, pages 111-12. The remainder comprises unoccupied and unreserved areas (22.1 per cent), reserved (18.7 per cent) and freehold (0.1 per cent). The following changes should be noted.

*Leases to Mission Organisations* are now granted under the *Special Purpose Leases Ordinance* 1953-1965 for fixed terms or in perpetuity.

*Miscellaneous Leases* are now granted in perpetuity for purposes such as a market garden, plantation, orchard, vineyard, poultry farm, piggery, or the like.

*Darwin Town Area Leases* are granted in perpetuity for business or residential purposes, or both, in the Darwin Town Area.

*Pastoral Homestead Leases*—provisions relating to the granting of these leases have been repealed.

*Agricultural Leases* are granted in perpetuity; the farm classifications no longer apply and the maximum area now which may be included in any one agricultural lease is fifty thousand acres and a person cannot hold agricultural land in excess of one hundred thousand acres except that these figures may be increased to 100,000 acres and 200,000 acres respectively by the Administrator on the recommendation of the Land Board.

*Special Purposes Leases* are now granted for a term of years or in perpetuity.

*Leases to Aborigines*—leases lying within Aboriginal reserves are now granted to Aborigines.

Legislation providing for new land tenure arrangements in the Darwin municipal area commenced on 1 January 1971. Under these arrangements land rent has in effect been abolished and a reserve price scheme introduced for new leases. The reserve price scheme enables the Commonwealth to recover development costs. Lessees may now, after compliance with lease covenants, convert to freehold on payment of an administrative fee.

Legislation has been passed to extend these arrangements to the whole of the Darwin Town Area and to municipalities other than Darwin.

The chapter Rural Industry of this issue contains statistical information concerning areas occupied under various forms of tenure.

### Agriculture

Commercial agricultural production is confined to grain sorghum, vegetables and small-scale fruit production for local consumption. Townsville stylo seed production has increased considerably and has become an important contributor to the income of many small landholders.

Information concerning scientific surveys (commenced in 1946), conducted by the Commonwealth Scientific and Industrial Research Organization to determine more accurately the potentialities of the Northern Territory, and the resulting establishment of an agricultural research station at Katherine and experimental farms at Katherine and Berrimah (near Darwin), is given in Year Book No. 51, page 101, and in earlier issues. Information is given also on the establishment of rice research stations and investigational work carried out, and on subsequent rice crop commercial scale operations. The appointment by the Minister for Territories in 1959 of an expert committee to carry out investigations relative to the prospect of agriculture in the Territory and subsequent developments are also referred to.

**NORTHERN TERRITORY: AREA AND PRODUCTION OF CROPS**  
1965-66 TO 1969-70

<i>Crop</i>	<i>1965-66</i>	<i>1966-67</i>	<i>1967-68</i>	<i>1968-69</i>	<i>1969-70</i>
<b>AREA(a)</b> (acres)					
Fruit—Bananas . . . . .	20	29	(b)	(b)	11
Pineapples . . . . .	12	17	(b)	(b)	10
Other . . . . .	78	87	98	90	87
<i>Total fruit</i> . . . . .	<i>110</i>	<i>133</i>	<i>98</i>	<i>90</i>	<i>108</i>
Peanuts . . . . .	16	(b)	12	(b)	(b)
Sorghum for grain . . . . .	1,093	527	(c)	(c)	(c)
Vegetables for human consumption . . . . .	144	218	199	255	277
Other crops(d) . . . . .	2,699	2,747	5,691	6,834	7,170
<i>Grand total(a)</i> . . . . .	<i>4,062</i>	<i>3,625</i>	<i>6,000</i>	<i>7,179</i>	<i>7,561</i>

**PRODUCTION**

Fruit—Bananas . . . . . bushels	1,985	1,684	(e)	(e)	(e)
Pineapples . . . . . "	990	997	(e)	(e)	(e)
Peanuts . . . . . cwt	76	(e)	32	(e)	(e)
Sorghum (grain) . . . . . bushels	12,018	7,533	(e)	(e)	(e)

(a) Excludes rice; details are not available for publication. (b) Not available for publication, included in Other crops. (c) Not available for publication, excluded from totals. (d) Principally fodder crops. (e) Not available for publication.

**Pastoral industry**

The pastoral possibilities of certain parts of the Territory were recognised at an early date, and both cattle and sheep raising have been attempted. For various reasons sheep-raising has not been very successful, but the cattle industry has progressed steadily and is continuing to expand. There is substantial potential for further expansion in the higher rainfall area of the Territory through the introduction of improved pastures and the use of superphosphate.

**NORTHERN TERRITORY: LIVESTOCK, 1966 TO 1970**  
(\*000)

<i>30 June—</i>	<i>Horses</i>	<i>Cattle</i>	<i>Sheep</i>	<i>Pigs</i>
1966 . . . . .	37	1,032	9	2
1967 . . . . .	38	1,097	8	3
1968 . . . . .	38	1,130	9	2
1969 . . . . .	39	(a)1,190	10	(a) 2
1970(a) . . . . .	41	1,179	8	4

(a) At 31 March.

**Mining**

During the 1969-70 financial year the value of output of the mining and quarrying industry in the Territory was \$38,637,000. The mining industry is now the Territory's biggest industry and the greatest export earner. The main minerals produced were manganese, copper, iron ore, gold and bismuth.

The Northern Territory's present major mining developments are at Tennant Creek, Groote Eylandt, Gove and Frances Creek.

Most of the copper and gold produced in the Territory is obtained from underground mines in the Tennant Creek district. A new mine at Warrego (36 miles to the north west of Tennant Creek) and an ore treatment concentrator will commence production at the end of 1972. Export earnings of from \$40 to \$50 million over about eight years are expected from the mine's known reserves.

Another new copper-gold mine at Gecko is expected to commence operations by June 1972. Peko-Mines N.L., the company developing these projects at Tennant Creek, is also proposing to establish a flash smelter to produce blister copper.

Manganese ore is being produced by open cut methods from extensive deposits at Groote Eylandt in the Gulf of Carpentaria. Production capacity has been increased since the commencement of operations in 1966 and should reach about 1.2 million tons per annum by late 1971 rising to about 1.6 million tons per annum by late 1972 or early 1973. Groote Eylandt supplies all Australia's requirements of metallurgical grade manganese ore and large tonnages are exported to Japan, Europe and the U.S.A. Total shipments of ore in 1969-70 amounted to 625,265 tons valued at \$10.8 million.

Production of iron ore at Frances Creek commenced in 1966 and at Mount Bunday in 1967. The output from these mines is being exported to Japan. All ore from both mines is shipped through Darwin and in 1969-70 totalled 1,112,875 tons valued at \$10.3 million.

A bauxite mining and treatment project based on extensive bauxite deposits is being developed at Gove at a cost of \$310 million. Under an agreement between the Commonwealth and Nabalco Pty Ltd, ratified by Ordinance passed by the Northern Territory Legislative Council in 1968, Nabalco undertook to develop the deposits. Under the terms of a supplemental agreement, signed in 1969, the equity capital of the project is held as to 70 per cent by Swiss Aluminium Australia Pty Ltd and as to 30 per cent by Gove Alumina Ltd (a consortium of seven Australian companies). An alumina plant is being built in two stages. The first stage with a capacity of 500,000 tons per year will be completed in July 1972 and the second stage, increasing the annual capacity to 1 million tons, by July 1973. The agreement permits exports of 40 million tons of untreated bauxite over 20 years. Export of bauxite commenced in June 1971.

The production of uranium oxide in the Rum Jungle area ceased in April 1971, when the processing of the ore stockpile was completed.

In July 1970 the selection was announced of successful applicants for specified prospecting areas within a 1,700 square mile area previously reserved from mining south of Darwin, including a section of the Rum Jungle area. In the same general area are the Woodcutters lead/zinc prospect and a low to medium grade lead orebody known as Brown's deposit. The feasibility of developing these deposits is under close examination.

Investigations are continuing into possible methods of treating the extensive lead-zinc deposits located in the McArthur River district. Conventional metallurgical processes are not considered suitable for the treatment of these ores.

In July 1970, discoveries of uranium deposits at Nabarlek and Ranger 1 in the East Alligator River area of Arnhem Land were announced. In June 1971 the existence of a further large deposit at Jim Jim in the same general area was confirmed. These discoveries, some 150 miles east of Darwin, are considered to be part of a uranium province of potentially world importance and aerial surveys have indicated further anomalies which could reveal further deposits of commercial importance.

Total expenditure on petroleum exploration in the Northern Territory during 1969 was about \$9.8 million. The principal area of interest for petroleum exploration has in the past been the Amadeus Basin in the south of the Territory. More recently the off-shore areas in the Bonaparte Gulf Basin and the Arafura Sea have drawn considerable attention. Drilling of the Petrel No. 1 well in 1969 in the Bonaparte Gulf resulted in the discovery of what could be a major field of natural gas. On-shore evaluations of the Mereenie oil and gas field have indicated reserves of 300 million barrels of oil and 1 U.S. trillion cubic feet of gas. The recovery of the oil presents some difficulties but the feasibility of establishing a small refinery at Alice Springs is being examined by the exploration companies and the Government. An important natural gas find at Palm Valley 70 miles west of Alice Springs, has been confirmed and indications are that a major field exists.

**NORTHERN TERRITORY: MINING AND QUARRYING OPERATIONS, 1965 TO 1968**  
(Excluding uranium mining)

	1965	1966	1967	1968
Number of mines and quarries . . . . .	67	80	74	58
Average number of persons employed during whole year (including working proprietors) . . . . .	688	814	1,006	1,132
Salaries and wages paid (a)(b) . . . . . \$'000	2,867	3,361	4,609	5,707
Total fuel, materials, etc., used . . . . . "	2,571	2,212	2,901	4,211
Value of additions and replacements to fixed assets (a) . . . . . "	5,677	7,282	5,195	7,756
Value of output (at mine or quarry) . . . . . "	8,289	13,283	19,316	23,446
Value of production (c) . . . . . "	5,715	11,070	16,416	19,235

(a) Excludes mines employing less than four persons. (b) Excludes drawings by working proprietors; the amounts are net after deducting value of explosives sold to employees. (c) Value of output less cost of power, fuel and light and other materials and stores used; depreciation and maintenance costs have not been deducted.

The following table shows preliminary results of the Mining Census taken in respect of the year ended 30 June 1969.

#### NORTHERN TERRITORY: MINING ESTABLISHMENTS, 1968-69

NOTE. Direct comparisons with figures for previous years are not possible because of change in the census units, the scope of the census and the items of data. For details see Chapter 27, Mineral Industry.

Establishments operating during 1968-69	No.	21
Persons employed(a)	No.	1,048
Wages and salaries	\$m	5.4
Sales, transfers out and other operating revenue	\$m	35.3
Stocks at 30 June—1968	\$m	4.4
1969	\$m	5.1
Purchases, transfers in and selected expenses	\$m	14.9
Value added(b)	\$m	21.1

(a) At end of June 1969. Includes working proprietors. (b) Sales, transfers out and other operating revenue plus increase (or less decrease) in the value of stocks, less purchases, transfers in and selected expenses.

#### Forestry

A programme of forest improvement and development to conserve existing forest areas and increase timber resources is undertaken by the Forestry Branch of the Northern Territory Administration. Basic forestry research is carried out by the Forestry and Timber Bureau at a Regional Research Station established at Berrimah. The Territory forestry programme includes the regeneration and utilisation of native forests, the establishment of 1,000 acres of softwood plantations (mainly native cypress pine) per year and makes provision for the employment and training of Aborigines in forestry work. Local production of log timber, mainly cypress pine, amounted to 1,322,000 super feet in 1969-70 but this was insufficient to meet local needs and some 6,922,000 super feet of sawn timber was imported from interstate and overseas.

#### Fisheries

Following preliminary surveys indicating the existence of valuable prawn resources off the Northern Territory coast, approval was given in 1968 for seven companies to begin prawning operations. A condition of this approval is that shore processing plants must be established by the companies. Three of these companies are joint Australian-Japanese ventures involving the use of foreign vessels and crews for a limited period. The joint ventures are required to establish their processing plants in Darwin; one of these plants commenced operations at the beginning of the 1970 season. Two of the four Australian companies are operating processing plants, one at Darwin and one at Groote Eylandt. During a limited establishment period the Australian companies based outside Darwin have been given protection against the establishment of additional processing plants in the areas in which they have elected to operate. Provision has also been made for participation of Aborigines in the industry. During 1970, the first full season of prawning operations, prawns valued at \$5.2 million were exported from the Territory.

The other main fishery in the Territory is that based on barramundi. In addition a small cultured pearl industry has been established.

#### NORTHERN TERRITORY: FISHING(a) 1965-66 TO 1969-70

		1965-66	1966-67	1967-68	1968-69	1969-70
<b>Prawning—</b>						
Estimated gross weight of prawn catch	'000 lb	1	1	23	2,375	8,682
Gross value of prawns	\$'000	1	1	14	831	3,646
<b>Other fisheries—</b>						
Estimated landed weight of fish catch	'000 lb	346	550	555	533	253
Gross value of fish	\$'000	57	73	92	96	51
<b>All fisheries—</b>						
Number of boats engaged		43	60	53	110	82
Number of men employed		120	133	123	573	437

(a) Excluding pearl shell fisheries and pearling.



**Secondary industries**

The secondary industries that have so far been established in the Territory have been largely the service industries normally associated with a developing area, such as electrical repairs, printing, motor and marine engineering, plumbing, welding, joinery, sheet metal work, and blue metal crushing. Industrial investments by private interests in recent years include plants to manufacture bitumen, clay bricks, concrete bricks, reinforcing steel, concrete products and fencing materials.

**NORTHERN TERRITORY: FACTORIES, 1963-64 TO 1967-68**

	1963-64	1964-65	1965-66	1966-67	1967-68
Number of factories(a) . . . . .	139	174	185	187	188
Average number employed(b)—					
Males . . . . .	978	1,098	1,182	1,308	1,380
Females . . . . .	97	112	112	115	139
<i>Persons employed</i> . . . . .	1,075	1,210	1,294	1,423	1,519
Salaries and wages paid(c)—					
Males . . . . . \$'000	2,628	3,298	3,666	4,146	4,721
Females . . . . .	142	185	192	203	263
<i>Total salaries and wages paid</i> . . . . .	2,770	3,483	3,859	4,349	4,983
Value of power, fuel, light, etc. used(d) . . . . .	735	865	856	946	1,159
Value of materials used(e) . . . . .	3,384	4,550	5,497	7,214	7,995
Value of production(f) . . . . .	4,938	6,654	7,103	7,847	9,680
Value of output(g) . . . . .	9,057	12,068	13,456	16,007	18,831
Value of land and buildings(h) . . . . .	4,586	5,668	6,101	6,482	8,150
Value of plant and machinery(h) . . . . .	6,046	6,103	5,954	6,825	6,696

(a) Any factory, workshop or mill in which four or more persons are employed or power other than hand is used. (b) The aggregate of the average number of persons employed in each factory. Includes working proprietors. Figures represent average employment over the whole year. (c) Excludes drawings by working proprietors. (d) Includes water and lubricating oil. (e) Includes also containers, etc., tools replaced and repairs to plant. (f) Value added in process of manufacture (i.e. value of output less value of materials and fuel used). (g) Value of goods produced including amounts received for repair work and other work done. (h) Depreciated or book value at end of year, including estimated value of rented premises and machinery.

The following table shows preliminary results of the Manufacturing Census taken in respect of the year ended 30 June 1969.

**NORTHERN TERRITORY: MANUFACTURING ESTABLISHMENTS, 1968-69**

NOTE. Direct comparisons with figures for previous years are not possible because of change in the census units, the scope of the census and the items of data. For details see Chapter 22 Manufacturing Industry.

Establishments operating during 1968-69 . . . . .	No.	75
Persons employed(a) . . . . .	No.	1,155
Wages and salaries . . . . .	\$m	4.1
Sales, transfers out and other operating revenue . . . . .	\$m	22.8
Stocks at 30 June—1968 . . . . .	\$m	2.0
1969 . . . . .	\$m	2.4
Purchases, transfers in and selected expenses . . . . .	\$m	13.7
Value added(b) . . . . .	\$m	9.4

(a) At end of June 1969. Includes working proprietors. (b) Sales, transfers out and other operating revenue plus increase (or less decrease) in the value of stocks, less purchases, transfers in and selected expenses.

**Tourism**

Tourism has become one of the Territory's major industries in recent years. There were more than 70,000 visitors to the Northern Territory in 1969-70. The industry is estimated to be worth \$19 million a year and is expanding at a rate around 12 per cent per annum.

A firm of consultants has reported on the tourism potential of Central Australia, and in particular the Ayers Rock-Mount Olga National Park. Their findings have been published in the reports *Tourism Plan for Central Australia* and *Ayers Rock-Mount Olga National Park Development Plan*. The reports provide useful guidelines for the formulation of tourism development programmes for the Centre.

### National Parks and Reserves

Large areas in the Territory have been set aside as wildlife sanctuaries under the provisions of the Wildlife Conservation and Control Ordinance. They cover about 18,000 square miles and are controlled by the Chief Inspector of Wildlife in the Northern Territory Administration. A further 92,704 square miles of Aboriginal reserves are also wildlife protected areas.

There are some thirty-two national parks and reserves totalling about 940 square miles which are administered by the Northern Territory Reserves Board. The Board is responsible for the care; control and management of these reserves, and its functions include preservation and protection of natural and historical features, and the encouragement of public use and enjoyment of land set aside in such reserves.

## Trade, transport and communication

### Trade

No comprehensive record is kept of the trade between the States and the Territory. The following table shows the values of the principal commodities imported into and exported from the Northern Territory from or to overseas countries during the years 1965-66 to 1969-70.

NORTHERN TERRITORY: PRINCIPAL OVERSEAS  
IMPORTS AND EXPORTS, 1965-66 TO 1969-70  
(\$'000)

Commodity	1965-66	1966-67	1967-68	1968-69	1969-70
<b>IMPORTS</b>					
Petroleum and shale spirit—					
Aviation spirit . . . . .	158	277	216	234	231
Other (motor spirit) . . . . .	456	542	587	577	706
Aviation turbine fuel . . . . .	955	615	1,099	1,513	1,093
Other oil(a) . . . . .	838	781	1,112	1,757	2,516
Sulphur . . . . .	..	70	486	168	..
Portland cement . . . . .	410	311	370	650	741
Timber (undressed hardwood) . . . . .	334	183	206	380	548
Iron and steel manufactures . . . . .	832	3	1,195	893	1,172
Machinery and transport equipment . . . . .	922	3,914	2,376	10,886	(b) 23,534
Other articles . . . . .	691	690	1,760	4,742	9,288
<b>Total imports</b> . . . . .	<b>5,596</b>	<b>7,386</b>	<b>9,407</b>	<b>21,800</b>	<b>39,829</b>
<b>EXPORTS(c)</b>					
Meats . . . . .	3,348	3,422	4,864	4,794	4,807
Hides and skins, raw . . . . .	61	227	135	209	269
Iron ore and concentrates . . . . .	..	..	3,053	6,467	9,124
Non-ferrous ores and concentrates . . . . .	173	2,682	4,474	8,540	9,091
Copper ores and concentrates . . . . .	2,044	1,512	775	..	116
Pearls . . . . .	179	34	39	8	29
Other articles . . . . .	593	1,091	4,515	8,916	(b) 26,289
<b>Total exports</b> . . . . .	<b>6,398</b>	<b>8,968</b>	<b>17,855</b>	<b>28,934</b>	<b>49,725</b>

(a) Includes kerosene, gas, oil, diesel oil, residual oil, etc. (b) Includes value of oil search equipment (floating structures, etc.) which were brought to the Northern Territory for temporary operation and moved overseas after the planned exploration activities were completed. (c) Includes domestic exports and re-exports.

### Shipping

Shipping services to Darwin are provided from the eastern States by the Australian National Line and from the west by the Western Australia State Shipping Service. Increasing numbers of oil tankers and overseas general cargo vessels visit Darwin while iron ore carriers continue to load lump and fine ore for Japan. The establishment of a prawning industry has resulted in an increasing number of prawning vessels entering the port. Activity is also increasing as a result of visits by oil rig tenders.

John Burke Pty Ltd operates a subsidised shipping service from Brisbane to the Gulf of Carpentaria ports and serves Aboriginal Missions and Settlements as well as the mining centres of Gove and Groote Eylandt, Gove is also served by Australian Territory Liner services. The export of bauxite from Gove has not yet commenced. Other shipping services to Groote Eylandt are in connection with the export of manganese ore.

Mission and privately owned boats and barges also provide services from Darwin to Aboriginal communities and ports along the coast.

The Australian National Line in July 1970 replaced its vessels calling at Darwin with a new container bulk ore vessel, the *Darwin Trader*, which carries general cargo to Darwin and backloads manganese ore from Groote Eylandt to Tasmania.

Developments approved for the port of Darwin will improve the capacity of the port to handle an expected increase in shipping.

#### **Air services**

At 30 June 1970 there were 124 aerodromes in the Territory, ten of which are maintained by the Commonwealth Department of Civil Aviation. The overseas passenger services using the Darwin international airport are Lufthansa (Sydney to Frankfurt); Qantas/B.O.A.C. (Sydney to London); B.O.A.C. (Sydney to Hong Kong); Union de Transports Aeriens (Paris to Los Angeles via Noumea); and T.A.A. on behalf of Transportes Aereos de Timor (Darwin to Baucau). Regular internal services to Darwin, with, in some cases, intermediate stops at Territory centres, are operated by Trans-Australia Airlines and Ansett Airlines (from Adelaide, Melbourne, Sydney and Brisbane), and MacRobertson-Miller Airways Ltd (from Perth and Derby), MacRobertson-Miller Airways Ltd and Connellan Airways Ltd operate a network of air services throughout the Territory, the latter company's base being at Alice Springs. The Royal Flying Doctor Service also operates aircraft, while charter services can be secured at Darwin and Alice Springs.

#### **Railways**

The Commonwealth Railways Commissioner operates the Central Australia Railway from Port Augusta in South Australia to Alice Springs over a distance of 822 miles, of which about 200 are in the Northern Territory. The line is standard gauge from Port Augusta to Marree, a distance of 217 miles, and 3 ft 6 in from Marree to Alice Springs. The Commonwealth Government has approved in principle the construction of standard gauge line between Tarcoola and Alice Springs to replace the Marree-Alice Springs section of the Central Australia Railway. The Commissioner also operates the North Australia Railway between Darwin and Birdum on a 3 ft 6 in gauge over a distance of 317 miles. The two inland terminals, Alice Springs and Birdum, are about 630 miles apart and are connected by road transport along the Stuart Highway. Larrimah, on the highway and 6 miles north of Birdum, is the point of trans-shipment for passengers and goods and is, at present, the effective terminal. A road-rail freight service operates between Adelaide and Darwin via Alice Springs.

#### **Roads**

The Stuart Highway, 954 miles long, connects Alice Springs with Darwin and runs via Katherine and Tennant Creek. The Barkly Highway, 403 miles long, connects Mount Isa (Queensland) with Tennant Creek and joins the Stuart Highway some 16 miles north of Tennant Creek. These highways are used for carrying various freights, including cattle, particularly to and from the railheads at Alice Springs, Larrimah and Mount Isa. The routes are used also for overland tourists and travellers from the southern States to Darwin. There are now approximately 12,000 miles of roads in the Territory of which 2,320 miles are sealed.

Work on a programme for reconstruction and development of beef cattle roads was commenced in 1961-62. To June 1970 \$30.2 million has been authorised for the improvement of 1,600 miles including the sealing of 950 miles. Expenditure to 30 June 1970 was \$23.5 million. The transport of cattle by road is expected to increase the number, quality and value of cattle turned off.

#### **Posts, telegraph, telephones and wireless**

Postal communication is maintained by road, rail and air transport between Darwin and the capital cities of Australia. In addition, vessels belonging to the Western Australian State Shipping Service provide a regular service between Fremantle and Darwin. Inland, the northern part of the Territory receives its mail via Darwin or by means of the aerial services, and the southern districts are served via Adelaide.

The overland telegraph line, covering 2,230 miles, runs from Adelaide to Darwin and links Darwin in telegraphic communication with other parts of the world. Trunk telephone lines extend

from Adelaide and Townsville to Darwin, providing telephone communication with the capital cities of Australia. These lines also carry interstate telegram and telex traffic and serve the towns along the routes.

Darwin is connected by high frequency radio to Gove Peninsula and to Groote Eylandt. In addition high frequency radio telephone exchanges have been established at Alice Springs and Katherine which provide connections to the telephone network for pastoral, mining, tourist and other organisations throughout the Northern Territory and across the borders into Queensland, South Australia and Western Australia. The majority of homesteads on pastoral leases are equipped with radio transceivers operated under licence from the Postmaster-General's Department.

Regional national broadcasting stations are situated at Darwin, Alice Springs, Tennant Creek and Katherine and there is a commercial station at Darwin.

## Education

*See also the chapter Education, Cultural Activities and Research.*

### Community schools

Since February 1968 the Commonwealth Minister for Education and Science has been responsible for community education in the Northern Territory. Community schools are operated by the Commonwealth under an agreement with the South Australian Department of Education which has until recently provided all teachers and curricula.

In July 1970 the South Australian Education Department announced that it had decided upon a planned withdrawal of South Australian teachers from the Northern Territory over a five year period. As a result of this withdrawal seventy teachers of the total 534 teachers employed, formed the nucleus of the first Commonwealth Teaching Service. At 1 August, 1971, there were 33 government schools in the Territory, with 10,810 pupils, and 5 non-government schools with 1,393 pupils, providing instruction according to the South Australian curriculum. High schools have been established with classes to matriculation level at Darwin and the leaving certificate level at Alice Springs and Nightcliff. Area schools provided classes up to fourth year high school level at Katherine and Nhulunbuy (fourth year by correspondence), and to third year high school level at Tennant Creek, Batchelor and Alyangula.

Special boarding-away-from-home allowances, correspondence supervision allowances and conveyance allowances are paid to school-age students in the Northern Territory. In addition, limited numbers of special Northern Territory secondary and tertiary scholarships supplement normal Commonwealth scholarship provisions. For details of these special allowances *see* Year Book No. 56, age 974.

At 30 June 1971 there were nineteen government pre-school centres (including two play groups) in the Territory, with an enrolment of 1,020 pupils. A number of scholarships are offered each year for the training of pre-school teachers.

### Theoretical training for apprentices

The recognition that technical school training is an extension of workshop training has led to the introduction of day-time classes which apprentices attend without loss of pay. Full trade courses are provided in the more popular trades in Darwin; correspondence courses are arranged for apprentices outside Darwin and for those in Darwin following the less popular trades.

## Finance

Details of receipts and expenditure of the Territory for the years 1965-66 to 1969-70 are shown in the table following. In this table the receipts and expenditure of the Northern Territory have been classified into a National Accounts form. The table covers transactions relating to the Northern Territory in the Commonwealth Consolidated Revenue Fund and the following trust funds; Northern Territory Aborigines Benefits, Northern Territory Government Settlements Canteens, Northern Territory Housing Commission, Northern Territory Housing Loans, and Northern Territory Transport. (Details of the financial transactions of the following Northern Territory semi-government authorities are also included: the Northern Territory Port Authority; Northern Territory Aboriginal Advancement Capital Fund (from 1968-69) and the Northern Territory Housing Commission (from 1969-70). Details of the financial transactions of the Darwin City Council are also incorporated in the table. Revenue derived by the Commonwealth from income taxes, customs duties, etc. levied in the Northern Territory and expenditure by the Commonwealth in the Northern Territory on such items as defence, civil aviation, railways, etc., and payments to residents from the National Welfare Fund are not included.

**NORTHERN TERRITORY: RECEIPTS AND EXPENDITURE, 1965-66 TO 1969-70**  
(\$'000)

	1965-66	1966-67	1967-68	1968-69	1969-70
<b>RECEIPTS</b>					
Taxation—					
Stamp duties . . . . .	53	55	73	86	94
Motor registration . . . . .	237	273	321	517	586
Other . . . . .	370	520	590	691	835
Interest, rent, etc. . . . .	357	309	456	490	547
Public enterprises income . . . . .	1,700	1,776	2,173	2,409	2,658
Net sale of local and semi-government securities . . . . .	227	..	-393	90	..
Other receipts—					
Net charge to Commonwealth budget . . . . .	39,008	50,698	53,159	57,490	72,274
Other(a) . . . . .	-210	382	646	658	-1,543
<b>Total receipts . . . . .</b>	<b>41,742</b>	<b>54,011</b>	<b>57,026</b>	<b>62,431</b>	<b>75,451</b>
<b>EXPENDITURE</b>					
Net current expenditure on goods and services—					
Law, order and public safety . . . . .	296	328	426	440	422
Education . . . . .	1,472	1,641	2,141	2,822	3,547
Public health and welfare . . . . .	6,492	7,748	9,330	11,053	14,414
Other . . . . .	10,614	12,524	14,063	16,131	17,929
Capital expenditure on new assets and stocks—					
Roads . . . . .	4,514	4,727	7,187	7,911	8,068
Housing . . . . .	4,658	4,407	3,925	3,678	6,193
Other . . . . .	11,914	20,554	17,390	17,526	19,594
Net purchase of existing assets(b) . . . . .	-17	205	-997	-460	2,883
Cash benefits . . . . .	300	316	369	450	498
Subsidies . . . . .	539	298	311	337	648
Interest paid . . . . .	253	145	81	67	180
Net advances—					
Housing . . . . .	294	567	2,191	1,957	809
Other . . . . .	408	544	603	512	234
Grants towards Private Capital Expenditure . . . . .	5	7	6	7	32
<b>Total expenditure . . . . .</b>	<b>41,742</b>	<b>54,011</b>	<b>57,026</b>	<b>62,431</b>	<b>75,451</b>

(a) Includes movements in cash, investments, etc. (b) Minus sign (-) denotes excess of receipts (from sales) over expenditure on, or purchases of, existing assets, including housing.

## THE AUSTRALIAN CAPITAL TERRITORY

### General description

The Commonwealth Constitution provides that the Seat of Government of the Commonwealth shall be in the State of New South Wales but distant not less than 100 miles from Sydney. After a number of alternative sites were considered, an area of 911 square miles lying approximately 200 miles south-west of Sydney was transferred to the Commonwealth as from 1 January 1911. A further 28 square miles at Jervis Bay were transferred as from 4 September 1915 to serve as a port for the Territory.

The primary responsibility for administering the Australian Capital Territory lies with the Department of the Interior, whose functions include housing, police, and municipal services. Education, public health, justice and the provision of basic physical services, including water supply, sewerage and roads, are the responsibility of the Departments of Education and Science, Health, Attorney-General's, and Works. The National Capital Development Commission has the responsibility for the planning and development of the Canberra city area.

The Australian Capital Territory Advisory Council was established in 1930. It has eight elected members and a representative from each of the Departments of Interior, Works, and Health, and the National Capital Development Commission, as well as an observer from the Department of Education and Science. The Council advises the Minister for the Interior on matters affecting the Australian Capital Territory. Ordinances are submitted in draft form to the Council for advice and comment before being implemented.

At the census of 30 June 1966 the population of the Australian Capital Territory was 96,013, made up of 92,308 in the Canberra metropolitan area and 3,705 in rural areas (including Jervis Bay). The estimated population of the Territory at 30 June 1970 was 68,704 males and 64,346 females, 133,050 persons. *See also* the chapters Population and Vital Statistics.

### National Capital Development Commission

*The National Capital Development Commission Act 1957-60* provides for a Commission to undertake and carry out the planning, development and construction of the City of Canberra as the National Capital of the Commonwealth. The year 1969-70 was the twelfth year of the Commission's operations. Construction work was carried out by means of agency arrangements with the Commonwealth Department of Works and private consultants. Details of the expenditure by the Commission in each year from 1965-66 to 1969-70 are included in the table on page 980. Total expenditure in 1969-70 was \$50.1m, comprising land development and services \$9.3m, water, sewerage and stormwater trunk services and headworks \$3.8m, housing, flats and other accommodation, \$7.9m, education facilities \$6.0m, roads, bridges and traffic control \$5.2m, city works and facilities \$3.8m, Commonwealth offices \$8.7m, national works \$2.6m, and others \$2.8m.

The following major works were completed during the 1969-70 financial year by the Commission: Lyneham Primary School Restoration; Scullin Primary School; Woden Valley High School Extensions; Captain Cook Memorial Jet; Woden Town Centre—Roadworks and Engineering Services; Weston Creek Trunk Sewer; Canberra Showground Pavilion.

Works under construction at the beginning of the 1970-71 financial year included the following projects: Belconnen High School, Weston Creek Primary School; Higgins Primary School, Kingston Transport Depot Extensions; Phillip Swimming Centre; Woden Police Station; Fyshwick Retail Fruit and Vegetable Market; Belconnen Reservoirs No. 3 and 4; Bendora—Mount Stromlo Gravity Main Extensions; Campbell Reservoir; Capital Hill Ring Road; Barton Highway Reconstruction; Northbourne Avenue Duplication; Belconnen Way Duplication; Campbell Park Offices; Civic Offices Extension; C.S.I.R.O. Headquarters Building, Campbell; Russell Buildings Nos 10, 11 and 14.

### Works and services

#### Housing

Until the period following the 1939-45 War most houses and flats in the Australian Capital Territory were built and rented by the Department of the Interior. More recently, an increasing number of houses and flats have been built by private enterprise, and as a result the proportion of houses and flats in the Australian Capital Territory occupied by tenants of the Department of the Interior has fallen from 79.7 per cent of total occupied houses and flats in 1954 to 58.3 per cent in 1961 and 38.8 per cent in 1966. Although the bulk of rented accommodation is provided by public authorities and will continue thus in the foreseeable future, there has been a considerable increase in the proportion of home ownership in the Australian Capital Territory, since 1954. The proportion of houses and flats owned or being purchased by instalments has risen from 19.5 per cent in 1954 to 29.0 per cent in 1961 and 45.6 per cent in 1966. In June 1966, 38.6 per cent of the total occupied private dwellings in the Canberra City District were owned by the Department of the Interior, and in June 1969, 33.3 per cent. Home building activity in the Woden Valley and Weston Creek, south-west of the former city area and Belconnen, north-west of the former city area, has continued to expand, and at June 1969 there were 7,396 occupied private dwellings in the Woden Valley and Weston Creek area, and 2,264 occupied private dwellings in the Belconnen area. *See also* the chapter Housing and Building.

#### Municipal services

Canberra has been developed as a garden city. More than eleven million trees and many acres of lawns have been planted since 1927. The development of new areas of parkland and the maintenance of existing tree and lawn areas is the responsibility of the Parks and Gardens Branch of the Department of the Interior. Municipal services are also provided by the Department of the Interior.

At 30 June 1970, 34,021 meters were connected to the city water supply, drawn through eighteen service reservoirs from three storages on the Cotter River with a total capacity of nearly 20,000 million gallons. In 1969–70 some 5,429 million gallons of water were consumed in Canberra, and in addition the system supplied 381 million gallons to Queanbeyan, New South Wales. Treatment works at Weston Creek, Belconnen and Fyshwick dispose of Canberra's sewage. At 30 June 1970, 689 miles of sewers, 9 miles of rising sewerage mains and 659 miles of storm water drains were laid.

#### Department of Works

Apart from the work it carries out for the National Capital Development Commission, the Department of Works acts as design and supervision agent for other Commonwealth departments and instrumentalities. Total expenditure during 1969–70 on all operations amounted to \$11.9 million (\$11.4 million in 1968–69), comprising: building works—housing \$101,742, other building \$4,881,196; engineering works \$688,670, repairs and maintenance—buildings \$2,581,903, engineering \$3,388,188, and purchase of plant \$232,864.

### Production

*See also* the chapters dealing with particular subjects.

#### Lands

Reference has been made in earlier issues of the Year Book to the general conditions of land tenure in the Territory and to the area of alienated and leased land, and the chapter Rural Industry of this issue contains statistical information on the subject. (*See also* § 1. Canberra: Fifty Years of Development, page 123 of Year Book No. 49.)

Under the *Seat of Government (Administration) Act* 1910–1965, no Crown lands in the Territory may be sold or disposed of for any estate in freehold except in pursuance of some contract entered into before the commencement of the Act. In general, leases of land in the city area are granted under the *City Area Leases Ordinance* 1936–1971. In special circumstances land may be leased for purposes other than business or residential under the *Leases (Special Purposes) Ordinance* 1925–1970 and for church purposes under the *Church Lands Leases Ordinance* 1924–1966. As considerable areas of Commonwealth owned land in the Territory are not immediately required in connection with the establishment of the City, they have been leased for agricultural or grazing purposes for terms consistent with the anticipated growth of Canberra under the *Leases Ordinance* 1918–1966. Some lands in the Territory, in areas generally remote from the City, remain in private ownership under freehold title.

The Commonwealth Territory at Jervis Bay, comprising about 28 square miles, was acquired from New South Wales for the possible provision of port facilities in connection with the Australian Capital Territory. A portion of the area is occupied by the Royal Australian Naval College (H.M.A.S. *Creswell*) and a Royal Australian Navy airfield. Several blocks fronting Sussex Inlet have been leased for guest houses and holiday camps, etc., under the *Leases Ordinance* 1918–1966, and an area of land in the Murray's Beach area has been set aside for possible use as an atomic power station under the control of the Australian Atomic Energy Commission. Apart from picnic and camping areas, experimental planting, afforestation and soil conservation activities, the remainder of the area is being maintained in its natural state.

#### Forestry

Forestry operations in the Territory were begun on Mount Stromlo in 1915. Plantings up to 1925 were chiefly decorative, but since then a much wider programme has been undertaken. In 1926 a comprehensive review was made of the Territory's potential for forest development, and a programme for the development of commercial forests was approved. Most of the better native forest has since been placed under management, and, following survey and assessment work, forestry operations, including fire-control, have been extended to 100,000 acres of eucalypt forest in the lower Cotter Catchment Area and adjacent forested areas.

Afforestation work has also been undertaken, and softwood plantations (mainly *Pinus radiata*) have been established at Uriarra, Stromlo-Green Hills, Pierce's Creek, Kowen, Tidbinbilla, Jervis Bay and Boboyan. Experimental plots have been established at Jervis Bay and in the Brindabella Ranges, and soil conservation plantings made at various locations throughout the Territory. The total area of softwood plantations within the Australian Capital Territory at 30 June 1971 was 30,041 acres, of which 28,224 acres were *Pinus radiata*, the balance consisting chiefly of *Pinus ponderosa* and *Pinus nigra*, plus 829 acres at Jervis Bay, mainly *Pinus radiata* and *Pinus elliottii*.

Continued thinning operations have improved all Australian Capital Territory forests so that they now yield a wide variety of products. Board-logs and case timber form the bulk of production, but some poles, fencing timber, and pulpwood are now being produced. The yearly output from pine plantations has increased from 2,500 cubic feet in 1930-31 to 1.93 million cubic feet in 1970-71. The 1970-71 output was valued at \$505,000 delivered at mill door Canberra, yielding a net stumpage of \$191,000 to the Commonwealth. The total net stumpage from all Australian Capital Territory plantation sales to date is \$2,113,000.

There was no hardwood log production in 1970-71. Up to 30 June 1971 a total of 27.05 million cubic feet of pine logs had been cut from plantations, while hardwood production from the Australian Capital Territory, including Jervis Bay, remained at 4.3 million cubic feet.

Construction of a modern, integrated, timber-using complex is in progress. Operations are scheduled to commence early in 1972 with the production of sawn timber and plywood under an agreement in which the supply of pine logs is planned to be increased to 4.2 million cubic feet annually by 1975.

Over the past four years, recreational use of the forests has increased four-fold to an estimated 30,000 visitors per year. The Forestry Branch of the Department of the Interior has developed facilities to provide a unique forest type of recreation, catering for solitude as well as more intensive picnic area based recreation.

**Agricultural, pastoral and secondary industries**

During 1968-69 the production of the more important items of the agricultural and pastoral industry was: wheat 83,674 bushels; wool 2,059,000 lb; whole milk 898,000 gallons; meat (carcass weight), fresh 4,591 tons. The numbers of livestock depastured at 31 March 1969 were: horses 705; cattle 13,845; sheep 245,884.

As in the Northern Territory, the secondary industries established in the Australian Capital Territory are largely the service industries associated with the growth of the Territory.

**AUSTRALIAN CAPITAL TERRITORY: FACTORIES, 1963-64 TO 1967-68**

	1963-64	1964-65	1965-66	1966-67	1967-68
Number of factories(a)	170	187	217	238	242
Average number of employed(b)—					
Males	2,236	2,634	2,896	2,992	3,007
Females	458	593	599	639	709
Persons employed	2,694	3,227	3,495	3,631	3,716
Salaries and wages paid(c)—					
Males \$'000	5,666	7,854	8,819	9,306	9,968
Females	607	848	1,047	1,177	1,317
Total salaries and wages paid	6,273	8,702	9,866	10,483	11,285
Value of power, fuel, etc., used(d)	502	644	760	735	830
Value of materials used(e)	8,428	11,440	13,349	14,918	16,382
Value of production(f)	11,097	14,060	17,418	18,860	19,372
Value of output(g)	20,026	26,145	31,528	34,514	36,583
Value of land and buildings(h)	11,669	20,583	21,891	22,779	23,410
Value of plant and machinery(h)	5,103	9,682	10,134	10,368	10,023

(a) Any factory, workshop or mill in which four or more persons are employed or power other than hand is used. (b) Average over whole year; includes working proprietors. (c) Excludes amounts drawn by working proprietors. (d) Includes water and lubricating oil. (e) Includes also containers, etc., tools replaced and repairs to plant. (f) Value added in process of manufacture (i.e. value of output less value of materials and fuel used). (g) Value of goods produced including amounts received for repair work and other work done. (h) Depreciated or book values at end of year including estimated value of rented premises and machinery.



The following table shows preliminary results of the Manufacturing Census taken in respect of the year ended 30 June 1969.

**AUSTRALIAN CAPITAL TERRITORY:  
MANUFACTURING ESTABLISHMENTS, 1968-69**

NOTE. Direct comparisons with figures for previous years are not possible because of change in the census units, the scope of the census and the items of data. For details see Chapter 22, Manufacturing Industry.

Establishments operating during 1968-69	No.	116
Persons employed(a)	No.	2,724
Wages and salaries	\$m	9.3
Sales, transfers out and other operating revenue	\$m	30.8
Stocks at 30 June—1968	\$m	3.4
1969	\$m	3.6
Purchases, transfers in and selected expenses	\$m	16.5
Value added(b)	\$m	14.7

(a) At end of June 1969. Includes working proprietors. (b) Sales, transfers out and other operating revenue plus increase (or less decrease) in the value of stocks, less purchases, transfers in and selected expenses.

### Transport and communication

Canberra is connected with the railway system of New South Wales at Queanbeyan by a line 5 miles long. This line was opened for goods traffic on 25 May 1914 and for passenger traffic on 15 October 1923. Direct or linking services operate between Canberra and Sydney and Canberra and Melbourne. Two airlines provide many services daily each way on the Sydney-Canberra-Melbourne route. Regular motor-coach services link Canberra with towns in New South Wales, Victoria and South Australia. The total length of roads in the Territory at 30 June 1970 was: bitumen and concrete, 588 miles; gravel, 248 miles; other formed roads, 26 miles; total, 862 miles. There are three radio broadcasting stations in the Territory, 2CY and 2CN of the national broadcasting system and 2CA, a commercial station, and two television stations, ABC Channel 3 of the national broadcasting system and CTC Channel 7, a commercial station.

### Social

See also the chapter Education, Cultural Activities and Research.

#### Education

The *Education Ordinance 1937-1966* provides for the compulsory attendance at school of children between the ages of six and fifteen years. The Commonwealth Department of Education and Science is primarily responsible for the education of children in the Australian Capital Territory. By agreement, however, the New South Wales Department of Education arranges the teaching programme in accordance with its own curriculum and provides teaching staff. It is reimbursed for expenses incurred.

At 1 August 1970 there were ten government secondary schools in the Australian Capital Territory providing courses proceeding to the Higher School Certificate. Thirty-four schools provided courses at infants and primary levels, three of these being in rural districts and one in the Jervis Bay area. There were also a school for mentally handicapped children, and a school for physically handicapped children located at Canberra Hospital which was transferred to the same location as Turner Infants School in 1971. In addition, classes for deaf children were located at Ainslie and Mawson primary schools and at Telopea Park High School; and classes for mildly mentally handicapped children at Ainslie, Turner, Mawson, and Narrabundah primary schools and at Narrabundah High School. Two special schools served the needs of moderately intellectually handicapped children. A pre-school also opened in 1970 for these children. There is also a therapy clinic for children with speech defects, and a clinic for educational guidance. A further four primary schools and one secondary school are scheduled to commence at the beginning of the 1972 school year. At 1 August 1970 there were 16,826 pupils enrolled in the primary grades of government schools, and 8,227 pupils in secondary forms of government schools.

At 1 August 1970 there were twenty-two non-government schools in Canberra including seven secondary schools which provide courses leading to the Higher School Certificate. At 1 August 1970, 5,624 pupils were enrolled in the primary grades of non-government schools and 3,557 pupils were enrolled in the secondary forms of non-government schools.

Forty-seven pre-school centres, including two in the Jervis Bay area and a mobile unit which visits outlying areas of the A.C.T., provide pre-school facilities for approximately 3,080 children between the ages of three and five years. Pre-school education is also provided for deaf and physically handicapped children.

The Canberra Technical College, which follows generally the curriculum set by the New South Wales Department of Technical Education, provides trade, post-trade, certificate, and some hobby courses. In 1970 the Technical College provided instruction in one hundred and seven courses in twenty-one different schools of study. Student enrolments in 1970 were 6,877.

The Canberra School of Music provides a Diploma Course and individual study in a range of instruments and voice. At 30 June 1970 enrolments totalled 705.

For information about the Australian National University, refer to the section on universities, on page 636 in Chapter 20, Education, Cultural Activities and Research.

The Canberra College of Advanced Education was established following a decision by the Commonwealth Government in October 1966 to accept the recommendations of a committee of enquiry into the need for a college of advanced education in the Australian Capital Territory. The College is organised into schools and in 1970, courses were offered in the School of Administrative Studies, the School of Applied Science and the School of Liberal Studies. Courses in the School of Teacher Education commenced in 1971. It is envisaged that additional schools will be established as other specialised fields of study are introduced.

### Health

The Canberra Hospital serves the population of Canberra and surrounding districts. At 31 March 1971 it had 661 beds, a visiting medical staff of 180, 41 salaried medical staff, and a nursing staff of 680. For further information about health services in the Australian Capital Territory see the Public Health chapter in Year Book No. 53 (pages 549-50) and Year Book No. 56 (page 431) for administrative changes which took place in 1969.

### Justice

The Australian Capital Territory has a Supreme Court and a Court of Petty Sessions. There is an Australian Capital Territory Police Force, which at 30 June 1971 numbered 347, including the Commissioner and Superintendent. Of the total, 190 were engaged in the General Duties Branch, including 13 at Woden Police Station, two at Jervis Bay and two caring for the Police Citizens Boys' Club. The Traffic Branch comprised 72 members, including the specialised water police and those involved in accident investigation and the Breath Analysis Squad. There were 33 in the Criminal Investigation Branch, containing a Women Police Section of 5. There were also 38 in the Planning and Research Branch, including one member of the Women Police and three in the Special Branch. The Recruitment and Training Branch had a staff of nine, including one member of the Women Police in the Safety Education Section.

## Finance

In the following table the receipts and outlay of the Australian Capital Territory have been classified in a National Accounts form. The table covers transactions relating to the Australian Capital Territory in the Commonwealth Consolidated Revenue Fund and the following trust funds: Australian Capital Territory Forestry, Australian Capital Territory Housing, Australian Capital Territory Transport and Australian Capital Territory Suspense. In addition, details of the financial transactions of the following semi-government authorities are also covered: Australian Capital Territory Electricity Authority, Commonwealth Brickworks, National Capital Development Commission, and the Canberra Theatre Trust. Revenue derived by the Commonwealth from income taxes, sales tax, etc., levied in the Australian Capital Territory and expenditure by the Commonwealth in the Australian Capital Territory on such items as defence, civil aviation, railways, etc., and payments to residents from the National Welfare Fund are not included.

**AUSTRALIAN CAPITAL TERRITORY: RECEIPTS AND OUTLAY**  
**1965-66 TO 1969-70**  
(\$'000)

	1965-66	1966-67	1967-68	1968-69	1969-70
<b>RECEIPTS</b>					
Taxation—					
Liquor . . . . .	171	197	226	259	285
Motor registration . . . . .	604	669	760	890	912
Stamp duties(a) . . . . .	296	305	298	382	1,969
Other . . . . .	300	915	733	729	882
Interest, rent, etc. . . . .	1,631	1,964	2,128	2,382	2,782
Public enterprises income . . . . .	5,949	6,564	7,778	7,870	9,718
Net sale of semi-government securities . . . . .	225	533	2,207	260	-94
Other receipts(b) . . . . .	-202	1,562	-732	203	242
Net charge to Commonwealth budget . . . . .	44,620	57,141	62,669	63,868	67,563
<b>Total receipts . . . . .</b>	<b>53,593</b>	<b>69,851</b>	<b>76,065</b>	<b>76,842</b>	<b>84,260</b>
<b>OUTLAY</b>					
Net current expenditure on goods and services—					
Law, order and public safety . . . . .	700	932	1,286	1,428	2,140
Education . . . . .	4,451	5,254	6,163	7,396	7,372
Public health and welfare . . . . .	2,971	3,973	4,494	4,754	5,248
Other . . . . .	5,515	6,998	7,912	9,391	10,616
Net capital expenditure on new assets and stocks—					
Education . . . . .	3,506	4,549	4,760	4,699	6,834
Cultural and recreational facilities . . . . .	2,484	2,993	4,426	963	584
Public health and welfare . . . . .	1,964	1,126	236	280	1,132
Water supply and sewerage . . . . .	5,427	13,479	12,718	6,839	7,260
Roads and bridges . . . . .	8,124	8,093	8,016	15,288	13,353
Power, fuel and light . . . . .	1,675	3,188	2,838	1,883	1,504
Housing . . . . .	8,582	6,383	8,038	9,746	8,409
Other . . . . .	10,091	9,404	11,810	14,321	17,626
Net purchase of existing assets(c) . . . . .	-12,326	-7,397	-7,647	-11,734	-14,626
Interest paid . . . . .	257	260	310	426	363
Cash benefits . . . . .	133	139	149	152	129
Net advances for housing . . . . .	9,801	10,281	10,398	10,254	14,445
Grants towards private capital expenditure . . . . .	237	195	158	757	1,870
<b>Total outlay . . . . .</b>	<b>53,593</b>	<b>69,851</b>	<b>76,065</b>	<b>76,842</b>	<b>84,260</b>

(a) Estimated for years prior to 1969-70. (b) Includes movements in cash, investments, etc. (c) Minus sign (-) denotes excess of receipts (from sales) over expenditures on, or purchases of, existing assets, including housing.

## NORFOLK ISLAND

### General description

Norfolk Island, discovered by Captain Cook in 1774, is situated in latitude 29°S., longitude 168°E. approximately. Its total area is approximately 14 square miles, the island being about 5 miles long and 3 miles wide. It is 1,035 miles from Sydney and 660 miles from Auckland. The length of the coast line is 20 miles, and its form that of an irregular ellipse. Except for a portion on the south side and the landing place at Cascade on the northern side, almost inaccessible cliffs rise from the water's edge. The climate is equable, the temperature ranging between 45° and 81°F. with a mean of 68°F. The average annual rainfall is 56 inches.

After serving as a penal station from 1788 to 1813 and from 1825 to 1855, Norfolk Island in 1856 became the home of the remaining descendants of the *Bounty* mutineers. The estimated population at 30 June 1970 was 1,240, excluding visitors.

### Administration

In 1856 the island was created a distinct and separate settlement under the jurisdiction of New South Wales. In 1896 it was made a dependency under the Governor of that Colony, and finally, by the passage of the *Norfolk Island Act* 1913, it was accepted by the Commonwealth Parliament as a Territory of Australia. It is controlled by the Minister for External Territories through an Administrator. The Norfolk Island Council is established pursuant to the *Norfolk Island Act* 1957-1969 and is constituted in accordance with the provisions of the *Norfolk Island Council Ordinance* 1960-1970. The Council may consider and tender advice to the Administrator on any matter affecting the peace, order and good government of Norfolk Island, and must be consulted on certain legislative and financial matters. The Council comprises the Administrator as *ex officio* chairman and voting member and eight members elected biennially.

### Economic activity

The major economic activities of the island are the tourist trade, primary production, and Government instrumentalities.

*Primary industries.* The soil on the island is particularly fertile, the climate equable and the rainfall fairly evenly distributed except for a pronounced dry period in November. This enables a wide range of temperate and semi-tropical products to be cultivated. However, the island's comparative isolation presents trading difficulties, and production of bean seed, formerly the major export, has declined rapidly since 1962-63.

Fish abound off the island. In the past a number of ventures have been formed to exploit this resource, but they have been short-lived, mainly because of the lack of a sheltered harbour. A modern whaling station was started on the island in 1955, and production commenced during the second half of 1956. Owing to a marked scarcity of whales after 1961, however, the station was closed down.

An active forestry programme is being carried out to increase the resources of Norfolk Island pine and to introduce suitable types of eucalypts.

*Tourists.* Regular sea and air services to the island are available for those who seek a quiet holiday in surroundings of beauty and historic interest. There are at present, apart from flats and unlicensed guest houses, hotels and licensed guest houses, and further accommodation is being built to meet the steadily increasing number of visitors.

*Employment.* A large proportion of the population derives its income from various aspects of the tourist industry including the operation of hotels and duty-free stores. The Commonwealth Government provides services through staff from the Department of Civil Aviation and Interior (Meteorological Branch) and teachers are seconded by the N.S.W. State Education Department. A number of clerical and other positions are available to islanders in the Norfolk Island Administration. Very few people rely for their income entirely on agricultural pursuits.

### Trade, transport and communication

Imports to Norfolk Island since the 1939-45 War have risen from \$65,000 in 1945-46 to \$3,187,000 in 1969-70. The major proportion (\$1,737,000) in 1969-70 came from Australia and the Pacific Islands while New Zealand supplied \$481,000. Export rose from \$18,500 in 1945-46 to \$420,000 in 1960-61, but declined, after whaling ceased in 1962-63 and in 1969-70 amounted to \$279,000. Exports to Australia and the Pacific Islands, the principal market, amounted to \$228,000, while exports to New Zealand amounted to \$37,000. No duties are chargeable on goods imported into Australia from Norfolk Island if the goods are the produce or manufacture of Norfolk Island, shipped direct to Australia, and not goods which if manufactured or produced in Australia would be subject to excise duty.

A shipping service to the island is maintained at approximately six-week intervals from Sydney via Norfolk Island to the New Hebrides and Solomon Islands, and thence back to Brisbane and Sydney. A service linking Sydney and Noumea includes a call at Norfolk Island on the outward voyage about every three weeks. Shipping between the island and New Zealand is infrequent.

A passenger and air freight service between Sydney and Norfolk Island is operated by Qantas Airways Ltd twice a week, and more frequently in peak periods. The service extends to New Zealand under charter to Air New Zealand Ltd.

There are approximately fifty miles of motor road on the island. A substantial section of the population possesses private motor cars, and taxi-cab and bus services are available.

An automatic telephone service is being established. A radio telephone service to Sydney is also being established. A local broadcasting service is operated by the Administration.

**Education**

Education is free and compulsory up to the age of fifteen years. The school, which is conducted by the New South Wales Department of Education, conforms to the Australian standard of public education, ranging from kindergarten to the School Certificate (Fourth Form) examination. The teachers are provided by the New South Wales Education Department, although they receive salaries from the Norfolk Island Administration. The number of scholars enrolled at 30 June 1970 was 288.

Bursaries are available for pupils who wish to attend a mainland school either to continue their studies beyond the School Certificate level or undertake high school courses not available on the Island. Trainee scholarships are available for pupils who have left school and wish to undertake apprenticeship or similar training away from the Island.

**Judiciary**

The judicial system of Norfolk Island consists of a Supreme Court and a Court of Petty Sessions. The Supreme Court is the highest judicial authority in the Territory and is a superior court of record with original criminal and civil jurisdiction. The jurisdiction of this Court is exercised by one judge sitting in Court or, to the extent and in the cases provided by or under ordinance, sitting in Chambers. The jurisdiction of the Court of Petty Sessions is exercised by the Chief Magistrate or any three magistrates other than the Chief Magistrate.

**Finance**

The revenue of the Territory, together with an annual grant from the Commonwealth Government for administrative expenses, is paid to the credit of the Norfolk Island Trust Fund, and advances for administrative and developmental expenses are drawn from the account. The principal items of revenue and expenditure for the five years 1965-66 to 1969-70 were as follows.

**NORFOLK ISLAND: REVENUE AND EXPENDITURE, 1965-66 TO 1969-70**  
(**\$'000**)

	1965-66	1966-67	1967-68	1968-69	1969-70
<b>REVENUE</b>					
Commonwealth subsidy . . . . .	66	66	66	66	66
Customs duties . . . . .	85	90	110	105	116
Sale of liquor . . . . .	41	53	56	61	68
Post office . . . . .	174	138	122	260	219
All other . . . . .	41	50	71	87	130
<b>Total revenue . . . . .</b>	<b>406</b>	<b>397</b>	<b>425</b>	<b>579</b>	<b>599</b>
<b>EXPENDITURE</b>					
Administrative . . . . .	72	73	89	104	123
Miscellaneous services . . . . .	22	27	20	25	26
Social expenditure . . . . .	70	97	126	142	153
Repairs and maintenance . . . . .	27	66	67	87	89
Capital works and services . . . . .	57	126	232	87	120
Postal services . . . . .	33	32	59	56	57
Other business undertakings . . . . .	9	7	7	..	..
<b>Total expenditure . . . . .</b>	<b>289</b>	<b>428</b>	<b>600</b>	<b>501</b>	<b>568</b>

## PAPUA AND NEW GUINEA

The information under this heading is applicable to both the Territory of Papua and the Trust Territory of New Guinea. For details of the respective Territories *see* pages 1005 (Papua) and 1007 (New Guinea) and following pages. The sections on pages 983-9 have been prepared by the Director of the Commonwealth Bureau of Meteorology.

### General description

#### Geographical position

The Territory of Papua and New Guinea includes the Territory of Papua and the Trust Territory of New Guinea. The total area of approximately 180,000 square miles lies in the equatorial zone between latitudes 2° S. and 12° S. and longitudes 141° E. and 156° E. The Territory of Papua comprises south-east New Guinea and also the islands of the Trobriand, Woodlark, D'Entrecasteaux, and Louisiade groups. The Trust Territory of New Guinea extends from 2° S. to 8° S. and includes north-east New Guinea (also called 'the mainland'), Bismarck Archipelago (New Britain, New Ireland, Lavongai, Admiralty Islands), and Solomon Islands (Bougainville, Buka).

#### Geographical features

There is a high backbone mountain chain extending generally along the centre of the main island with coastal plains which widen in some areas, particularly in the Fly River Basin. The mountains, which are rugged, rise to 15,000 feet above sea level in some areas; the larger islands mostly have mountain backbones, some rising to about 10,000 feet. In many parts the highlands extend to the coast.

### Weather and climate

The climate, particularly the rainfall, over so wide an area as Papua and New Guinea, with its numerous islands and varying elevations, presents many variations. Generally speaking, the climate is hot and humid, except in the highlands where days are mild to warm and nights are cool. Mean temperatures vary little throughout the year, and there are no winter and summer seasons comparable to those of higher latitude.

The predominant seasonal feature of the Territory is the regular alternation between two major air-streams, the south-east trade winds and north-west monsoon. The 'south-east' season prevails approximately from May to October, and the 'northwest' season persists for a shorter period from about December to early April. Two short spells of calm weather occur between these two seasons.

#### Rainfall

There are great spatial variations in the amount of rainfall received over the Territory of Papua and New Guinea. The variations depend mainly upon the direction and speed of the air streams. These streams are moist, requiring only a small amount of lifting for condensation of water vapour to occur. Topography therefore has a dominating influence on the rainfall distribution.

#### Average annual rainfall

The table on page 985 shows the average annual and monthly rainfall for selected stations in the Territory. It may be seen that the spatial distribution of average annual rainfall varies greatly, being dependent mainly on topography in relation to prevailing winds. The annual averages vary from 39 inches at Port Moresby (township) to 227 inches at Kikori at the head of the Gulf of Papua. There are few rainfall observing stations above 6,000 feet, so that rainfall above that height must generally be estimated. The map on page 989 shows the rainfall distribution over the region for the year 1969.

#### Seasonal distribution of rainfall

Places in Papua such as Port Moresby, where the south-east trade wind does not blow directly onshore, have a dry season during May-October. Places such as Kikori have heavier rainfall during May-October because of the onshore south-east winds. In the Territory of New Guinea, where conditions are more equatorial, rainfall occurs throughout the year, but is heaviest in the November-April period at most places.

#### Variability of rainfall

There are marked variations from year to year in annual rainfall totals throughout the Territory. At Port Moresby (township), for example, in forty-two years of record the annual rainfall has varied from 72 inches to 23 inches; at Daru in fifty-four years of record the annual rainfall has varied from 156 inches to 46 inches; and at Madang in forty years of record the variation has been from 180 inches to 92 inches. The table on page 986 shows the annual rainfall at Port Moresby and Lae for the years 1946 to 1968 inclusive.

### Heavy rainfalls

Highest twenty-four hour rainfall registrations have included 21.60 inches at Pondo Plantation in New Britain and 17.60 inches at Cape Nelson on the east coast of the main island. Twenty-four hour falls greater than 15 inches have been recorded at a number of other stations in the Papua and New Guinea region. The highest twenty-four hour fall recorded in Australia was 36 inches at Crohamhurst, Queensland. All these registrations were for the restricted twenty-four hour period from 9 a.m. to 9 a.m. Higher falls, possibly approaching 30 inches, have probably occurred in the Territory in unrestricted periods of twenty-four consecutive hours.

### Temperature

Although the Territory has no summer and winter seasons, it has a wide range in temperature because of elevation differences. For each month the mean daily maximum temperature decreases by about 2° F. and the mean daily minimum temperature by about 4° F. for each 1,000 feet increase in elevation up to 5,000 feet.

A table on page 986 shows temperature and humidity data for five lowland and two highland stations. Mount Hagen, elevation 5,500 feet, is the highest station for which temperature data are available. However, both day and night temperatures continue to decrease with elevation above this level.

### Average seasonal temperature distribution

In the lowland areas there is a difference in temperature pattern between the areas south of the highlands and those to the north. In the south there is a tendency for temperatures to be lower in the May–October period than in the November–April period (e.g. Samarai). In the north there is little difference throughout the year (e.g. Madang). In the highlands, temperatures are appreciably lower than in the lowlands and are slightly lower in the middle of the year than they are at the beginning of the year (e.g. Goroka). The nights are cold in the highlands throughout the year; the mean daily minimum at Mount Hagen for July is 53.6° F.

### Extreme temperatures

The highest air temperature recorded at Lae (in twenty years of record) was 101.7° F. and the lowest was 66.3° F.; at Port Moresby (in twenty-four years of record) the highest was 97.4° F. and the lowest was 57.3° F.; at Mount Hagen (in thirteen years of record) the highest was 88.0° F. and the lowest 35.0° F. The mean daily range of temperature is about 15° F. at lowland stations and 20° F. at highland stations up to 5,000 feet elevation.

### Humidity

Humidity is high generally throughout the year. In the lowlands persistently high humidity in association with high temperatures is responsible for the human discomfort experienced. The average index of mean relative humidity for January and July is shown for selected stations in a table on page 986. This index has been derived from the ratio of the average 9 a.m. vapour pressure to the saturation vapour pressure at the mean temperature. Being thus related to the mean temperature, this value of relative humidity is a good approximation to the daily mean.

In the lowland areas the average index of mean relative humidity (*see* table on page 986) is in the range 75–85 per cent throughout the year. There is little variation in the index from month to month at any station. This is in contrast with northern Australian localities where the south-east winds of the dry season result in low relative humidities. For example, Darwin's average index of mean relative humidity ranges from 81 per cent in February to 62 per cent in July.

In the highland areas up to 6,000 feet elevation the average index of mean relative humidity is within the range 70–80 per cent throughout the year. The lower temperatures experienced on the highlands relative to the lowlands result in conditions being generally more comfortable in the highlands.

### Evaporation

The only evaporation data available are records for Port Moresby. These show that the mean monthly tank evaporation varies from 5–6 inches per month in the early part of the year to 6–7 inches per month in the latter part of the year. The average annual tank evaporation at Port Moresby over an eleven-year period was 73.59 inches. It is probable that evaporation is less than this value in the higher humidity areas.

### Sunshine and cloud

Mean daily sunshine hours are recorded for each month at Port Moresby, and the figures show a variation from 6.1 hours per day in February and March to 8.4 hours per day in November. The mean daily amount of sunshine at Port Moresby for the year is 6.9 hours, which is significantly less than Darwin (8.4 hours) but comparable with Brisbane (7.5 hours)

At Port Moresby the mean cloud amount varies from 5.0 eighths per day in June to 6.9 eighths in February; at Lae the variation is from 6.1 eighths in May, June and October to 6.9 eighths in March. The mean daily cloud amounts for the year at Port Moresby and Lae are 5.8 and 6.5 eighths respectively, which are high in comparison with Darwin (3.1).

**Winds**

As mentioned previously the south-east trade winds prevail from May to October and the north-west monsoonal winds prevail from December to March over most of the region. However, the broad-scale wind pattern may be completely masked by the effects of local topography and land and sea breezes. The mean 9 a.m. and 3 p.m. wind speeds and prevailing directions are shown in the tables on pages 987-8 for Port Moresby and Lae.

At Port Moresby the mean winds are stronger during the period May-November than during December-April; for example, the 3 p.m. mean wind for August is 15.4 mph and for March is 7.6 mph. The winds at 3 p.m. are much stronger than at 9 a.m.; for example, for the year the 3 p.m. mean wind is 11.5 mph and the 9 a.m. mean wind is 4.1 mph. The prevailing direction of the wind is south-east during May-November and north-north-west to south-west during December-April.

At Lae the winds are mainly lighter than at Port Moresby. In the period May-October the winds at Lae are lighter than in the period November-April. The winds at 3 p.m. are greater than at 9 a.m. except in February. The prevailing direction is north-west at 9 a.m. and south-east at 3 p.m. throughout the year.

**Storms and cyclones**

The Papua and New Guinea region is subject to thunderstorm activity, squall lines and local storms throughout the year. Severe thunderstorms are frequent in the mountainous areas, but also occur in coastal lowlands. The main tropical cyclone belt lies to the south of the region, but occasionally a tropical cyclone affects the region, causing loss of life and property.

**Climatological tables**

The averages and extremes for a number of elements recorded at Port Moresby and Lae are given in the tables on pages 987-8. These tables generally follow the format given for Australian capital cities included in Chapter 2 of this Year Book, the observational data being for available years of record to 1969 inclusive unless otherwise stated. Some elements included in the Australian capital city tables have been omitted from the tables for Port Moresby and Lae because of the inadequacy of observational records.

**PAPUA AND NEW GUINEA: AVERAGE MONTHLY AND ANNUAL RAINFALL FOR SELECTED STATIONS(a)**  
(Inches)

Station (lat. long.)	Years of record	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Bwagaioia(b) (10° 41' 152° 51')	34	10.31	12.91	9.70	11.01	11.45	8.79	6.83	8.79	8.67	9.63	9.75	8.92	116.76
Daru(b) (9° 04' 143° 12')	55	11.06	10.17	12.94	12.24	8.74	4.06	3.31	2.16	1.70	2.18	4.46	8.47	81.49
Dogura(b) (10° 00' 149° 55')	42	9.20	8.31	8.63	5.85	3.70	3.57	2.94	2.50	3.05	2.80	3.41	4.35	58.31
Gobaragere(b) (9° 50' 147° 45')	33	7.43	6.98	7.85	8.56	4.30	3.49	1.66	2.17	2.37	3.07	5.12	6.88	59.88
Gusoeta(b) (8° 32' 151° 4')	35	16.22	15.59	15.48	12.51	12.71	11.85	12.16	12.07	11.44	9.73	11.58	10.72	152.06
Itikimuna(b) (9° 25' 147° 29')	38	12.76	11.26	14.05	14.64	10.75	6.79	4.76	7.01	8.40	11.23	12.61	12.86	127.12
Kairuku(b) (8° 51' 146° 32')	39	9.47	10.25	9.07	5.35	1.73	1.83	1.10	0.62	1.48	1.64	2.11	5.52	50.17
Kerema(b) (7° 57' 145° 46')	42	9.63	8.85	10.63	11.19	16.87	15.81	13.74	13.70	13.89	11.75	8.38	7.85	142.29
Kikori(b) (7° 25' 144° 15')	42	12.22	13.17	14.10	17.20	29.20	28.08	25.44	21.60	23.94	17.75	12.64	11.43	226.77
Kokoda(b) (8° 58' 147° 43')	34	13.17	13.91	14.13	13.29	10.51	7.04	6.82	8.51	10.52	12.46	16.44	14.47	141.27
Kokopo(c) (4° 20' 152° 15')	33	8.02	6.94	8.80	6.74	4.68	5.01	6.42	6.00	4.01	4.52	6.44	9.03	76.61
Kwikila(b) (9° 44' 147° 44')	36	6.70	5.47	7.13	6.10	3.27	2.26	1.73	1.90	2.52	2.13	2.62	4.67	46.50
Lindenhafen(c) (6° 15' 150° 30')	30	6.66	5.82	6.39	11.23	22.71	31.60	41.00	43.56	31.82	19.32	11.85	7.42	239.38
Madang(c) (5° 13' 145° 47')	41	13.13	12.31	14.82	17.47	15.03	9.65	7.30	4.89	5.65	9.86	14.61	14.63	139.35
Port Moresby(b)(d) (9° 26' 147° 13')	23	6.66	8.42	7.23	6.77	2.09	1.66	0.78	1.37	1.49	1.51	2.67	6.12	46.77
Samarai(b) (10° 37' 150° 40')	43	6.72	7.15	9.81	10.26	11.52	11.93	8.05	8.11	10.94	8.39	7.54	5.23	105.65

(a) With thirty or more years of record to 1968. (b) Papua. (c) New Guinea. (d) 23 years of record. See page 987



## RAINFALL: PORT MORESBY AND LAE, 1946 TO 1969

Year	Port Moresby (Papua)		Lae (New Guinea)	
	Amount	No. of days	Amount	No. of days
	in		in	
1946	61.79	137	(a)168.64	(a)248
1947	40.61	154	180.37	261
1948	45.82	138	179.26	267
1949	43.20	164	174.78	275
1950	47.67	137	158.51	251
1951	45.51	108	191.59	250
1952	54.88	150	165.58	274
1953	36.20	126	197.76	264
1954	46.49	118	173.70	277
1955	39.33	128	155.26	261
1956	56.60	141	122.39	233
1957	51.89	129	238.66	282
1958	46.02	107	190.02	250
1959	41.65	126	185.78	245
1960	34.17	116	167.50	260
1961	42.75	136	193.09	267
1962	43.98	133	182.84	261
1963	58.76	138	165.18	254
1964	55.02	151	163.10	244
1965	40.73	103	175.93	265
1966	41.25	116	206.19	291
1967	57.05	147	198.86	263
1968	44.44	116	185.68	265
1969	44.50	125	220.46	262

(a) Incomplete for July and August.

## PAPUA AND NEW GUINEA: TEMPERATURE AND RELATIVE HUMIDITY FOR SELECTED STATIONS

Station	Lat.	Long.	Altitude (ft)	Years of record	Temperature °Fahr.				Relative humidity			
					Mean max. Jan.	Mean max. July	Mean min. Jan.	Mean min. July	Av. index of		Mean 3 p.m. Jan.	Mean 3 p.m. July
									mean Jan. (a)	mean July (a)		
Daru(b)	9° 04'	143° 12'	26	1940-1968	88.8	82.6	75.1	73.0	(f)84	(f)83		
Goroka(c)	6° 04'	145° 24'	5,200	1952-1968	78.5	76.7	59.1	56.4	(f)75	(f)72	(f)56	(f)52
Kikori(b)	7° 25'	144° 15'	30	1917-1968	90.4	81.3	73.5	71.9	(e)83	(e)91		
Madang(c)	5° 13'	145° 47'	14	1951-1968	86.3	85.3	73.7	73.0	(f)85	(f)87	76	75
Mount Hagen(c)	5° 51'	144° 09'	5,500	1953-1965	76.2	73.8	55.9	53.6	(e)79	(e)80	(d)65	(d)69
Samarai(b)	10° 37'	150° 40'	50	1956-1968	88.4	80.7	76.1	72.8	(f)81	(f)85	(f)74	(f)81
Wewak(c)	3° 35'	143° 40'	15	1956-1968	86.4	86.5	73.4	72.9	(f)83	(f)85	(f)75	(f)74

(a) See text, page 984, for explanation of this index. (b) Papua. (c) New Guinea. (d) 1955-65. (e) To 1965. (f) To 1966.

CLIMATOLOGICAL DATA: PORT MORESBY (PAPUA)  
(Jackson's Strip, Lat. 9° 26' S., Long. 147° 13' E., Height above M.S.L. 92 ft)  
BAROMETER, WIND, EVAPORATION AND CLOUD

Month	Bar. corrected to 32° F. mn sea level and standard gravity from 9 a.m. and 3 p.m. readings (m. bars)	Wind (height of anemometer 32 ft)				Mean amount of clouds		
		Average miles per hour		Highest gust speed (mph)	Prevailing direction		evaporation (in)	9 a.m., 3 p.m., 9 p.m.(a)
		9 a.m.	3 p.m.		9 a.m.	3 p.m.		
No. of years of observations . . . . .	23	5	5	17	5	5	11	19
January . . . . .	1,007.0	3.4	8.3	55	NNW	SW	6.17	6.7
February . . . . .	1,007.1	3.9	9.3	52	N	SW	5.14	6.9
March . . . . .	1,007.4	2.6	7.6	49	N	W	5.47	6.6
April . . . . .	1,008.1	1.7	7.7	40	NNW	SSE	4.92	6.0
May . . . . .	1,008.5	3.3	10.8	43	SE	SSE	5.43	5.1
June . . . . .	1,009.7	5.7	13.0	46	SE	SSE	5.46	5.0
July . . . . .	1,009.9	6.7	14.5	46	SE	SE	5.85	5.3
August . . . . .	1,009.9	5.8	15.4	47	SE	SSE	6.43	5.5
September . . . . .	1,010.0	5.3	14.5	46	SE	SSE	6.67	5.5
October . . . . .	1,009.1	5.3	15.0	46	SSE	SSE	7.52	5.3
November . . . . .	1,008.1	2.8	12.2	38	SE	SSE	7.53	5.4
December . . . . .	1,007.0	2.3	9.6	54	NNW	SW	7.00	6.0
Year { Total Averages . . . . .	1,008.5	4.1	11.5	..	SE	SSE	73.59	..
Extremes . . . . .	..	..	..	55	..	..	..	5.8

(a) Scale 0-8.

TEMPERATURE AND SUNSHINE

Month	Mean temperature (° Fahr.)			Extreme shade temperature (° Fahr.)		Extreme temperature (° Fahr.)	Mean daily hours of sunshine
	Mean max.	Mean min.	Mean	Highest	Lowest		
						Lowest on grass	
No. of years of observations . . . . .	24	24	24	24	24	13	13
January . . . . .	89.8	73.3	81.6	97.2 11/64	68.8 27/49	65.3 21/66	6.2
February . . . . .	88.8	73.1	81.0	97.0 12/47	65.8 17/57	62.2 3/68	6.1
March . . . . .	88.9	72.9	80.9	95.8 26/46	65.0 23/61	58.0 31/66	6.2
April . . . . .	88.0	72.5	80.3	93.6 3/46	62.3 11/46	56.6 1/66	7.0
May . . . . .	87.9	72.6	80.3	92.9 2/64	58.1 28/53	59.0 18/66	7.4
June . . . . .	86.5	71.4	79.0	93.0 25/38	58.0 23/54	54.0 29/65	7.0
July . . . . .	86.0	70.7	78.4	92.0 11/64	57.3 8/46	50.8 30/65	6.6
August . . . . .	87.3	71.3	78.8	92.8 12/38	58.6 14/61	50.3 31/67	6.8
September . . . . .	87.3	72.1	79.7	94.6 17/65	58.0 10/61	48.0 1/67	6.8
October . . . . .	89.4	72.9	81.2	95.9 4/65	61.3 11/55	52.2 5/65	7.4
November . . . . .	90.4	72.7	81.6	97.3 11/65	62.1 10/67	55.0 4/63	8.4
December . . . . .	90.4	73.3	81.9	97.4 16/67	67.2 1/63	62.9 16/67	7.3
Year { Averages . . . . .	88.2	72.4	80.3	97.4	57.3	48.0	6.9
Extremes . . . . .	..	..	..	16/12/67	8/7/46	1/9/67	..

HUMIDITY, RAINFALL AND FOG

Month	Vapour pressure mean 9 a.m. (m. bars)	Mean relative humidity % at 9 a.m.	Rainfall (inches)				Fog mean No. days	
			Mean mthly	Mean No. of days of rain	Greatest monthly	Least monthly		
								Greatest in one day
No. of years of observations . . . . .	23	23	24	24	24	24	24	
January . . . . .	28.1	77	6.70	17	18.30 1967	1.02 1950	4.18 26/67	3.3
February . . . . .	28.5	81	8.45	19	17.08 1957	2.37 1947	5.54 14/49	3.8
March . . . . .	28.4	80	7.24	18	17.42 1951	1.11 1950	4.42 16/51	7.2
April . . . . .	28.6	81	6.75	15	28.65 1946	0.36 1966	12.89 12/46	7.7
May . . . . .	28.2	79	2.03	8	7.35 1952	0.08 1958	3.02 18/60	6.9
June . . . . .	26.4	78	1.64	6	12.33 1963	0.00 1957	8.06 5/63	3.7
July . . . . .	25.2	77	0.75	6	2.75 1949	0.01 1958	1.33 1/52	2.5
August . . . . .	25.0	75	1.28	7	5.43 1953	0.02 1959	1.94 22/53	2.4
September . . . . .	25.4	73	1.55	7	13.53 1958	0.00 (a)	5.90 5/58	1.9
October . . . . .	26.2	69	1.48	7	7.12 1948	0.06 1951	2.13 31/64	2.4
November . . . . .	26.4	68	2.68	8	9.22 1952	0.00 1965	3.56 29/54	3.3
December . . . . .	27.6	73	6.30	13	10.57 1954	0.99 1967	4.83 29/65	2.9
Year { Totals . . . . .	..	..	46.35	131	..	..	..	48.0
Averages . . . . .	27.0	76	..	11	..	..	..	..
Extremes . . . . .	..	..	..	..	28.65 4/1946	0.00 (b)	12.89 12/4/46	..

(a) 1948 and 1950.

(b) June 1957, September 1948 and 1950, and November 1965.

CLIMATOLOGICAL DATA: LAE (NEW GUINEA)

(Meteorological Office: Lat. 6° 44' S., Long. 147° 00' E., Height above M.S.L. 25 ft)

BAROMETER, WIND AND CLOUD

Month	Bar. corrected to 32° F. mn sea level and standard gravity from 9 a.m. and 3 p.m. readings (m.bars)	Wind (height of anemometer 32 ft)					Mean amount of clouds 9 a.m., 3 p.m., 9 p.m.(a)
		Average miles per hour		Highest gust speed (mph)	Prevailing direction		
		9 a.m.	3 p.m.		9 a.m.	3 p.m.	
No of years of observations	23	5	5	13	5	5	20
January	1,006.8	7.7	8.3	51	NW	SE	6.8
February	1,006.8	8.1	7.6	43	NW	SE	6.8
March	1,007.2	6.8	7.3	40	NW	SE	6.9
April	1,008.4	4.6	7.2	40	NW	SE	6.5
May	1,009.5	2.8	6.5	36	NW	SE	6.1
June	1,010.5	2.7	6.2	41	NW	SE	6.1
July	1,011.0	2.0	6.6	36	NW	SE	6.5
August	1,011.0	2.2	6.8	40	N	SE	6.5
September	1,010.9	2.3	7.9	38	NW	SE	6.3
October	1,010.1	2.9	7.9	40	NW	SE	6.1
November	1,008.5	4.6	8.7	45	NW	SE	6.3
December	1,007.4	6.0	8.4	41	NW	SE	6.7
Year { Averages	1,009.0	4.4	7.5	..	NW	SE	6.5
{ Extremes	..	..	..	51	..	..	..

(a) Scale 0-8.

TEMPERATURE

Month	Mean temperature (° Fahr.)			Extreme shade temperature (° Fahr.)	
	Mean max.	Mean min.	Mean	Highest	Lowest
No. of years of observations	20	20	20	20	20
January	87.9	74.7	81.3	100.8 20/59	69.2 7/60
February	88.1	74.7	81.4	99.1 14/57	70.0 24/62
March	87.4	74.6	81.0	101.7 6/56	71.1 16/56
April	86.1	73.9	80.0	93.0 4/56	70.4 22/66
May	85.1	73.2	79.2	91.8 24/52	67.0 30/53
June	83.4	72.2	77.8	92.2 8/58	67.0 20/53
July	81.9	71.5	76.7	89.9 16/64	66.7 31/65
August	82.2	71.6	76.9	90.4 28/64	67.0 27/55
September	83.6	71.9	77.8	90.0 12, 13/50	66.3 13/61
October	85.3	72.6	79.0	95.3 31/49	66.4 4/65
November	86.6	73.4	80.0	94.0 30/61	69.6 (a)
December	87.2	74.2	80.7	96.1 24/59	68.5 19/64
Year { Averages	85.4	73.2	79.3	..	..
{ Extremes	..	..	..	101.7	66.3
				6/3/56	13/9/61

(a) 13/1965 and 11/1968.

HUMIDITY, RAINFALL AND FOG

Month	Vapour pressure mean 9 a.m. (m.bars)	Rainfall (inches)				Fog mean No. days
		Mean monthly	Mean No. of days of rain	Greatest monthly	Least monthly	
No. of years of observations	23	25	25	25	25	23
January	28.0	10.64	21	20.54 1964	4.21 1958	7.84 9/59
February	28.5	9.24	19	15.88 1967	2.09 1957	5.26 8/53
March	28.3	12.59	21	20.63 1952	5.52 1968	6.38 10/52
April	28.7	15.77	22	23.71 1955	9.32 1968	7.84 15/53
May	28.3	16.40	22	33.08 1957	2.65 1956	6.52 17/61
June	26.5	16.12	22	30.32 1965	4.51 1964	8.90 4/51
July	25.4	19.61	25	41.66 1953	5.63 1956	11.76 16/53
August	25.0	20.38	24	33.99 1957	6.32 1951	10.18 14/47
September	25.6	18.74	23	29.12 1950	7.58 1960	6.16 10/51
October	26.5	14.84	21	26.20 1957	4.82 1956	5.77 20/63
November	26.7	13.51	21	22.73 1948	5.04 1956	7.26 2/45
December	27.7	13.08	21	23.81 1957	6.06 1951	8.96 16/68
Year { Totals	..	180.92	262	..	..	..
{ Averages	27.1	..	..	..	..	..
{ Extremes	..	..	..	41.66	2.69	11.76
				7/1953	2/1957	16/7/53

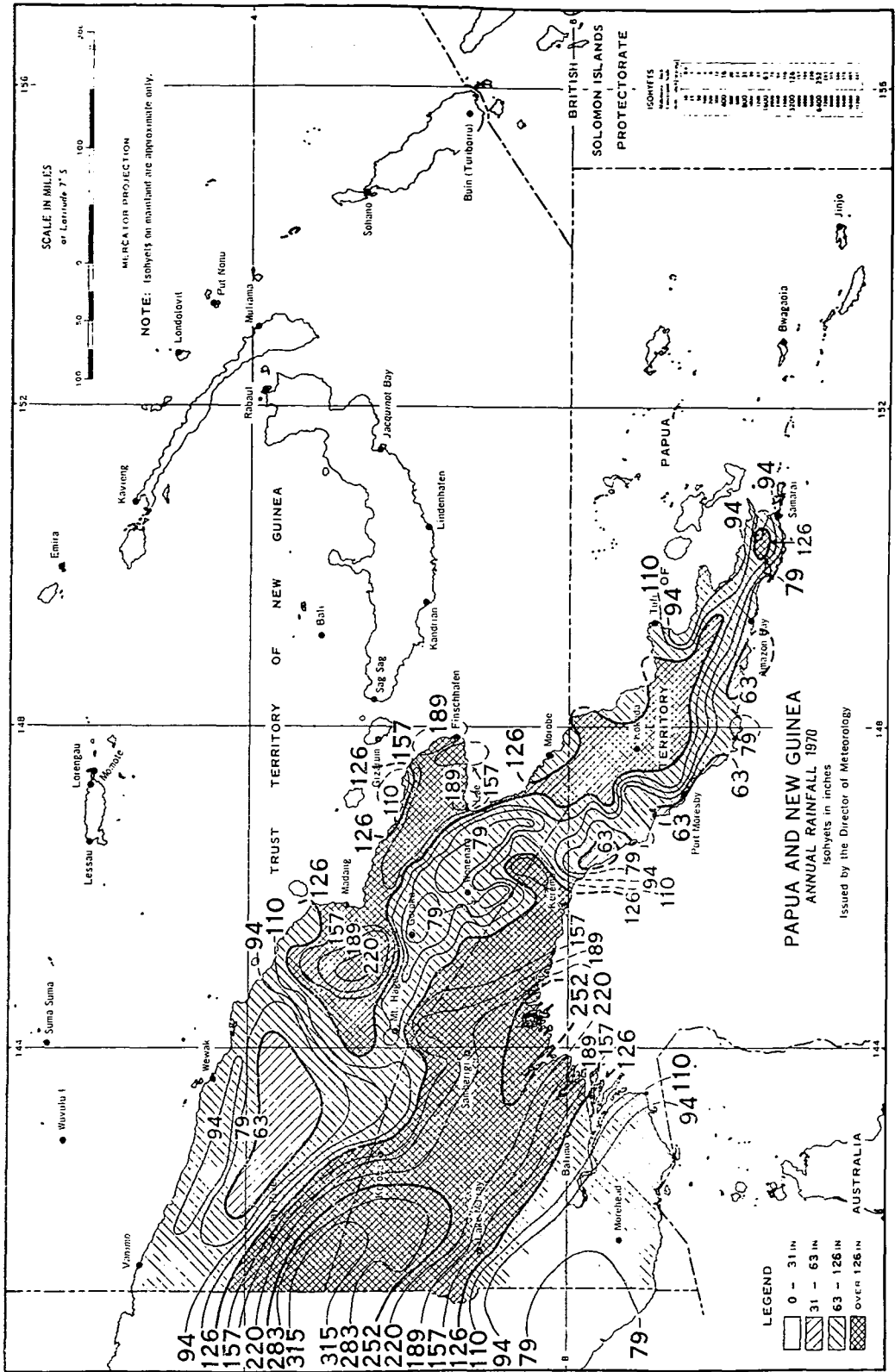


PLATE 51  
989

LEGEND

[White Box]	0 - 31 in
[Diagonal Lines]	31 - 63 in
[Cross-hatch]	63 - 126 in
[Stippled]	OVER 126 in

PAPUA AND NEW GUINEA  
ANNUAL RAINFALL 1970  
Isohyets in inches  
Issued by the Director of Meteorology

SCALE IN MILES  
of Latitude 7° S

MILICA FOR PROJECTION

NOTE: Isohyets on mountains are approximate only.

ISOHYETS

Annual Rainfall	Annual Rainfall
0	126
31	157
63	189
94	220
110	252
126	283
157	315
189	315
220	
252	
283	
315	
315	

### Population

Censuses of the non-indigenous population of the Territory of Papua and New Guinea have been taken in conjunction with censuses of the Commonwealth of Australia. For the indigenous population of the Territory of Papua and New Guinea, estimates of size, geographic location, and the broad age distribution of the population were available from the results of the Department of District Administration census (formerly known as the Tax Census). This was conducted over most of the Territory, but was continuous rather than conducted at a common date for all areas covered. No regular pattern of operations was adopted, although once the census had been taken in an area it was in general repeated fairly frequently. Although these estimates were of great value, the limitations of the information on population characteristics and the lack of simultaneous collection for all areas made them insufficient for many purposes. The 1966 census covered both indigenous and non-indigenous population, and thus superseded the traditional census of non-indigenes.

Figures for the non-indigenous population as enumerated at censuses held in conjunction with Commonwealth censuses and estimates of the indigenous population based on the Department of District Administration censuses are set out below.

#### PAPUA AND NEW GUINEA: POPULATION AT CENSUSES, 1921 TO 1966

Year	Indigenous			Persons estimated	Total persons	Non-indigenous			
	Enumerated					Males	Females	Persons	
	Males	Females	Persons						
PAPUA									
1921 . .	59,825	52,687	112,512	..	..	1,408	670	2,078	
1933 . .	..	..	170,836	..	..	1,232	941	2,173	
1941 . .	..	..	..	..	..	..	..	..	
1947 . .	..	..	..	..	..	2,057	1,182	3,239	
1950 . .	117,455	104,474	221,929	146,630	368,559	..	..	..	
1954 . .	151,464	134,732	286,196	202,200	488,396	3,867	2,446	6,313	
1961 . .	236,676	209,632	446,308	67,340	513,648	5,490	4,304	9,794	
1966 . .	310,153	281,806	591,959	..	591,959	8,307	6,070	14,377	
NEW GUINEA									
1921 . .	(a)100,445	(a)66,276	(a)166,721	..	..	2,502	671	3,173	
1933 . .	218,218	182,911	401,129	..	..	3,709	1,507	5,216	
1941 . .	324,830	318,988	(b)684,284	300,000	984,284	..	..	..	
1947 . .	..	..	..	..	..	4,369	1,831	6,200	
1950 . .	415,939	354,116	770,055	301,050	1,071,105	..	..	..	
1954 . .	538,113	472,480	1,010,593	184,714	1,195,307	7,201	4,241	11,442	
1961 . .	721,806	647,277	1,369,083	64,300	1,433,383	9,158	6,378	15,536	
1966 . .	810,153	748,205	1,558,358	..	1,558,358	11,746	8,546	20,292	

(a) 1920; figures for 1921 not available. (b) Includes 34,087 indentured labourers, 1,127 native constabulary, 4,823 attending approved mission schools, and 429 patients at Anelua Leprosarium and Taskul Observation Colony (New Ireland), for which particulars of sex are not available.

The total indigenous population of Papua and New Guinea at the 1966 census was 2,150,317 persons, and the total non-indigenous, 34,669 persons. Estimated totals for 30 June 1970 are 2,412,808 and 48,961 persons respectively. See pages 1005 and 1008 for further details.

The population (indigenous and non-indigenous) of the major towns at the census, June-July 1966, was as follows: Port Moresby, 41,848; Lae, 16,546; Rabaul, 10,561; Wewak, 8,945; Madang, 8,837; Goroka, 4,826; Daru, 3,663; Mount Hagen, 3,315; Bulolo, 2,724; Lorengau, 2,446; Samarai, 2,201; Kavieng, 2,142. A population count held in conjunction with the setting up of a Local Government Electoral Roll in February-April 1970 showed that the population of Port Moresby was 56,206; Lae, 24,339; Madang, 11,151 and Rabaul 21,453 (although it should be noted that urban boundaries used in the Rabaul count were not comparable with the 1966 boundaries. A Census pre-test conducted in Goroka in July 1970 showed the population to be 7,882 persons.)

#### Population Census, 1966

The census was conducted over the period June-July 1966 and covered both indigenous and non-indigenous populations. For census purposes the indigenous population comprised the aboriginal peoples of the Territory of Papua and New Guinea, Australia, New Zealand, and the other islands

of Polynesia, Melanesia, and Micronesia, and all persons descended from these aboriginal peoples to the extent of more than one half. The non-indigenous population comprised all persons not covered by the definition of the indigenous population given above. The Census completely enumerated virtually all the non-indigenous population, together with all the indigenous population located in areas outside rural villages. The rural village population was estimated by means of a representative sample of approximately 10 per cent of rural villages. Consequently the figures published for the population of rural villages are estimates of total figures based on a representative sample, while those published for other areas are totals based on complete enumeration. Totals for a District or Territory as a whole are the sums of these estimated and actual figures.

A short description of the development operations undertaken before the 1966 census and of the actual census operations is given in Year Book No. 53, pages 141–2. A description of Methods and definitions used can be found in *Population Census, 1966—Preliminary Bulletin No. 20: Summary of Population* issued by the Bureau of Statistics, Konedobu, Papua. A similar population census was conducted in July 1971. These results are not yet available.

For details of selected characteristics of Population Census 1966 see Year Book No. 55, pages 1165–69.

### Administration

The *Papua-New Guinea Provisional Administration Act 1945–1946*, which provided for the transfer back of control from the military authorities to civil authorities after the 1939–45 War, was repealed by the *Papua and New Guinea Act 1949*, which came into force on 1 July 1949. The latter Act approved the placing of the Territory of New Guinea under the International Trusteeship system and provided for an Administrative Union of the Territory of Papua and the Territory of New Guinea with one Administrator, a Legislative Council and an Executive Council, one Supreme Court, and one Public Service.

For an outline of the development of the Legislative and Executive (later Administrator's) Councils between 1949 and 1963, see Year Book No. 51, page 117.

In May 1963 the Commonwealth Government passed an amendment to the Papua and New Guinea Act, making provision for a House of Assembly of sixty-four members to replace the Legislative Council. The house then consisted of ten official members appointed by the Governor-General on the advice of the Administrator, forty-four members elected by the people of the Territory on a common roll in forty-four open electorates, and ten non-indigenous persons elected on a common roll in ten special electorates comprising one or more open electorates. The first elections for the House of Assembly were held in February–March 1964, and the inaugural meeting of the new House was convened on 8 June 1964.

The 1963 Act also increased the membership of the Administrator's Council from seven to eleven, seven of whom must be elected members of the House of Assembly.

In October 1966 the Commonwealth Parliament passed a further amendment to the Papua and New Guinea Act, providing for an increase in the membership of the House of Assembly to ninety-four, sixty-nine members representing open electorates, fifteen from regional electorates and ten official members.

The second general election for the House of Assembly was held from 17 February–16 March 1968, and the Second House was convened on 4 June 1968. The Ministerial Nomination Committee in conjunction with the Administrator chose fifteen elected members who were appointed to seven Ministerial Member and eight Assistant Ministerial Member positions.

The *Papua and New Guinea Act 1968* provides for the Administrator's Council to become the Administrator's Executive Council, deciding major matters of Territory policy. In June 1968 it had its first meetings. It consists of the Administrator, the seven Ministerial Members, three official Members, and a twelfth Councillor who is an elected M.H.A. but a non-office holder.

The result of constitutional instruments signed in August, 1970 by the Governor-General and the Minister for External Territories was to transfer full authority in relation to specified matters to designated ministerial office holders. This effectively enhanced the role of the Administrator's Executive Council as the Administrator became bound to accept its advice in respect of these specified matters. Ministerial office holders are fully responsible for the functions of the specified departments, or parts thereof.

Local government was introduced in 1949 by the Native Village Councils Ordinance which was replaced by the *Local Government Ordinance 1963*. The Administrator may establish by proclamation local government councils with authority in defined areas.

### Judiciary

The courts which exercise jurisdiction within the Territory are: the Supreme Court of the Territory of Papua and New Guinea, District Courts, Local Courts, Children's Courts and Wardens' Courts.

The Supreme Court is the highest judicial authority and has unlimited criminal and civil jurisdiction. Appeals lie from decisions of a single judge to the Full Court of the Supreme Court and, subject to prescribed conditions, from decisions of the Full Court to the High Court of Australia. District Courts have criminal jurisdiction over all summary offences, i.e. generally, all offences punishable by less than 12 months' imprisonment, and conduct preliminary hearings in respect of indictable offences. They also exercise civil jurisdiction over claims for amounts up to \$2,000. Local Courts have criminal jurisdiction over summary offences and may impose penalties not greater than a fine of \$100 or six months' imprisonment, plus civil jurisdiction over matters involving up to \$200. Children's Courts have jurisdiction over all offences by persons under the age of 16 years, except the most serious offences, and in affiliation and other child welfare cases. Wardens' Courts exercise jurisdiction over offences against mining laws and civil cases concerning mining or mining lands.

In addition, there is the Land Titles Commission set up under the *Land Titles Commission Ordinance* 1962-1970 to inquire into and determine rights in land, particularly native land. The Commission has the particular function under the *New Guinea Land Titles Restoration Ordinance* 1951-1968 to inquire into and determine claims to interest in land where the official records were lost or destroyed as a result of the Japanese invasion of New Guinea. For the purposes of the latter Ordinance, the Jurisdiction of the Commission is exercised by the Chief Commissioner (who must be qualified to be a judge of the Supreme Court) sitting with two Senior Commissioners.

### Agriculture and animal industry

#### Soils

Although many parts of Papua and New Guinea are covered by skeletal soils unsuitable for agriculture, there are extensive areas in all districts where fertile soils occur suitable for growing a variety of crops. Soils on the coastal plains consist mainly of alluvium and podsolised alluvium. The coastal swamp soils, of which there are extensive areas in the delta plains of the Sepik and Fly rivers and intermittently around the coasts and along the lower reaches of other rivers, are in general quite unsuited to any form of agricultural development.

Volcanic soils probably offer the greatest prospects for development. They are found mostly on the central plateau and southern foothills of the main island, but there are also areas in New Britain (particularly in the Gazelle and Willaumez Peninsulas), Bougainville and New Ireland, as well as in numbers of smaller islands. Other rich soils are the alluvials of the river valleys. The largest single area of this type is in the valley occupied by the Ramu and Markham Rivers.

#### Land tenure

The *Land Ordinance* 1962-1969 of the Territory of Papua and New Guinea, which came into operation in 1963, replaced much land legislation previously in force separately in the two Territories. This simplification in legislation was a major step towards applying uniform principles to land tenure throughout the whole of the Territory of Papua and New Guinea. All land in the Territory other than native land or land subject to any estates, rights, titles, or interests in force from time to time is Administration land.

There is considerable variation throughout the Territory in the nature of customary ownership of land. In most areas some rights remain in the landholding group, and individuals within the group have limited rights or use, either for life or for a shorter period. Thus the normal system by which the rights of ownership in land use are acquired is by birth to a landholding group. Transfer of rights between individuals by sale and purchase appears to have been unusual in the past, but this practice is now an established custom in some localities and appears to be increasing. Inheritance may be based on either patrilineal or matrilineal descent, or both. In parts of the Territory, however, there is a tendency for the whole inheritance system to change, particularly in communities where it is based on matrilineal descent. Following a close study of the problems in relation to land holdings by indigenes, the Government has laid down the following broad principles of policy.

The ultimate and long-term objective in Papua and New Guinea is to introduce throughout the Territory a single system of land holding regulated by the central Administration by statute, administered by the Department of Lands of the central Administration and providing for secure individual registered titles after the pattern of the Australian system.

Only the Administration working through the Department of Lands, Surveys and Mines and through the Registrar of Titles may issue and register land titles.

Land subject to native custom remains subject only to native custom until it is taken out of custom either by acquisition by the Administration or by a process, provided for by the *Land (Tenure Conversion) Ordinance* 1963-1968, of conversion of title to an individual registered title.

Upon either acquisition or conversion of title, compensation is provided in respect of extinction of rights under native custom.

Land held under native custom may not be acquired outside of native custom by other than the Administration. Land may not be acquired by the Administration except for prescribed public purposes unless the native owners are willing to sell and the Administration is convinced, through its Division of District Administration, Department of the Administrator, that the land is not required by them, and conversion of title from native custom to individual registered title may take place only if all those interested in the land under native custom consent to conversion and the method of conversion.

The services of Commissioners under the *Land Titles Commission Ordinance 1962-1970* are used, as a first priority, on investigations into claims by the Administration that land is ownerless and may therefore be declared administration land, on investigation into the ownership under native custom of land proposed to be acquired by the Administration, on settlement of disputes about the ownership of land held under native custom, and on investigations into the rights held under native custom in land proposed to be converted to individual registered title. The Commissioners, as opportunity offers, continue investigations into the holding of land under native custom; the results of such investigations are recorded for use in connection with future acquisitions or conversions of title.

The legislation and administrative steps necessary to put the remainder of this policy into effect are well advanced.

#### Suitable crops

Most tropical crops can be grown in Papua and New Guinea. Those of commercial importance at present are coconuts, cocoa, coffee, rubber, tea, peanuts, pyrethrum and passion fruit. Major developments in the production of palm oil are under way. This crop is expected to be of future economic significance.

#### Non-indigenous rural production

In 1968-69 there were 1,241 holdings in use by non-indigenous persons, 335 being in Papua and 906 in New Guinea. The total area of these holdings was 1,016,839 acres, 264,832 in Papua and 752,007 in New Guinea. The following tables summarise the information available for principal activities.

#### PAPUA AND NEW GUINEA: NUMBER OF HOLDINGS, AREA, PRODUCTION AND NEW PLANTINGS 1965 TO 1969

(Source: *Rural Industries Bulletin*, 1968-69 Bureau of Statistics, Papua and New Guinea)

Year ended 31 March—	Holdings	Area under crop(a)	Trees(a)	Production	New plantings	
					Area	Trees(b)
Coconuts—		acres	'000	tons	acres	'000
1965 . . . . .	670	262,039	11,995	85,034	4,013	272
1966 . . . . .	667	264,391	12,006	90,209	5,512	377
1967 . . . . .	683	269,127	12,704	81,159	5,208	460
1968(c) . . . . .	681	270,176	12,809	86,736	4,902	586
1969(c) . . . . .	685	271,623	12,972	89,115	4,062	382
Cacao—						
1965 . . . . .	435	116,981	19,792	14,326	7,058	1,835
1966 . . . . .	439	122,226	20,696	14,427	8,354	1,870
1967 . . . . .	447	126,147	21,830	15,059	4,981	1,366
1968(c) . . . . .	447	129,706	21,400	18,092	5,446	1,749
1969(c) . . . . .	443	133,235	22,180	18,134	5,095	1,690
Coffee—						
1965 . . . . .	261	12,228	7,860	3,374	1,345	1,162
1966 . . . . .	257	13,415	8,779	3,874	1,323	1,254
1967 . . . . .	248	14,365	9,912	4,492	1,090	1,212
1968(c) . . . . .	249	14,817	10,004	4,705	810	937
1969(c) . . . . .	237	14,685	9,798	6,196	664	828
Rubber—						
1965 . . . . .	70	33,317	3,768	5,183	1,238	249
1966 . . . . .	81	35,417	3,998	5,333	1,847	344
1967 . . . . .	86	37,043	4,177	5,437	1,260	305
1968(c) . . . . .	89	35,878	4,126	5,711	484	167
1969(c) . . . . .	83	33,964	3,901	5,850	471	134

(a) Includes mature and immature areas. (b) Includes replacements. (c) 30 June.



**PAPUA AND NEW GUINEA: AREA UNDER PRINCIPAL CROPS  
AND CROP PRODUCTION, YEAR ENDED 30 JUNE 1969**

*(Source: Rural Industries Bulletin, 1968-69 Bureau of Statistics, Papua and New Guinea)*

Crop	Recorded area in acres			Unit	Recorded production			Average yield per productive acre		
	Papua	New Guinea	Total		Papua	New Guinea	Total	Papua	New Guinea	Total
<b>Permanent crops—</b>										
<b>Copra—</b>										
Plantation	33,951	237,672	271,623	ton	9,659	79,456	89,115	0.31	0.39	0.38
Trade(a)				"	445	4,674	5,119			
Coconuts, for use as such					34	420	454			
<b>Cacao—</b>										
Plantation	10,219	123,016	133,235	ton	1,048	17,086	18,134	0.12	0.18	0.17
Trade(a)				"	49	1,104	1,153			
<b>Coffee—</b>										
Plantation	890	13,795	14,685	"	37	6,159	6,196	0.07	0.55	0.53
Trade(a)				"	13	2,074	2,087			
Rubber	32,447	1,517	33,964	"	5,850		5,850	0.23		0.23
Tea	207	5,063	5,270	lb (dry)		761,066	761,066		449.5	449.5
<b>Grain crops—</b>										
Maize	34	142	176	bus	470	2,267	2,737	13.82	15.96	15.55
Rice	251	208	459	ton (paddy)	148	129	277	0.59	0.62	0.60
Sorghum	377	1,248	1,625	bus	7,212	8,096	15,308	19.13	6.49	9.42
<b>Crops for green fodder—</b>										
Maize	2	316	318							
Sorghum	15	365	380							
Other	93	1,040	1,133							
<b>Industrial crops—</b>										
Peanuts	10	1,599	1,609	cwt (kernel)	37	6,185	6,222	3.70	3.87	3.87
<b>Vegetable crops—</b>										
<b>For sale—</b>										
Beans (green)	7	18	25	cwt	119	160	279	17.00	8.89	11.16
Tomatoes	15	18	33	"	487	402	889	32.47	22.33	26.94
Potatoes, English	1	3	4	"		48	48		16.00	16.00
Potatoes, sweet	45	343	388	"	1,581	17,531	19,112	35.13	51.11	49.26
Pumpkins	24	5	29	"	960	144	1,104	40.00	28.80	38.07
Other	82	67	149	"						
<b>For consumption on holding—</b>										
Potatoes, sweet	697	3,515	4,212	cwt	20,691	197,891	218,582	29.69	56.30	51.90
All other	520	1,797	2,317	"						
All other crops	320	2,918	3,238	"						
<b>Total</b>	<b>80,207</b>	<b>394,665</b>	<b>474,872</b>							

(a) Includes all produce acquired by purchase during the year from sources outside the holding.

### Livestock

Total cattle on non-indigenous holdings at June 1969 was 60,728. Indigenous involvement in the cattle industry is being encouraged. An estimated 5,870 head of cattle were owned by indigenes in 1968-69. Dairy farming is carried out on a small scale near major towns.

A number of British breeds of cattle are represented, but for best results the use of Zebu cross-bred types of cattle is desirable. For dairying the Jersey seems to be the best breed and adapts quite well to tropical conditions.

A central abattoir controlled by the Administration has been set up at Lae and Administration slaughterhouses at Port Moresby, Goroka and Mount Hagen. There are smaller private slaughterhouses at other centres.

The following table shows the numbers of the various kinds of livestock on non-indigenously occupied holdings in Papua and New Guinea at 30 June 1969.

## PAPUA AND NEW GUINEA: LIVESTOCK NUMBERS 30 JUNE 1969

(Source: *Rural Industries Bulletin*, 1968-69 Bureau of Statistics  
Papua and New Guinea)

<i>Kind of stock</i>	<i>Papua</i>	<i>New Guinea</i>	<i>Total</i>
Horses . . . . .	432	773	1,205
Cattle—			
For dairying—			
Cows—in milk . . . . .	302	988	1,290
dry . . . . .	363	918	1,281
Heifers, one year and over . . . . .	187	724	911
Heifer calves, under one year . . . . .	211	875	1,086
Bulls, one year and over . . . . .	60	239	299
Bulls under one year . . . . .	34	134	168
<i>Total dairying cattle</i> . . . . .	1,157	3,878	5,035
For beef—			
Cows and heifers, one year and over . . . . .	6,335	24,080	30,415
Calves, under one year . . . . .	1,146	5,216	6,362
Bulls, one year and over . . . . .	379	1,233	1,612
Bulls, under one year . . . . .	103	397	500
Other, one year and over . . . . .	3,426	13,378	16,804
<i>Total beef cattle</i> . . . . .	11,389	44,304	55,693
<i>Total, all cattle</i> . . . . .	12,546	48,182	60,728
Sheep . . . . .	52	329	381
Pigs—			
Boars . . . . .	71	237	308
Breeding sows . . . . .	315	773	1,088
Suckers, weaners, and slips . . . . .	824	1,902	2,726
Other . . . . .	55	421	476
<i>Total pigs</i> . . . . .	1,265	3,333	4,598
Goats . . . . .	824	583	1,407
Poultry(a)—			
Fowls . . . . .	(a)	(a)	168,757
Ducks . . . . .	(a)	(a)	3,757
Turkeys . . . . .	145	169	314
Geese . . . . .	(a)	(a)	45
<i>Total poultry</i> . . . . .	118,301	54,572	172,873

(a) Only recorded where poultry products are marketed or flocks exceed 100 birds.

## Forestry

Many species of tropical timbers are found in the Territory of Papua and New Guinea, and there is a large pure stand of *Klinkii* pine in the Bulolo Valley. This timber is used mainly for the production of plywood and veneer. The Territory forests produce all local timber requirements as well as exports of logs, sawn timber, plywood and veneer. The Administration operates a forestry school at Bulolo to train forestry officers, and has established a research centre for forest products at Hohola near Port Moresby as well as regional silvicultural stations and a large herbarium at Lae.

The Administration is making available for public application a number of extensive timber areas estimated to contain a total of about 14,000 million super feet of logs and possibly twice this quantity of pulpwood. It is intended that those areas should form the basis for the development of integrated forest industries, which would be large and economically viable. Feasibility studies have been undertaken by consultants and some interested firms. Subject to negotiation the areas will be allocated on long-term permits. The Administration has acquired from the indigenous peoples timber rights over 4.9 million acres of forest for industrial development. Reforestation of permanently dedicated land is being undertaken by the administration, the area planted to date being 25,423 acres.

At 30 June 1970, 72 permits and 52 licences were current, the total area of forest involved being 1,339,181 acres. The total number of sawmills was 63 and the total sawn timber produced during 1969-70 was 48.9 million super feet. Total log production was 214 million super feet (true volume) of which 79.6 million was exported.

### **Fishing**

Over 1,400 different species of fish are to be found in the coastal and inland waters of Papua and New Guinea and many are important food fish. Those of greatest commercial significance are tunas (mainly skipjack), prawns, barramundi, and tropical lobster. Efforts are being made to encourage indigenous fishermen to regard fishing as a source of cash income and not merely as a means of subsistence. This involves the Administration in research and extension work and requires the improvement of refrigeration, transportation and marketing facilities throughout the Territory. In the Highlands there is increasing interest in fish culture in freshwater ponds.

Commercial fishing for prawns by joint venture companies is increasing and joint venture surveys for skipjack on a commercial scale are giving promising results.

The value of exports in 1969-70 was fish \$849,000; crocodile skins \$452,000; marine shell \$141,000; cultured pearls (round and half) \$174,000.

### **Indigenous agriculture**

Most of the indigenous inhabitants of Papua and New Guinea are agriculturalists producing fruit and vegetables for their own consumption. The crops grown vary according to environment and altitude and include yams, taro and sweet potatoes, coconuts, bananas, papaws, maize, sugar cane, cassava, beans, peanuts, rice, cucurbits, and tobacco. Sago is the staple food in the extensive semi-inundated areas which occur along the lower valleys of the major rivers. In these areas it is cut largely from naturally occurring stands. In other parts of the country small areas of sago are grown along stream banks and in swampy patches and are regarded as a reserve in times of poor harvest. In recent years the indigenes have taken up the production of introduced crops such as peanuts, rice, cucurbits, tobacco and maize for their own consumption, and cocoa, coffee, tea, palm oil, passion fruit and pyrethrum for export. Some small-scale rubber growing is now being undertaken. In coastal areas large quantities of copra are produced. In 1968-69 estimated indigenous production was: copra 43,801 tons, coffee 14,942 tons, cocoa 5,833 tons. In many localities the indigenes follow a farming system known as bush fallowing rotation, which is described in Year Book No. 48, and earlier issues.

The growing of food is done by both the men and the women. The division of work is usually clearly defined within the village itself, but this division is not necessarily the same in all areas. Generally the felling of forests is done by the men, and carrying the harvested food home to the village is done by the women. Other work, however, such as cultivating, planting and weeding may be done by either men or women according to the customs of the particular village or area.

The advancement of indigenous agriculture for local food supply and improved land use in village gardens as well as for economic production of crops for sale have a high priority in Government policy for the Territory. In recent years the Administration has intensified the programme of agriculture extension work among the indigenes. Indigenous cattle projects are increasing rapidly.

### **Survey of indigenous agriculture and ancillary surveys, 1961-62**

A survey of the agriculture of indigenes of Papua and New Guinea was carried out in 1961-62 by the Territory Bureau of Statistics in conjunction with the Commonwealth Bureau of Census and Statistics and the Territory Department of Agriculture, Stock and Fisheries. A comprehensive report on the surveys was published by the Territory Statistician in 1963, and reference should be made to this for further information. A summary of the principal results of the survey appears on pages 1104-10 of Year Book No. 52. Statistics of indigenous cash crop and cattle projects are compiled annually by the Administration's Department of Agriculture, Stock and Fisheries.

**PAPUA AND NEW GUINEA: AREA OF PRINCIPAL CROPS AND  
CROP PRODUCTION, YEAR ENDED 30 JUNE<sup>(a)</sup>**

*(Sources: Rural Industries Bulletin 1968-69, Bureau of Statistics and Indigenous Crop and Cattle Statistics Department of Agriculture, Stock and Fisheries, Papua and New Guinea)*

	Area under crop (acres)			Quantity of production (tons)		
	Indigenous	Non-indigenous	Total	Indigenous (b)	Non-indigenous	Total
<b>Coconuts—</b>						
1965 . . .	287,897	262,039	549,936	33,602	85,034	118,636
1966 . . .	292,615	264,391	557,006	36,991	90,209	127,200
1967 . . .	305,630	269,127	574,757	34,504	81,159	115,663
1968 . . .	344,540	270,176	614,716	38,644	86,736	125,380
1969 . . .	348,742	271,623	620,365	43,801	89,115	132,916
<b>Cocoa—</b>						
1965 . . .	33,335	116,981	150,316	5,119	14,326	19,445
1966 . . .	35,915	122,226	158,141	4,131	14,427	18,558
1967 . . .	38,075	126,147	164,222	5,032	15,059	20,091
1968 . . .	39,569	129,706	169,275	5,546	18,092	23,638
1969 . . .	44,285	133,235	177,520	5,883	18,134	24,017
<b>Coffee—</b>						
1965 . . .	35,037	12,228	47,265	3,950	3,374	7,324
1966 . . .	41,590	13,415	55,005	6,791	3,874	10,665
1967 . . .	46,613	14,365	60,978	10,566	4,492	15,058
1968 . . .	47,691	14,817	62,508	9,634	4,705	14,339
1969 . . .	49,666	14,685	64,351	14,942	6,196	21,138
<b>Pyrethrum—</b>						
1965 . . .	1,652	..	1,652	140	..	140
1966 . . .	3,224	..	3,224	252	..	252
1967 . . .	3,815	..	3,815	551	..	551
1968 . . .	2,867	..	2,867	457	..	457
1969 . . .	4,104	..	4,104	398	..	398
<b>Rubber—</b>						
1965 . . .	1,049	33,317	34,366	27	5,183	5,210
1966 . . .	1,538	35,417	36,955	31	5,333	5,364
1967 . . .	2,617	37,043	39,660	23	5,438	5,461
1968 . . .	3,404	35,878	39,282	13	5,711	5,724
1969 . . .	4,222	33,964	38,186	26	5,850	5,876

(a) Non-indigenous figures refer to year ended 31 March, for 1967 and earlier years. (b) Includes all produce acquired by purchase during the year from sources outside the non-indigenous holdings. Excludes amount consumed by growers.

### Co-operative societies

Co-operatives are under the guidance of the Department of Business Development. The present structure of the co-operative movement is based on primary societies, associations of societies, regional unions and a Territory-wide Federation formed by the unions. At 30 June 1970 there were 329 primary societies with 132,000 members. Turnover exceeded \$6m including \$4.6m from produce. In addition there are service organisations for wholesale trade, insurance and shipping. A Co-operative College is being set up near Port Moresby with United Nations Development Programme and International Labour Organisation assistance. The first buildings were opened in May, 1971.

### Indigenous labour

At 30 June 1971 there were approximately 332,000 Papuans and New Guineans wholly or mainly engaged in the money-raising work force, of whom 154,000 were wage and salary earners.

Minimum wages and conditions of employment for Papuan and New Guinean workers are prescribed by statute under the *Native Employment Ordinance 1958-1971*, the *Industrial Relations (Minimum Wages Board) Ordinance 1971*, and the *Public Service (Papua and New Guinea) Ordinance 1964-1971*. Conditions of employment and wage rates are also prescribed by awards negotiated by agreement between organisations of employers and employees and by determinations of arbitral tribunals established under the *Industrial Relations Ordinance 1962-1971* and the *Public Services Conciliation and Arbitration Ordinance 1969-1970*.

The minimum statutory wage for an unskilled worker is \$5.90 a week. Where a worker is provided with accommodation, food, clothing and other issues, deductions may be made from the cash wage by agreement between employer and employee up to legally prescribed limits. The maximum permissible deductions for accommodation and food are 87 cents and \$2.50 a week respectively.

General employment agreements are in force in Lae, Goroka, Mount Hagen, Madang, Wewak, Vanimo, Kavieng, Rabaul, Lorengau, Daru, Popondetta, Samarai-Alotau-Bwagaoia and Port Moresby. These agreements apply to all workers employed by members of the Employers' Federation regardless of whether or not they are members of a Workers' Organisation (other than those employees directly engaged in primary production, domestic duties, stevedoring operations or in shipping services). In many of the above centres or localities the agreements are applied to all workers engaged not only by members of the Employers' Federation but also by employers who are not members of the Federation due to common rules being declared. The agreements cover annual and sick leave entitlements and rates of pay and conditions of employment for workers in those areas. In all cases the agreements are negotiated between the Employers' Federation of Papua New Guinea and the local workers' association or union.

At Kerema, Kieta and Lombrum similar rates of pay and conditions of employment are paid. At these localities, however, the Administration or Commonwealth departments initially agree to the increase to urban rates of pay in the absence of any Employers' Federation member operating in these towns.

In addition to agreements applying to workers in particular localities there are also awards which apply to workers in particular industries, e.g. stevedoring, timber, building and construction and mining.

The minimum wage rates for adult unskilled workers in industries and locations covered by awards and agreements range between \$6.50 and \$8.00 a week. Margins for skill are prescribed for semi-skilled and skilled workers ranging up to about \$30 a week.

The *Industrial Organizations Ordinance* 1962-1970 provides for the registration and control of industrial organisations. At 30 June 1971 there were thirty-five registered employees' organisations in Papua New Guinea with a total membership of 27,316 workers, including 22,451 Papuans and New Guineans. Nine of the above employee organisations have joined together to form the Federation of Workers' Associations of Papua and New Guinea which was registered on 4 March 1970. There was one employers' organisation registered under the Industrial Organizations Ordinance.

On 18 June 1971 the House of Assembly passed legislation to establish a Bureau of Industrial Organisations. The functions of the Bureau are to encourage and assist the formation and development of industrial organisations of employers and employees.

The Papua New Guinea Labour Advisory Council advises the Administrator's Executive Council and the Government on labour matters generally, and in particular on:

- methods of improving industrial relations,
- measures needed to achieve full and efficient use of the country's manpower,
- methods of bringing about rapid localisation of the work force in the private sector and incentives and other measures to achieve this end,
- measures to improve productivity, and
- trade union development.

In 1970, 2,494 Papuans and New Guineans completed courses of study and training in tertiary and post-secondary vocational training institutions in Papua New Guinea. The corresponding numbers for 1968 and 1969 were 1,793 and 2,066 respectively.

At 30 June 1971, there were 1,439 indigenous apprentices indentured under the Apprenticeship Ordinance, training in twenty-eight trades. The public sector was responsible for 761 indentures and the private sector 678. At the same date forty-nine non-indigenous apprentices were indentured. Outputs of qualified artisans from the apprenticeship scheme have increased from 137 in 1969 to 326 for the year ending 30 June 1971.

## Housing

Village housing is constructed to traditional patterns using local materials including bush timber, bamboo, grass, pit-pit and sago palm leaves. Town housing is generally constructed from comparatively expensive imported material including fibrous asbestos cement, aluminium and galvanised iron. The majority of houses are timber framed and made from both locally milled and imported timber.

The rapid growth of urban areas consequent upon increased economic development has created a housing shortage. Major programmes are directed towards reducing this shortage.

During 1969-70 the Administration completed accommodation for 1,355 married and 702 single officers.

The Housing Commission completed its third year of operations in 1970-71. Completed dwellings including those taken over from the Administration, at 30 June 1969 were 602; at 30 June 1970 were 720; and at 30 June 1971 were 641 (including 11 staff houses).

### Secondary industries

The major manufacturing industries are generally those processing primary products, mainly for export. Examples of these are plywood, coconut oil, copra by-products, desiccated coconut and pyrethrum.

Nevertheless industries catering for the rapidly expanding local market remain numerically predominant. These include the brewing of beer, furniture making and assembly of electrical appliances; the production of cigarettes and twist tobacco, aerated waters, clothing, plastic articles, concrete products, glass bottles, drums industrial gases, chemicals, fibreglass products, nails and other wire products, packaging and paper products, paints, metal louvre frames, wood preservative, metal roofing, water heaters, cast-iron stoves and other building materials; tyre repairs, fire protection equipment, agricultural machinery, matches, printing and ship-building.

A wide variety of services has also been established such as engineering workshops, plumbing establishments, motor repairs and electrical services.

#### PAPUA AND NEW GUINEA: SUMMARY OF FACTORY OPERATIONS, 1967-68 AND 1968-69

(Source: *Secondary Industries Bulletin* 1968-69, Bureau of Statistics, Papua and New Guinea)

	Papua		New Guinea		Total	
	1967-68	1968-69	1967-68	1968-69	1967-68	1968-69
Number of factories(a)	195	203	361	406	556	609
Average number employed(b)	4,221	4,261	7,199	9,026	11,420	(c)13,287
Salaries and wages paid(d)	\$'000 4,860	5,218	7,405	8,798	12,265	14,016
Value of power, fuel, light, etc., used(e)	526	484	1,177	1,322	1,703	1,806
Value of materials used(f)	8,728	9,148	25,424	29,234	34,152	38,382
Value of production(g)	10,712	11,937	19,253	23,106	29,965	35,043
Value of output(h)	19,967	21,569	45,854	53,661	65,821	75,231
Value of land and buildings(i)	7,855	7,960	9,357	11,891	17,212	19,852
Value of plant and machinery(f)	12,370	13,391	8,461	10,814	20,831	24,206

(a) Any factory, workshop or mill in which four or more persons are employed or power other than hand is used. (b) Average weekly employment including working proprietors. (c) Comprising 12,769 males and 518 females. (d) Excludes drawings by working proprietors. (e) Includes water and lubricating oil. (f) Includes value of containers, packing, etc., tools replaced, and repairs to plant. (g) Value added in process of manufacture (i.e. value of output less value of materials and power, fuel, etc. used). (h) Value of goods produced including amounts received for repair work and other work done. (i) Depreciated or book value at end of year, including estimated value of rented premises and machinery.

#### PAPUA AND NEW GUINEA: FACTORY OPERATIONS BY CLASS OF INDUSTRY, 1968-69

(Source: *Secondary Industries Bulletin* 1968-69, Bureau of Statistics, Papua and New Guinea)

	Class of industry				Total
	Industrial metals, machines and conveyances	Food, drink and tobacco	Sawmills, plywood and joinery	Other industries	
Number of factories	281	94	152	82	609
Number of employees—					
Non-indigenous	n.a.	n.a.	n.a.	n.a.	2,330
Indigenous	n.a.	n.a.	n.a.	n.a.	10,957
Total employees	4,273	3,225	3,932	1,857	13,287
Salaries and wages paid	\$'000 6,902	1,878	3,147	2,088	14,016
Value of power, fuel and light, etc.	309	558	333	607	1,806
Value of materials used	9,617	13,580	6,549	8,636	38,382
Value of production	11,680	8,359	8,000	7,004	35,043
Value of output	21,605	22,497	14,883	16,246	75,231

See footnotes to previous table.

NOTE. Electricity generation is included in 'Other industries'. For details of electricity generation, see Chapter 28, Electric Power Generation and Distribution.

## Trade, transport and communication

## Value of imports and exports

PAPUA AND NEW GUINEA: IMPORTS AND EXPORTS  
1965-66 TO 1969-70  
(\$'000)

(Source: Overseas Trade Statistics, Bureau of Statistics, Papua and New Guinea)

	1965-66	1966-67	1967-68	1968-69	1969-70(p)
<b>Total imports(a)</b> . . . . .	110,431	127,379	(b)145,303	150,455	214,161
<b>Exports—</b>					
Domestic exports . . . . .	43,885	46,113	59,089	64,896	71,653
Re-exports . . . . .	5,975	7,107	11,161	10,348	22,093
<b>Total exports</b> . . . . .	49,830	53,220	70,250	75,244	93,746

(a) Includes value of outside packages. (b) Includes floating oil rig valued at \$8 million, re-exported in July 1969.

## Country of origin or destination

PAPUA AND NEW GUINEA: COUNTRY OF ORIGIN OF IMPORTS  
1965-66 TO 1969-70  
(\$'000)

(Source: Overseas Trade Statistics, Bureau of Statistics, Papua and New Guinea)

Country of origin	1965-66	1966-67	1967-68	1968-69	1969-70(p)
Australia . . . . .	62,452	71,160	78,108	82,165	114,209
Canada . . . . .	878	736	852	1,162	2,982
Ceylon . . . . .	296	320	366	341	342
China (mainland) . . . . .	1,600	2,257	1,715	2,758	2,248
France . . . . .	448	573	825	1,402	1,668
Germany, Federal Republic of . . . . .	2,320	2,687	2,739	3,448	3,920
Hong Kong . . . . .	4,045	4,306	4,583	4,760	5,607
Italy . . . . .	297	363	1,449	746	1,119
Japan . . . . .	9,996	13,073	14,448	17,849	26,306
Malaysia and Singapore . . . . .	3,337	3,471	3,874	4,357	7,314
Netherlands . . . . .	563	4,468	880	913	2,022
New Zealand . . . . .	328	249	77	841	2,607
Sweden . . . . .	770	455	480	610	610
United Kingdom . . . . .	8,644	7,141	7,213	8,574	12,313
United States of America . . . . .	7,507	7,804	(a)19,613	11,589	22,451
Other Countries . . . . .	6,950	8,314	8,081	8,940	8,445
<b>Total</b> . . . . .	110,431	127,379	145,304	150,455	214,161

(a) Includes floating oil rig valued at \$8 million.

PAPUA AND NEW GUINEA: COUNTRY OF DESTINATION OF EXPORTS  
1965-66 TO 1969-70

(\$'000)

(Source: Overseas Trade Statistics, Bureau of Statistics, Papua and New Guinea)

Country of destination	1965-66	1966-67	1967-68	1968-69	1969-70(p)
Australia . . . . .	23,045	24,857	29,288	29,548	41,342
Germany, Federal Republic of . . . . .	2,283	3,030	4,656	8,403	7,607
Japan . . . . .	1,981	2,794	4,652	3,732	8,560
Netherlands . . . . .	1,456	1,192	2,194	3,869	4,389
United Kingdom . . . . .	16,577	14,543	20,279	18,769	15,379
United States of America . . . . .	2,287	3,311	5,403	5,662	11,137
Other Countries . . . . .	2,201	3,493	3,778	5,261	5,332
<b>Total . . . . .</b>	<b>49,830</b>	<b>53,220</b>	<b>70,250</b>	<b>75,244</b>	<b>93,746</b>

## Principal commodities exported

PAPUA AND NEW GUINEA: PRINCIPAL DOMESTIC EXPORTS  
1965-66 TO 1969-70

(\$'000)

(Source: Overseas Trade Statistics, Bureau of Statistics, Papua and New Guinea)

Commodity	1965-66	1966-67	1967-68	1968-69	1969-70(p)
Copra . . . . .	14,298	9,994	13,943	14,804	13,340
Other coconut products . . . . .	6,589	5,840	7,405	6,361	6,408
Coffee beans . . . . .	8,787	10,208	14,320	15,531	20,181
Cocoa beans . . . . .	4,435	9,545	11,794	16,060	15,693
Timber(a) . . . . .	1,697	2,264	2,662	2,296	3,802
Plywood(b) . . . . .	1,987	2,167	2,429	2,504	2,702
Rubber(c) . . . . .	2,576	3,481	1,956	2,276	2,858
Gold . . . . .	947	914	825	807	839
Crayfish and prawns . . . . .	17	33	978	268	651
Crocodile skins . . . . .	1,001	737	509	473	452
Peanuts . . . . .	527	521	430	469	553
Pyrethrum extract . . . . .	89	390	417	313	332
Passionfruit extract . . . . .	174	112	202	122	131
Tea . . . . .	11	3	42	297	645
Other . . . . .	750	904	1,177	2,315	3,068
<b>Total . . . . .</b>	<b>43,885</b>	<b>46,113</b>	<b>59,089</b>	<b>64,896</b>	<b>71,653</b>

(a) Logs and sawn timber. (b) Plywood, veneer and battery veneer. (c) Raw and scrap rubber.

## Shipping

In 1969-70 shipping entries (excluding coastal shipping and cargoes) at Territory ports totalled 1,903, and 1,289,000 tons of cargo were discharged and 623,000 tons were loaded. Corresponding figures for 1968-69 were 1,543, 1,000,000 and 524,000 respectively.

Regular passenger and freight services operate between Australia and Papua and New Guinea. Vessels trading between Australia and the East also call at Territory ports, and there are services from continental and United Kingdom ports. Coastal and inter-island shipping services are maintained by vessels operating from the principal ports of the Territory.



### Other forms of transport and communication

Scheduled flights provide a network of air transport throughout Papua and New Guinea and regular air services link the Territory with Australia and neighbouring Territories, also with Manila, Hong Kong, Honiara and Jaipura. There were 406 licensed aerodromes in the whole of Papua and New Guinea at 30 June 1970, and of these 12 were the responsibility of the Department of Civil Aviation, 131 of the Administration, and 263 were privately owned. Much of the internal traffic and freight is carried on a charter basis.

At 30 June 1969 there were 7,374 miles of roads in the Territory of which 2,516 were adequately paved. Total motor vehicle registrations (excluding defence force vehicles) at 31 December 1970 were 33,667.

Telephone services operate between the main centres by radio telephone. These together with telex and telegraph services are operated within the Territory by the Department of Posts and Telegraphs, while overseas traffic is handled by the Overseas Telecommunications Commission. The Australian Broadcasting Commission broadcasts on medium wave and short wave from Port Moresby and Rabaul. The Administration Department of Information and Extension Services operates transmitters at a number of centres, broadcasting programmes in several local languages.

## Education and health

### Education

Schools in Papua New Guinea are conducted by the Administration and various Christian missions. In February 1970 the Australian Government adopted the recommendations of the Advisory Committee on Education in Papua and New Guinea, the House of Assembly subsequently passed the *Education (Papua and New Guinea) Ordinance, 1970* and the *Teaching Service (Temporary Provisions) Ordinance, 1970*. The new legislation provided for the voluntary merger as from 1 July 1970 of mission schools and colleges, and teaching staff with those of the Administration into a unified Territory Education System and a single Territory Teaching Service. A representative Territory Education Board and a number of District Education Boards were created to advise on educational planning and administration at the national and district levels respectively. A Teaching Service Commission was also created to employ teachers and to determine their salaries and conditions of service.

At 30 June 1970, 582 primary, secondary, technical and vocational schools were maintained by the Administration for 97,000 children. The total number of pupils in the various grades of the 1,170 mission schools was 142,000. There is also a correspondence school. To assist the educational work of the missions the Administration provides expert advice, educational equipment and textbooks, teachers' salaries and grants-in-aid. Teachers are recruited from Australia and overseas and some are trained at the Australian School of Pacific Administration, Sydney, and in 12 teachers' colleges in Papua New Guinea conducted by the missions and the Administration.

At the post-secondary and tertiary level of education, as well as the University of Papua and New Guinea and the Institute of Technology, there are a range of specialised institutions operated by Administration and Commonwealth Departments, including technical and teachers colleges, School of Valuation, Police Training College, Dental College, Vudal Agricultural College, Bulolo Forestry School and others. The University of Papua and New Guinea has faculties of Arts, Law, Science, Education and Medicine. In 1970 there were 818 students enrolled in degree and post-graduate courses, of whom 404 were Papuans and New Guineans. In August 1970 the University graduated its first group of students, 6 of the 10 graduates being Papuans and New Guineans. The Papua and New Guinea Institute of Technology conducts diploma courses in civil, electrical and mechanical engineering, surveying, architecture and building technology, accountancy and business studies, and in 1970 there were 229 enrolments (9 expatriates). At its first graduation ceremony in March 1970, four students received diplomas of surveying.

In November 1970 the Minister for External Territories appointed a Committee of Inquiry into Higher Education in Papua and New Guinea to advise on the future development and co-ordination of higher education to meet the national priorities of Papua and New Guinea.

### Health

The Department of Public Health of the Territory of Papua and New Guinea has the general oversight of all medical and dental services. The Department has the following seven functional divisions: medical services, preventive medicine, medical training, maternal and child health, dental education, administrative services, and mental health. To facilitate administration and co-ordination of the field services of the Department of Public Health, the Territory is divided into four geographical regions: the New Guinea Mainland, Highlands, New Guinea Islands Region and Papua.

## Finance

## Revenue and expenditure

PAPUA AND NEW GUINEA: REVENUE AND EXPENDITURE, 1965-66 TO 1969-70  
(\$'000)

	1965-66	1966-67	1967-68	1968-69	1969-70
<b>REVENUE</b>					
Customs . . . . .	11,783	14,916	16,555	17,669	23,951
Licences . . . . .	523	634	738	814	907
Stamp duties . . . . .	348	422	508	553	870
Postal . . . . .	2,548	3,201	3,543	4,682	5,289
Land revenue . . . . .	653	788	748	832	1,102
Mining receipts . . . . .	41	39	47	72	116
Fees and fines . . . . .	186	248	283	364	459
Health revenue . . . . .	263	300	317	352	464
Forests . . . . .	550	572	640	547	684
Agriculture . . . . .	586	786	1,087	1,015	1,011
Public utilities . . . . .	556	629	905	1,173	1,273
Direct taxation . . . . .	10,182	13,902	15,904	17,187	21,075
Miscellaneous . . . . .	4,576	4,869	5,397	4,614	5,381
Recoverable services . . . . .	2,526	2,883	3,229	5,264	9,862
<i>Total internal revenue</i> . . . . .	<i>35,320</i>	<i>44,190</i>	<i>49,900</i>	<i>(a)55,137</i>	<i>(a)72,442</i>
Territory loans . . . . .	6,157	6,194	8,397	7,183	6,736
Grant by Commonwealth of Australia(b) . . . . .	62,000	69,784	77,594	87,271	97,271
International loans . . . . .	..	..	..	51	1,384
Commonwealth loans . . . . .	..	..	..	..	5,000
Special Loan—Purchase of Equity in Bougainville Copper Ltd . . . . .	..	..	..	..	12,500
Consolidated revenue . . . . .	..	..	..	..	344
<b>Total revenue</b> . . . . .	<b>103,477</b>	<b>120,168</b>	<b>135,892</b>	<b>149,642</b>	<b>195,677</b>
<b>EXPENDITURE</b>					
Special appropriations . . . . .	2,028	2,386	2,785	5,734	5,567
Administrator . . . . .	686	1,082	1,329	1,327	9,278
House of Assembly . . . . .	306	418	420	291	383
Information and extension services . . . . .	645	748	1,001	1,187	1,239
Public Service Board . . . . .	791	1,240	1,270	1,550	1,838
Treasury . . . . .	10,586	10,302	11,576	11,623	3,313
Public health . . . . .	9,554	10,410	11,124	12,217	14,255
Social development and home affairs(c) . . . . .	..	..	..	..	6,953
District administration(d) . . . . .	4,751	5,667	6,012	6,570	..
Labour . . . . .	472	595	632	778	957
Education . . . . .	11,527	13,167	15,062	17,214	21,204
Agriculture, stock and fisheries . . . . .	4,548	5,413	6,427	7,492	8,751
Royal Papua and New Guinea Constabulary . . . . .	2,962	5,239	6,143	6,671	7,965
Law . . . . .	1,524	2,174	2,545	2,930	4,009
Lands, surveys and mines . . . . .	2,306	3,051	3,177	3,270	5,321
Forests . . . . .	1,330	1,625	2,369	2,469	2,677
Posts and telegraphs . . . . .	3,528	4,249	4,750	5,688	7,661
Trade and industry . . . . .	2,435	2,374	2,607	2,826	3,243
Stores for resale . . . . .	1,594	1,535	1,474	1,625	5,677
Public works . . . . .	4,187	4,755	5,740	7,115	8,105
General overheads . . . . .	2,184	2,088	2,291	2,241	2,745
Maintenance . . . . .	8,456	9,402	10,581	12,217	14,046
Capital works . . . . .	19,674	21,221	22,503	21,379	28,215
Other institutions . . . . .	3,702	6,444	8,623	11,498	15,474
Motor transport . . . . .	2,253	2,523	2,792	3,214	3,555
Government printer . . . . .	273	289	312	361	446
Purchase of investments—Bougainville Copper Ltd . . . . .	..	..	..	..	12,500
<b>Total</b> . . . . .	<b>102,303</b>	<b>118,398</b>	<b>(e)133,547</b>	<b>(e)149,485</b>	<b>(e)195,377</b>

(a) From 1 July 1968 refunds of revenue have been deducted from gross collections by items. (b) The annual grants by the Commonwealth of Australia are made to the Territory of Papua and New Guinea. (c) New department established 1969-70; includes former sections of the Department of the Administrator, Department of the Treasury and the former Department of District Administration. (d) Abolished in 1969-70—functions taken over by the Department of the Administrator and the Department of Social Development and Home Affairs. (e) Amount reduced by taxation refunds and refunds of revenue.

### Taxation

The main forms of taxation are income tax and import duties. *Income Tax* was imposed on 1 August 1959 to operate from 1 July 1959. In the case of individuals two different methods of calculating tax payable are used. Tax on taxable incomes has applied since 1 July 1959 and is calculated on a similar basis to that in Australia. The scale of taxation is about 50 per cent of the tax payable on the same taxable income in Australia. Deductions for dependants the taxpayer is maintaining are considerably higher than those allowed in Australia. Tax on chargeable income was introduced to apply from 1 January 1967 and has supplanted a previous *Personal Tax* of \$4 payable by all males eighteen years and over. Chargeable income consists of gross income less expenses directly incurred in earning the income. No deductions are allowable for dependants or any other private expenditure such as medical or education expenses. The tax is a flat rate of 2.00 cents in the \$1 applying on income above \$416 with a maximum of \$20.00. The two methods of calculating tax payable are supplementary, the method applied to any particular taxpayer being the one resulting in the greater amount of tax payable. Companies are taxed on a similar basis to that in Australia, and deductions allowable are generally comparable to those in Australia. From 1 July 1959 to 30 June 1967 the rates on public and private companies differed, public companies being taxed at a flat rate of 20 cents in the \$1 and private companies at 12.5 cents in the \$1 for the first \$10,000 and 17.5 cents in the \$1 for the remainder. From 1 July 1967 a flat rate of 22.5 cents in the \$1 applies to all companies, and from the same date private companies are no longer required to distribute a portion of their income in dividends each year. To encourage industry in the Territory certain companies manufacturing products new to the Territory may be granted complete tax exemption for the first five years of operation under the *Industrial Development (Incentive to Pioneer Industries) Ordinance 1965-1969*. In addition to income taxes the Native Local Government Councils (which are formed voluntarily by the indigenes) are empowered to levy local taxes for the purpose of providing for local services carried out by the councils. These taxes are set off against the taxpayers' personal taxation.

The present *Customs Tariff* provides high revenue rates on imports of ale, spirits, tobacco and cigarettes, timepieces, cigarette papers, fancy goods, and jewellery, but allows entry duty free or at a low rate of duty on most necessities affecting living and building costs. Under the Customs Tariff, plant, machinery and chemicals to be used mainly for industrial and developmental purposes are generally duty-free. A by-law covers goods imported by passengers. No preferential rates are specified in the schedule. Export duties imposed on copra, cocoa, rubber, mother-of-pearl, trochus and burgo shell, and gold were repealed in July 1959.

Effective from 2 September 1970, a general levy of 2½ per cent was imposed, subject to certain exemptions on all goods imported into Papua New Guinea. Exemptions apply in the main to goods imported by the Administration and/or the Australian Government and their statutory authorities, goods imported for the use of charitable organisations and goods used for educational, health or medical services or for scientific research.

This levy, although administered by the Comptroller of Customs is not a Customs Duty and does not affect rates of duty imposed under the Customs Tariff.

Provision is made in the *Australian Customs Tariff 1966-1970* for the free entry into Australia of certain agricultural goods produced in and imported direct from the Territory (*see* chapter Overseas Transactions). In addition, goods produced or manufactured in the Territory and imported directly into Australia are exempted from primage duty.

### Banking

The banking system in the Territory of Papua and New Guinea is based on Australia's, and provides full trading and savings bank facilities. Four Australian trading banks have branches in the main centres. They are: the Commonwealth Trading Bank of Australia, the Bank of New South Wales, the Australia and New Zealand Bank and the National Bank of Australasia Ltd. Affiliates or subsidiaries of banking institutions operate savings banks in the Territory. Rates of interest for bank deposits and advances are the same as those applying in Australia. A branch of the Reserve Bank of Australia in Port Moresby carries out central bank functions and acts as banker for the Administration and Commonwealth Government Departments in the Territory. The Territory uses the same currency as Australia.

The Banking (Foreign Exchange) Regulations of the Commonwealth of Australia apply to the Territory of Papua and New Guinea. The Regulations are administered by the Reserve Bank of Australia in a way that is consistent with the policy of encouraging overseas investment in Australia and the Territory. All remittances abroad require exchange control approval, though in practice no restrictions are imposed on current transactions and the trading banks have been authorised to deal with the great majority of these transactions as agents of the Reserve Bank.

The Papua and New Guinea Development Bank which opened in July 1967, has as its prime objective the provision of funds to assist individuals and enterprises in developing the Territory. The Bank was established to provide finance where it was not otherwise available on reasonable terms and conditions. Both indigenes and non-indigenes can qualify for advances. When considering applications the Bank is concerned mostly with the borrower's prospects for success rather than his security.

Average weekly deposits of cheque-paying banks in the Territory of Papua and New Guinea for the year 1969-70 were \$41,906,000 and loans, advances, etc., \$27,207,000. Average weekly debits to customers' accounts amounted to \$21,437,000. Savings banks depositors' balances at 30 June 1970 amounted to \$41,488,000, comprising indigenous \$15,689,000 and non-indigenous \$25,799,000, having increased since June 1959 from \$2,380,000 and \$7,546,000 respectively.

## TERRITORY OF PAPUA

### General description

#### Area, etc.

Papua lies wholly within the tropics. The northernmost point touches 5° S. latitude; its southernmost portion, comprising Tagula and Rossel Islands, lies between 11° S. and 12° S. latitude. It is separated from Australia by Torres Strait. The length of Papua from east to west is upwards of 930 miles; towards either end the breadth from north to south is about 320 miles, but about the centre it is considerably narrower. The Territory includes also the islands of the Trobriand, Woodlark, D'Entrecasteaux, and Louisiade groups. The length of coast-line is estimated at 3,664 miles—1,728 on the mainland and 1,936 on the islands. The total area is 86,100 square miles, of which 83,325 are on the mainland and 2,775 on the islands. A description of the physical characteristics of the Territory appears in earlier issues of the Year Book (*see* No. 18, page 633) and in the Administration Annual Reports.

#### Administration

Particulars of the early administration of Papua are given in Year Book No. 19, page 576. The Territory was placed under the authority of the Commonwealth on 1 September 1906 by proclamation issued in pursuance of Letters Patent of 18 March 1902 and was accepted by the Commonwealth by the *Papua Act* 1905, which came into force by virtue of the aforesaid proclamation. The transfer was made under the authority of Section 122 of the Constitution. The Territory is under the control of the Commonwealth, but not included within it, and is divided into six administrative districts, Southern Highlands, Western, Gulf, Central, Milne Bay, and Northern.

## Population

#### Indigenous population

Within the major division, Melanesian, into which most indigenous inhabitants of the Territory are classified, a distinction may be made between a Melanesian type and a Papuan type, the former representative of the eastern mainland and the island archipelagos to the east and south-east, and the latter representative of the western third and the interior of the Territory. Some negro traits have been noted in a few of the inland mountain groups. The indigenous population of the Territory of Papua as recorded in the 1966 census is shown on page 990. The estimated indigenous population for 30 June 1970 was 640,064 persons, comprising Central, 129,092; Gulf, 70,456; Milne Bay, 107,179; Northern, 61,141; Southern Highlands, 206,816; and Western, 65,378.

#### Non-indigenous population

The numbers of non-indigenous population from the 1966 census are given on page 990. Separate figures for Papua and for New Guinea are no longer available. The estimated non-indigenous population at 30 June 1970 for Papua and New Guinea was 48,961.

## Land tenure

The basic principles applying to land tenure in Papua are the same as those applying to the whole of the Territory of Papua and New Guinea described on pages 992-3. At 30 June 1970, of the total area of Papua, 22,299,796 hectares, only 789,047 hectares had been alienated. The distribution of alienated land at 30 June 1970 according to tenure was as follows: held by private non-indigenous

inhabitants, freehold 9,826 hectares; leasehold 165,012, land tenure conversion (freehold) 2,422 hectares; native reserves 27,218 hectares; other Administration land, including land reserved for public purposes, 584,569 hectares. Land held in accordance with native custom may be converted to freehold tenure under the *Land (Tenure Conversion) Ordinance* 1963–1968.

Although a small amount of freehold land exists in Papua, present legislation does not provide for the granting of estates in freehold. Leases of various kinds may be granted by the Administration. The principal types of leases available are agricultural leases, pastoral leases, town subdivision leases, business leases and residence leases of other than town allotments, and various forms of special leases and licences over land. Leasehold terms are liberal, and, in general, leases may be granted for periods of up to ninety-nine years. Rent is based on the unimproved value of the land.

Leases of Crown land are granted by the Administrator following a land use examination, advertisement of leases available, and consideration of applications by the Land Board. Dealings in privately-owned land are a matter for private treaty. Native-owned land, however, cannot be acquired or leased from the native owners by private individuals. The Administration alone may purchase native-owned land, and then only if the owners are willing to sell and the Administration is satisfied that the owners do not require, and are not likely to require, the land.

The registration of titles, interest and dealings in alienated land is provided for under the *Real Property Ordinance* 1913–1969, modelled on the Torrens system of land registration.

## Production

### Primary production

The products of the Territory are obtained principally from its agricultural, forestry, mining, and fishing industries. Indigenous subsistence agriculture, fishing and hunting produce most of the food requirements of the indigenous population. The main indigenous agricultural products are taro, yams, sweet potatoes, bananas, and papaws. Peanuts are becoming of increasing importance in the indigenous diet. Non-indigenous enterprise produces most of the commodities exported. Indigenous, however, produce copra for export, while indigenous enterprise in other fields of agricultural production for export purposes, e.g. cocoa and coffee, is undertaken. The principal agricultural products of Papua for the export trade are copra and rubber. Indigenous production of copra is increasing. The fishing industry is also of increasing importance. Gold, silver, manganese, zinc-lead, and copper ores have been mined in commercial quantities in the past, but current production is limited to gold and silver.

For information on the agricultural, fisheries and animal industries, see pages 992–7 which for the sake of convenience covers the Territories of Papua and New Guinea singly and combined. The following paragraphs relate to forestry, mining, fisheries, and water-power resources in Papua.

### Forestry

A general description of the forestry policy in Papua and New Guinea is given on pages 995–6.

Tropical rain forest covers most of Papua, although near Port Moresby there is an area of savannah country. Because of the mixed nature of the timbers in any one area, their utilisation on an economical basis is difficult. Mangroves occur in large areas fringing the Gulf of Papua. Forestry field work is carried out in Papua with a view to assessing the forest resources available and also to survey areas subsequently made available for cutting.

### Mining

Although a large number of minerals have been found in Papua, including platinum, gold, silver, copper, tin, lead, zinc, cinnabar, iron, osmiridium, manganese, sulphur, chromite, gypsum, and lignite, current mineral production is not of economic importance. Before the 1939–45 War gold was an important item in Papuan production, but it has since dwindled to insignificance. Large quantities of copper ore were mined and exported up to 1940. A large low grade copper ore body is being investigated in the Star Mountains, near the West Irian border. Extensive deposits of magnetite sands exist along the Gulf of Papua coastline, but these contain the undesirable impurity titanium, and ways of separating this from magnetite are under investigation. The *Mining Ordinance* 1937–1966 and the *Mining Development Ordinance* 1955–1960 control mining in Papua.

Indications of oil have been found at scattered locations over a large area, but commercial quantities have not been discovered. Natural gas has been found in several wells in the Gulf District (including offshore), but its commercial use is not yet economically feasible. At 30 June 1971 thirty-one permits and licences were effective under the provisions of the *Petroleum (Prospecting and Mining) Ordinance* 1951–1968 and the (*Commonwealth*) *Petroleum (Submerged Lands) Act* 1967–1968.

### Fisheries

The fishing industry in Papua is considered to have considerable potential. In 1968–69 the most important export from Papua and New Guinea was 258,395 lb of frozen crayfish tails and prawns from the north coast of Papua, valued at \$268,181. Exports of barramundi to Australia are also important. Two large international firms are operating commercial prawn fishing ventures.

Two cultured pearl farms have recently commenced production of both round and half pearls of high quality.

### Water power

Most of the rivers in Papua carry a large volume of water from a great height over a relatively short distance, thereby offering opportunities for the installation of hydro-electric power plants. It is estimated that at least 1,850 MW could be developed.

For further details, see Chapter 24, Water Conservation and Irrigation and Chapter 28, Electric Power Generation and Distribution.

## TRUST TERRITORY OF NEW GUINEA

### General description

#### Area, etc.

The Trust Territory of New Guinea extends almost from the equator to latitude 8° S., a distance of 400 nautical miles, and from longitude 141° E. to 160° E., a distance of 1,000 nautical miles. The land area is 92,160 square miles, that of the New Guinea mainland being 69,095 square miles and that of adjacent islands, including the two northernmost islands of the Solomon Islands, Buka and Bougainville, and the Bismarck Archipelago, 23,065 square miles. Information regarding physiography and climate will be found in Year Book No. 22, page 613, in the *Official Handbook of the Territory of New Guinea*, and the Administration Annual Reports.

#### Administration

The terms of the League of Nations mandate (1920) of the former German possession of New Guinea are given in Year Book No. 33 (see page 264). Particulars of the administration of the Territory of New Guinea prior to the setting-up of the Papua and New Guinea Administration are given in Year Book No. 36 and earlier issues, and of events following the outbreak of the Pacific War in Year Book No. 37 and subsequent issues up to No. 48.

Following the 1939–45 War the Commonwealth Government undertook to place the Territory of New Guinea under the Trusteeship System established under the Charter of the United Nations. The Trusteeship Agreement for the Territory, under which the Government of Australia is the sole administering authority, was approved by the General Assembly of the United Nations Organisation on 13 December 1946. The terms of the Agreement are shown in Year Book No. 39, pages 355–7.

For administrative purposes the Territory is divided into the following twelve districts: East New Britain and West New Britain, comprising New Britain and the adjacent islands; Morobe, Madang, Eastern Highlands, Chimbu (major part), Western Highlands, East Sepik and West Sepik on the mainland; New Ireland, comprising New Ireland, Lavongai and adjacent islands; Manus, comprising the Admiralty Group; and Bougainville in the Solomon Islands. Each district is administered by a District Commissioner.

## Population

### Indigenous population

The indigenous people of the Territory may in general be grouped with the Melanesians who occupy the greater part of the Western Pacific. They may be divided into two main types—Melanesian and Papuan—the former, with a few exceptions, constituting the population of the Bismarck Archipelago, the Solomon Islands and the coastal districts of the New Guinea mainland, the latter inhabiting the interior of the mainland. Some tribes of Negritos exist in the mountains of New Guinea. There is a strain of Papuan, and, possibly, of Polynesian blood in the Admiralty Islanders, while the Western Islanders and the inhabitants of the small islands east and south-east of New Ireland are Micronesians. (See Year Book No. 16, page 670, and *Official Handbook of the Territory of New Guinea*, Part V.)

The indigenous population of the Territory at the Census of 30 June 1966 is shown on page 990. At 30 June 1970 the estimated indigenous population was 1,772,744 persons, comprising Bougainville, 77,793; Eastern Highlands, 288,617; Chimbu, 185,295; Western Highlands, 331,299; Madang, 177,307; Manus, 21,951; Morobe, 244,956; East New Britain, 98,597; West New Britain, 55,171; and New Ireland, 50,623.

#### Non-indigenous population

The non-indigenous population of the Territory of New Guinea at the 1966 Census is shown on page 990. Separate figures for Papua and for New Guinea are no longer available. The estimated non-indigenous population at 30 June 1970 for Papua and New Guinea was 48,961.

### Land tenure

The principles governing the acquisition and ownership of land and types of tenure available in New Guinea are in general similar to those which obtain in Papua, and grants of estates are restricted to leasehold tenure. In New Guinea, however, the amount of freehold land of earlier origin held by private non-indigenous owners amounts to more than half a million acres. Freehold titles to this land, which includes a good deal of plantation land, may be transferred by purchase, subject only to the general provision that dealings in land require the approval of the Administrator.

The area of the Territory of New Guinea is estimated at approximately 23,869,237 hectares, of which at 30 June 1970 only 776,354 hectares were alienated. The following was the distribution of alienated land according to tenure at 30 June 1970: held by private non-indigenous inhabitants—freehold land under tenure conversion, 207,012 hectares; leasehold 205,849 hectares; native reserves 10,852 hectares; other Administration land, including land reserved for public purposes 351,528 hectares. Land held in accordance with native custom may be converted to freehold tenure under the *Land (Tenure Conversion) Ordinance 1963–1968*.

Under German law there was a system of registration of titles in a Ground Book, but registration did not necessarily confer an indefeasible title. The German system has been replaced by one modelled on the Torrens plan, embodied in the *Lands Registration Ordinance 1924–1969*. The land registers were lost during the 1939–45 War, but provision for restoration of the lost titles is made in the *New Guinea Land Titles Restoration Ordinance 1951–1968*.

### Production

The products of New Guinea are obtained principally from its agricultural, mining, fishing, and forestry industries. A copra crushing mill near Rabaul, established in 1952, commenced crushing at about 18,000 tons of copra per annum, and its capacity is now about 60,000 tons of copra per annum. Early in 1968 a factory capable of manufacturing 7,000 tons of desiccated coconut a year was established also near Rabaul. At Bulolo a company is producing high quality moisture-proof plywood in a factory with an approximate annual plywood production of 38 million square feet (on a  $\frac{3}{8}$  in. basis). Indigenous subsistence agriculture, fishing and hunting produce most of the food requirements of the indigenous population. The main indigenous agricultural products are taro, yams, sweet potatoes, coconuts, bananas, papaws. Non-indigenous enterprise produces most of the commodities exported. Indigenous, however, produce copra for export, and in recent years have taken up the production of introduced crops such as peanuts, rice, cucurbits, and maize for their own consumption and coffee, cocoa, tea, passionfruit, pyrethrum and palm oil for export. The principal agricultural products of New Guinea for the export trade are copra and coconut oil, cocoa, and coffee, but exports of timber and timber products are substantial and the export of tea is increasing. Subsistence fishing is widely practised. In the past the principal exports of marine produce have been marine shell, crocodile-skins and barramundi. In the future substantial exports of tuna, prawns, and cultured pearls are expected.

For information on the agricultural, fisheries and animal industries, which for the sake of convenience covers the Territories of Papua and New Guinea singly and combined, see pages 992–7. The following paragraphs relate to the timber, and mining industries in the Territory of New Guinea alone.

#### Forestry

A general description of the forestry policy in Papua and New Guinea is given on pages 995–6.

### Mining

The production of gold and associated silver is the most important mining activity in New Guinea, although other minerals, such as osmiridium, platinum, copper, iron ore, sulphur, and brown coal, have been discovered. The production of gold in New Guinea since the 1939–45 War has been on a much smaller scale than before the war, decreasing from \$1,410,000 in 1959–60 to \$797,155 in 1969–70.

A large low grade copper deposit with ore reserves of 900 million tons of ore containing 0.48 per cent copper and 0.36 dwt per ton gold is being developed by Bougainville Copper Pty Ltd a partly owned subsidiary of Conzinc Rio Tinto Australia Ltd with a 20 per cent shareholding by the Administration. Beginning in mid 1972, ore is expected to be mined at the rate of 30 million tons per annum to produce concentrates containing some 150,000 tons of copper, 510,000 oz of gold and 1,000,000 oz. of silver for export.

The laws in operation governing mining are the *Mining Ordinance* 1928–1966, the *Mines and Works Regulation Ordinance* 1935–1962 and the *Mining Development Ordinance* 1955–1960 and the regulations made thereunder.

The *Petroleum (Prospecting and Mining) Ordinance* 1951–1968 deals with the issue of permits and the granting of licences and leases for oil exploration. There were six permits and licences for oil current at June 1971.

### Water power

The International Bank for Reconstruction and Development has granted a \$20.7 million loan for the development of the first stage of the Upper Ramu Hydro-electric Scheme. For details, see Chapter 28, Electric Power Generation and Distribution.

## HEARD ISLAND AND McDONALD ISLANDS

These islands, about 2,500 miles south-west of Fremantle, were transferred from the United Kingdom to Australia as from 26 December 1947. The laws of the Australian Capital Territory were declared to be in force in the Territory of Heard Island and McDonald Islands by the *Heard and McDonald Islands Act* 1953. In 1968, the responsibility for the administration of this Act was transferred from the Minister for External Affairs to the Minister for Supply.

In December 1947 an Australian scientific station was established on Heard Island, and meteorological investigations were conducted until the station was closed in March 1955 following the establishment of Mawson station on the Antarctic mainland. Australian expeditions have since visited the island from time to time. Heard Island is about twenty-seven miles long and thirteen miles wide. The McDonald Islands are twenty-six miles to the west of Heard Island. They are small, rocky and precipitous. The first known landing on McDonald Island, the largest of the group of the same name, took place on 27 January 1971 when two members of the Australian National Antarctic Research Expeditions (ANARE) paid a short visit on their way to the Heard Island Station.

## AUSTRALIAN ANTARCTIC TERRITORY

An Imperial Order in Council of 7 February 1933 placed under Australian authority all the islands and territories other than Terre Adélie situated south of 60° S. latitude and lying between 160° E. longitude and 45° E. longitude. The Order came into force with a Proclamation issued by the Governor-General on 24 August 1936 after the passage of the *Australian Antarctic Territory Acceptance Act* 1933. The boundaries of Terre Adélie were definitively fixed by a French Decree of 1 April 1938 as the islands and territories south of 60° S. latitude lying between 136° E. longitude and 142° E. longitude. The *Australian Antarctic Territory Act* 1954 declared that the laws in force in the Australian Capital Territory are, so far as they are applicable and are not inconsistent with any ordinance made under the Act, in force in the Australian Antarctic Territory. In 1968, responsibility for the administration of this Act was transferred from the Minister for External Affairs to the Minister for Supply.

On 13 February 1954 the Australian National Antarctic Research Expeditions (ANARE) established a station on Mac-Robertson Land at latitude 67° 36' S. and longitude 62° 53' E. The station was named Mawson in honour of the late Sir Douglas Mawson and was the first permanent Australian station to be set up on the Antarctic continent. Meteorological and other scientific research is conducted at Mawson, which is the centre for coastal and inland survey expeditions.



A second Australian scientific research station was established on the coast of Princess Elizabeth Land on 13 January 1957 at latitude 68° 35' S. and longitude 77° 58' E. The station was named Davis in honour of the late Captain John King Davis of Melbourne, who commanded a number of famous Antarctic ships. The station was temporarily closed down in January 1965 and reopened in February 1969. In February 1959 the Australian Government accepted from the United States Government custody of Wilkes Station, which was established by the United States on 16 January 1957 on Vincennes Bay, at latitude 66° 15' S. and longitude 110° 32' E. The station was named in honour of Lieut Charles Wilkes, who commanded the 1838–42 United States expedition to the area. Wilkes ceased operations early in April 1969. A new station of advanced design, built about 1½ miles south of Wilkes, was opened in February 1969 and named Casey in honour of Lord Casey, who has had a long association with Antarctic Expeditions.

On 1 December 1959 Australia signed the Antarctic Treaty with Argentina, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the U.S.S.R., the United Kingdom, and the United States of America. Poland, Czechoslovakia, Denmark and the Netherlands have subsequently acceded to the Treaty. The Treaty reserves the Antarctic area south of 60° S. latitude for peaceful purposes, provides for international co-operation in scientific investigation and research, and preserves, for the duration of the Treaty, the *status quo* with regard to territorial sovereignty, rights and claims. The Treaty entered into force on 23 June 1961. Since then the Antarctic Treaty powers have held six consultative meetings under the Treaty, the first at Canberra in July 1961, the second at Buenos Aires in July 1962, the third at Brussels in June 1964, the fourth at Santiago in 1966, the fifth in Paris in 1968 and the sixth in Tokyo 1970. The seventh is to be held in Wellington in 1972.

## COCOS (KEELING) ISLANDS

### General description

The Cocos (Keeling) Islands, two separate atolls comprising some twenty-seven small coral islands with a total area of about 5½ square miles, are situated in the Indian Ocean in latitude 12° 5' S. and longitude 96° 53' E. They lie some 1,720 miles north-west of Perth and 2,290 miles almost due west of Darwin, while Johannesburg is some 3,800 miles further distant to the south-west and Colombo is 1,400 miles to the north-west of the group.

The main islands of the Territory are West Island, the largest, about six miles from north to south, on which are the aerodrome and most of the European community; Home Island, the headquarters of the Clunies-Ross Estate; Direction Island; South Island; and Horsburgh Island. North Keeling Island, which forms part of the Territory, lies about fifteen miles to the north of the groups and has no inhabitants.

Main settlements are on West Island and Home Island. The group of atolls is low-lying, flat and thickly covered by coconut palms, and surrounds a lagoon which has a harbour in the northern part but which is extremely difficult for navigation.

The climate is equable and pleasant, usually being under the influence of the south-east trade winds for about three-quarters of the year. However, the winds vary at times, and meteorological reports from the Territory are particularly valuable to those engaged in forecasting for the eastern Indian Ocean. The temperature varies between 70° and 89° F., and the average rainfall is about 67 inches. There are occasional violent storms. The estimated population at 30 June 1970 was 611 (308 males and 303 females).

### History and administration

Summarised particulars of the discovery of the islands and their history up to 1946, when they became a dependency of the Colony of Singapore, are given in Year Book No. 51, page 140, and in earlier issues. On 23 November 1955 the Cocos Islands ceased to form part of the Colony of Singapore and were placed under the authority of the Commonwealth of Australia. The transfer was effected by an Order in Council made by Her Majesty Queen Elizabeth the Second under the Imperial Act entitled the Cocos Islands Act 1955 and by the *Cocos (Keeling) Islands Act 1955* of the Commonwealth whereby the islands were declared to be accepted by the Commonwealth as a Territory under the authority of the Commonwealth, to be known as the Territory of Cocos (Keeling) Islands.

Responsibility for the administration of the Territory rests with the Minister for External Territories. The first Official Representative was appointed on 23 November 1955 to take charge of the local administration of the Territory. Under the *Official Representative Ordinance 1955–1961* of the Territory, the Official Representative is given such powers and functions in relation to the Territory as are delegated to him by the Minister under the *Cocos (Keeling) Islands Act 1955–1966* or are otherwise conferred on him under that Act or by or under any other law of the Territory. The laws of

the Colony of Singapore which were in force in the islands immediately before the date of the transfer were, with certain exceptions, continued in force by the *Cocos (Keeling) Islands Act 1955-1966*. They may be amended or repealed by Ordinances made under the provisions of that Act which empower the Governor-General to make Ordinances for the peace, order and good government of the Territory.

#### Transport and communication

There is an international airport at West Island under the control of the Commonwealth Department of Civil Aviation. A fortnightly air service is provided between Perth and the Cocos Islands by Ansett and T.A.A. alternately. Although there is no regular shipping service, vessels from Australia and Singapore call at intervals. A radio teletype link with Perth is maintained by the Administration. Local postal and telephone services exist, and a non-commercial broadcasting station operates.

### CHRISTMAS ISLAND

Christmas Island is an isolated peak situated in the Indian Ocean in latitude 10° 25' 22" S., longitude 105° 39' 59" E. It is approximately 224 miles south from Java Head at the south entrance to Sunda Strait, 815 miles from Singapore and 1,630 miles from Fremantle. Christmas Island covers an area of about fifty-two square miles. It consists of a central plateau of about 600 to 800 feet with several prominent rises up to 1,170 feet. The plateau descends to the sea in a series of steep slopes alternating with terraces, the last dropping in a cliff of 200 to 300 feet to a shore terrace, terminating in a sea cliff of 10 to 150 feet, which is continuous round the island except in a few places, the chief of which is Flying Fish Cove, where the principal settlement is located and which is also the only known anchorage.

The climate is healthy and pleasant, and the prevailing winds come from the south-east to east-south-east from May to December, but from then to April (the wet season) they occasionally shift round to between north and west. The average yearly rainfall is about 80 inches with a marked summer incidence. The porous nature of the ground prevents the formation of pools of water, but there are several good springs which maintain an adequate supply of fresh water for the small population and the installations. The mean average temperature is about 80° and does not vary greatly throughout the year.

The economy of the Territory is based almost entirely on the mining and extraction of phosphate. Because of the nature of the land there appears little prospect of establishing any other economic activity.

At 30 June 1970 the estimated population was 3,361 (2,208 males and 1,153 females).

#### Education

The Christmas Island education system comprises a primary school and a secondary school following the Singapore curriculum, a primary school following an Australian curriculum and a technical training centre. The Singapore curriculum schools provide classes to Form 4 level and scholarships are available for students wishing to proceed to Singapore for education beyond that level.

At 30 June 1970, 693 children were enrolled at the primary and secondary schools following the Singapore curriculum. The combined staff establishment consisted of a headmaster, two senior teachers, 25 class teachers and two trainee teachers. The Australian curriculum primary school had 66 pupils at 30 June 1970, with teachers seconded from the Western Australian Department of Education. The Technical Training Centre, which opened in 1969, had a total enrolment of 259 at 30 June 1970.

#### History and administration

Summarised particulars of the history of Christmas Island up to its administration by the United Kingdom as a separate Crown Colony from 1 January 1958, pending transfer to Australia, are given in Year Book No. 51, page 141, and in earlier issues. On 1 October 1958 the island was transferred to the Commonwealth of Australia by the *Christmas Island Act 1958* and is now administered as a Territory under the authority of the Commonwealth. Responsibility for the administration and government of the Territory rests with the Minister for External Territories, and day to day affairs on the island are administered by an Administrator under delegation from the Minister. The laws which were in force on the island at 30 September 1958 were continued as the laws of the Territory after its transfer to Australia.

**Phosphate deposits**

The only commercial activity carried out is the mining of phosphate. The British Phosphate Commissioners act as managing agents for the Christmas Island Phosphate Commission. There are three principal phosphate deposits on the islands, of which the largest is that now being worked at South Point. This field is situated on the 600 feet to 800 feet level and is approximately 12 miles from the drying and shipping plant at Flying Fish Cove. During 1969-70, 989,049 tons of phosphate were exported to Australia and New Zealand. In addition 92,323 tons of phosphate dust were exported to South-east Asia and Australia.

**Transport and communication**

Transport to and from the island is maintained by vessels operated under charter by the Christmas Island Phosphate Commission. One vessel makes regular trips between Christmas Island and Singapore, and other vessels carry phosphate to Australian ports and New Zealand.

A post office and internal telephone system are operated by the Administration. The latter comprises four automatic exchanges and three small subscriber-attended exchanges. A radio station is used for messages via Perth and Singapore and for communication with ships at sea. A limited broadcasting station commenced operating during 1966-67.