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COMMONWEALTH



OF AUSTRALIA

REPORT
OF
THE DIRECTOR-GENERAL
OF
HEALTH

JULY 1, 1956

JUNE 30, 1958

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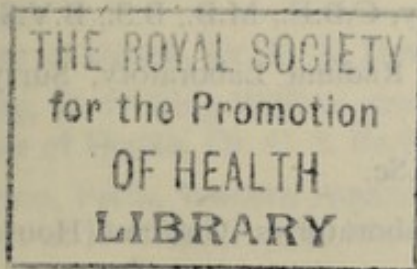
COMMONWEALTH



OF AUSTRALIA

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**REPORT
OF
THE DIRECTOR-GENERAL
OF
HEALTH**



JULY 1, 1956 ————— JUNE 30, 1958

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Commonwealth Health Laboratories are located at the following centres:—

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Bendigo, Launceston, Hobart, Port Pirie, Kalgoorlie, Darwin, Canberra,
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*The Honourable D. A. Cameron, O.B.E., M.P.,
Minister for Health,
Commonwealth of Australia.*

The following report relates to the activities of the Commonwealth Department of Health during the two years from 1st July, 1956, to 30th June, 1958. Some sections include, mainly for purposes of clarification, references to previous development of the Department.

CONSTITUTIONAL

A point which has been made in the past and which could well be reiterated here is that, under the Commonwealth Constitution, the powers of the Commonwealth in public health administration are limited to certain specific functions.

The Constitution Act (Placitum (ix) of Section 51) empowers the Commonwealth to make laws with respect to quarantine and in addition, the Commonwealth has power to make grants in aid and may legislate on matters incidental to other powers under the Constitution. In 1946 Section 51 of the Constitution Act was amended by the addition of Placitum (xxiiiA) as follows:—

“The provision of maternity allowances, widows' pensions, child endowment, unemployment, pharmaceutical, sickness and hospital benefits, medical and dental services (but not so as to authorize any form of civil conscription), benefits to students and family allowances.”

This extension to the Act has enabled the Commonwealth to introduce legislation to provide a number of National Health benefits and services, full details of which are included in a later section of this report.

Under the Constitution, the responsibility for public health generally, is left to the various State Governments, except of course in respect of Commonwealth territories. However, the Commonwealth has, in co-operation with the States, established the National Health and Medical Research Council which, with its various specialist sub-committees has contributed greatly to the improvement of public health standards and practices.

Some of the more important aspects of the Council's activities are summarized in the following pages.

PUBLIC HEALTH—COMMONWEALTH-STATE CO-OPERATION

Tuberculosis: One of the earliest public health enterprises undertaken by the Commonwealth in collaboration with the States was the campaign directed against Tuberculosis. In its early years as the search for cases gained momentum, the Tuberculosis morbidity rate each year showed a tendency to increase, reaching a maximum of 56.47 per 100,000 of population in 1953. Since that time, there has been a definite downward trend and the rates for 1957 and 1958 are respectively 41.08 and 40.1 compared to a rate of 46.8 in 1956. The death rate for these years 6.0 per 100,000 of population in 1957 and 5.4 in 1958 also show a downward trend compared with 7.6 in the year 1956.

It is worthy of remark that the same downward trend in incidence does not apply to the age group 55 and over nor on an Australia-wide basis to the age group 0-14 years. An analysis of the incidence by States made by the Director of Tuberculosis disclosed that the downward trend applies to the age group 0-14 years in States where radiographic examination of the chest is compulsory. On the other hand, where these examinations are conducted on a voluntary basis there has been a definite increase in incidence of tuberculosis in the 0-14 years age group, suggesting that uncontrolled and unsuspected exposure to infection in the home may be a major factor in States in which chest examinations are not compulsory.

Detailed information on all aspects of the Tuberculosis Campaign is included in the Tuberculosis report on page 36.

Statistics in respect of Tuberculosis cases for the period, are included in the Epidemiological report on page 54.

Influenza: Influenza of Asian type was introduced into Australia from Singapore early in May, 1957, by air to Victoria and by ship to Queensland. The disease spread quickly through coastal Queensland to Brisbane and eastern New South Wales, but there was a delay of some weeks before it reached epidemic proportions in Victoria. Infection subsequently extended to Tasmania, South Australia and Western Australia in that order. Central Australia was not involved until the epidemic on the coast was subsiding. A surprising feature was the escape of Darwin, the first port of call by air from the Far East. The epidemic continued for twenty weeks, resembling in this respect epidemics in previous years when opportunities for rapid and wide dispersion by air transport comparable to that of to-day did not exist. Data available are not suitable for an accurate assessment of the attack rate but it is estimated that some 20 per cent. of the work force was absent for variable periods on account of influenza. The age group under twenty years and the aged and debilitated were the most susceptible. Speaking generally, the disease was of mild form.

The epidemic called attention to the present lack of any effectual method of combating influenza. It is clearly impossible with present cultural methods, during the currency of an epidemic, to manufacture, distribute and administer a vaccine to the mass of the population in time to permit the development of a protective immunity. Some prospect of control attaches to the possibility that prior immunization of several months standing with a polyvalent vaccine may provide a basic protection permitting rapid and effectual response to a reinforcing dose of the prevalent virus in the face of an epidemic. Planning of a national programme of influenza control is beset by many uncertainties. It is hoped that it will be possible in the near future for the Commonwealth and States in collaboration to organise and conduct field trials designed to provide the basic information necessary for the design of an effectual system of mass protection.

Details of production and distribution of influenza virus vaccines are included in the Commonwealth Serum Laboratories section of this report, on page 104.

Poliomyelitis: By agreement between the Commonwealth and the States mass immunization against Poliomyelitis was commenced throughout Australia in July, 1956, using a Salk type vaccine manufactured by the Commonwealth Serum Laboratories. On the recommendation of the National Health and

Medical Research Council, the age group 6 months to 14 years, pregnant women, physiotherapists and members of hospital staffs at risk were specified for first priority. To effect the vaccination the smaller States relied principally upon mobile clinics conducted by the Public Health Departments but in N.S.W. and Victoria the task of immunization was delegated to the Municipalities and Shire Councils.

By June, 1958, in the 0-14 years group, 2,128,900 of an estimated 2,849,418 persons had received a complete course, 377,591 had received two and 73,888 had received one injection. Immunization of the group 15 years and over had commenced and 68,662 had received the complete course, 185,728 two injections and 110,982 one injection. Concurrently with the vaccination campaign the incidence of poliomyelitis fell remarkably, cases for the calendar year 1957, numbering 125 in contrast to 1,194 in the preceding 12 months.

For the currency of the mass immunization campaigns the Commonwealth set up a surveillance committee to which details of all cases suspected to be poliomyelitis were sent for study. This Committee set out precise diagnostic criteria and issued a form of clinical record to be furnished from each case. In the early months only cases in vaccinated subjects were referred, the principal purpose being to check the safety of the vaccine. However, the fall in incidence of poliomyelitis after the first few months permitted the Committee to undertake similar study of suspected cases in unvaccinated persons also, so that a statistical assessment of the efficacy of the vaccine became possible.

During the two years to June 30th, 1958 eight million injections were given without any evidence of the vaccine causing or provoking paralysis. Statistical analysis of the incidence of poliomyelitis in the vaccinated and the unvaccinated indicated that amongst those who had received injections the vaccine proved 80% effective in preventing infection.

The section of this report devoted to the operation of the Commonwealth Serum Laboratories during the period, contains further details in respect of the production of Poliomyelitis (Salk) vaccine.

Diphtheria Immunization: There is some evidence that where Poliomyelitis vaccinations have been undertaken by the local authority immunization against Diphtheria has been neglected. A brief and hurried survey in one State has shown that the great majority of infants recently immunized against Diphtheria were taken to private practitioners for that purpose. This observation suggests that in Municipalities where the population is less affluent and less alert to the need for immunization there may be a dangerous falling off in the level of protection in pre-school children.

Narcotic drugs: Some progress was made towards States requiring the notification of "addiction" in accordance with the definition advocated by the World Health Organization. On behalf of the National Health and Medical Research Council, this Department obtained the agreement of the Federal Council of the British Medical Association to States adopting legislation in the Queensland form to provide for notification of protracted narcotic drug therapy. Medical practitioners under such an arrangement would be required to inform the State health authority of the intention to prescribe narcotic drugs for any patient over a period greater than two months. For this purpose "Health Authority" means the principal medical officer in the Department of Public Health and his relationship to the notifying medical practitioner will be that of consultant.

In 1955, at 52.5Kg. per million of population, without any proportionate reduction in the use of Morphine, the Australian consumption of Pethidine was reported to be conspicuously in excess of that in any other country. Late in 1956, at the request of this Department, the British Medical Association set up a Committee to investigate this problem.

The Committee found that Pethidine was:—

- (a) used appropriately as an alternative to Morphine;
- (b) used unnecessarily as a substitute for aspirin;
- (c) commonly prescribed for both these purposes in amounts much in excess of the apparent need.

The Committee emphasised that Pethidine is a drug of addiction, readily self administered in tablet form and that prevailing methods of prescribing permitted sustained self medication and ready access to further supplies. On the recommendation of the Committee and with the co-operation of the Pharmaceutical Benefits Advisory Committee, Pethidine tablets were removed from the list of Pharmaceutical Benefits. Following this action, annual consumption in Australia fell to 23.5Kg. per million of population.

Antibiotics: A special meeting of the Antibiotics Advisory Committee with representation from the Veterinary profession was called during 1956 to report upon hazards attending the increasing use of antibiotics in agriculture as therapeutic agents, growth accelerators and for the preservation of meat. The joint Committee reported that speaking generally all antibiotics used as therapeutic substances in medical practice are also required for veterinary purposes. It recommended that in the interests of public health and the better to conserve the therapeutic value of antibiotics, sale of these should be restricted to medical and veterinary prescription, except where specially prepared and packed in applicator devices for the use of farmers. On the proposal to use antibiotics for the preservation of meat the Committee recommended that until there is a sufficient body of evidence to show that the theoretical hazards attending this practice are not important, approval for this method of meat preservation should be withheld.

Bronchogenic Carcinoma: In May, 1957, the National Health and Medical Research Council accepted from its Public Health Committee the following recommendations on lung cancer:—

- (a) Tobacco smoking and in particular cigarette smoking is definitely a contributory factor in the production of cancer of the lung, the incidence of which is increasing and is highest in those who smoke most heavily.
- (b) States should commence publicity campaigns
 - (i) to warn non-smokers against acquiring the habit of smoking;
 - (ii) to induce habitual smokers to cease smoking or to reduce consumption.

Notification of Disease: During the period under review, the National Health and Medical Research Council recommended the notification of Mastitis, Breast Abscess and Eclampsia and advised that the certification of Infective Hepatitis should, for statistical purposes be limited to cases with jaundice.

The Council recommended that States require the notification of Mastitis and Breast Abscess occurring in lactating women within 6 weeks of delivery. The information so collected would permit Directors of Maternal and Child

Health in the Departments of Public Health to enquire into sources of infection and in particular, to study and, where necessary, correct nursing practices in the hospitals in which the delivery took place.

The Council recommended that for purposes of notification, Eclampsia be defined as toxæmia of pregnancy, characterized by one or more convulsions and coma. The purpose of notification is to provide accurate information of the incidence of this condition which, in the opinion of the Council, it should be possible to reduce to negligible proportions.

Detailed statistics relating to notifiable diseases in Australia are set out on pages 54 to 62 of this report.

Food and Drug Legislation: Special committees set up by the National Health and Medical Research Council to report upon and to draft uniform legislation for the control of poisons, to set standards for food and to regulate the use of chemical additives in food, made good progress during the period under review. Each of these committees has enjoyed the full co-operation of industry and it is expected that this work will shortly permit States to consider the adoption of draft model legislation designed to remove most, if not all of the conflicting requirements which at present embarrass interstate trade.

Commonwealth Establishments for Medical Research &c.: A number of technical units, production laboratories and research institutions sponsored by the Commonwealth, have resulted from co-operation with the States and the part played by the Commonwealth has been included in this report.

Progress by the various teaching institutions and Commonwealth laboratories is covered by later sections of this report. Extensive reorganization of the divisions of the Commonwealth Serum Laboratories has been reported, together with details of research and production of the regrouped units.

The increasing importance of work relating to radio-active isotopes at the X-ray and Radium Laboratory, a conversion programme at the Commonwealth Acoustic Laboratories, the work performed at the various Commonwealth Health Laboratories in respect of the epidemics of Asian influenza and more recently the commencement of work in relation to the Survey of Soft Tissue Infections, have also been reported.

The field of Environmental Health has received attention during the last two years, including a survey carried out by Dr. R. K. MacPherson at the request of the Commonwealth, and action has been taken to set up a research unit attached to the School of Public Health and Tropical Medicine, Sydney, for the purpose of developing knowledge and experience in Australia in relation to local environmental health problems.

The control of therapeutic substances authorized by the *Therapeutic Substances Act* 1953 and the Therapeutic Substances Regulations, became operative during the period under review and a move was made towards the establishment of the National Biological Standards Laboratory in Canberra, to conduct tests as required in respect of biological material.

Quarantine: The earliest health function assumed by the Commonwealth was the development and maintenance of a uniform and efficient quarantine service throughout Australia. For this purpose appropriate legislation was introduced and has been amended from time to time to ensure adequate control measures in respect of human, animal and plant quarantine. These matters are fully reported on pages 78 to 91, particularly in respect of developments during the two years ended 30th June, 1958.

Broadcasting and Television: With the advent of television in Australia the activities of the Department under the Broadcasting Act were further extended by legislation with effect from 1st July, 1956, to include the censoring of health material used with television as a medium. Details of these activities are set out on page 62.

Territory Health: A full report on pages 92 to 103 outlines the work of the department in respect of health services and public health activities in the Australian Capital Territory. In this report, particular attention has been paid to Child Health and to Veterinary Services.

In the section devoted to the Northern Territory on pages 96 to 103, the general development of the Northern Territory Medical Services and public health functions of the Department have been fully reported. Particular emphasis has been laid on the development of medical services to the aboriginal population of the Territory.

Detailed Reports: Detailed information in respect of other activities of the Department is included in the following reports relating to the various divisions of the Department. These reports have been grouped under section headings in accordance with the table of contents.

A. J. METCALFE
Director-General of Health.

NATIONAL HEALTH BENEFITS

The various National Health benefits administered by the Department are authorized under the following acts:—

The *National Health Act 1953-1957*, which provides for the Medical Benefits Scheme, the Hospital Benefits Scheme, the Pensioner Medical Service, Pharmaceutical Benefits and Pharmaceutical Benefits to Pensioners.

The *Tuberculosis Act 1948*.

States Grants (Milk for School Children) Act 1950.

States Grants (Mental Institutions) Act 1955.

Table I. on page 24 sets out the total Commonwealth expenditure on these activities for each year since 1st July, 1945. Tables II. to XVI. on pages 25 to 35 show detailed statistics regarding each of the various benefits.

Notes on the establishment and history of the National Health Benefit Schemes were included in the Report for the year ended 30th June, 1954. The following sets out firstly an outline of the actual operation of the various National Health Benefit Schemes, followed by a statement of development in the two years covered by this report.

HOSPITAL BENEFITS

Under the Hospital Benefits Scheme, financial assistance is provided towards the cost of in-patient hospital treatment by means of the allowance of ordinary hospital benefit and the payment, where applicable, of additional hospital benefit.

Ordinary Hospital Benefit: The Commonwealth Department of Health pays a benefit of 8s. for each day a patient is in a public or private hospital.

This amount is deducted from the patient's hospital account.

In the case of pensioners enrolled in the Pensioner Medical Service who are not members of a registered hospital benefit organization, 12s. is paid by the Commonwealth to the States for each day the pensioner or any of his dependants is a patient in a public hospital.

The patient does not have to make a claim for these benefits which are provided for him automatically under arrangements made by the Commonwealth with the hospital authorities.

Additional Hospital Benefits: Additional hospital benefits are paid towards the cost of hospital treatment in accordance with the principle of Commonwealth support of voluntary health insurance.

A person who insures with a registered hospital benefit organization receives, in addition to ordinary hospital benefit of 8s. a day, a further Commonwealth benefit for each day on which he or any of his dependants is in a public or private hospital. The amount of additional benefit is—

4s. per day in cases where the insurance is for a fund benefit between 6s. and 16s. per day;

12s. per day in cases where the insurance is for a fund benefit of 16s. or more per day.

Members also receive the amount of fund benefit to which they are entitled under the rules of their organization, generally by cash payment.

The contributor makes his arrangements in the usual manner to obtain hospital treatment and is charged by the hospital in the ordinary way. The contributor then makes a claim on his organization for payment of the amount of Commonwealth additional benefit and fund benefit to which he is entitled.

Most registered organizations will accept any member of the public as a contributor, but, in the case of a few organizations, membership is restricted, e.g., to employees of a particular company. Hospitals in some areas operate registered organizations providing benefits in the form of free hospital treatment or treatment at reduced charges for their members.

Weekly contributions to registered hospital benefit organizations generally vary between 6d. and 2s. for single persons and between 1s. and 4s. for persons with dependants, according to the amount of the fund benefit insured for.

Conditions of payment of Commonwealth benefit are provided in the National Health Act. Payment of fund benefit depends on the rules of each organization. Organizations' rules vary on some matters, but the following is a general guide to conditions of benefit:—

1. The treatment must be given in a recognized hospital otherwise fund benefit is not payable.
2. The claim must be rendered within a reasonable time after discharge from hospital, otherwise fund benefit may be disallowed.
3. Where the combined Commonwealth and fund benefits exceed the amount of the hospital charge, the organizations' rules in some cases provide for a reduction of the benefits to the amount of the hospital charge. Commonwealth benefit is not payable in any case in excess of the hospital charge.
4. New members of an organization must serve a waiting period before fund benefit becomes payable. The length of the waiting period varies according to the rules of each organization, but is generally—

Accident	..	..	..	..	..	Nil.
All cases except obstetric	..	..	..	..	..	Two months.
Obstetric	..	..	..	..	..	Ten months.

Commonwealth additional benefit is subject to a waiting period of two months unless fund benefit is paid.
5. Should contributions fall into arrears, benefit is not payable. Commonwealth benefit may, however, be paid in these cases if, on the date the contribution became payable, the contributor was in receipt of Unemployment or Sickness benefit under the Commonwealth Social Services Act.
6. Repatriation, Third Party, Workers' Compensation and similar cases are generally excluded from Commonwealth and fund benefit if the cost of the hospital treatment is not borne by the member.
7. Commonwealth and fund benefits are generally paid for hospital treatment received by Australian residents who are temporarily overseas. The Commonwealth ordinary hospital benefit of 8s. per day is also paid in such cases.

Developments 1956-58: During 1957 the Commonwealth-State Agreements covering the payment of Commonwealth ordinary hospital benefit in respect of public hospital patients, were renewed for a further period of five years. The

agreements were originally made in 1952 and provide that the Commonwealth pays the States hospital benefits for beds occupied in public hospitals at the rates of—

- (i) 12s. per day in respect of pensioners and their dependants who are enrolled under the Commonwealth Pensioner Medical Service, provided they are not patients in a State benevolent home or entitled to the Commonwealth additional hospital benefit payment; and
- (ii) 8s. per day in respect of all other qualified patients.

All the agreements provide that the States shall ensure that the charges per day payable by qualified patients in respect of beds in public hospitals shall be reduced by the benefit rate.

The amount of additional hospital benefit originally paid by the Commonwealth was 4s. per day in respect of persons insured for a fund benefit of at least 6s. per day with a registered hospital benefit organization. The National Health Act was amended by Act No. 92 of 1957, so as to provide that, as on and from 1st January, 1958, the Commonwealth additional hospital benefit would be paid at the rate of 12s. per day in respect of hospital charges incurred by those persons who are insured for a fund benefit of at least 16s. per day. Commonwealth additional benefit at the rate of 4s. per day would continue to be paid to those persons contributing for a fund benefit of at least 6s. per day but less than 16s. per day.

This amending legislation also provided that, as on and from 1st January, 1958, Commonwealth additional hospital benefit would not be payable to a contributor for hospital treatment during the first two months of membership unless a fund benefit of at least 6s. per day was paid by the organization for that hospital treatment. Hitherto, Commonwealth additional hospital benefits had not been subject to a waiting period.

There has been a steady increase in the transfers of members to the higher benefit tables provided by registered hospital benefit organizations. The following figures indicate the trends in this direction—

- (i) The proportion of total membership of registered hospital benefit organizations contributing to benefit tables providing at least 16s. per day fund benefit, was 65 per cent. as at 30th September, 1957 and 74 per cent. as at 30th June, 1958.
- (ii) The average amount of fund benefit paid per day increased from £1 5s. 9d. per day during the six months ended 31st December, 1957 to £1 6s. 8d. per day for the six months ended 30th June, 1958.

At 30th June, 1958, 119 non-profit organizations operating health insurance schemes were registered with the Department to pay Commonwealth additional benefit in addition to their own fund benefits.

During the period 1st July, 1956, to 30th June, 1958, the registration of one hospital benefit organization was suspended and later cancelled by the Minister for Health. A further twelve organizations voluntarily sought de-registration. In all cases suitable arrangements were made for the members to be absorbed into other registered organizations. Five new registrations were effected during the same period.

In Table II. on page 25, Commonwealth hospital benefit payments for the two years under review are set out, subdivided to show totals for the various classes of hospital benefit payable to public hospitals and private hospitals and to members of registered organizations by way of additional hospital benefit.

Tables III. and IV. on pages 26 and 27 respectively, present particulars relating to fund benefit payments, membership of registered organizations and payment of claims in respect of each State and the Commonwealth.

Chronic, Pre-existing Ailment and Maximum Benefit Cases: During the year ended 30th June, 1958, consideration was given to the large number of hospital bed-days which attracted Commonwealth benefit but were excluded from fund benefit under organizations' rules relating to chronic and pre-existing ailments and maximum benefits.

Details of these exclusions for the years ended 30th June, 1957 and 30th June, 1958, are—

	1956-57.		1957-58.	
	Number.	Per cent. of Total.	Number.	Per cent. of Total.
Hospital Bed-days . .	1,035,932	11.2	1,179,299	11.2

These exclusions represented a weakness in the Scheme as the non-payment of fund benefit occurred in cases where it was usually most needed.

Following consideration of the problem, it was agreed that Commonwealth assistance should be provided to enable payment of fund benefit in such cases. Details of the arrangements to give effect to this decision were developed during the period but the appropriate legislation was not introduced into Parliament until after 30th June, 1958.

MEDICAL BENEFITS

The Medical Benefits Scheme, which commenced on 1st July, 1953, was introduced to provide assistance in meeting the cost of medical attention received by persons who insure with a registered medical benefit organization.

Most registered medical benefit organizations provide benefits for their members by cash payments. The contributor makes his own arrangements to obtain medical attention from a doctor and is charged by the doctor in the usual manner. He then claims on his organization for payment of the Commonwealth and fund benefits to which he is entitled.

The cost of medical cover depends on the amount of fund benefit for which insurance is required and on whether the contributor is married or single. Generally the weekly cost is between 1s. and 1s. 6d. for single persons and between 2s. and 3s. for persons with dependants.

The medical benefits available consist of Commonwealth benefit ranging from 6s. for ordinary visits to a general practitioner, to £11 5s. for a major operation. Fund benefit varies according to the weekly contribution paid and the particular medical service received.

Most registered organizations will accept any member of the public as a contributor, but, in the case of a few organizations, membership is restricted, e.g., to employees of a particular company or to persons residing in a particular area.

Where an organization has made contract arrangements with doctors for the free medical treatment of members, the payment of Commonwealth medical benefit takes the form of a reimbursement by the Department to the organization of a proportion of the payments made by the organization to the doctor.

Conditions of payment of Commonwealth benefit are provided in the National Health Act. Payment of fund benefit depends on the rules of each organization. Organizations' rules vary on some matters, but the following is a general guide to conditions of benefit:—

1. The medical service must be rendered by or directly on behalf of a medical practitioner. Some organizations pay fund benefit for physiotherapy, home nursing and the provision of spectacles, but these services do not qualify for Commonwealth benefit.
2. The claim must be rendered within a reasonable time after the date of the service, otherwise fund benefit may be disallowed.
3. The combined Commonwealth and fund benefit cannot exceed ninety per cent. of the doctor's account.
4. New members of an organization must serve a waiting period before benefit becomes payable. The length of the waiting period varies according to the rules of the organization, but is generally—

Accident	..	..	..	..	..	Nil
All services except obstetric	..	..	..	..	..	Two months
Obstetric	..	..	..	..	..	Ten months
5. Should contributions fall into arrears, benefit is not payable. Commonwealth benefit may, however, be paid in these cases if, on the date the medical service was rendered, the contributor was receiving Unemployment or Sickness benefit under the Commonwealth Social Services Act.
6. Life assurance and Friendly Society medical examinations are not eligible for benefit.
7. Eye examinations as a result of which spectacles are prescribed, are not eligible for Commonwealth benefit. However, fund benefit is generally payable in these cases.
8. Commonwealth benefit is payable for pathological and radiological services and electroencephalograms received from a public hospital. Otherwise, charges by a public hospital for medical attention generally do not qualify for benefit. This condition is not applicable in the Northern Territory.
9. Repatriation, Third Party, Workers' Compensation and similar cases are generally excluded from Commonwealth and fund benefit because the expense of the medical treatment is not borne by the member.

Developments 1956-58: The National Health Act was amended by Act No. 92 of 1957, to introduce revised schedules of medical benefits.

The schedules of medical benefits, which set out the item number, professional service and amount of Commonwealth benefit payable, were completely re-drafted and some minor variations made in the amounts of Commonwealth benefit, particularly for pathological and radiological services. The First Schedule to the National Health Act includes 251 services and the Second Schedule 618, making a total of 869 services. Provision has been made for the insertion of

additional items in the schedules by leaving blank certain item numbers in each schedule. The new format has considerably facilitated the assessing and payment of claims.

During the two-year period under review, three new registrations were effected and two registrations cancelled at the request of the organizations concerned. In the latter cases the members were absorbed by other registered organizations. At 30th June, 1958, 81 non-profit organizations operating health insurance schemes, were registered by the Department to pay Commonwealth medical benefits in addition to their own fund medical benefits.

Tables V. and VI. on pages 28 and 29 relate to the Medical Benefits Scheme.

Table V. sets out the numbers of registered organizations as at 30th June, 1957, and 30th June, 1958, the membership and estimated coverage of those organizations and details of the payment of fund benefit during the two years under review.

Table VI. shows the number and cost of services rendered for which fund benefit was paid, in relation to the manner in which the cost of these services was met and also the average number of services per contributor.

Chronic, Pre-existing Ailment and Maximum Benefit Cases: Exclusions from fund medical benefit in these cases has followed a similar trend to that illustrated by the hospital benefit figures on page 16 in respect of the non-payment of fund benefit, due to certain conditions generally included in organizations' rules.

Details of these exclusions for the years ended 30th June, 1957, and 30th June, 1958, are—

Medical Benefits.	1956-57.		1957-58.	
	Number.	Per cent. of Total.	Number.	Per cent. of Total.
Professional Services	290,278	2.17	266,028	1.73

As the non-payment of fund benefit generally occurred in cases where it was most needed, consideration was given to the provision of Commonwealth assistance to enable payment of fund benefit in such cases. Details of the arrangements to give effect to this decision were developed during the period under review but appropriate legislation was not introduced into Parliament until after 30th June, 1958.

PENSIONER MEDICAL SERVICE

This service, which commenced in February, 1951, is a general practitioner medical service, including medicine provided free of cost, for eligible pensioners under arrangements made by the Department of Health with the medical profession.

Persons eligible for the Pensioner Medical Service include persons receiving an age, invalid or widow's pension under the Commonwealth Social Services Act or a service pension under the Repatriation Act, subject to an income means test set out below; persons receiving a tuberculosis allowance under the Tuberculosis Act; and dependent wives and children (under sixteen years of age) of any person who is eligible.

The means test applied for the Pensioner Medical Service is not the same means test as is now applied for a social service pension. The means test applied for new enrolments in the Pensioner Medical Service is the income test that had to be satisfied in order to qualify for a full social service pension as at 31st December, 1953.

Details of the means test applied for new enrolments in the Pensioner Medical Service are (except in special types of cases)—

Age, Invalid, Widows' and Service Pensions.	Maximum permissible income * per week excluding pension.
	£
Single pensioners	2
Widow	2
Married couple—both pensioners	4
Married couple—one a pensioner	5

* The permissible income is that assessed by the Commonwealth Department of Social Services after making allowances for dependent children, &c.

Persons whose pension commenced prior to 1st November, 1955, and persons in receipt of a tuberculosis allowance may receive the benefits of the Pensioner Medical Service even if their income, apart from pension, is over £2 a week.

The Commonwealth Department of Social Services issues a Pensioner Medical Service Entitlement Card to each pensioner who is enrolled in the Service. This card shows the name of the pensioner, the names of his dependants (if any) and certain other details.

An entitlement card may be retained by the person in whose name it is issued as long as he remains eligible for the Pensioner Medical Service. Where, for any reason, a person ceases to be eligible, the card must be returned as soon as possible to the Department of Social Services.

The entitlement card is the doctor's authority to provide a pensioner and his dependants with medical attention free of charge. It is also the authority whereby the pensioner and his dependants receive free medical attention. The card must therefore be presented to the doctor on each occasion on which medical attention is requested. The doctor must initial and date the card every time a medical service is given.

The medical services provided free of charge are services of a general practitioner nature such as are ordinarily rendered by a general medical practitioner in his surgery or at the patient's home.

Medical services may be obtained free of charge from any doctor who has made arrangements with the Department of Health for the provision of the service. Most doctors have made the necessary arrangements.

Under their arrangement with the Department, doctors are entitled to be paid a mileage allowance when they have to travel beyond a distance of 3 miles in metropolitan areas or provincial cities or 2 miles in country districts to attend a pensioner. Four-fifths of the mileage allowance is paid to the doctor by the Department of Health, but in accordance with the arrangement, a doctor is permitted to charge a pensioner the remaining one-fifth of the fee. The proportion of the mileage fee payable by the pensioner however must not in any case exceed 10s.

A doctor is permitted to charge a pensioner an "after hours" fee of 5s. where a service is given under the Pensioner Medical Service outside the doctor's usual hours of practice.

The permissible charges for mileage and after hours services explained above are the only charges that a doctor may make to a pensioner for attention provided under the Pensioner Medical Service.

Committees of Inquiry: Committees of Inquiry have been established in each State under the provisions of the National Health Act. The personnel of each Committee consists of the Commonwealth Director of Health and four medical practitioners appointed by the Minister for Health from among medical practitioners nominated by the Council of the State Branch of the British Medical Association. The function of a Committee is to inquire into and report to the Minister for Health or the Director-General of Health on any matter referred to it arising out of the services or conduct of medical practitioners in respect of the Pensioner Medical Service.

Medicines for Pensioners: A full range of medicines is available free of cost to pensioners and their dependants enrolled in the Pensioner Medical Service. These medicines may be obtained by a pensioner or his dependants from a chemist upon presentation of a prescription written by a doctor.

Developments 1956-58: A new agreement was negotiated with the British Medical Association, to come into effect on 1st July, 1958. In accordance with the terms of the new agreement the fees payable to participating doctors are increased from 10s. to 11s. for a surgery consultation and from 12s. to 13s. for a domiciliary visit.

The scope of the service has been reviewed and is now defined as "all such services as are ordinarily rendered by a general practitioner in the surgery or at the home, including the treatment of a patient who has undergone a surgical operation from the time that he returns to his home from a hospital".

The only other significant change which affects the operation of the service is an alteration in the method of assessing mileage allowance. In country areas a doctor may claim mileage allowance for travel beyond a radius of 2 miles from his surgery. The previous radius of 3 miles still applies in metropolitan areas and provincial cities.

Tables VII., VIII., and IX., on pages 30, 31 and 32, respectively, relate to the operation of the Pensioner Medical Service during the years ended 30th June, 1957 and 30th June, 1958.

Details of pensioners and dependants participating in the services at 30th June, 1957 and 30th June, 1958, are set out in Table VII. on page 30.

The number of participating doctors and the payments to doctors for medical services and mileage, are shown in Table VIII. on page 31.

Table IX. gives a break-up of the types of services rendered by participating doctors and the number of mileage claims submitted during the two years under review.

PHARMACEUTICAL BENEFITS

Pharmaceutical Benefits are provided by the Commonwealth in accordance with Part VII. of the *National Health Act 1953-1957* and the *National Health (Pharmaceutical Benefits) Regulations*.

The benefits available fall broadly into two categories, viz., General Pharmaceutical Benefits and Pensioner Pharmaceutical Benefits.

General Pharmaceutical Benefits first became available under the present scheme in September, 1950, whilst the scheme for the provision of Pensioner Pharmaceutical Benefits was introduced on 1st August, 1951.

Although the general provisions of the legislation governing these schemes has undergone little change since that time, the General Benefits Scheme has grown to such an extent that to-day it is considered that the range of drugs available provides treatment for the greater majority of diseases.

At this stage, therefore, it is thought desirable to outline broadly the principal features of the existing schemes and to deal generally with the significant trends which have become apparent during the period under review.

General Pharmaceutical Benefits: A pharmaceutical benefit is one of a comprehensive range of life-saving and disease preventing drugs which, when prescribed by a medical practitioner, is supplied by a chemist free of charge to the patient. Pharmaceutical benefits are generally available to any person in Australia, as required, when an appropriate prescription is written by a medical practitioner.

Under the Pharmaceutical Benefits Scheme any registered medical practitioner may write a prescription for a drug which he considers is necessary for the treatment of a particular condition. If this drug is a pharmaceutical benefit the prescription is written in duplicate for the purposes of the Scheme.

Practically all chemists throughout Australia are approved to supply pharmaceutical benefits to the public. Friendly Society dispensaries may supply benefits to their own members and may also supply benefits to the public when approved by the Department of Health to do so.

A list of drugs available as pharmaceutical benefits has been prepared on the advice of a committee comprising leading experts who have the most up-to-date knowledge on the value of drugs for the treatment and prevention of disease. This Committee recommends to the Minister for Health those drugs which should be included on the list after investigations have ensured that the drugs listed are those whose use will be most beneficial and necessary.

The list of benefits available is being continually revised to keep pace with the rapid advances being made in medicine. During the period under review several new items have been added to the list, some of them being in the more expensive class, thus causing increases in the cost of pharmaceutical benefits.

The majority of drugs listed as pharmaceutical benefits may be prescribed for the treatment of any condition where it is considered the use of that drug is necessary. There are, however, certain drugs known as Second Schedule drugs, including most of the important antibiotics, which are available as benefits only when they are prescribed for the treatment of specified diseases. This restriction is designed to preserve the effectiveness of these drugs in the treatment of those conditions where their use is most necessary.

Where it is necessary to undergo prolonged treatment, special arrangements are made by way of repeat prescriptions, to enable the ordering of additional supplies of pharmaceutical benefits, as required. Medical practitioners are permitted to maintain supplies of certain pharmaceutical benefits which may be required in cases of emergency.

A high standard of service is maintained and high quality drugs and chemicals are made available to ensure the success of the Pharmaceutical Benefits Scheme. Arrangements have been made to supply pharmaceutical benefits in isolated areas, through the Bush Nursing Services, medical practitioners, the Royal Flying Doctor Service and both public and private hospitals have also been included in the Scheme.

Figures relating to General Pharmaceutical Benefits are included in Table I. on page 24, representing payments to chemists, approved doctors, approved hospital authorities, Bush Nursing Centres, the Royal Flying Doctor Service and other miscellaneous payments. Tables X., XI. and XII. on page 33 also refer to General Pharmaceutical Benefits.

Pensioner Pharmaceutical Benefits: A full range of medicines is available, free of cost, to pensioners and their dependants. A pensioner includes a person to whom an age, invalid, widow's or service pension, or a tuberculosis allowance is granted and who has been issued with a Pensioner Medical Service Entitlement Card by the Department of Social Services.

The amounts shown in Table I. on page 24 under Pharmaceutical Benefits, Pensioners, represent payments made to chemists and approved doctors in respect of medicine supplied to pensioners. Tables XIII. and XIV. on page 34 show the payments made under the Pensioner Pharmaceutical Benefits Scheme and the number of prescriptions written since its commencement.

Committees of Inquiry: These committees were established by the Minister for Health in respect of each State to inquire into and report on matters referred to them relating to the supply of pharmaceutical benefits. A Federal Committee was also established to deal with matters involving questions of principle.

Membership of the State Committees consists of the Commonwealth Director of Health, a departmental officer who is a pharmacist and four pharmaceutical chemists appointed by the Minister for Health from among pharmaceutical chemists nominated by the Federal Pharmaceutical Service Guild, in respect of each State.

Developments 1956-58: The most notable feature of the period has been the unprecedented rise in expenditure during 1957-58 on general pharmaceutical benefits supplied through chemists and approved doctors. The year ended 30th June, 1957, showed a fall to £8,585,835 from the 1955-56 level of £9,030,546. Expenditure during the succeeding year (1957-58) however, rose sharply to £11,413,242. The number of prescriptions dispensed increased from 8,970,890 in 1955-56 to 10,309,446 in 1957-58.

Investigation has shown that these increases have been brought about by a combination of the following factors—

- (a) Increases in the list of drugs available as benefits.
- (b) The tendency of medical practitioners to fit their prescribing to those drugs available as benefits (this tendency has accelerated and will continue to do so).
- (c) The listing as benefits of several new and costly drugs and newly developed forms of existing benefits. These drugs have tended to replace the relatively inexpensive drugs.
- (d) The easing during 1957-58 of the restrictions which applied to the prescribing of certain broad-spectrum antibiotics.
- (e) Increases in population.

Payments to hospitals for the provision of pharmaceutical benefits also increased to a modified degree for similar reasons during the period.

The increase in payments for the supply of Pensioner Pharmaceutical Benefits from £1,507,960 in 1955 to £2,123,245 in 1957-58 is a result of a steadily increasing pensioner population coupled with a growing tendency on the part of the medical profession to ensure that pensioners avail themselves of the advantages provided by the scheme.

FREE MILK FOR SCHOOL CHILDREN

There have been no changes in legislation affecting the supply of free milk to school children during the two years under review..

The estimated number of children receiving free milk during the two years and the amounts reimbursed to the States in meeting the cost of the scheme for the period are included in Table XV. on page 34.

Total expenditure by the Commonwealth on the Free Milk Scheme since its commencement in 1950-51 is shown in Table I. on page 24. However, these figures do not include amounts reimbursed to the States in respect of 50 per cent. of capital and incidental expenditure, which were £6,099 and £6,988 respectively for 1956-57 and 1957-58. The figures shown in Table XV. include these reimbursements in respect of capital and incidental expenditure.

MENTAL INSTITUTIONS

Earlier Commonwealth action in the field of mental health is summarized in my report covering the period ended 30th June, 1956. As there recorded, the Commonwealth Government, in June, 1955, made an offer to the States of a grant of £10,000,000 for the purpose of encouraging a capital expenditure programme of £30,000,000. The offer was made on the basis of the provision of £1 by the Commonwealth for every £2 by the States. All of the States accepted the offer made by the Commonwealth and agreed to the grant being divided on a population basis which resulted in the States being eligible for the following amounts:—

	£
New South Wales	3,830,000
Victoria	2,740,000
Queensland	1,460,000
South Australia	895,000
Western Australia	720,000
Tasmania	355,000
	10,000,000

In November, 1955, the Commonwealth Parliament passed the *States Grants (Mental Institutions) Act* which provided the necessary legislation for the above grants to be made available to the States. Expenditure must have the prior approval of the Minister for Health. The grant is paid to the States as a part reimbursement of their expenditure and therefore the amount of Commonwealth contribution, within the above totals, is dependent upon the capital expenditure made by the States in connexion with their mental hospitals.

Details of the expenditure by the States each year and the amount of Commonwealth grants paid to the States since the inception of the scheme are shown in Table XVI. on page 35.

TABLE I
NATIONAL HEALTH
Commonwealth Expenditure

Year Ended.	Hospital Benefits.	Medical Benefits.	Pharmaceutical Benefits General.	Pharmaceutical Benefits Pensioners.	Pensioner Medical Service.	Tuberculosis.	Free Milk.	Mental Institutions.	Total.
	£	£	£	£	£	£	£	£	£
30th June, 1946 ..	1,111,292	..	..	..	..	..	..	..	1,111,292
30th June, 1947 ..	4,380,296	..	..	..	..	109,603	..	..	4,489,899
30th June, 1948 ..	4,448,015	..	..	..	..	27,590	..	..	4,475,605
30th June, 1949 ..	5,885,446	..	149,037	..	..	151,079	..	..	6,185,562
30th June, 1950 ..	6,320,164	..	304,689	..	..	{ 180,658*	..	255,586	7,651,168
30th June, 1951 ..	6,535,628	..	2,930,163	..	75,511	2,682,749	35,775	405,664	12,665,490
30th June, 1952 ..	6,683,106	..	7,327,414	357,632	1,036,225	4,613,154	814,806	517,780	21,350,117
30th June, 1953 ..	7,223,241	..	6,486,651	728,658	1,739,953	6,168,289	1,521,394	522,552	24,390,738
30th June, 1954 ..	8,330,053	1,434,166	8,218,633	1,010,780	2,115,539	6,959,130	1,999,312	494,833	30,562,446
30th June, 1955 ..	9,320,603	4,209,495	9,444,631	1,294,836	2,516,077	7,366,728	2,237,425	225,586†	36,615,381
30th June, 1956 ..	9,552,944	5,413,320	10,379,474	1,507,960	2,874,364	7,454,255	2,405,349	773,149	40,360,815
30th June, 1957 ..	9,813,283	6,146,029	9,923,724	1,793,101	2,998,886	8,596,624	2,607,040	1,248,132	43,126,819
30th June, 1958 ..	10,823,096	7,085,524	12,910,744	2,123,245	3,198,791	7,908,464	2,755,603	1,256,399	48,061,866
Total ..	90,427,167	24,288,534	68,075,160	8,816,212	16,555,346	52,808,394	14,376,704	5,699,681	281,047,198

* This amount and those shown for previous years represent amounts expended under the *Tuberculosis Act 1945-46*. Subsequent amounts represent payments under the *Tuberculosis Act 1948*.
† This amount and amounts shown for previous years are payments made under the *Mental Institutions Benefits Act 1948*. The amounts shown for 1955-56 onwards represent payments made under the *States Grants (Mental Institutions) Act 1955*.

TABLE II
HOSPITAL BENEFITS
Commonwealth Expenditure

Year Ended.	Public Hospitals.			Private Hospitals.	Total Ordinary Benefits (Public and Private Hospitals).	Commonwealth Additional Benefit.	Total Ordinary and Additional Benefit).
	Ordinary.	Pensioners.	Total.				
30th June, 1946	912,848	..	912,848	198,444	1,111,292	..	1,111,292
30th June, 1947	3,502,614	..	3,502,614	877,682	4,380,296	..	4,380,296
30th June, 1948	3,433,790	..	3,433,790	1,014,225	4,448,015	..	4,448,015
30th June, 1949	4,561,202	..	4,561,202	1,324,244	5,885,446	..	5,885,446
30th June, 1950	4,762,431	..	4,762,431	1,557,733	6,320,164	..	6,320,164
30th June, 1951	4,915,202	..	4,915,202	1,620,426	6,535,628	..	6,535,628
30th June, 1952	4,997,876	..	4,997,876	1,642,522	6,640,398	..	6,640,398
30th June, 1953	*80,441	..	4,920,561	1,659,098	6,579,659	42,708	6,683,106
	4,186,144	..	4,920,561	..	..	643,582	7,223,241
30th June, 1954	*95,882	..	5,429,912	1,768,856	7,198,768	..	8,330,053
30th June, 1955	4,197,570	..	5,429,912	..	..	1,131,285	..
	*103,405	..	5,954,899	1,852,609	7,807,508	..	9,320,603
	4,621,253	..	5,954,899	..	..	1,513,095	..
30th June, 1956	*105,012	..	6,033,538	1,880,692	7,914,230	..	9,552,944
	4,600,455	..	6,033,538	..	..	1,638,714	..
30th June, 1957	*131,443	..	5,992,941	1,980,222	7,973,163	..	9,813,283
	4,413,289	..	5,992,941	..	..	1,840,120	..
30th June, 1958	*139,984	..	5,961,400	2,029,752	7,991,152	..	10,823,096
	4,167,917	..	5,961,400	..	..	2,831,944	..
Total	*656,167	..	61,379,214	19,406,505	80,785,719	9,641,448	90,427,167
	53,272,591	..	61,379,214	..	..	..	..

* Payments of 12s. per day on account of hospitals in South Australia, to which Part IV. of the South Australian Hospitals Act 1934-1951 applies.

TABLE III
HOSPITAL BENEFITS

Membership of Registered Organizations and Fund Payments to Contributors, years ended 30th June, 1957 and 30th June, 1958.

State.	Number of Organizations.		Membership.		Estimated Coverage (Including Dependents).		Percentage Population Covered.		Fund Benefit Paid.*	
	As at 30.6.57.	As at 30.6.58.	As at 30.6.57.	As at 30.6.58.	As at 30.6.57.	As at 30.6.58.	As at 30.6.57.	As at 30.6.58.	1.7.56-30.6.57.	1.7.57-30.6.58.
New South Wales	28	28	1,026,103	1,064,925	2,440,000	2,535,000	% 67	% 68	£ 4,253,995	£ 4,504,862
Victoria..	53	51	648,380	679,700	1,741,000	1,829,000	65	67	873,998	1,217,358
Queensland	3	3	217,937	253,154	569,000	646,000	41	46	581,036	727,835
South Australia ..	15	14	198,690	217,428	445,000	470,000	51	53	444,195	594,950
Western Australia	13	13	193,527	201,768	471,000	485,000	68	69	483,076	609,702
Tasmania ..	10	10	88,825	97,199	213,000	230,000	65	68	332,829	421,078
Commonwealth ..	122	119	2,373,462	2,514,174	5,879,000	6,195,000	61	63	6,969,129	8,075,785

* Ancillary benefits not included. Total ancillary benefits paid, 1956-57, £42,926; 1957-58, £61,023.

TABLE IV
HOSPITAL BENEFITS.
Membership of Registered Organizations and Particulars of Claims, years ended 30th June, 1957 and 30th June, 1958(a)

State.	Membership of Registered Organizations.		Claims for Fund Benefit.				Average Amount of Fund Benefit Paid.(b)			
	As at 30. 6. 57.		Number.		Average Number of Claims per 100 Members (Mean Membership).		Per Claim.		Per day in Hospital.	
	As at 30. 6. 58.	As at 30. 6. 57.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.
New South Wales ..	1,026,103	1,064,925	277,801	282,458	28	27	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Victoria ..	648,380	679,700	111,346	137,533*	17	21	14 10 11	15 19 3	1 6 6	1 10 4
Queensland ..	217,937	253,154	40,045	60,559	21	26	7 4 4	8 17 6	14 5	17 8
South Australia ..	198,690	217,428	29,369	53,245	16	26	11 11 8	12 0 5	1 5 1	1 5 6
Western Australia ..	193,527	201,768	54,843	66,529	29	34	10 19 0	12 0 3	1 2 8	1 5 11
Tasmania ..	88,825	97,199	19,758	23,431	24	25	7 19 2	9 6 0	18 9	1 1 6
Commonwealth	2,373,462	2,514,174	533,162	623,755	23	26	16 12 3	17 19 5	1 12 3	1 17 5

* Estimated figure.

(a) Figures for the year ended 30th June, 1957 exclude certain claims for which fund benefit was paid and for which no Commonwealth Additional Benefit was paid, e.g. payments of fund benefit in dual membership cases have been disregarded. Figures for the year ended 30th June, 1958 are for all claims for which fund benefit was paid whether or not Commonwealth Additional Benefit was paid. (b) In addition to fund benefit, members of registered organizations receive 4s. per day Commonwealth Additional Benefit. In relation to hospital treatment on and from 1st January, 1958 the amount of Commonwealth Additional Benefit was increased to 12s. per day for persons insured for 16s. a day or more fund benefit.

TABLE V
MEDICAL BENEFITS

Membership of Registered Organizations and Fund Payments to Contributors, years ended 30th June, 1957 and 30th June, 1958.

State.	Number of Organizations.		Membership.		Estimated Coverage (Including Dependents).		Percentage Population Covered.		Fund Benefit Paid.*	
	As at 30.6.57.	As at 30.6.58.	As at 30.6.57.	As at 30.6.58.	As at 30.6.57.	As at 30.6.58.	As at 30.6.57.	As at 30.6.58.	1.7.56-30.6.57.	1.7.57-30.6.58.
New South Wales	25	25	1,004,510	1,087,939	2,465,000	2,620,000	%	%	£	£
Victoria..	22	22	551,656	594,003	1,567,000	1,704,000	68	70	3,428,933	4,042,663
Queensland	6	6	225,985	259,041	608,000	674,000	59	63	1,371,038	1,641,711
South Australia	9	9	196,210	212,054	469,000	490,000	44	48	792,990	917,683
Western Australia	9	9	174,077	184,934	422,000	461,000	54	55	655,507	781,214
Tasmania	10	10	76,156	84,109	184,000	199,000	61	66	772,116	854,629
Commonwealth	81	81	2,228,594	2,422,080	5,715,000	6,148,000	56	59	186,515	238,534
							60	63	7,207,099	8,476,434

* Ancillary benefits, e.g., for physiotherapy services, not included. Total ancillary benefits paid, 1956-57, £253,775; 1957-58, £317,927.

TABLE VI.
MEDICAL BENEFITS
Fund Benefit Paid and Particulars of Claims, years ended 30th June, 1957 and 30th June, 1958.

State.	Fund Benefit Paid.*		Services received—(Fee-for-service and Contract).				Services received—Fee-for-service only.								Average No. of Services per Contributor.			
			No. of Services.		Percentage of G.P. Services to Total Services.		Total Cost.		Percentage of Total Cost met by—									
									Fund.				Commonwealth.				Contributor.	
	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.†	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.
New South Wales ..	3,428,933	4,042,663	5,968,340	6,794,173	74	73	9,645,127	11,469,798	35.4	35.2	28.1	27.1	36.5	37.6	6.37	6.42		
Victoria ..	1,371,038	1,641,711	3,228,342	3,761,425	78	77	4,984,946	5,908,782	27.2	27.6	28.8	28.3	44.0	44.1	6.50	6.76		
Queensland ..	792,990	917,683	1,518,790	1,666,230	77	77	2,139,953	2,484,913	37.0	36.9	31.0	29.9	32.0	33.2	7.34	7.00		
South Australia ..	655,507	781,214	1,306,124	1,522,764	76	77	1,851,415	2,207,286	35.3	36.3	31.8	31.7	32.9	32.0	7.35	7.84		
Western Australia ..	772,116	854,629	1,325,646	1,432,459	74	75	1,856,288	2,082,888	40.4	40.4	32.2	31.4	27.4	28.2	7.41	7.66		
Tasmania ..	186,515	238,534	320,524	405,288	59	66	523,791	658,660	34.6	35.6	26.6	27.0	38.8	37.4	4.23	4.90		
Total ..	7,207,099	8,476,434	13,667,766	15,582,339	75	75	21,001,520	24,812,327	34.1	33.9	29.3	28.3	36.6	37.8	6.60	6.73		

* Ancillary benefits, e.g. for physiotherapy, not included.

† Figures for 1956-57 are for Fee-for-service only.

Total ancillary benefits paid—1956-57, £253,775; 1957-58, £317,927.

TABLE VII.
PENSIONER MEDICAL SERVICE
Pensioners and Dependants Enrolled in Pensioner Medical Service as at 30th June, 1957 and 30th June, 1958.

State.	1956-57.			1957-58.		
	Number of Pensioners and Allowances Current.	Pensioners Enrolled (including Pensioner Wives).	Total Number Pensioners and Dependants Enrolled.	Number of Pensioners and Allowances Current.	Pensioners Enrolled (including Pensioner Wives).	Total Number Pensioners and Dependants Enrolled.
New South Wales	262,586	248,130	280,778	269,791	248,101	280,746
Victoria	159,182	153,220	172,864	165,778	158,501	178,821
Queensland	97,059	87,559	105,071	100,436	91,327	109,578
South Australia	56,162	51,996	58,337	58,948	53,086	59,560
Western Australia	43,822	38,106	43,230	46,442	39,131	44,419
Tasmania	21,278	20,050	23,568	21,800	20,482	24,075
Northern Territory	*	*	*	272	230	258
Commonwealth	640,089	599,061	683,848	663,467	610,858	697,457

Australian Capital Territory figures included in those shown for New South Wales.

* Northern Territory figures prior to 1958 included in those shown for South Australia.

TABLE VIII
PENSIONER MEDICAL SERVICE
Payments to Participating Doctors, years ended 30th June, 1957 and 30th June, 1958

State.	1956-57.				1957-58.			
	Number of Participating Doctors.	Payments to Doctors.		Total.	Number of Participating Doctors.	Payments to Doctors.		Total.
		Medical Services.	Mileage.			Medical Services.	Mileage.	
New South Wales	1,948	£ 1,373,941	£ 11,303	£ 1,385,244	2,077	£ 1,444,184	£ 12,225	£ 1,456,409
Victoria	1,464	720,156	14,041	734,197	1,500	772,164	14,100	786,264
Queensland	602	361,867	3,960	365,827	665	387,882	3,917	391,799
South Australia	452	257,867	3,175	261,042	468	274,720	2,730	277,450
Western Australia	391	193,365	1,055	194,420	397	215,198	915	216,113
Tasmania	133	55,207	2,949	58,156	131	66,416	4,078	70,494
Northern Territory	*	*	*	*	5	255	7	262
Commonwealth	4,990	2,962,403	36,483	2,998,886	5,243	3,160,819	37,972	3,198,791

Australian Capital Territory figures included in those shown for New South Wales.

* Northern Territory figures prior to 1958 included in those shown for South Australia.

TABLE IX
PENSIONER MEDICAL SERVICE
No. of Services and Mileage Claims, years ended 30th June, 1957 and 30th June, 1958

State.	1956-57.			1957-58.			
	Number of Services.			Number of Mileage Claims.	Number of Services.		Number of Mileage Claims.
	Surgery.	Domiciliary.	Total.		Surgery.	Domiciliary.		Total.
New South Wales	1,324,710	1,188,118	2,512,828	13,092	1,246,051	2,635,666	12,718
Victoria	585,252	692,167	1,277,419	12,662	748,045	1,396,524	12,769
Queensland	414,516	258,140	672,656	4,295	270,574	721,736	4,561
South Australia	192,303	269,545	461,848	2,856	286,752	492,174	2,562
Western Australia	201,378	152,954	354,232	1,435	169,972	396,628	926
Tasmania	60,259	41,796	102,055	2,830	51,873	122,458	3,740
Northern Territory	*	*	*	*	263	456	39
Commonwealth	2,778,418	2,602,720	5,381,138	37,170	2,773,530	5,765,642	37,315

Australian Capital Territory figures included in those shown for New South Wales.

* Northern Territory figures prior to 1958 included in those shown for South Australia.

GENERAL PHARMACEUTICAL BENEFITS.

TABLE X

Payments for each State per annum—Chemists and Doctors

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australian Capital Territory.	Total.
	£	£	£	£	£	£	£	£
1948-49..	15,235	21,903	3,875	4,783	12,224	8,228	20	66,268
1949-50..	50,704	54,400	8,806	14,385	23,515	21,485	46	173,341
1950-51..	986,807	799,710	357,232	284,215	227,425	64,925	6,465	2,726,779
1951-52..	2,610,314	2,070,477	769,559	674,368	446,398	126,419	14,612	6,712,147
1952-53..	2,452,123	1,834,691	739,307	602,588	433,378	121,522	16,175	6,199,784
1953-54..	2,877,692	2,067,187	842,340	646,310	556,537	147,684	22,436	7,160,186
1954-55*	3,398,810	2,253,602	1,007,413	732,448	600,939	158,758	†	8,151,970
1955-56..	3,880,513	2,566,624	1,072,872	746,727	592,558	171,252	†	9,030,546
1956-57..	3,533,119	2,423,714	1,076,500	761,783	599,261	191,458	†	8,585,835
1957-58..	4,791,959	3,249,416	1,391,250	973,093	738,397	269,127	†	11,413,242

* Figures for the year 1954-55 and subsequent years, include payments made for the supply of Doctors Bag Emergency Supplies.

† Included in New South Wales total.

TABLE XI

Payments to Hospitals, Bush Nursing Centres, Flying Doctor Services, &c.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australian Capital Territory.	Total.
	£	£	£	£	£	£	£	£
1948-49..	..	..	74,808	..	..	3,244	4,717	82,769
1949-50..	..	..	86,542	10,777	11,177	14,917	7,935	131,348
1950-51..	..	..	106,383	17,616	20,409	16,995	41,981	203,384
1951-52..	400,000	..	91,834	21,106	26,303	9,085	66,940	615,268
1952-53..	..	..	114,858	32,995	72,000	16,662	50,352	286,867
1953-54..	252,339	431,451	91,920	68,172	78,360	58,643	77,562	1,058,447
1954-55..	494,466	325,000	200,709	84,693	85,237	48,616	53,940	1,292,661
1955-56..	448,606	332,949	279,073	58,764	124,942	30,022	74,573	1,348,929
1956-57..	460,865	333,630	243,831	81,573	99,212	51,508	67,269	1,337,888
1957-58..	499,980	378,941	272,791	61,964	125,486	48,000	110,340	1,497,502

The figures for the Australian Capital Territory represent payments in respect of bush nursing centres, the Royal Flying Doctor Service and other miscellaneous payments.

TABLE XII

Statement Showing Number of Prescriptions

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australian Capital Territory.	Total.
1948-49..	66,480	97,347	18,235	20,139	42,518	35,904	96	280,719
1949-50..	124,173	169,558	28,560	38,360	62,018	61,386	155	484,210
1950-51..	1,365,080	1,166,562	529,194	340,642	260,997	87,309	8,838	3,758,622
1951-52..	2,513,350	1,987,658	828,225	603,912	428,542	137,282	16,699	6,515,668
1952-53..	2,649,212	2,001,481	938,803	628,787	456,187	160,249	19,218	6,853,937
1953-54..	2,752,330	2,033,299	940,287	635,715	487,478	174,602	20,710	7,044,421
1954-55..	3,721,618	2,571,753	1,203,062	844,569	647,860	212,525	*	9,201,387
1955-56..	3,744,722	2,448,144	1,145,473	797,452	633,937	201,162	*	8,970,890
1956-57..	3,650,232	2,446,882	1,211,152	866,343	655,897	214,933	*	9,045,439
1957-58..	4,213,538	2,872,602	1,314,222	931,605	710,921	266,558	*	10,309,446

* Included in New South Wales total.

PENSIONER PHARMACEUTICAL BENEFITS

TABLE XIII

Payments Per Annum for Each State

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australian Capital Territory.	Total.
	£	£	£	£	£	£	£	£
1951-52..	186,814	60,721	40,320	32,988	29,448	6,980	361	357,632
1952-53..	364,240	139,166	96,613	65,185	48,590	14,149	715	728,658
1953-54..	502,402	200,163	135,990	88,424	62,967	19,711	1,123	1,010,780
1954-55..	618,904	262,807	188,142	117,694	82,304	24,985	*	1,294,836
1955-56..	708,947	313,659	223,177	137,144	95,553	29,480	*	1,507,960
1956-57..	825,873	377,629	278,510	162,155	113,632	35,301	*	1,793,100
1957-58..	965,308	454,659	335,158	182,870	139,282	45,968	*	2,123,245

* Included in New South Wales total.

TABLE XIV

Number of Prescriptions

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australian Capital Territory.	Total.
1951-52..	879,124	291,465	175,939	143,945	128,498	34,900	1,699	1,655,570
1952-53..	1,344,682	547,531	373,990	237,036	206,790	53,058	2,860	2,765,947
1953-54..	1,651,195	716,993	479,970	316,738	215,884	68,560	4,211	3,453,551
1954-55..	2,063,013	901,042	673,933	403,517	286,274	90,854	*	4,418,633
1955-56..	2,465,906	1,090,980	776,271	470,202	327,606	104,048	*	5,235,013
1956-57..	2,541,147	1,192,500	868,092	512,063	354,181	112,963	*	5,580,946
1957-58..	2,895,952	1,347,137	980,940	548,615	407,650	132,920	*	6,313,214

* Included in New South Wales total.

TABLE XV

FREE MILK FOR SCHOOL CHILDREN

State.	No. of Children Participating.		Payments.	
	As at 30th June, 1957.	As at 30th June, 1958.	1956-57.	1957-58.
			£	£
New South Wales	380,000	400,000	1,094,469	1,139,512
Victoria	280,000	298,000	600,901	677,000
Queensland	172,000	187,000	386,999	401,000
South Australia	111,000	115,000	200,000	212,000
Western Australia	90,000	93,000	158,659	153,600
Tasmania	43,000	46,000	156,275	160,433
Australian Capital Territory	6,500	6,900	16,146	18,186
Northern Territory	600	400	1,323	860
Total	1,083,100	1,146,300	2,614,772	2,762,591

TABLE XVI
States Grants (Mental Institutions) Act 1955

STATES' EXPENDITURE AND COMMONWEALTH GRANTS.

	1955-56.	1956-57.	1957-58.	Total.
	£	£	£	£
New South Wales—				
State Expenditure	626,290	1,150,666	972,455	2,749,411
Commonwealth Grant	208,763	383,555	324,152	916,470
Victoria—				
State Expenditure	1,337,239	1,581,639	1,636,095	4,554,973
Commonwealth Grant	445,746	527,213	545,365	1,518,324
Queensland—				
State Expenditure	199,764	264,203	342,311	806,278
Commonwealth Grant	66,588	86,068	114,104	268,760
South Australia—				
State Expenditure	36,735	385,400	456,476	878,611
Commonwealth Grant	12,245	128,467	152,158	292,870
Western Australia—				
State Expenditure	29,953	155,565	87,709	273,227
Commonwealth Grant	9,985	51,855	29,236	91,076
Tasmania—				
State Expenditure	89,467	206,923	274,151	570,541
Commonwealth Grant	29,822	68,974	91,384	190,180
Total—				
State Expenditure	2,319,448	3,744,396	3,769,197	9,833,041
Commonwealth Grant	773,149	1,248,132	1,256,399	3,277,680

TUBERCULOSIS

TUBERCULOSIS EXPENDITURE

The intensive campaign against this disease in Australia in recent years is the result of agreements between the Commonwealth and State Governments for the provision, free of charge, of complete facilities for the diagnosis, treatment and control of tuberculosis.

In accordance with the agreement, each State has undertaken to reduce the incidence of tuberculosis as soon and as far as possible.

For its part the Commonwealth Government has met all expenditure incurred since 1st July, 1948, on new tuberculosis clinics, hospitals and equipment and has met all increases in the maintenance costs of the campaign (including the costs of X-ray surveys, clinics, sanatoria and hospitals). Special allowances are paid by the Commonwealth to sufferers from infectious tuberculosis.

Figures representing total Commonwealth expenditure since 1st July, 1945, under the *Tuberculosis Act* 1945-1946 and the *Tuberculosis Act* 1948, are shown under the heading of Tuberculosis in Table I. on page 24, relating to National Health expenditure. This expenditure includes all the costs to the Commonwealth of the Tuberculosis campaign.

The extent to which the Commonwealth has provided finance in respect of capital expenditure and maintenance expenditure during the period is shown in Tables I. and II. on page 37. This expenditure is comprised of amounts reimbursed to the States in respect of the cost of providing chest hospitals, clinics, X-ray and other equipment, together with running costs of hospitals, laboratories, mass X-ray surveys and other maintenance expenditure.

Tuberculosis Allowances: A scheme providing for Commonwealth tuberculosis allowances came into operation in July, 1950.

These allowances are subject to a liberal means test and are paid to sufferers who are infectious and who co-operate fully with the tuberculosis control authorities. The weekly rates of payment at 30th June, 1958, were—

		£	s.	d.
Married person	10	7	6	
Person without dependent wife—				
(a) while undergoing approved domiciliary treatment ..	6	10	0	
(b) while undergoing free hospital treatment	4	7	6	

There is a payment of 10s. per week for each dependent child, in addition to child endowment.

Expenditure relating to tuberculosis allowances since the introduction of this scheme in July, 1950, is shown in Table III. on page 38.

Variations in the rates of allowances payable to sufferers since the commencement of the scheme are shown in Table IV. on page 38.

The number of persons receiving allowances has dropped from 4,427 in June, 1956, to 3,784 in June, 1957, and to 2,961 in June, 1958.

TUBERCULOSIS REIMBURSEMENTS TO STATES.

TABLE I

Reimbursement of Maintenance Expenditure

State.	1949-50 to 1955-56.	1956-57.	1957-58.	Total.
	£	£	£	£
New South Wales	5,494,301	1,625,000	1,740,107	8,859,408
Victoria	6,096,267	1,115,958	1,049,952	8,262,177
Queensland	2,024,192	1,082,461	771,547	3,878,200
South Australia	1,316,856	329,783	368,341	2,014,980
Western Australia	2,146,573	475,801	452,268	3,074,642
Tasmania	898,163	176,000	187,000	1,261,163
Total	17,976,352	4,805,003	4,569,215	27,350,570

TABLE II

Reimbursement of Capital Expenditure

State.	1949-50 to 1955-56.	1956-57.	1957-58.	Total.
	£	£	£	£
New South Wales	2,541,431	989,576	593,219	4,124,226
Victoria	1,239,010	117,493	75,340	1,431,843
Queensland	2,217,878	671,778	678,402	3,568,058
South Australia	286,177	89,426	107,817	483,420
Western Australia	695,825	503,977	669,299	1,869,101
Tasmania	223,038	6,397	4,385	233,820
Total	7,203,359	2,378,647	2,128,462	11,710,468

TUBERCULOSIS ALLOWANCES

TABLE III

Expenditure

State.	1950-51 to 1955-56.	1956-57.	1957-58.	Total.
	£	£	£	£
New South Wales	4,297,199	527,161	447,349	5,271,709
Victoria	2,755,630	361,303	295,548	3,412,481
Queensland	1,315,844	244,186	226,952	1,786,982
South Australia	967,877	158,401	144,949	1,271,227
Western Australia	676,067	91,545	76,109	843,721
Tasmania	488,662	78,054	63,786	630,502
Total	10,501,279	1,460,650	1,254,693	13,216,622

TABLE IV

Variations in Rates of Allowances

Category.	Original Rate 13.7.50.	Rate from 1.11.51.	Rate from 2.10.52.	Rate from 29.10.53.	Rate from 27.10.55.	Rate from 24.10.57.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1. Married person rate	6 10 0	8 5 0	9 0 0	9 2 6	9 12 6	10 7 6
2. Sufferer without dependants—						
(a) Whilst not in hospital	3 12 6	5 0 0	5 10 0	5 12 6	6 2 6	6 10 0
(b) Whilst receiving treatment in an approved institution free of charge	2 12 6	3 0 0	3 7 6	3 10 0	4 0 0	4 7 6
3. Sufferer with no dependent wife but with a dependent child or children	3 12 6	5 0 0	5 10 0	5 12 6	6 2 6	6 10 0
4. Each dependent child of a sufferer	0 9 0	0 9 0	0 10 0	0 10 0	0 10 0	0 10 0

N.B.—The means test was relaxed from 14.10.54 when the allowable income was raised for sufferers without dependent wives from £2 to £3 10s. per week and for married sufferers from £4 to £7 per week.

TUBERCULOSIS CAMPAIGN

Incidence of Infection: Tuberculin surveys during recent years indicate that the incidence of infection in school children is decreasing. It is lowest in Tasmania, South Australia and Western Australia, and highest in Queensland, with Victoria and New South Wales occupying intermediate positions. The cause of the high rate in Queensland is not yet clear. It should become obvious after more extensive tuberculin testing and the completion of the anticipated State-wide x-ray survey on a compulsory basis. In certain rural areas of New South Wales, associated with the dairying industry, high rates of positive tuberculin reactors have been found, without evidence of any increase in the amount of pulmonary tuberculosis. It is possible that a similar situation will be found in Queensland.

Positive Reactors to Tuberculin Skin Tests
(Expressed as percentage of those tested and checked)

State.	School Children.	National Service Trainees.	Other Groups (Young Adults).
		%	
Tasmania— 1957 and 1958	All grades, native born only— 2.18 per cent.	11.6	..
South Australia— 1957	Country, all grades— Australian born—3.2 per cent. Migrant—11.7 per cent. City, all grades— Australian born—4.0 per cent. Migrants—16.2 per cent.	13.5	
Victoria— 1956	City— 13 and over—8.14 per cent. Country— 13 and over—6.25 per cent. 5 to 12 years—3.42 per cent.	..	Nursing and teacher trainees, navy recruits, University students et al—16.2 per cent.
New South Wales— 1956 and 1957 Some areas of uncontrolled bovine tuberculosis	City and country, all grades— 10.4 per cent.	24.3	..
Queensland— 1957 Some areas of uncontrolled bovine tuberculosis	City and Country, all grades— 23.4 per cent.	35.3	University students—57.8 per cent. Trainee teachers—40.7 per cent. Technical students—45.4 per cent.
Western Australia— 1957 .. ..	.. .. 5.3 per cent (1956)	..	5,039 in mixed groups— 36.4 per cent.

Notifications: The incidence of disease, as revealed by notifications of newly discovered cases shows a definite overall reduction:

Year.	Number.	Rate per 100,000.
1949	3,884	49.49
1951	4,601	55.04
1953	4,979	56.47
1955	4,606	50.01
1956	4,359	46.7
1957	4,035	42.46
1958	3,948	40.1

The increase in notifications immediately after the initiation of the National Anti-tuberculosis Campaign in 1948 was due to improved case-finding and to the payment of tuberculosis allowances. Although during the past four years

there has been a definite reduction in the total notification rate, this has not been the case as regards the proportion of notifications in the age group 55 and over—

Number of Notifications in Certain Age Groups

Age Group.	1956.	1957.	1958.
0-14 years	267	250	274
50 and over	1,703	1,571	1,686

All States, except Victoria and Queensland, show a reduction in the 0-14 age group expressed as a percentage of the total yearly notifications. Victoria and Queensland are the only States where community x-ray surveys have not been done on a compulsory basis.

Notifications in 0-14 age group (As percentage of total notifications)

State.	1956.	1957.	1958.
	%	%	%
Victoria	6.9	10.1	10.5
Queensland	5.0	8.4	10.4
South Australia	14.0	8.3	5.9
Tasmania	9.5	4.5	5.6
New South Wales	4.2	3.7	4.0
Western Australia	5.2	4.0	3.2

Case-finding—Mass Surveys: At present there is no practical substitute for community x-ray surveys in the discovery of *previously unknown* cases of tuberculosis.

The following table indicates the percentage in each State of newly notified cases discovered by mass survey during the past three years:

State.	1956.	1957.	1958.	Average for 3 years.
	%	%	%	%
Victoria	29.0	23.6	21.9	24.5
South Australia	21.0	19.0	37.0	25.7
New South Wales	34.6	38.8	36.1	36.5
Western Australia	47.8	38.0	34.3	40.0
Tasmania	42.8	39.1	45.0	42.3(48% pulmonary cases)

Analysis of the statistics supplied by the Department of Health, Victoria, indicate that:—

- (1) the percentage of eligible persons x-rayed by the mass surveys is much lower than in the other States;
- (2) the coverage is particularly poor in the older age groups, in which the disease is known to have the highest incidence. It is also much lower in the densely populated inner suburbs of Melbourne than in the outer suburbs and country towns.

In Tasmania, mass surveys have been carried out more frequently than in any other State. As a result—

- (1) more of the newly notified cases have been discovered by this means than in any other State; and

(2) more of these cases have been found in the minimal stage of the disease than elsewhere in Australia.

Percentage of Newly Notified Cases of Pulmonary Tuberculosis found by Mass Surveys.			Percentage of these Cases found to be in the Minimal Stage.		
Year.		%	Year.		%
1953	.. ..	32	1953	.. ..	33.5
1954	.. ..	40	1954	.. ..	31.7
1955	.. ..	45	1955	.. ..	34.2
1956	.. ..	51	1956	.. ..	33.3
1957	.. ..	44	1957	.. ..	39.1
1958	.. ..	49	1958	.. ..	43.9
			(Average for Australia for past three years (all sources) 30%)		

Percentage of eligible population x-rayed:

South Australia — 95%

Western Australia — 90-95%

Tasmania — 87-95%

New South Wales — 80-90% Metropolitan, 1st time

72% „ 2nd time

65% „ 3rd time

87.2% Newcastle 2nd time

75% Western (country)

90.4% Northern (country)

Victoria (1957) — 30%

Yield of active cases:

Western Australia: 1952 — 2.4 per 1,000

1954 — 1.1 „ „

1958 — 0.8 „ „

March 1958—Completion of Metropolitan survey

South Australia: 1952-1955 —

Town and country — 0.71 per 1,000
(43.5% in minimal stage)

1957 — 0.6 per 1,000

Tasmania: 1952-1957 0.6 per 1,000

New South Wales: 1953-54

(i) City of Sydney (192,297 persons)

1.8 per 1,000 had active disease

(ii) 9 Municipalities and Parramatta (620,739 persons)

0.9 per 1,000 had active disease

(65.1% of the active cases were in 40 and over age groups and 47.5% of the active cases were in 50 and over age groups).

In 1954 — 43.19% of notifications came from Mass Surveys.

1956-1958

Country surveys (319,711 persons) 272 or 0.85 per 1,000 had active disease.

Third Survey in metropolitan Sydney — 0.62 per 1,000 had active disease.

Treatment Facilities: Beds available for the treatment of tuberculosis were, on June, 30th, 1958, approximately 4,712 (Repatriation 1,117, States approximately 3,595).

B.C.G. Vaccination: The freeze dried preparation of the Commonwealth Serum Laboratories is used. Vaccination is advised in certain groups, e.g.

- (1) contacts of known cases;
- (2) persons likely to be exposed by occupation such as medical, dental and veterinary students, nurses and other hospital workers in contact with patients or their soiled linen;
- (3) personnel of the Armed Services going overseas;
- (4) Government officials and their families going on duty to countries with a high incidence of the disease.
- (5) Aborigines and natives of the Trust Territories.

In Victoria, South Australia and Queensland, B.C.G. is still given to children during their last year of school. However its use is of very limited value for children of school leaving age in countries of low tuberculosis incidence such as Australia. The immunity produced will have waned considerably by early adult life. Most disease in Australia occurs in women in the latter child bearing age groups and in middle-aged and elderly men.

Deaths: Deaths from all forms of tuberculosis have shown a steady downward trend.

Year.	Number.	Rate per 100,000.
1949	1,964	20.3
1953	974	11.0
1956	719	7.6
1957	585	6.0
1958	538	5.4

The rate for males is highest in the 50 and over age groups and for females between 35 and 45 years. There are three male deaths for each female death.

Deaths from tuberculosis in certain age groups expressed as a percentage of all deaths:—

Year.	Under 25 years.	50 years and over.
	%	%
1948	8.0	53.8
1955	3.1	71.3
1956	3.0	75.5
1957	1.7	74.2
1958	3.2	73.6

IMMIGRATION MEDICAL SERVICE

The Department continued to conduct the Hospitals of the Immigration Medical Service in Migrant Reception Centres controlled by the Department of Immigration.

Nine hospitals with 485 beds, cots and bassinets were in use at the commencement of the period under review. Cairns closed in October, 1956, although it re-opened for five weeks in May-June, 1957. Holden closed in December, 1956, and Somers in January, 1957. During the period under review, the total number of beds installed was reduced to 350.

The numbers accommodated in the Centres increased from 4,645 in July, 1956 to 8,332 in June, 1957 and in June, 1958 the numbers had fallen to 4,041.

Thirty-four babies were born in Centre Hospitals and a further 316 were born in the local public hospitals, to Centre residents.

A total of 9,210 in-patients, covering 55,416 bed days, were treated and 173,470 out-patient treatments given during the period. A total of 1,910 cases of infectious disease, chiefly influenza, mumps, chickenpox, measles and whooping cough were included in the in-patients. 6,892 immunizations were effected. Surgery was carried out in only three Centres, 408 minor operations being performed.

During May, 1957, an outbreak of Asian Influenza occurred at the Bonegilla Migrant Centre in Victoria, where there were 3,300 migrants and 1,200 staff and staff dependants in residence at the time.

In the four weeks prior to the outbreak, 15 plane loads of migrants, mainly Hungarians, came from Europe via Singapore, in addition to a number by sea. The outbreak occurred among Hungarian migrants who arrived by air, the diagnosis being confirmed by the isolation of the specific virus at the Commonwealth Serum Laboratories.

Between 8th May, and 30th June, 1957, 234 cases were recorded. On the whole, the cases conformed to a fairly typical pattern. After the first month it became more difficult to differentiate the clear picture of Asian Influenza, as the onset of winter brought with it an increasing number of ill-defined respiratory ailments.

During the epidemic, the restriction of all movement of personnel in or out of the Centre prevented any epidemic spread from this source. The inoculation of all hospital staff against the disease enabled the hospital to cater for the rapid expansion required to meet the emergency.

Staff figures at the beginning and end of the period were—

	1st July, 1956.	30th June, 1958.
Medical Officers	4	2
Matrons and Sisters	25	14
Male Orderlies	23	4
Female Orderlies	98	50
Other	89	57

NATIONAL FITNESS

The administration of the National Fitness Movement was continued as in former years in co-operation with the three main agencies in the States, State National Fitness Councils, State Departments of Education, and the Universities. In addition, a programme of activity was also carried out for the Australian Capital Territory.

STATE NATIONAL FITNESS COUNCILS

State National Fitness Councils continued to direct their activities towards the training of voluntary leaders, the further development of camps and camping programmes, assistance to voluntary youth and sports organizations and advisory services to the community on all matters relating to recreation and the development of recreational facilities.

The Associated Youth Committees, as sub-committees of State National Fitness Councils, act as co-ordinating agencies for the voluntary youth organizations, undertaking such activities as youth conferences and rallies, and the organization of Commonwealth Youth Sunday in each State. In the same way, co-ordinating committees for amateur sports organizations operate in some States, and assist in the promotion of the activities of these organizations.

Courses for coaches of all major games are arranged in co-operation with the ruling amateur sports bodies concerned. During the years 1956 and 1957, 234 leadership courses were held. A total of 8,933 voluntary leaders and games coaches were trained in these various courses.

Seventeen National Fitness Camps were in operation during 1956-57, providing for many youth groups as well as for expanding school camping programmes. Many youth organizations are now developing their own Camps on the pattern of the National Fitness Camps, thus increasing the accommodation available for this popular type of education and recreational activity. There are now nine fully functioning National Fitness Camps in New South Wales, four in Queensland, two in Victoria, two in South Australia and two in Western Australia. A third seaside camp is being developed in Western Australia, and Tasmania should have its first permanent camp by the end of 1959. During the period 1956-57, National Fitness Camps accommodated 1,023 school and youth groups with a total number of campers at 41,605.

State National Fitness Councils are also responsible for the Play Centre programmes conducted in several States. The most extensive programme is that carried out in New South Wales, where in January, 1957, 96 centres were organized with a staff of 339 and an enrolment of 23,202 children of school age. Thirteen additional centres were also conducted at Migrant Hostels and 2,270 children were thus provided for in January, 1957. Staff for this work were given special training in a play centre supervisors' course organized by the New South Wales Council.

A similar though less extensive programme was conducted by the Victorian Fitness Council in co-operation with municipal authorities. In January, 1957, the total attendance of centres wholly conducted by the Council was 26,227. Twelve centres were conducted at Migrant Centres at which the total attendance was 17,523.

Coaching courses for leaders in major games were provided in all States. In 1956, 422 leaders passed through special courses in South Australia. In Queensland, also in 1956, 267 leaders attended residential games-coaching camps, and

a total of 2,101 leaders were enrolled in non-residential courses in town and country centres. In 1957, a total of 1,266 young players took part in coaching courses. In Tasmania, 32 coaching schools for juniors were held, enrolling 467 junior players in various major games. Similar activities were conducted in other States.

Following the Olympic Games in 1956 special courses in athletics coaching were organized in a number of States using the services of leading Olympic athletics coach Franz Stampfl. In Victoria, in January, 1957, vacation schools were held for young athletes and cricketers, which were attended by approximately 250 boys and girls.

In New South Wales, a number of coaching courses were conducted specially for teachers and teachers' college students, many of whom would be responsible for games' training in the schools.

STATE EDUCATION DEPARTMENTS

The Commonwealth Grant of £17,000 per annum was continued through 1956 and 1957 on the same basis as in former years, each State Education Department receiving an equal amount of the grant, viz., £2,833. The allocation is directed towards the training of teachers in physical education, assistance towards the programmes in teachers' colleges, and the promotion of school camping programmes.

The holding of the International Conference in Physical Education in November, 1956, was made possible by a Commonwealth National Fitness subsidy. Teachers from all States attended, including a group of 70 from New South Wales, who were specially released from duty to attend, and were organized to make a special study of the various sports at the Olympic Games. These studies have since been produced in the form of a composite report for the use of teachers of physical education.

The Commonwealth Grant has been applied particularly to the training of teachers in refresher courses and schools of instruction. Four States, New South Wales, Queensland, Western Australia and Tasmania held courses for supervisory and specialist field staff, which varied in length from two days to two weeks, covering aspects of the physical education syllabuses for schools and other activities of the physical education programmes for schools and teachers' colleges. The total number participating in these courses during 1957 was 257.

The award of bursaries to teachers in South Australia, Western Australia and Tasmania to undertake specialist training in physical education was continued.

School camping programmes continued to expand in all States except Victoria, where owing to the lack of a suitably situated camp, no programme can be undertaken. As in former years, the camps were of two kinds—

- (a) regular school camps undertaken during school time; and
- (b) holiday camps for school children organized by State National Fitness Councils.

All camps were held at National Fitness Camps or Youth Hostels; in the case of Tasmania, at the Bellerive Camp owned by the Education Department. An interesting aspect of the school camping programme in Western Australia was the continuation of the mixed aboriginal and white children's camp for children from the far North-West of the State, the programme of five to seven-day camps for high schools, and the building of a new dormitory block at a forest camp, by technical high school students attending the camp.

UNIVERSITIES

The grant of £12,400 allocated to the six Universities, Sydney, Melbourne, Queensland, Adelaide, Western Australia and Tasmania, for the promotion of specialist courses in physical education, was continued on the same basis as in former years.

The appointment of a lecturer at the University of Tasmania established physical education as part of the general course for teachers. Plans were being developed in 1957 for the establishment of a Diploma Course, which was expected to function by 1959.

The major development during 1956 was the completion of the Beaurepaire Physical Education Centre at the University of Melbourne. A special grant from the Commonwealth National Fitness Fund provided the very modern and well-set-up gymnastic equipment for the Centre.

The Student Health Service at the University of Adelaide continued to provide medical examinations and general health supervision for all students in a Special Student Health Unit. In 1956-57, 2,090 examinations were conducted, with 447 re-examinations carried out during the two years under review.

AUSTRALIAN CAPITAL TERRITORY

Subsidy grants amounting to £344 in 1956, and £1,500 in 1957, were made available to voluntary youth and sports organizations in the A.C.T. towards the purchase of equipment and the development of facilities for their activities. In addition, the regular grants of £250 were paid to the Department of the Interior towards the cost of conducting Holiday Play Centres during the January school vacations in 1957 and 1958.

Three week-end courses for youth leaders were held in 1956, enrolling an average of 35-40 leaders in each course, and a further two courses in 1957.

The annual allocation of £375 each to the Y.M.C.A. and the Y.W.C.A. in Canberra was paid from the Central Fitness Fund.

Special allocations were made to six youth organizations towards the construction of buildings to be used for physical recreation activities as part of their youth activity programmes. The special recreation building grant of £10,000 allocated to the Y.M.C.A. was held, pending the amount of a matching grant being guaranteed, and the building commenced. Two subsidy allocations, each of £2,500, were paid to assist the building of a Methodist and a Catholic Youth Centre, both of which were opened in 1957. The remaining three organizations had commenced building before 30th June, 1958.

WORLD CONGRESS ON PHYSICAL EDUCATION

The Commonwealth National Fitness Council sponsored a World Congress in Physical Education, which was held in Melbourne in November, 1956, immediately prior to the 1956 Olympic Games. A grant of £2,000 was allocated towards the cost of the congress which was attended by approximately 300 delegates, including representatives from the British Ministry of Education, New Zealand, Canada, the U.S.A. and a number of other European and Asian countries. About 250 of the delegates were Australians from State Education Departments, Teachers' Colleges, University Departments of Physical Education, private schools and related institutions.

The Congress was held at the University of Melbourne from November 11th to 17th. A report of the discussions is printed in the Report of Activities of the Commonwealth National Fitness Council for the year 1956.

APPENDIX I

ANNUAL ALLOCATION OF COMMONWEALTH NATIONAL FITNESS GRANTS—Total £72,500

To:—	£
State National Fitness Councils	36,954
State Education Departments	17,000
Universities	12,400
Central Administration	3,396
Australian Capital Territory	2,750
	<u>72,500</u>

ALLOCATIONS TO STATE AGENCIES—Total £66,354.

State.	Councils.	Universities.	Education Departments.	Totals.
	£	£	£	£
New South Wales	7,243	2,000	2,834	12,077
Victoria	7,243	2,100	2,834	12,177
Queensland	5,742	2,100	2,833	10,675
South Australia	5,742	2,100	2,833	10,675
Western Australia	5,742	2,100	2,833	10,675
Tasmania	5,242	2,000	2,833	10,075

DETAILS OF ALLOCATIONS TO STATE AGENCIES

State National Fitness Councils—Total, £36,954

Item.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
	£	£	£	£	£	£
1. Salaries and travelling expenses, Director and Assistant Director	1,750	1,750	1,500	1,500	1,500	1,500
2. Services to Associated Groups ..	2,000	2,000	1,500	1,500	1,500	1,500
3. Grants to voluntary Youth Organizations	500	500	438	438	438	258
4. Subsidies to local National Fitness Committees	750	750	654	654	654	384
5. Services to sports organizations ..	243	243	150	150	150	100
6. Development of Camps and Hostels	2,000	2,000	1,500	1,500	1,500	1,500
Totals	7,243	7,243	5,742	5,742	5,742	5,242

APPENDIX I—continued

State Education Departments—Total, £17,000

Item.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.
	£	£	£	£	£	£
1. Training of general teachers in physical education—						
(a) Short courses	500	500	500	300	300	300
(b) Residential courses ..	500	500	500	500	500	500
2. Provision of bursaries to enable selected teachers to undertake university courses .. ..	..	..	..	600	600	600
3. Development of health and physical education in practising schools and Teachers' Colleges—						
(a) Equipment	300	300	300	200	200	200
(b) Camps for Teachers' college students	250	250	250	150	150	150
4. Publications, films, records, &c. ..	484	484	483	483	483	483
5. Development of school camping and hostelling—						
(a) Equipment of camps and schools	500	500	500	400	400	400
(b) School camping, hostelling	300	300	200	200	200	200
Totals	2,834	2,834	2,833	2,833	2,833	2,833

Universities—£12,400.

1. The Universities of Melbourne, Sydney, Queensland, Adelaide, and Western Australia receive £2,000 each for the conduct of specialist Physical Education Courses. All except Sydney receive the £100 special grant for the promotion of a physical education programme for the general student body.

2. The Sydney Course is conducted as a Diploma Course at the Sydney Teachers' College, and not as a University Course. Therefore no special grant for activities of the general student body is allocated.

3. The University of Tasmania receives a total allocation of £2,000 of which £1,600 is to be expended on physical education training courses for general teachers and £400 on scholarships taken out generally at the University of Melbourne.

Australian Capital Territory—£2,750.

	£
1. Development of activities in the Australian Capital Territory	2,000
2. Grant to Young Men's Christian Association and Young Women's Christian Association, Canberra	750
	<hr/>
	2,750
	<hr/>

NURSING

COLOMBO PLAN—TECHNICAL CO-OPERATION SCHEME

There has been an increase in departmental activity during the period under review, in connexion with arrangements for nurses' study programmes in Australia, under the Colombo Plan.

Training in many specialized fields of nursing was made possible through the excellent co-operation of the nursing colleges and hospital authorities. Asian nurses from Singapore, Pakistan, India, Thailand, Burma and the Philippines studied in one or other of the post-graduate courses provided by the various colleges of nursing. The number of graduate nurses who commenced post-graduate courses during 1957 and 1958 at nursing colleges in Australia are—

Location.	1957.	1958.
New South Wales College of Nursing	17	10
College of Nursing, Melbourne	12	7

During 1957, three nurses from Singapore completed post-certificate courses. Two of the nurses attended an Infant Welfare Course at the Tweddle Bay Hospital, Melbourne and the other completed an Infectious Diseases Course at the Fairfield Hospital, Melbourne.

From 1st July, 1956, to 30th June, 1958, increasing numbers of Colombo Plan students were placed in Australian hospitals to undergo a general nursing course. During this period, training was commenced by 71 girls, 59 of whom came from Malaya, 10 from Ceylon and one each from Burma and North Borneo. During the same period 14 Malayan nurses completed their training and returned to their own country.

At 30th June, 1958, 81 nurses were undergoing a basic course at Australian hospitals.

Under the auspices of the World Health Organization, five graduate nurses completed study programmes in Australia.

HOME NURSING SUBSIDY ACT 1956

The Home Nursing Subsidy Scheme which came into operation on 1st January, 1957, was designed to assist in the extension of home nursing activities, either by the expansion of existing home nursing organizations or the formation of new ones. To be eligible for a subsidy, an organization must provide a home nursing service, be a non-profit-making organization, employ registered nurses and be in receipt of assistance from a State government.

Subsidy payments are based on the number of nurses employed over and above the number employed during September, 1956, in the case of existing organizations and on the total number of registered nurses employed by newly formed organizations. A subsidy at the rate of £800 per annum is paid in respect of each additional nurse employed in the first instance and at the rate of £400 per annum in respect of nurses employed by newly formed organizations.

Particular examples of subsidized expansion are as follows:—

Location of Nursing Service.	Number of Additional Nurses.
The Blue Nursing Service, Brisbane	9
The District Nursing Association, Brisbane	4
The Melbourne District Nursing Association	7
The Sydney District Nursing Association	3
The Silver Chain and Bush Nursing Association, Perth	2
The District and Bush Nursing Society of South Australia	1

For the year ended 30th June, 1958, a total subsidy of £22,558 was paid to nine organizations in respect of 35 nurses.

CONFERENCES

The Principal of the Division of Nursing attended the Royal Australian Nursing Federation's annual Conference, as an official observer, during October, 1956.

In January, 1957, the Principal was guest speaker at the Nurses Graduation Ceremony held at the Rachel Forster Hospital for Women and Children, Sydney.

The Principal also attended the Nursing Study Period No. 1, Civil Defence Course, conducted by the Commonwealth Civil Defence School at Mount Macedon, Victoria, in August, 1957, and the W.H.O. Expert Advisory Nursing Group meeting held in Geneva on "Principles of Administration Applied to Nursing Service" during December, 1957.

Other administrative services performed during the period under review included the preparation of a number of matters for attention by the Committee of Nursing of the National Health and Medical Research Council, as well as participation in the work of that Committee.

INSTITUTE OF ANATOMY

A series of exhibits displaying the supposed origins of the primitive Australian aboriginal and various aspects of his mode of life, were added to the exhibits referred to in previous reports. These exhibits are displayed in the Ethnology Museum of the Institute. They depict the childhood and initiation of the aboriginal, his hunting, fishing and fighting, his music and art.

A Hearing and Speech Exhibit was installed in the Health and Hygiene section of the Museum. This exhibit shows how sound waves of different tones are generated in the vocal organs of the human and how these waves travel through the air to be detected by the hearing organs. Interesting facets of the process are illustrated by examples taken from everyday life. Included in this exhibit is an audiometer, by means of which visitors to the Institute are able to test the efficiency of their own hearing.

A travelling exhibit on Dental Health was loaned from the Institute for display at a number of conventions including the Health Week, Brisbane, and the Dental Convention, Wagga.

NUTRITION

Officers of the section assisted in the planning and pretesting for a National Survey of Australian Household Budgets, being organized by the Commonwealth Bureau of Census and Statistics.

As in previous years calculations of the nutrient content of the Australian diet were made from statistics compiled by the Bureau of Census and Statistics. These are published annually by the Bureau in its "Report on the Production and Consumption of Foodstuffs and Nutrients in Australia".

Colloquia on Hypertension and Pregnancy Toxaemia were held in Sydney during August, 1957. These Colloquia were jointly organized by the Commonwealth Department of Health, the Australian Regional Council Royal College of Obstetricians and Gynaecologists, the Royal Australian College of Physicians and the Life Insurance Medical Research Fund of Australia and New Zealand. The proceedings of the Colloquia will be published during 1959 as a special issue of the Bulletin of the Post-Graduate Committee in Medicine in the University of Sydney.

An investigation of the trends in the published mortality statistics, of deaths from coronary heart disease was made and the possible relationships with trends in the diet pattern in Australia, were studied.

A booklet entitled "Height-Weight Standards for Australians" was prepared.

Metabolic Studies: Studies on the concentration of hydrocortisone and corticosterone concentration in the blood of normal and toxaemic pregnant women, were carried out. Both the free steroids and the conjugated steroids split by the enzyme β -glucuronidase were determined. No differences between the two groups investigated were found.

An attempt was made to confirm a report in the literature that there was present in the plasma of women with pregnancy toxaemia, an antidiuretic substance which was not present during normal pregnancy. Data obtained at the Institute did not confirm this report. As a side issue arising out of this work, evidence was obtained which strongly suggests that the antidiuretic hormone is carried by the plasma during late pregnancy, bound to a protein as a hormone-protein complex, which is resistant to destruction by the powerful "antidiureticase" enzyme which develops in the human during pregnancy. This observation offers a logical explanation as to how control of diuresis can be maintained during pregnancy in the presence of this enzyme.

An investigation of the possible inter-relationships of diet with the level of gamma-globulin in the serum was commenced and this work is continuing.

Research was continued into the inter-relationship of insulin and oxidative phosphorylation. This work involved a study of the effect of 2-4 Dinitrophenol on myosin and enzymes responsible for muscular contraction. The results of some of this work have been published.

PUBLICATIONS

Commonwealth of Australia, Department of Health

FOOD AND NUTRITION NOTES AND REVIEWS. Vol. 13, 1956, Nos. 7-12.

Ibid. Vol. 14, 1957, Nos. 1-12.

Ibid. Vol. 15, 1958, Nos. 1-6.

THE NUTRITIVE VALUE AND USES OF VEGETABLE OILS AS FOODS. W. E. Garran, *Food and Nutrition Notes and Reviews*, Vol. 14, 1957, page 9.

SOME OBSERVATIONS ON THE EPIDEMIOLOGY OF CORONARY HEART DISEASE IN AUSTRALIA. E. H. Hipsley, *Food and Nutrition Notes and Reviews*, Vol. 14, 1957, page 41.

SPINACH, OXALIC ACID AND CALCIUM. W. E. Garran, *Food and Nutrition Notes and Reviews*, Vol. 13, 1956, page 101.

VEGETABLE PROTEIN FEEDING FOR NEW GUINEA INFANTS. W. E. Garran, *Food and Nutrition Notes and Reviews*, Vol. 13, 1956, page 92.

THE ACTION OF 2-4 DINITROPHENOL ON MYOSIN. D. Gilmour and M. Griffiths, *Arch. Biochem.*, Vol. 72, 1957, page 302.

THERAPEUTIC SUBSTANCES

THE THERAPEUTIC SUBSTANCES ACT AND REGULATIONS

The purpose of the *Therapeutic Substances Act* 1953 is to control standards of therapeutic substances imported into Australia, traded interstate or exported from Australia, in accordance with the standards fixed by the British Pharmacopoeia, the British Pharmaceutical Codex or by Regulation. Provisions of the Act and Regulations also apply to the standards of therapeutic substances supplied in the form of pharmaceutical benefits and to the Commonwealth Government.

The Act was assented to in Parliament on 5th December, 1953 and Parts I., III. and IV. of the Therapeutic Substances Regulations came into operation on 1st February, 1956. Part II. of the Regulations operated on and from 1st August, 1956. Subsequent amendments to the Regulations have been made by the following Statutory Rules:—

1956, No. 113, dated 21st December, 1956.

1957, No. 64, dated 26th October, 1957.

1958, No. 21, dated 27th March, 1958.

The Regulations are in relation to packaging and labelling, the appointment of Laboratories, power of authorized persons to enter and take samples and also the constitution of various committees.

Sampling and analysis of importations under the provisions of the Regulations was commenced in Victoria in June, 1957 and extended to all other States in March, 1958. In the initial trial period this control was confined to a limited list of 12 controlled therapeutic substances which was later increased to 25 and subsequently to 50.

During the period from the commencement of sampling up to 30th June, 1958, 200 samples were taken, of which 9 failed to comply with official requirements. Where a consignment fails to comply with official requirements, it is treated as a prohibited import.

As stated previously, the Regulations allow for the constitution of various committees and the following have been formed:—

(a) The Therapeutic Substances Advisory Committee, comprised of the Director-General of Health, an officer of the Department of Health, the Commonwealth Analyst and six members of various professional and trade organizations. The purpose of this Committee is to enquire into and advise the Minister for Health on any matter relating to the Act or Regulations referred to the Committee by the Minister.

(b) The Biological Products Standards Committee, comprised of the Director-General of Health, an officer of the Department of Health and four other members. The purpose of this Committee is to enquire into and advise the Minister for Health on the standards, and matters relating to the standards, of antibiotics, antigens, antitoxins, blood derivatives, insulin products, sera, toxoids, vaccines and other biological products.

CONTROL OF IMPORTATIONS OF BIOLOGICAL AND ANTIBIOTIC SUBSTANCES

Item 28A of the Third Schedule to the Customs (Prohibited Imports) Regulations came into operation on 1st February, 1958 but was not implemented until 1st May of that year.

This Item controls the importation of the following therapeutic substances:—

- (a) Sera, toxoids, toxins, antitoxins, vaccines, antigens and glandular extracts, and
- (b) antibiotic substances,

requiring that the importer shall produce to the Collector of Customs the permission in writing of the Director-General of Health to import the goods.

The procedure is that the importer applies to the Director-General of Health for the necessary permission in accordance with certain requirements. When these requirements are fulfilled, and the Director-General is satisfied that importation should be allowed, an authority for importation is issued to the importer who produces it to the Collector of Customs. The goods in question are then allowed entry.

When consideration is being given to applications, due regard is also given to quarantine factors.

THE NATIONAL BIOLOGICAL STANDARDS LABORATORY

During the year ended 30th June, 1958, action was initiated towards the establishment of the National Biological Standards Laboratory. The functions of this laboratory are to advise on the standards of biological products and to conduct the examination and testing of biological material, as required by the provisions of the *Therapeutic Substances Act 1953*.

The National Biological Standards Laboratory was originally planned as a section of the Commonwealth Serum Laboratories, Melbourne. However the Australian National University, Canberra offered to make available their Physiology Block for the use of this Department and this offer was accepted to enable the establishment of the National Biological Standards Laboratory as an independent unit.

Action was taken at the close of the two year period under review, to appoint Dr. L. F. Dodson to the position of Director, National Biological Standards Laboratory. Steps were also taken towards amending the Therapeutic Substances Regulations to authorise the establishment of the Laboratory during the year 1958-59.

EPIDEMIOLOGY

The following information in respect of the two years ended 30th June, 1957 and 30th June, 1958, has been collated from the sources indicated on page 46 of the report for the year ended 30th June, 1954.

TABLE I

Diseases notifiable in each State and Territory of Australia, and number of cases reported during year ended 31st December, 1956.

Disease.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Acute Rheumatism	156	157	164	15	21	*	11	1	525
Amoebiasis ..	*	5	..	1	7	..	..	1	14
Ancylostomiasis ..	33	2	343	..	1	..	66	..	445
Anthrax ..	*	1	..	..	..	..	..	..	1
Bilharziasis ..	*	..	..	..	..	..	..	..	..
Brucellosis ..	12	18	..	3	3	1	..	..	37
Chorea ..	15	23	1	1	1	*	1	..	42
Dengue ..	..	..	*	..	..	*	..	..	..
Diarrhoea, Infantile	270	652	173	..	48	1	13	8	1,165
Diphtheria ..	70	103	20	7	145	2	1	..	348
Dysentery, Bacillary	*	94	308	37	71	1	25	..	536
Encephalitis ..	34	44	1	23	2	..	..	..	104
Erythema Nodosum	..	19	..	4	1	..	1	..	25
Filariasis ..	*	..	1	..	..	..	..	..	1
Homologous Serum Jaundice ..	*	..	*	..	..	*	..	..	..
Hydatid ..	*	12	*	1	..	18	..	..	31
Infective Hepatitis..	4,435	3,056	*	791	181	247	79	72	8,861
Lead Poisoning ..	*	..	14	..	13	*	..	..	27
Leprosy ..	..	1	1	..	34	..	14	..	50
Leptospirosis ..	22	3	199	..	..	*	..	..	224
Malaria ..	..	11	18	..	6	..	35	..	70
Meningoccal In- fection ..	112	142	44	12	13	36	3	2	364
Ophthalmia ..	*	*	*	..	..	..	5	..	5
Ornithosis ..	3	1	*	..	..	*	..	..	4
Paratyphoid Fever	4	3	..	..	..	13	..	1	21
Poliomyelitis ..	240	251	112	122	401	55	..	13	1,194
Puerperal Fever ..	41	2	50	3	1	3	5	..	105
Rubella ..	*	1,681	19	800	85	1	20	..	2,606
Salmonella Infection	*	*	*	26	27	*	..	2	55
Scarlet Fever ..	574	681	257	249	57	20	5	14	1,857
Tetanus ..	*	7	36	5	15	*	1	..	64
Trachoma ..	*	1	*	..	280	*	154	..	435
Trichinosis ..	*	*	*	..	..	*	..	..	..
Tuberculosis ..	1,702	878	726	349	463	242	46	13	4,419
Typhoid Fever ..	15	12	7	..	8	..	2	..	44
Typhus (flea, mite or tick borne) ..	5	2	35	2	16	..	..	..	60

* Not notifiable.

NOTE.—No cases of Cholera, Plague, Smallpox, Epidemic Typhus or Yellow Fever.

TABLE IA

Diseases notifiable in each State and Territory of Australia, and number of cases reported during year ended 31st December, 1957.

Disease.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Acute Rheumatism	99	131	183	29	27	*	5	..	474
Amoebiasis ..	*	4	2	1	10	2	1	..	20
Ancylostomiasis ..	71	1	212	..	..	..	..	..	284
Anthrax ..	*	..	..	..	..	..	..	..	..
Bilharziasis ..	*	..	..	..	..	..	..	..	..
Breast Abscess ..	*	*	† 57	*	*	*	*	1	58
Brucellosis ..	16	28	2	2	2	1	..	..	51
Chorea ..	4	12	1	..	1	*	..	..	18
Dengue ..	..	..	*	..	..	*	..	..	..
Diarrhoea, Infantile	203	560	106	..	23	..	116	19	1,027
Diphtheria ..	56	73	16	4	63	25	..	..	237
Dysentery, Bacillary	*	63	100	50	46	..	37	..	296
Encephalitis ..	21	65	2	6	2	..	..	..	96
Erythema Nodosum	..	19	..	4	1	..	..	..	24
Filariasis ..	*	..	..	..	..	..	..	..	..
Homologous Serum Jaundice ..	*	..	*	..	..	*	..	..	..
Hydatid ..	*	14	*	2	..	12	..	1	29
Infective Hepatitis ..	2,405	1,386	71	258	363	128	46	18	4,675
Influenza ..	*	*	*	‡ 1,199	*	*	*	*	1,199
Lead Poisoning ..	*	..	5	3	1	..	..	..	9
Leprosy ..	..	1	2	1	33	1	55	..	93
Leptospirosis ..	10	..	197	..	1	*	..	..	208
Malaria ..	..	9	31	..	2	3	53	1	99
Meningococcal In- fection ..	94	104	47	5	6	25	..	4	285
Ophthalmia ..	*	*	*	4	9	..	28	..	41
Ornithosis ..	..	3	*	1	..	*	..	..	4
Paratyphoid Fever	6	1	..	1	3	4	..	2	17
Poliomyelitis ..	58	13	24	16	8	6	..	..	125
Puerperal Fever ..	23	8	30	5	2	1	4	..	73
Rubella ..	*	2,227	241	1,284	550	..	12	18	4,332
Salmonella Infection	*	*	*	19	21	..	1	..	41
Scarlet Fever ..	485	748	203	268	120	21	6	3	1,854
Tetanus ..	*	14	30	15	4	1	3	1	68
Trachoma ..	*	..	*	..	656	*	405	..	1,061
Trichinosis ..	*	*	*	..	..	*	..	..	..
Tuberculosis ..	1,609	758	762	265	352	174	105	10	4,035
Typhoid Fever ..	6	7	6	2	9	4	..	..	34
Typhus (flea, mite or tick borne) ..	2	..	52	..	7	..	1	..	62

* Not notifiable. † Breast Abscess notifiable, Queensland as from September, 1957. ‡ Influenza notifiable, South Australia as from August, 1957.

NOTE.—No cases of Cholera, Plague, Smallpox, Epidemic Typhus or Yellow Fever.

TABLE II
TUBERCULOSIS STATISTICS—AUSTRALIA

Source of Report
1956-57 and 1957-58

Source.	Number.		Source.	Number.	
	1956-57.	1957-58.		1956-57.	1957-58.
<i>New South Wales</i>			<i>South Australia</i>		
Private Practitioners ..	375	329	Chest Clinic	133	102
Chest Clinic	205	169	Private Practitioners ..	39	38
Sanatorium	2	..	Mass X-ray Survey (Met.)	52	54
Other Hospitals ..	235	251	Mass X-ray Survey (Rural)	26	21
Death Certificate ..	111	104	Sanatorium	36	18
Repatriation	45	33	Hospitals—Repatriation ..	20	24
Mass Survey	548	684	Metropolitan	11	26
Other	80	54	Rural	2	..
	1,601	1,624	Registrar of Deaths ..	5	..
			Government Statistician ..	..	1
				324	284
<i>Victoria.</i>			<i>Western Australia</i>		
State Clinics and Institutions (other than Mass X-ray Surveys) ..	250	259	Mass Survey	209	145
Mass X-ray Surveys ..	204	192	Private Practitioner via P.C.C.	81	53
Public Hospitals ..	83	103	Private Practitioner ..	54	38
Private Practitioners ..	156	149	Repatriation Hospital ..	14	15
Repatriation	79	90	Other Hospitals	42	28
Death Certificate ..	35	24	Transfers In	18	16
	807	817	Chest Clinics	46	85
			Death Certificate ..	2	..
			Sanatorium	1	1
				467	381
<i>Queensland</i>			<i>Tasmania</i>		
Chest Clinic	249	422	Private Physician	16	15
General Hospital ..	201	210	Chest Clinic	37	23
Repatriation	32	47	Public Hospitals	68	52
Private Practitioner ..	92	88	Mass X-ray Survey ..	79	71
Thursday Island ..	26	7	Repatriation Hospital ..	8	7
Sanatorium	35	59	Government Medical Officer	..	2
Post-mortem	4	6		208	170
Death Certificate ..	..	11			
Palm Island	3	..			
Cherbourg	1	2			
	643	852	<i>Australian Capital Territory</i>		
			Health Department ..	3	..
			Private Practitioner ..	4	8
			Canberra Hospital ..	3	3
			Migrant X-ray	1	..
			Other .. ..	..	1
				11	12
<i>Northern Territory</i>					
Health Department ..	57	78			
	57	78			

TABLE IIA
TUBERCULOSIS STATISTICS 1956-57
New Cases Notified

Age Group.	New South Wales.		Victoria.		Queensland.		South Australia.		Western Australia.		Tasmania.		Northern Territory.		Australian Capital Territory.		Commonwealth.	
	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.
0-4	25	18	22	19	14	22	8	6	5	8	5	5	1 (1)	..	..	1	80 (1)	79
5-9	5	7	12	11	1	1	9	3	2	6	7	3	1 (1)	..	..	..	37 (1)	31
10-14	5	6	6	15	13	2	5	2	1	7	2	3	4 (4)	2 (2)	..	..	36 (4)	37 (2)
15-19	15	20	16	35	8	8	9	7	3	4	4	7	4 (4)	2 (2)	..	1	59 (4)	84 (2)
20-24	57	52	27	28	17	14	9	15	11	14	9	8	4 (4)	2 (2)	..	..	134 (4)	133 (2)
25-29	72	61	51	29	28	21	16	13	23	17	9	8	1 (1)	2 (2)	2	2	202 (1)	153 (2)
30-34	70	76	56	32	25	30	30	11	23	27	9	8	3 (3)	5 (4)	1	1	217 (3)	190 (4)
35-39	91	82	51	27	34	16	16	19	30	17	6	7	..	1 (1)	..	..	229	169 (1)
40-44	103	60	44	22	36	26	16	6	40	8	6	9	4 (3)	1 (1)	..	..	249 (3)	132 (1)
45-49	114	45	51	25	41	16	16	4	33	9	13	7	1 (1)	3 (2)	..	..	269 (1)	109 (2)
50-54	97	31	41	17	37	10	26	3	38	7	13	5	1 (1)	2 (1)	..	1	254 (1)	75 (1)
55-59	90	32	48	10	46	10	9	5	47	2	8	5	4 (1)	2 (2)	..	..	252 (1)	66 (2)
60-64	98	21	40	10	40	11	13	6	27	3	10	3	4 (3)	..	..	..	232 (3)	54
65-69	76	15	33	7	38	8	15	3	52	6	10	3	..	..	..	..	224	42
70-74	72	17	15	6	31	9	7	4	22	3	4	3	1	..	..	..	152	42
75 and over	43	17	14	7	31	6	11	..	22	..	7	2	..	..	1	..	128	33
Not stated	3	6	1	1	1	..	..	..	3	..	..	..	1 (1)	..	..	..	9 (1)	7
Total	1,036	566	528	301	441	210	215	107	382	138	122	86	34 (32)	22 (19)	5	6	2,763 (32)	1,436 (19)
	1,602		829		651		322		520		208		56 (51)		11		4,199 (51)	

Figures in brackets are Aboriginal native patients.

TABLE IIb
TUBERCULOSIS STATISTICS 1957-58
New Cases Notified

Age Group.	New South Wales.		Victoria.		Queensland.		South Australia.		Western Australia.		Tasmania.		Northern Territory.		Australian Capital Territory.		Commonwealth.	
	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.	Males.	Fe-males.
0-4	16	15	9	14	32	17	3	3	5	6	2	2	2	2	..	..	69	58
5-9	9	8	16	16	15	5	2	5	..	2	1	1	3	3	..	..	46	37
10-14	7	7	5	9	2	1	4	3	1	..	1	1	1	..	..	..	21	25
15-19	17	20	15	14	4	10	4	10	..	3	8	8	4	4	..	..	52	69
20-24	33	44	31	34	19	32	6	6	3	9	12	5	3	3	..	3	107	136
25-29	67	47	49	34	37	15	10	12	18	8	9	9	3	3	..	1	194	128
30-34	66	54	44	41	45	28	15	12	26	16	13	8	1	2	..	1	211	161
35-39	94	57	45	31	44	31	16	11	18	16	10	6	7	4	..	..	234	155
40-44	101	54	49	22	55	25	11	16	23	11	7	9	4	5	..	2	252	142
45-49	130	51	44	10	43	19	19	6	29	8	13	2	4	2	..	..	282	97
50-54	110	26	44	6	60	18	10	4	30	19	4	2	3	2	..	..	261	76
55-59	123	18	65	9	52	13	22	7	38	6	3	2	2	1	..	..	305	56
60-64	120	23	58	6	47	19	10	6	36	7	5	..	3	2	..	2	281	64
65-69	112	26	33	6	51	7	11	8	18	2	6	4	2	1	..	..	233	53
70-74	61	20	24	6	47	12	11	3	14	4	10	1	1	1	..	1	169	47
75 and over	64	18	22	8	27	6	11	7	8	1	5	..	1	..	..	..	138	40
Not stated	5	..	..	..	10	4	..	..	1	..	..	..	2	2	..	..	18	4
Total	1,135	488	553	264	590	262	165	119	269	118	109	60	45	78	7	4	2,873	1,348
	1,623		817		852		284		387		169		78	58	11		4,221	58

Figures in brackets are Aboriginal native patients.

TABLE III
POLIOMYELITIS STATISTICS—AUSTRALIA
 Showing Age and Sex, Type of Disease, 1st July, 1955 to 30th June, 1956

Age Group.	Paralytic.				Non-Paralytic.		Bulbar.				Total.	
	Respirator.		No Respirator.		Fatal.	Not Fatal.	Respirator.		No Respirator.			Nature not Stated.
	Fatal.	Not Fatal.	Fatal.	Not Fatal.			Fatal.	Not Fatal.	Fatal.	Not Fatal.		
					Fatal.	Not Fatal.						Fatal.
<i>Males</i>												
0-1..	1	6	..	..	..	..	..	..	..	7
1-4..	2	70	..	..	..	..	..	..	..	110
5-9..	..	2	..	86	..	..	..	..	1	..	15	160
10-14..	..	1	..	45	..	..	..	..	1	..	7	103
15-19..	..	1	..	31	..	..	..	..	..	..	4	54
20-24..	..	3	..	20	..	..	..	..	..	..	5	53
25-29..	..	2	..	28	..	..	..	..	..	..	4	60
30-34..	..	4	..	29	..	..	1	..	2	..	4	60
35-39..	..	1	..	12	..	..	..	..	..	..	3	27
40-44..	..	1	..	6	..	..	..	..	..	..	..	10
45 and over	5	..	..	..	..	..	..	..	8
Not stated	3	..	..	..	..	1	..	..	6
Total	9	11	13	341	..	..	1	..	5	13	51	658
<i>Females</i>												
0-1..	6	..	..	..	..	..	..	..	8
1-4..	..	1	..	52	..	..	..	..	..	..	..	90
5-9..	..	1	..	47	..	..	..	..	..	..	14	81
10-14..	..	2	..	31	..	..	..	..	..	..	5	64
15-19..	..	1	..	28	..	..	..	..	..	..	2	61
20-24..	..	3	..	33	..	..	..	..	..	..	5	64
25-29..	..	3	..	40	..	..	1	..	..	..	9	90
30-34..	..	1	..	26	..	..	..	..	..	..	3	54
35-39..	..	1	..	9	..	..	..	..	..	..	2	21
40-44..	7	..	..	..	..	..	..	1	15
45 and over	2	..	..	..	..	..	..	4	9
Not stated	2	..	..	..	..	..	..	2	5
Total	4	13	10	283	..	..	1	..	2	7	49	562
Total all Cases	13	24	23	624	..	..	2	..	7	20	100	1,220

TABLE IIIA
POLIOMYELITIS STATISTICS—AUSTRALIA
 Showing Age and Sex, Type of Disease, 1st July, 1956 to 30th June, 1957

Age Group.	Paralytic.				Non-Paralytic.				Bulbar.				Total.	
	Respirator.		No Respirator.		Fatal.	Not Fatal.	Respirator.		No Respirator.		Fatal.	Not Fatal.		Nature not Stated.
	Fatal.	Not Fatal.	Fatal.	Not Fatal.			Fatal.	Not Fatal.	Fatal.	Not Fatal.				
	<i>Males</i>													
0-1..	5	..	..	..	..	..	..	..	..	5	
1-4..	29	..	4	..	..	..	..	..	..	36	
5-9..	..	1	..	27	..	10	..	..	..	..	..	1	42
10-14..	20	..	4	..	..	..	..	..	..	24	
15-19..	6	..	..	..	..	..	..	..	..	8	
20-24..	..	1	..	7	..	8	..	..	..	..	..	..	21
25-29..	..	1	..	6	..	2	..	1	..	..	..	..	13
30-34..	..	2	..	5	..	2	..	1	..	..	..	..	10
35-39..	5	..	2	..	..	..	..	..	..	6	
40-44..	2	..	1	..	..	..	..	..	..	2	
45 and over	2	..	..	..	..	..	..	..	..	2	
Not stated	
Total	4	3	3	114	..	31	2	2	1	1	8	1	169	
	<i>Females</i>													
0-1..	4	..	..	..	..	..	..	..	..	5	
1-4..	1	21	..	3	..	..	1	..	2	..	30	
5-9..	..	1	..	19	..	7	..	..	..	..	..	..	27
10-14..	6	..	4	..	..	1	..	1	..	12	
15-19..	6	..	2	..	..	..	..	..	..	8	
20-24..	8	..	3	..	..	1	..	2	..	13	
25-29..	7	..	3	..	..	..	..	1	..	13	
30-34..	..	1	..	3	..	5	..	..	..	..	1	..	10
35-39..	2	..	1	..	..	..	..	..	..	3	
40-44..	
45 and over	
Not stated	
Total	2	5	1	76	..	28	2	2	3	7	4	4	121	
Total all Cases	4	5	5	190	..	59	2	2	3	15	5	5	290	

TABLE IIIc

POLIOMYELITIS STATISTICS

Total All Persons 1955-56, 1956-57 and 1957-58

Age Group.	Number.		
	1955-56.	1956-57.	1957-58.
0-1	15	10	..
1-4	200	66	9
5-9	241	69	8
10-14	167	36	1
15-19	115	16	4
20-24	117	34	4
25-29	150	26	3
30-34	114	20	4
35-39	48	9	2
40-44	25	2	1
45 and over	17	2	1
Not stated	11	..	..
Total	1,220	290	37

TABLE IIIb

POLIOMYELITIS STATISTICS

Summary

State.	1955-56.			1956-57.			1957-58.		
	Males.	Fe-males.	Total.	Males.	Fe-males.	Total.	Males.	Fe-males.	Total.
New South Wales	175	88	263	45	37	82	13	8	21
Victoria	128	108	236	37	25	62	..	3	3
Queensland	64	42	106	18	18	36	2	1	3
South Australia	83	77	160	36	25	61	1	4	5
Western Australia	186	233	419	8	4	12	1	1	2
Tasmania	12	9	21	25	12	37	1	2	3
Australian Capital Territory	6	5	11	..	..	..	..	..	..
Northern Territory .. .. .	..	..	4	..	..	..	..	..	..
Total	658	562	1,220	169	121	290	18	19	37

BROADCASTING AND TELEVISION

MEDICAL CENSORSHIP

The censorship of medical talks and advertisements relating to medicines used in sound broadcasting has been a continuing activity of the Department under the *Broadcasting Act* 1942-1954. Legislation came into force on 1st July, 1956, extending censorship to include similar talks and advertisements where the medium of Television is used.

In sound broadcasting, the practice of advertisers in submitting scripts for censorship presented no great problems. The visual, as well as sound contents of material for use in television has, however, created difficulties in determining suitability.

Advertising matter is submitted in varying forms. For television, it was necessary that it be presented in a manner which allowed the relationship of the visual and sound contents, one to the other, to be clearly understood.

A large proportion of television advertising is by "stills" or by films. Approval of "stills" was usually sought after the preliminary sketches were drawn.

In view of the cost involved and the preparation necessary for films manufactured in Australia, it was suggested to advertisers that the material be submitted at alternative points of preparation, viz., when the screen play, shooting script or storyboard had been prepared or when the film was completed, but before the addition of the sound track.

Imported films in completed form are subject to censorship by the Commonwealth Film Censorship Board on importation. Approval is given by this Board for the use on television of films which deal with matters of a medical nature, whether for advertising or other purposes, subject to the subsequent approval of the Director-General of Health.

The Director-General's authority is contained in the following sections of the *Broadcasting and Television Act 1942-1956*:—

Section 100 (6). A licensee shall not broadcast or televise an advertisement relating to a medicine unless the text of the proposed advertisement has been approved by the Director-General of Health, or, on appeal to the Minister under this section, by the Minister.

Section 121 (1). Except as prescribed, a person shall not broadcast or televise a talk on a medical subject unless the text thereof has been approved by the Director-General of Health, or, on appeal to the Minister under this section, by the Minister.

THE NATIONAL HEALTH AND MEDICAL RESEARCH COUNCIL

The members of the National Health and Medical Research Council at the forty-fifth session, held on 15th May, 1958, were: Dr. A. J. Metcalfe (Chairman), Dr. P. L. Bazeley and Professor Edward Ford (Commonwealth), Dr. H. G. Wallace (New South Wales), Dr. K. Brennan (Victoria), Dr. A. Fryberg (Queensland), Dr. A. R. Southwood (South Australia), Dr. L. Henzell (Western Australia), Dr. J. Edis (Tasmania), Dr. W. F. Simmons (the Federal Council of the British Medical Association), Professor E. S. J. King (Royal Australasian College of Surgeons), Professor J. G. Hayden (Royal Australasian College of Physicians), Professor S. Sunderland (Australian Universities having Medical Schools), Professor B. T. Mayes (the Australian Regional Council of the Royal College of Obstetricians and Gynaecologists), Dr. J. G. Radford (the Australian Council of the College of General Practitioners), Dr. E. Thomson (College of Pathologists of Australia), Professor A. J. Arnott (Australian Dental Association), Sir Norman Nock (Layman appointed by the Commonwealth), Matron G. N. Burbidge (Laywoman appointed by the Commonwealth).

The following Committees were operative at the close of the period under review, and reported to the Council as required:—Medical Research Advisory, Public Health, Epidemiology and Control of Epidemic Diseases, Poliomyelitis, X-rays, Radioactive Isotopes, Radio Therapy Advisory, Industrial Hygiene, Antibiotics, Tropical Physiology and Hygiene, Maternal and Child Welfare, Nutrition, Dental Research Advisory, Nursing, Ultrasonics, Rh Factor, Staphylococcal Infection, and Radiation Hazards.

The resolutions adopted at the forty-second, forty-third, forty-fourth and forty-fifth sessions of the Council are listed below:—

Forty-second Session: Held at Sydney, New South Wales, on 8th November, 1956. There were no resolutions adopted during this session.

Forty-third Session: Held in Melbourne, Victoria, on 23rd May, 1957. There were no resolutions adopted during this session.

Forty-fourth Session: Held at Sydney, New South Wales, on 7th November, 1957.

Resolution 1.—That as there will be an increasing use in Australia of unsealed radioactive sources in medicine, industry and research, in the interests of public health a central laboratory should be established in Australia with facilities and adequate trained personnel to undertake the assay of any materials submitted following the ingestion, inhalation or absorption of radioactive substances.

Resolution 2.—Noting that under Radioactive Substances Acts in various States, the present functions of the State Therapeutic Trials Committees may be discharged by the Radiological Advisory Council established under the Act or by a sub-committee of that Council; and noting that uniformity of policy on the use of radio-isotopes in humans in various States is desirable; the Council resolved that representations should be addressed to the various States emphasizing the desirability of establishing uniformity of policy and suggesting that the question of liaison be made the subject of discussion between the Radiological Advisory Council and the Chairman of the Standing Committee on Radio-Isotopes.

Resolution 3.—Having regard to the increasingly important part played by cancer in the health of the modern community and the high costs and duplication of administration of anti-cancer services in the various Australian States, the Council commends for consideration the question of establishing an all-Australian Committee, widely representative and with a capacity to examine thoroughly the various aspects of the problem. This Committee might profitably give rise to the establishment of a National Anti-Cancer Society along the lines of similar bodies overseas.

Forty-fifth Session: Held at Brisbane, Queensland, on 15th May, 1958.

Resolution 1.—*Poliomyelitis.*—The Council resolved that a campaign be conducted to encourage adults of the age group 15 to 44 years to be immunized against poliomyelitis, with particular emphasis on the age group 15 to 34 years. Consequently it would seem that a golden opportunity to press the immunization of the younger group of adults exists at the present moment when poliomyelitis is virtually absent. This phase could be substantially covered before epidemic conditions again are likely.

Resolution 2.—*Smallpox.*—The Council having considered the possibilities of entry of smallpox into Australia from Asia, re-affirmed its resolution of twenty-ninth session that all persons likely to be exposed, if a case of smallpox develops unexpectedly, should be vaccinated.

This group would include medical practitioners, medical students, employees of hospitals, ambulance employees, health inspectors, persons employed in aeroplanes and on aerodromes, policemen, wharf labourers, taxi drivers, crews of Australian vessels, employees of shipping companies who come in contact with overseas traffic, pilots, press reporters and all persons who are likely to come in contact with overseas vessels.

Resolution 3.—*Eclampsia.*—The Council reaffirmed its resolution made in November, 1955, and drew the attention of the States to the need for resolute action that Eclampsia be proclaimed a notifiable condition in all States. For this purpose Eclampsia should be defined as a toxæmia of pregnancy characterized by one or more convulsions and coma.

SCHOOL OF PUBLIC HEALTH AND TROPICAL MEDICINE

The School of Public Health and Tropical Medicine provides for teaching and instruction at both the post-graduate and undergraduate level. Research into problems associated with tropical medicine, hygiene and public health is an important function of the School, which is also a centre for the provision of information and advice on subjects within its field.

As a result of expanding activities the School outgrew its original accommodation at the University of Sydney and during 1955-56 extra library, classroom and laboratory space was provided by the addition of a new wing to the original building. At the planning stage, the provision of these extra facilities seemed adequate for many years of steady expansion, but the new teaching laboratory is already used to its full capacity, due to the rapid increase in the numbers studying for the Diploma in Tropical Medicine and Hygiene.

TEACHING

Post-graduate: The course for the Diploma in Public Health was attended by six students in 1957 and nine in 1958. Three students attended in 1957 and four in 1958 on W.H.O. Fellowships. These students came from Ceylon, Formosa, Israel and Korea.

There were fifteen students enrolled for the course for the Diploma in Tropical Medicine and Hygiene in 1957 and sixteen in 1958.

The staff of the School also gave lectures in the University of Sydney post-graduate courses for the Diploma in Clinical Pathology, the Diploma in Diagnostic Radiology and the Diploma in Dermatological Medicine. Post-graduate courses were also given in Public Health and Preventive Medicine and Bacteriology for nurses studying for the New South Wales College of Nursing Diploma in Nursing Administration and Sister Tutor's Diploma. A number of nurses studying under the Colombo Plan were included in each of these classes.

One W.H.O. Fellow, not proceeding to a diploma, received instruction in the Entomology Department.

Undergraduate: The principal undergraduate teaching consisted of the lectures in Public Health and Preventive Medicine delivered to 197 students in 1957 and 203 in 1958.

Courses of lectures were also given to the following undergraduate classes:—

Medicine IV.—Helminthology.

Science III.—Protozoology.

Architecture III.—Hygiene.

Engineering III.—Industrial Health Hazards, Accident Prevention and First-Aid measures.

Social Studies I.—Biology and Hygiene.

The course in Tropical Medicine for Missionaries and others proceeding to the Tropics was given as usual in June, July and August, 1957. The most recent course of this nature was commenced in June, 1958.

Lectures were given in the induction course for Papua-New Guinea administration employees and to patrol officers in the long course at the Australian School of Pacific Administration. Lectures were also given to medical officers of the Papua-New Guinea Department of Public Health at Port Moresby, Lae and Rabaul during a visit by Dr. Black.

Instruction was also provided for individual workers from various departments, officers of tropical territories and personnel of the armed services.

RESEARCH

Bacteriology and Pathology: Further work has been done regarding animal reservoirs of leptospirosis and Q fever. Investigation in leptospirosis has been extended to Tasmania. Sera are being examined with a view to determining the incidence of leptospirosis in native populations in the South-West Pacific area.

A serological survey of groups of workers exposed to leptospiral or Q fever infection in New South Wales is due to be completed in 1958. This survey is being conducted in association with the Glenfield Institute of Veterinary Research.

Sera and tissue from various islands of the South-West Pacific area are being examined to estimate the incidence of leptospirosis in native populations.

A survey of specimens for mycotic infections, from native and white populations of the Territory of Papua and New Guinea and adjacent areas, has been continued. A series of biopsy and autopsy specimens were examined in connexion with the Tumour Registry of the Territory of Papua and New Guinea.

Arrangements have been made with the Department of Health, Territory of Papua and New Guinea, for the examination of and preparation of lepromin from biopsy specimens from native lepers as part of a study of the pattern of leprosy in the Territory.

In association with the Director of Industrial Hygiene, State Health Department, New South Wales, a survey of pet-shop workers for antibodies to the lymphogranuloma venereum-psittacosis group of viruses was made and a number of positive reactors was detected.

Chemistry: Work has continued on the aetiology of Pink Disease and its relationship to calomel.

Some preliminary work has been done on sorption of insecticides on Sago Palm petiole and leaf, in connexion with residual spraying of native huts.

Entomology: Dr. P. Freeman of the British Museum was asked to undertake a revision of the Australian Chironomidae. As he expressed his willingness to do so, some time was devoted during the summer of 1957-58 to providing fresh material for this study. These arrangements predated by some months the re-awakened interest in the Canberra Lakes Scheme, which is a project that might possibly initiate a midge nuisance.

Dr. W. Wirth, a Fulbright Fellow and a world authority on sandflies, spent nine months in the Department during 1957, working on Australian sandflies.

Late in 1957 the Commonwealth Serum Laboratories were asked whether a sandfly desensitizing agent could be prepared. As the major difficulty in such a proposal is the collection of adequate numbers of sandflies, free of contaminants, two collections have been made and sorted by the School. One of about 8,000 specimens of *Culicoides subimmaculatus* was made over a period of three months in Sydney and the other of probably 30,000 to 40,000 specimens of *Culicoides ornatus*, around Darwin. From these pest species of the eastern and northern coastlines of Australia, Dr. Grenville at the C.S.L. has prepared desensitizing agents which are expected to be tested in the near future.

Work was continued on the sources of mosquito blood meals, using the precipitin technique for identification of the blood samples.

The spirit collection of Acarina, of medical and public health significance, at this School was studied in detail, the material being indexed, labelled and set up according to the latest methods adopted at the British Museum for the establishment of permanent collections of Acarina.

Research was undertaken on the environmental stimuli involved in oviposition behaviour of *Aedes aegypti* and on the biology and ecology of *Aedes australis*.

The larval habitats of some four or more new species of *Culicoides* and some species of other genera, were detected by a new technique of soil sampling developed by the Department.

The co-operative programme of research, in conjunction with the C.S.I.R.O., into myxomatosis transmission was continued, with special attention to the correlation of mosquito biting activity with meteorological factors.

Industrial Hygiene: A series of urine and blood specimens were examined for the presence of lead, following the use of versenate in children considered to have been exposed to lead at an earlier stage of life.

Some investigations were made regarding health hazards from exposure to gases and fumes produced by welding.

Parasitology: Work has continued on the causation of bather's itch. This has included a study of the parasites of fish, crustacea and other animals living in estuarine waters.

Preparation of amoebic antigens was continued during 1956-57 and experiments were made on the detection of amoebic antibodies in serum by means of agglutination.

Further experimental work on the serology of amoebiasis is in progress.

Cultures of various ciliates have been maintained and in particular a pure clone of *Tetrahymena pyriformis*, which has been supplied on request to several biochemical research workers.

Copepod vectors have been infected with the first larval stage of *Dibothriocephalus latus*.

Birds have been examined for schistosomes and two unidentified schistosomes were found in a seagull and a tern respectively. A *Trichobilharzia* was also found in a teal duck.

Studies have been made of the parasites of the echidna (*Tachyglossus aculeatus*).

Environmental Health: During 1954-55, action was commenced to establish a unit to conduct research into the environmental problems of the white population residing in tropical Australia. A basic approach to research into these problems was provided by a publication prepared by Dr. R. K. MacPherson, entitled "Tropical Fatigue". This paper was written and published in the University of Queensland Papers (Physiology) 1, No. 10, following war-time research by Dr. MacPherson, into living conditions and facilities in the New Guinea area.

Between 12th March, 1957, and 17th June, 1957, Dr. MacPherson undertook a survey of living conditions, mainly in the Northern Territory and the Territory of Papua-New Guinea, at the request of the Commonwealth. The aims of this survey, in general terms, were—

- (1) To determine what factors, particularly climatic and geographical factors, reduce the level of efficiency and an individual's ability to work in tropical Australia and detract from the living of a full and contented life in tropical areas.
- (2) To indicate, on the basis of these findings, what might be done immediately to improve conditions or remedy existing disabilities.
- (3) To consider the desirability of undertaking some continuing research towards the problems of living and working in hot environments and to advise on the nature and scope of such a research project.

Arising from the last stated aim of Dr. MacPherson's survey, is the proposed establishment of an Environmental Health Section within the School of Public Health and Tropical Medicine in Sydney, functioning under the general control of the Director of the School, Professor E. Ford. Towards the close of the period under review, action was taken to arrange the appointment of Dr. MacPherson to conduct the Environmental Health Section of the School of Public Health and Tropical Medicine.

The objects of such a research project are considered to be threefold; there is firstly the conduct of research, the second is the provision of expert advice as required and the third object is teaching or dissemination of information.

The Survey covered many specific problems of environment in the tropics, including such matters as hours of work, conditions of leave and the incidence of ill health, including "tropical neurasthenia" among the white population. These

and other subjects have been suggested by Dr. MacPherson as being suitable subjects for research in the overall research programme to be undertaken in the field of environmental health.

Some specific features of Dr. MacPherson's report which will require extensive investigation and research in the future are—

- (1) The effect of environment on the health of white communities in tropical areas, particularly in relation to illness and diseases generally associated with a tropical environment.
- (2) The standard of accommodation, both living and working, in settled areas of tropical Australia. This includes a survey of air conditioning, evaporative coolers and other means of alleviating the effects of the hot environment.
- (3) The provision of suitable amenities to enable more comfortable living in the tropical climate.
- (4) The special reactions to hot environments of infants, women, the aged and the infirm, the high turnover of labour in tropical Australia and the sociological problems arising therefrom.
- (5) The design of clothing and the physiological properties of fabrics.

It is expected that the Environmental Health Section will be established in Sydney during 1958-59 and will be equipped in the near future to carry out extensive research and field work along the lines proposed by Dr. MacPherson.

Tropical Medicine: Investigation of the clinical results of treatment of relapsing *P. vivax* malaria of South-west Pacific origin, with Primaquin was continued and the final stages of the work should be completed by December, 1958.

Quartan malarial fever following blood transfusion, was investigated.

An investigation of the health of patrol officers in Papua-New Guinea, was commenced.

Vital Statistics: Work was continued in a survey of mortality in Australia and similar studies were commenced in data from New Zealand.

A clinical survey into lung cancer was concluded and some preliminary inquiries made concerning leukaemia.

Some mathematical papers were prepared, dealing with χ^2 and related topics.

WORLD HEALTH ORGANIZATION

Dr. R. H. Black held a W.H.O. Fellowship in Tropical Medicine and Hygiene, from January to May, 1957, during which time he studied those subjects in Malaya, India, Nigeria, Belgian Congo, Kenya, Uganda, Tanganyika and the Union of South Africa.

In October, 1957, Dr. R. E. Murray attended a Study Group in the teaching of Social and Preventive Medicine in the Western Pacific area, arranged by the World Health Organization and held in Manila, Philippine Islands.

In May, 1958, Dr. G. Scott attended a Seminar on Environmental Sanitation, arranged by the World Health Organization and held in Port Moresby, Territory of Papua and New Guinea.

CO-OPERATION WITH PUBLIC HEALTH AGENCIES

A close liaison exists between the School and other Commonwealth Departments, the Medical Directorates of the Armed Services, the Health Departments of the various States and Territories, the World Health Organization and the South Pacific Commission. Collaboration is also maintained with numerous health and educational bodies, especially those pertaining to Public Health and Tropical Medicine.

Professional and technical advice and consultations are provided to many health agencies and practitioners. In addition a consultant service in Clinical Pathology is maintained for the Commonwealth Health Laboratories. Numerous serological and bacteriological tests are made for health laboratories, public hospitals, medical practitioners and veterinarians, in respect of leptospirosis, Q fever, psittacosis, brucellosis and the typhus fever group.

Examination of specimens for pathogenic fungi and examination of faecal specimens with unusual helminth ova, are made for various hospitals. Examinations of urine for uranium are performed and radiation dosage received by workers exposed to ionizing radiation is assessed. The last named service, which is provided by the Industrial Health Unit, has increased to nearly 60 estimations a week during the past year.

Many requests for advice regarding insects of public health importance, are dealt with during the year. There was an increasing number of requests for advice on sandfly control, both from the public and government services and more frequent inquiries about spiders during the period.

Some assistance has been given to the Department of Territories regarding the analysis of insecticides for use in malaria control in New Guinea.

INFORMATION SERVICE

The library continued to provide a microfilm service to approved libraries and institutions. Information for research and other purposes is also supplied to research workers and medical practitioners throughout Australia as well as to other Government departments and organizations.

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INSTITUTE OF CHILD HEALTH

As in previous years, the activities of the Institute of Child Health were devoted broadly to teaching and research. Further extension of the programmes was made in both these fields and a number of new research projects commenced.

TEACHING

Post-graduate: Regular study groups for paediatricians and others have been conducted by the Institute in various aspects of child health.

About 80 visiting doctors have visited the Institute, most of them attending ward demonstrations and clinical discussions.

Lectures by members of the staff were given at the Dental Hospital, the Royal Alexandra Hospital for Children and the School of Public Health and Tropical Medicine, to physicians attending advanced courses in Medicine and to general practitioners in their annual revision course.

Annual weekend courses in paediatrics were arranged by the Director, in conjunction with the hospital and the Post-Graduate Committee in Medicine. Some 50 general practitioners attended each course.

The regular lunch hour post-graduate medical discussion groups were held twice weekly during the academic year.

Undergraduate: Instruction by means of demonstrations, lectures and discussions, were given to undergraduate students in both clinical and social paediatrics. The experiment of allowing undergraduate students to make visits to the homes of specially selected patients was continued during the past two years. Discussion groups were extended and have proved a most popular method of teaching among the student body.

Extra-mural Activities: In 1956 the Director, Professor L. Dods, attended the annual meetings of the American Paediatric Society and the American Society for Paediatric Research. He also attended the International Paediatric Congress in Copenhagen where he acted as Chairman of the Discussion on Social Paediatrics.

During this period the Director also carried out a series of post-graduate studies in the United States of America and in the United Kingdom. He delivered lectures in both these countries on various aspects of clinical paediatrics and acted as external examiner in Paediatrics in the University of Manchester.

Professor Dods attended meetings of the Council and clinical meetings of the Royal Australasian College of Physicians in Brisbane and Sydney, acting as chairman of the Research Advisory Committee of this College. He was also a member of the committee appointed to offer advice to the Minister for Health. This committee met in Melbourne on three occasions.

In 1956, Dr. F. W. Clements attended a conference conducted by the Family Welfare Bureau in Sydney and convened a sub-committee dealing with the infant and the family.

Dr. Clements also acted as Consultant for the World Health Organization in Formosa, to report upon a Maternal and Child Health Training project and in Ceylon to report upon, in conjunction with a Food and Agriculture staff member, the state of nutrition of the people. At the completion of these assignments Dr. Clements visited Holland, England and the United States of America, to study

certain aspects of the teaching of child health. During the visit to the United States of America he gave lectures in the School of Public Health, Harvard and at the Medical School, Vanderbilt University, Nashville, Tennessee.

Dr. R. H. Vines (honorary staff member) and Dr. Clements contributed papers at the Australian Medical Congress held in Hobart in March, 1958.

Overseas Students: During 1956, a Colombo Plan student from Thailand, Dr. Krasae Vajarapana, studied various aspects of child health under the Director of the Institute.

RESEARCH

Study of the Natural History and Prevention of Acute Rheumatic Fever: A rheumatic fever survey, commenced in 1951, was continued during the two-year period under review. Approximately 140 children are now receiving prophylactic penicillin orally and their progress is being watched and recorded. A chart system to demonstrate more clearly the progress of each child in the penicillin and control groups, has been set up in the Institute common room. This had already proved useful in the teaching of undergraduate and post-graduate students and for demonstrating to the patients themselves the need for constant vigilance concerning prophylaxis.

Study of Female Pseudohermaphroditism: The observation and treatment with cortisone of a group of children with congenital adrenal hyperplasia has been continued. A further five patients with this condition have been added to the group, making 22 children under surveillance. Difficulties requiring further study have arisen in regard to the management of these children where they have an associated disorder of salt water metabolism and in regard to the timing and technique of clitoridectomy. A group of children with non-hormonal intersexuality is now being studied, having first been seen with the diagnosis of adrenal hyperplasia in mind.

Aetiology of Endemic Goitre: Study of the aetiology of endemic goitre was continued, the principal efforts being directed towards discovering the character and distribution in foods and plants of substances suspected by earlier epidemiological studies to be associated with thyroid enlargement. The work has continued along several lines—

- (a) In association with the School Medical Branch, Department of Health, Tasmania, repeated examinations of selected groups of school children were made to determine the extent of periodic variations of thyroid size. A series of as yet unexplained epidemics of thyroid enlargement have been recorded.
- (b) In association with the Nutrition Unit, Department of Health, Tasmania, information was assembled concerning the incidence of goitre in children in relation to the source of milk and the grazing habits of the cows. Seeds of various cruciferous weeds were collected for testing for goitrogenic properties.
- (c) In association with the Director, Experiment Farms of the University of Sydney, Cobbity, New South Wales, samples of plants suspected of being goitrogenic are being grown and tested.
- (d) In association with the Department of Bio-chemistry, University of Melbourne, chemical and biological tests are being made of extracts of milk and plants for goitrogenic properties.

Children with the Nephrotic Syndrome: During the two years under review the examination and analysis of the histories of 68 children with the nephrotic syndrome was completed. The findings confirmed the belief that for the majority of cases the cause remains unknown (eleven children had mercury in their urine, suggested a causal relationship). This remains a serious disease with a high death rate. The results will shortly be published by Dr. R. H. Vines in the Medical Journal of Australia.

Cretinism Survey: A small study designed to assess the mental and physical progress of a group of approximately 50 children suffering from cretinism was commenced in April, 1958. The work is being carried out by Dr. Bryan Dowd in conjunction with the Institute's full-time psychologist, Mr. James Cullen. The performances of these children are being compared with those of their brothers and sisters. The work is proceeding.

Mycological Studies: A survey has been made by Dr. S. Vince of the incidence of candida and other yeast-like fungi (thrush) in the mouth of healthy and sick infants and children. It was possible to make a comparison with results obtained earlier in Budapest, Hungary. The results will shortly be published in the Medical Journal of Australia.

Bronchitis in Infancy: Dr. John Beveridge has been collecting a group of infants who are suffering from cough. At present 56 children are under constant supervision. Difficulties are being experienced in conveying to New Australians, who have a limited knowledge of the English language, the purpose of the study and the need for follow-up interviews. Eleven children have defaulted so far. It is hoped to enrol a total of 100 children. This should be enough to enable a comprehensive study of the cause of chronic bronchitis in infancy and the best routine to prevent undesirable sequelae.

Urinary Tract Infections: The study of urinary tract infections in 50 children was commenced in July, 1957, by Dr. John McDonald. Out-patients are seen at the Institute and in-patients in the hospital ward attached to the Institute. The work includes the criteria for the diagnosis and the clinical progress of acute and chronic urinary tract infection in children.

Throughout the year three talks have been presented to medical meetings on the subject of urinary tract infections in childhood with special reference to the experience gained during this study. These contributions have been to the Annual Meeting of the Australian Paediatric Association in Canberra, to the B.M.A. Clinical Meeting at the Royal Alexandra Hospital for Children, and to the New South Wales Post-Graduate Committee in Medicine's Week-end Course in Paediatrics at the Royal Alexandra Hospital for Children.

Studies relating to the Surgery of Congenital Heart Diseases: In March, 1958, Dr. Douglas Cohen joined the staff of the Institute and commenced a series of studies, in conjunction with an engineer and Dr. D. F. Stewart of the McMaster Animal Health Laboratory of the C.S.I.R.O., Sydney, into a more suitable type of heart-lung bypass for use in congenital heart operations. Although some forms of congenital heart disease can now be treated successfully by operation, others await the development of a suitable heart-lung by-pass.

Considerable progress has been made by this team and most components of the apparatus have been successfully tested in operations on sheep. It is confidently expected that by mid 1959 work will have progressed to the stage when the heart-lung by-pass can be used in human cardiac operations.

Accidents in Childhood: Activities in this major problem have been continued in two directions:—

- (a) Surveys have been made of the attitudes of groups of parents towards accident prevention classes;
- (b) Special pilot classes have been conducted with groups of mothers with the object of developing a teaching technique that can be used by selected group leaders in the community. A training course for community group leaders was held in Canberra. Evaluations of these techniques will be made in the future. This work is being done mainly by Mr. James Cullen.

Follow-up of children in a "Stress" study three years ago: From 1953 to 1955 a group of 78 children attending the Lady Gowrie Child Centre were studied to determine the relationship between the exhibition of manifestations of stress in the children and home conditions. Over the last year these children have been re-examined and a study made of their home environment and success at school. The work, carried out by a team consisting of Dr. Clements, Miss Grave and Mr. Cullen, is proceeding and is expected to be completed early in 1959.

Serum-protein Patterns of Children: A special electrophoresis apparatus was purchased and with this a study has been made of the serum-protein patterns of children. Special attention has been paid to patients suffering from the nephrotic syndrome. In this condition the serum-protein patterns are characteristic and show definite changes during therapy, which can be used as a guide to the effectiveness of therapy. (Dr. S. Vince.)

Experimental Marrow Transfusion: Rabbits are used in a study being jointly carried out by Drs. Garvan and George and Mr. Roche of St. Vincent's Hospital and Dr. S. Vince of the Institute. Bone marrow is destroyed by radiation and then the animals are given a marrow transfusion. In some animals marrow transplantation has apparently occurred.

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ANIMAL QUARANTINE AND VETERINARY HYGIENE

LEGISLATION

Important alterations to legislation under the Quarantine Act 1908-1950 were effected during the two years ended 30th June, 1958.

(a) By Statutory Rule No. 65 of 23rd September, 1956, Quarantine (Animals) Regulations were amended to provide that cooked meats and cooked edible parts of animals contained in hermetically sealed cans must not be imported unless accompanied by a government veterinary certificate of ante and post-mortem inspection of the animals from which the goods were derived and a certificate of adequate cooking by the manufacturer to ensure that all contents of each pack reached at least 100° C. It had been found that some overseas meat packs had been heated at quite low temperatures insufficient for sterilization, thereby creating a risk of introducing diseases of animals when imported.

(b) By Proclamation 58A of 22nd November, 1956, the importation of cattle from the United States of America was prohibited owing to the wide-spread incidence of Blue-tongue of sheep in the United States of America. The virus of this disease can be carried by cattle which do not usually exhibit symptoms. A second reason was the existence of Mucosal Disease of cattle in the United States of America. The importation of sheep from the United States of America had been prohibited for some years because of the incidence of Scrapie in the United States of America. None of these diseases exists in Australia.

(c) Proclamation 59A of 17th April, 1957, declared Townsville as a port of landing for certain species of wild animals. This followed the registration and establishment of a privately owned zoo in the Townsville area.

(d) By Proclamation 60A of 21st March, 1958, the importation of cattle, sheep and goats into Australia, from all countries, was prohibited after 31st May, 1958. The effect was to prohibit the following, which were the only importations of these species permitted at that time:—

Cattle from Great Britain, Northern Ireland, Canada, New Zealand and the Republic of Ireland.

Sheep from New Zealand.

Goats from Great Britain, Northern Ireland, New Zealand and the Republic of Ireland.

The object of this sweeping prohibition is to exclude any possible risk of introducing Blue-tongue of sheep into Australia. Originally confined to South Africa, Blue-tongue has now been reported in the United States of America, certain Mediterranean countries, Spain and Portugal. It has not been reported from any of the countries affected by the prohibition but the foreseen risk is that it, being borne by insect vectors, may spread to those countries and be transmitted to Australia with imported animals.

The same Proclamation prohibited the importation of pigs from Ireland because of the progressive incidence of Swine Fever in that country.

Permits for the importation of bovine semen and for the importation of ruminant animals into zoos have been discontinued in conformity with the principle of prohibiting the importation of cattle, sheep and goats.

(e) Statutory Rule No. 35 of 22nd May, 1958, amended provisions for the health certification of imported animals, conferred discretionary powers upon Chief Quarantine Officers regarding removal of litter and manure from A Class Zoological Gardens and provided for payment of fees for cattle under surveillance and cattle in quarantine stations pending export.

(f) Statutory Rule No. 36 of 22nd May, 1958, repealed certain regulations rendered redundant by the issue of Proclamation 60A (vide supra).

(g) By Proclamation 61A of 29th May, 1958, African Horse Sickness, Chronic Respiratory Disease, Haemorrhagic Septicaemia, Lumpy Skin Disease and Mucosal Disease Complex, were declared to be diseases of animals for the purposes of the Quarantine Act.

(h) Proclamation 62A of 29th May, 1958, prohibited the importation of edible birds' nests, permitted importation of egg noodles from New Zealand only, permitted the importation of fertilizer and stock feed derived from whales and made provision, subject to compliance with the Plant Quarantine requirements, for the importation of animal foods of plant origin. It also included a provision that the stomachs of animals (used for rennet manufacture) shall not be imported from a country other than New Zealand.

IMPORTATIONS SUBJECT TO QUARANTINE

Animals: The principal importations were—

DOMESTICATED ANIMALS.

	From—					
	Great Britain and Ireland.		New Zealand.		Total.	
	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.
Horses	20	54	373	371	393	425
Cattle	90	146	33	105	123	251
Sheep .. ..	..	..	7,269	1,932	7,269	1,932
Goats .. ..	..	6	..	4	..	10
Pigs .. ..	..	20	..	2	3	23
Dogs and Cats ..	211	283	..	163	354	446

There were also two head of cattle from Canada in 1957-58. All animals (except horses) imported from Great Britain, Canada and Ireland were subjected to the usual quarantine detention in an animal quarantine station. All animals were accompanied by the prescribed health certificates.

Laboratory Animals: During the two-year period 141 small laboratory animals were imported by scientific institutions.

In addition the importation of monkeys continued for use by the Commonwealth Serum Laboratories for the manufacture of Salk Poliomyelitis Vaccine. In the two-year period 13,950 were imported. Permits for importation by aircraft were issued and all transporting planes were cleansed and disinfected under quarantine supervision.

Zoological and Other Animals: The usual importations for registered zoos and circuses, mainly carnivores and primates, continued. Queen bees and aquarium fish were also imported.

Goods: Approximately 50 different kinds of goods subject to animal quarantine control were imported, the major items being hides and skins, carpet wool, sausage casings and foodstuffs of animal origin.

EXPORTS SUBJECT TO QUARANTINE

The principal animal exports were—

	1956-57.	1957-58.
Horses	804	758
Cattle	15,373	24,738
Sheep	128,227	126,268
Goats	81	6,812
Pigs	999	1,027
Dogs and Cats	500	836
Poultry	136,287	144,623
Miscellaneous (including fish, birds and other species) ..	33,200	33,460

In addition to dairy cattle and stud stock most of the cattle exported went to the Philippines for slaughter. Most of the sheep were exported to Singapore from Western Australia. Most of the goats were exported from Western Australia to Malaya and Ceylon.

Appropriate tests and examinations were carried out and health certificates issued to meet the requirements of importing countries.

An interesting development was the agreement by the authorities in Great Britain to permit the importation of stud cattle from Australia subject to very rigid conditions of health certification.

ANIMAL QUARANTINE STATIONS

These stations, which are situated at all State Capital City ports, were utilized for the quarantine detention of imported cattle, pigs, dogs and cats. Small animal accommodation was improved in accordance with modern requirements.

Following acceptance of Australian cattle by Great Britain, the stations have also been used to quarantine cattle prior to export to Great Britain.

Because of port expansion activities of the Melbourne Harbour Board, the land on which the Coode Island Station is situated will be handed over to the Board in the near future. A suitable site has been acquired at Spotswood, a suburb of Melbourne, where work has been commenced on the construction of a new station.

MISCELLANEOUS QUARANTINE MATTERS

Large numbers of small items of quarantine risk continue to arrive with migrants and through postal channels addressed to new Australians and to a small extent to Asian visitors. These are detected by Customs Searchers and passed to Quarantine Officers for incineration. The main items in this category were meat and uncooked meat products, home-made cheese, eggs and straw packing.

Of ships arriving at Australian ports from overseas in 1957-58, 626 carried ships' pet animals, all of which were the subject of shipmasters' bonds for their safekeeping on board at all ports to prevent landing in Australia; this involved checking at each port of call in co-operation with Customs Officers.

CONFERENCES

The Biennial Conference of Commonwealth and State Veterinarians, under the auspices of the Australian Agricultural Council, was held at Canberra in October-November, 1957.

Under the Chairmanship of the Director of Veterinary Hygiene, Conference considered present legislative precaution designed to prevent the introduction of exotic diseases and reviewed disease control measures in Australia.

A session attended by Chief Quarantine Officers (Animals), discussed problems associated with the implementation of Animal Quarantine legislation and policy.

Meetings of the Standing Committee on Agriculture of the Australian Agricultural Council were attended by the Director of Veterinary Hygiene as representative of the Health Department, who also attended meetings of the Australian Agricultural Council as an adviser.

The Director of Veterinary Hygiene also attended meetings of the Australian National Council of the Food and Agricultural Organization as a member of Council.

On the recommendation of the Director of Veterinary Hygiene, an Australian Delegate attended the Joint Food and Agricultural Organization/Office International des Epizooties Meeting on the "Control of Tick Borne Diseases of Livestock" held in Rome from 23rd to 27th July, 1956.

The Delegate was Mr. C. C. Blumer, Chief of the Division of Animal Industry, New South Wales Department of Agriculture. He is a member of the Federal Cattle Tick Commission of which the Director of Veterinary Hygiene is Chairman. By this means Australia made a very valuable contribution to the discussions.

The Director of Veterinary Hygiene, Mr. R. N. Wardle, who is the permanent delegate for Australia on the Committee of the Office International des Epizooties, attended the Twenty-sixth Session of the Office in Paris in May, 1958.

Besides taking part in the business session Mr. Wardle presented a paper on "Measures for the Protection of Australia against the Introduction of Foot and Mouth Disease".

This paper was well received and the international aspect which was emphasized was that the authorities in countries in which Foot and Mouth Disease is present, together with international organizations such as the Office International des Epizooties and the Food and Agriculture Organization, should take a great interest and assume some responsibility for protecting those countries in which the disease is not present.

The delegates from Foot and Mouth Disease-free countries such as Canada, New Zealand, the Republic of Ireland and the United States of America were among the strong supporters of the views expressed by the Australian delegate.

Our delegate took part in the discussions on other animal health subjects of international concern notably that on the sheep disease Blue-tongue—and was appointed to the Sub-committee to prepare resolutions on that subject for consideration by the Session.

Mr. Wardle's attendance at the Twenty-sixth Session did much to bring the Australian animal health position before controlling authorities of other countries, and our delegate was asked to arrange for a paper to be presented at the Session in May, 1959, on "Airport Inspection of Animals and Animal Products. Treatment of Waste, Notably Food Waste, Originating in Aircraft".

HUMAN QUARANTINE

The Quarantine Service authorized under the Quarantine Act 1908-1950, was maintained during the two years ended 30th June, 1957, and 30th June, 1958.

Following a general revision, new Regulations came into force on 21st December, 1956 (Statutory Rule 114 of 1956). There were no major alterations, as the revision merely aimed at improving the layout, sequence and wording of the Regulations. Opportunity was taken to raise fees for fumigation and other services to a level compatible with present day labour charges.

During the period it was necessary to order the tanker *Stanvac Pretoria* into quarantine.

The tanker, carrying a crew of 65, comprised of twelve whites and 53 coloured, left Bombay on 19th March, 1957, calling at Umm Said on 23rd-24th March. An Indian fireman reported sick on 27th March, and he was placed in isolation in the ship's hospital.

The vessel arrived in Port Phillip Bay on 13th April, 1957, having previously advised by radio of the presence of one case of chickenpox on board. On examination on 13th April, the case was considered to be chickenpox and pratique was granted for Melbourne. The vessel berthed at Breakwater Pier, Williamstown, at 2.30 p.m. and commenced discharging oil.

On re-examination on 14th April, the case was considered to be smallpox and the vessel was ordered into quarantine. By this time 44 shore personnel had been aboard the vessel. These were subsequently traced and vaccinated.

The vessel proceeded to Portsea on 14th April, where the case and three contacts were removed to quarantine. The native crew was put through the bath block and the ship's hospital, patient's and contacts' cabins were fumigated with formalin. The vessel sailed for Sorong (Dutch New Guinea) on 16th April, 1957.

Tests carried out at the Commonwealth Serum Laboratories on specimens from the case were positive for smallpox.

Cases of non-quarantinable infectious disease continue to be met, mainly at the port of Fremantle. Details of the cases reported during the period appear in Table III. on page 86.

Asian Influenza: The spread of Asian influenza throughout the continent of Asia, from Japan to Singapore, was closely watched in the initial months of 1957, and the Quarantine Service was alert to deal with the situation.

The outbreak in Japan and the Philippines did not result in any cases requiring action on arrival in Australia. Although three cases were suspected on the S.S. *Mylos*, which arrived at Sydney from the Philippines on 14th May, further investigation proved them to be cases of malaria.

With the spread of the epidemic to Singapore, the closer shipping and air contact with Australia immediately created a dangerous threat particularly on the west coast of Australia where there is a regular service between Singapore and Fremantle via the north-west ports of Australia.

The M.V. *Gorgon* arrived at Derby on 17th May after leaving Singapore on 10th May, 1957. They reported that there had been nine cases of influenza in the native crew, but none amongst the passengers or European crew. The vessel was isolated at Derby and Broome. Cargo was worked, but no passengers and crew were allowed ashore and no visitors allowed on the ship. No further cases had developed on arrival at Fremantle. The ship was released from isolation, with the exception that the native crew was not allowed ashore.

A similar procedure was followed with the M.V. *Charon* which arrived at Derby on 4th June, 1957, from Singapore. In neither instances were secondary cases traced to contact with these vessels.

On the east coast, the migrant vessel *Toscana* berthed at Cairns on 24th May, after leaving Singapore on 12th May, and after having had six cases of influenza during the voyage. These cases gave the typical history of Asian influenza and two cases were landed in isolation at Cairns. A number of migrants from this vessel proceeded directly to private accommodation in Cairns and neighbouring districts. The outbreak of Asian influenza in the Ingham area appears to have followed contact with some of these.

During the same period there was no interruption in the commercial airline services through Singapore to Australia, but no cases of Asian influenza were discovered on board aircraft until the outbreak at the Bonegilla Migrant Centre which began on 8th May, 1957, and was attributed to Hungarian migrants arriving in Australia by air at that time.

TABLE I
Vessels Boarded and Cleared

Port.	1956-57.					
	Surface.			Air.		
	Craft.	Crew.	Passengers.	Craft.	Crew.	Passengers.
Sydney	486	40,239	28,089	586	6,428	17,621
Newcastle	96	4,128	31	..	..	..
Port Kembla	46	1,832	16	..	..	..
Botany Bay	99	5,015	14	..	..	..
Total (N.S.W.)	727	51,214	28,150	586	6,428	17,621
Melbourne	399	55,783	91,710	35	248	1,098
Geelong	156	7,623	73	..	..	..
Portland	1	75	..	..	..	..
Total (Vic.)	556	63,481	91,783	35	248	1,098
Brisbane	248	12,904	1,278	9	78	283
Maryborough	4	167	..	..	..	..
Bowen	19	765	..	..	..	..
Gladstone	8	422	..	..	..	..
Mackay	8	289	13	..	..	..
Townsville	61	5,397	696	12	116	91
Cairns	32	1,648	1,045	1	4	..
Thursday Island	8	475	140	..	..	..
Total (Qld.)	388	22,067	3,172	22	198	374
Port Adelaide	192	20,977	22,266	..	..	..
Port Lincoln	14	591	21	..	..	..
Port Pirie	32	1,910	57	..	..	..
Whyalla	3	115	12	..	..	..
Wallaroo	6	253	..	..	..	..
Cape Thevenard	3	119	..	..	..	..
Total (S.A.)	250	23,965	22,356	..	..	..

TABLE I.—continued.
Vessels Boarded and Cleared

Port.	1956-57.					
	Surface.			Air.		
	Craft.	Crew.	Passengers.	Craft.	Crew.	Passengers.
Kwinana	157	7,476	..	..	..	..
Fremantle	440	56,180	113,496	..	..	..
Albany	35	2,054	1,679	..	..	..
Broome	2	195	124	..	..	..
Bunbury	36	1,551	147	..	..	..
Carnarvon	2	123	91	..	..	..
Derby	15	1,282	797	..	..	..
Geraldton	27	1,203	45	..	..	..
Port Hedland	1	48	..	..	..	..
Wyndham	2	95	..	..	..	..
Yampi	2	127	2	..	..	..
Perth .. .. .	..	..	..	58	637	2,688
Pearce .. .. .	..	..	..	2	16	24
Total (W.A.)	719	70,334	116,381	60	653	2,712
Hobart	11	551	40	..	..	..
Burnie	5	193	10	..	..	..
Bell Bay	9	435	11	..	..	..
Launceston	1	41	..	..	..	..
Inspection Head	2	164	12	..	..	..
Total (Tas.)	28	1,384	73	..	..	..
Darwin	34	1,277	..	1,044	9,269	34,337
Total (N.T.)	34	1,277	..	1,044	9,269	34,337
Total (All States)	2,702	233,722	26,195	1,747	16,796	56,142

TABLE II
Vessels Boarded and Cleared.

Port.	1957-58.					
	Surface.			Air.		
	Craft.	Crew.	Passengers.	Craft.	Crew.	Passengers.
Sydney	500	51,856	35,849	586	5,201	16,013
Newcastle	81	3,620	19	..	..	..
Port Kembla	48	1,788	29	..	..	..
Botany Bay	141	7,339	15	..	..	..
Total (N.S.W.)	770	64,603	35,912	586	5,201	16,013
Melbourne	346	41,023	62,621	11	69	60
Geelong	137	6,310	17	..	..	..
Portland	4	198	..	..	..	..
Total (Vic.)	487	47,531	62,638	11	69	60

TABLE II.—continued.
Vessels Boarded and Cleared

Port.	1957-58.					
	Surface.			Air.		
	Craft.	Crew.	Passengers.	Craft.	Crew.	Passengers.
Brisbane	243	14,460	3,400	57	579	1,336
Urangan	8	381	..	..	..	..
Bowen	14	606	..	..	..	..
Gladstone	3	126	..	..	..	..
Rockhampton	1	79	..	..	..	..
Mackay	28	1,136	12	..	..	..
Townsville	60	3,827	378	8	82	17
Cairns	33	1,775	419	..	..	..
Thursday Island	12	539	163	..	..	..
Amberley .. .. .	..	..	..	46	320	213
Total (Qld.)	402	22,929	4,372	111	981	1,566
Port Adelaide	182	14,956	8,701	..	..	..
Port Lincoln	12	582	1	..	..	..
Port Pirie	17	940	11	..	..	..
Walleroo	13	754	444	..	..	..
Cape Thevenard	1	39	..	..	..	..
Total (S.A.)	225	17,271	9,157	..	..	..
Kwinana	157	7,500	..	..	..	..
Fremantle	403	65,026	106,998	..	..	..
Albany	44	2,322	314	..	..	..
Broome	1	92	55	..	..	..
Bunbury	27	995	17	..	..	..
Carnarvon	4	200	58	..	..	..
Derby	15	1,217	684	..	..	..
Esperance	3	139	6	..	..	..
Geraldton	27	1,378	54	..	..	..
Onslow	4	158	99	..	..	..
Port Hedland	4	152	..	..	..	..
Wyndham	2	119	..	..	..	..
Yampi	6	217	..	..	..	..
Learmonth	1	70	..	..	..	..
Perth .. .. .	..	..	..	133	1,456	5,123
Pearce .. .. .	..	..	..	8	104	..
Kalgoorlie .. .. .	..	..	..	1	11	36
Total (W.A.)	698	79,585	108,285	142	1,571	5,159
Hobart	29	4,010	1,231	..	..	..
Burnie	3	116	..	..	..	..
Bell Bay	4	221	..	..	..	..
Launceston	6	238	..	..	..	..
Beauty Point	1	98	2	..	..	..
Total (Tas.)	43	4,683	1,233	..	..	..
Darwin	33	776	9	1,031	8,955	27,740
Total (N.T.)	33	776	9	1,031	8,955	27,740
Total (All States)	2,658	237,378	221,606	1,881	16,777	50,538

TABLE III
**Infectious Diseases on Overseas Vessels Arriving in Australia—
 1st July, 1956 to 30th June, 1958.**

Disease.	Number of Cases.	
	1956-57.	1957-58.
Measles	147	61
Rubella	11	28
Chickenpox	44	48
Whooping Cough	7	3
Mumps	6	19
Influenza	11	21
Diphtheria .. .. .	..	1
Infective Hepatitis .. .. .	..	1
Granuloma Venereum .. .. .	..	2
Varicella .. .. .	..	38
	226	222

TABLE IV
**Inspections and Examinations at Australian Ports Required under the Navigation Act
 1st July, 1956 to 30th June, 1958.**

Port.	Number of Vessels Inspected.						Number of Seamen Examined.	
	Primary Inspections.		Annual Re-inspections.		Special Inspections.		1956-57.	1957-58.
	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.		
Sydney	6	4	57	52	11	8	553	560
Newcastle	2	3	23	24	33	6	304	224
Melbourne	4	3	22	13	27	20	..	..
Brisbane	2	1	12	7	..	..	141	243
Cairns	1	..	..	..	..	..	49	30
Townsville .. .. .	..	..	..	..	..	1	13	8
Port Adelaide .. .. .	..	..	5	6	2	6	116	67
Whyalla	2	2	..	..	..	..	..	..
Port Pirie .. .. .	..	..	..	..	..	..	..	2
Fremantle	388	349	51	73	..	..	56,861	55,026
Kwinana	156	153	1	4	..	..	7,476	7,500
Albany	27	33	8	11	..	..	2,054	2,322
Bunbury	31	15	14	12	..	..	1,856	996
Geraldton	30	23	2	4	..	..	1,408	1,378
Broome	1	1	1	..	..	..	195	92
Derby	15	15	..	..	..	..	1,282	1,217
Wyndham	1	1	1	..	..	..	95	70
Yampi Sound	3	6	..	..	..	..	127	217
Carnarvon	2	2	..	2	..	..	123	136
Port Hedland	1	3	..	1	..	..	48	152
Esperance	1	..	..	3	..	..	35	139
Onslow .. .. .	..	3	..	1	..	..	..	158
Learmonth .. .. .	..	1	..	..	..	..	..	70
Hobart .. .. .	..	..	2	1	..	1	..	13
Launceston .. .. .	..	..	2	4	1	1	..	13
Smithton .. .. .	..	..	..	..	..	1	..	..
	673	618	201	218	74	44	72,736	70,633

TABLE V
 Deratization Operations on Overseas Vessels during the two years ended 30th June, 1957 and 30th June, 1958

State.	No. of Vessels Dealt With.*		Fumigated.				Trapped or Poisoned.			
	1956-57.	1957-58.	No. of Vessels.		No. of Rats Obtained.		No. of Vessels.		No. of Rats Obtained.	
			1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.
New South Wales	985	1,005	34	27	749	644	53	182	85	176
Victoria..	381	467	19	31	539	229	5	13	45	124
Queensland	1,184	263	..	..	..	..	9	8	258	218
South Australia	19	539	7	7	165	138	12	36	43	108
Western Australia	19	11	3	2	20	28	16	9	48	50
Tasmania	130	167	..	..	..	..	3	4	6	2
Northern Territory	..	..	..	..	..	..	..	..	..	..
Total	2,718	2,452	63	67	1,473	1,039	98	252	485	678

* Number of vessels inspected as distinct from total number of vessels fumigated, trapped or poisoned.

TABLE VI

Deratization Operations on Australian Vessels (Interstate and Coastal) during the two years ended 30th June, 1957 and 30th June, 1958.

State.	No. of Vessels Dealt With.*		Fumigated.				Trapped or Poisoned.				
	1956-57.	1957-58.	No. of Vessels.		No. of Rats Obtained.		No. of Rats Obtained.				
			1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.			
New South Wales	281	280	50	19	152	186	16	29	8	26	
Victoria..	89	119	10	18	117	37	6	9	14	78	
Queensland	579	569	5	5	42	2	23	13	621	241	
South Australia ..	18	51	9	7	56	76	2	7	4	10	
Western Australia	49	58	40	42	354	582	9	16	88	30	
Tasmania	193	348	Fumigation carried out on mainland				2	3	2	2	6
Northern Territory
Total ..	1,209	1,425	114	91	721	883	58	77	737	391	

*Number of vessels inspected as distinct from total number of vessels fumigated, trapped or poisoned.

TABLE VII

Number of overseas vessels fumigated, trapped or poisoned in Australian Ports during the years ended 30th June, 1957 and 30th June, 1958, from which more than ten rats were obtained during any one operation.

State.	No. of Vessels Dealt with During the Year.		No. of Rats Obtained.		No. of Vessels Dealt with More than Once.		No. of Vessels Dealt with Once.	
	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.
New South Wales	16	13	761	677	9	7	7	6
Victoria	13	15	593	289	4	2	9	13
Queensland	8	8	254	218	..	..	8	8
South Australia ..	19	9	220	177	..	..	19	9
Western Australia	2	3	34	53	..	1	2	..
Tasmania .. .. .	..	..	..	..	..	..	..	..
Northern Territory	..	..	..	..	..	..	..	..
Total	58	48	1,862	1,414	13	10	45	36

TABLE VIII

Number of Australian [Interstate and Coastal] Vessels fumigated, trapped or poisoned during the two years ended 30th June, 1957 and 30th June, 1958, from which more than ten rats were obtained during any one operation.

State.	No. of Vessels Dealt with During the Year.		No. of Rats Obtained.		No. of Vessels Dealt with More than Once.		No. of Vessels Dealt with Once.	
	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.
New South Wales	4	4	109	182	1	1	3	3
Victoria	8	5	110	146	..	..	8	5
Queensland	14	9	550	218	3	7	11	2
South Australia ..	4	3	61	67	..	1	4	2
Western Australia	12	26	248	504	..	..	12	26
Tasmania .. .. .	..	..	..	..	..	..	..	..
Northern Territory	..	..	..	..	..	..	..	..
Total	42	47	1,078	1,117	4	9	38	38

TABLE IX

Overseas Vessels Applying for Exemption under Regulation 32 of the Quarantine (General) Regulations, 1st July, 1956 to 30th June, 1958

Applications Received.		Applications Approved Without Further Action.		Applications Approved but Vessels Trapped or Poisoned.				Applications Approved but Vessels Fumigated.			
				No. of Vessels.		No. of Rats.		No. of Vessels.		No. of Rats.	
1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.
354	362	290	289	41	41	106	260	30	32	657	245

TABLE X

Australian (Interstate and Coastal) Vessels Exempted from Fumigation, 1st July, 1956 to 30th June, 1958

Applications Received.		Applications Approved Without Further Action.		Applications Approved but Vessels Trapped or Poisoned.				Applications Approved but Vessels Fumigated.			
				No. of Vessels.		No. of Rats.		No. of Vessels.		No. of Rats.	
1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.
137	150	89	106	25	26	51	259	24	18	286	45

PLANT QUARANTINE

Air travel and air freight on both the internal and overseas airlines have increased in the two-year period under review.

There has been a steady flow of migrants into Australia who brought with them a wide range of plant material. Indoor ornamental plants and orchids, largely from tropical countries, have become increasingly popular.

The heavy incidence of European House Borer, *Hylotropes bajulus* (L.), in imported prefabricated houses in the Brisbane area, made it necessary to intensify further the examination of all packing cases. The European House Borer was also found in small pieces of wood at the back of the bellows in a piano accordion from Italy and in a Cognac case from France.

A consignment of broom millet from Italy was found to be infected with the Durra Stem Borer, *Sesamia cretica* (Led.), necessitating immediate fumigation with Methyl Bromide.

The presence of Nematode, *Anguina agrostis*, in the seeds of creeping bent grass led to the evolution of fumigation technique which killed the nematode without injuring the seed.

Importation of gladioli, bulbs and nursery stock was regulated more closely to offset existing risks of introducing pests and diseases.

Special regulations were introduced in respect of bean seed for sowing, ensuring that only seed to standard of certified disease-free seed in New South Wales, Victoria and Queensland was permitted importation.

Sirex investigations were continued in Tasmania where the area infested with Sirex has extended. Detailed surveys established the present limits of infestation and the boundaries of the quarantine area have been extended. Research in laboratories and glasshouse established in Canberra have been organized to concentrate on finding suitable seed treatments against internally borne pathogens and to evolve satisfactory fumigation technique against a wide range of plants and plant material.

Arrangements were made for "screening" against Virus and other diseases all imported plants of Vines, Strawberries, Stone Fruits, Apples and Citrus. As part of these arrangements, insect-proof glasshouses are being established in each capital city. The first of these in Canberra and Sydney are ready for use.

FOOD AND AGRICULTURE ORGANIZATION SURVEY

The Director carried out a special survey for F.A.O. of Plant Quarantine facilities and needs in nine South-East Asian countries. The Director was elected Chairman of the Plant Protection Committee set up under the International Plant Protection Agreement for South-East Asia and Pacific Region.

PUBLICITY

Plant Quarantine publicity has been extended to embrace the screening of 35-mm. films in commercial picture theatres and the appearance on T.V. in both Sydney and Melbourne with special display material.

Certain overseas countries have instituted publicity campaigns based on detailed information of our methods, sent at their request. These countries have concluded also that publicity is an indispensable part of Plant Quarantine administration.

TERRITORY HEALTH

AUSTRALIAN CAPITAL TERRITORY

Due to the unusual system of local government in Canberra, the Department of Health is called upon to assume certain responsibilities and to perform certain duties which would normally be functions of a local municipal council.

The administration of Canberra and the Australian Capital Territory is the direct responsibility, in the case of health services, of the Minister for Health.

PUBLIC HEALTH

Health Inspections: A staff of four health inspectors, under the Medical Officer of Health, closely supervised those matters affecting the health of Territory residents.

Chemical and bacteriological tests of the city's water supply were made and samples of milk were frequently taken for chemical and bacteriological analysis.

In addition to these health inspection duties, an investigation was carried out during 1958, into the sanitary quality of the Molonglo River. The results of this investigation were made available to the National Capital Development Commission for consideration in connexion with the proposed Lakes Scheme for Canberra.

The numbers of licences issued for various purposes during the two years under review were—

Premises.	As at 30th June.	
	1957.	1958.
Prepared Meat Vendors	85	94
Ice Cream Vendors	5	6
Barbers' Shops	32	32
Milk Vendors	64	66
Eating Houses	32	35
Meat Vendors	20	27
Boarding Houses	30	24

District Nursing Service: This service provided a total of 10,596 visits in 1956-57 and 11,573 in 1957-58.

CHILD HEALTH

One of the more important events in respect of child health in Canberra was the commencement of the Salk anti-poliomyelitis vaccination campaign early in 1956-57. During the first year of the campaign, 4,221 children between the ages of four months and five years commenced the course of Salk anti-poliomyelitis vaccinations.

The campaign was extended to higher age groups during that year and was continued during 1957-58.

During 1956-57, diphtheria immunization was given to 124 non-immunized children and 586 children, initially immunized in infancy, were given boosters.

Triple Antigen (diphtheria, tetanus and whooping cough) was given as an initial course to 689 infants and young children during 1956-57 and was continued in 1957-58. Booster doses were given to 146 toddlers during 1956-57. For the half year ended 30th June, 1958, initial courses were given to 503 children and boosters to 306 others. Comparable numbers were immunized during the previous half year.

Medical Examinations: School Age Children.—Routine examinations were carried out at Australian Capital Territory schools during the two years, 1,305 children being examined in 1956-57 and 1,355 in 1957-58. Of these children 187 and 348 for 1956-57 and 1957-58 respectively required treatment for defects, mainly of eyesight, or for ear, nose and throat conditions.

Pre-school Children.—In this age group 436 children were examined during 1956-57, accompanied by parents or guardians and verbal advice regarding supervision of defects was given.

The medical officer attached to the centres conducted 124 interviews in 1956-57 and 218 interviews in 1957-58 mainly in respect of referrals by the clinic sisters but including a number of children under supervision as a result of school inspections.

Infant and Maternal Welfare: The School Medical Officer acts in an advisory capacity to the Canberra Mothercraft Society, which employed six triple certificated sisters and conducted seven main welfare centres with seven subsidiary centres operating in Infant Welfare work.

During 1957-58, 93 expectant mothers came for advice, 2,262 children under two years of age attended the centres and 3,835 home visits were made by the sisters.

School and Pre-school Dental Service: During 1956-57 the number of children examined and treated increased to 5,300. The service continued to expand during 1957-58, with dental clinics being opened at Griffith and Turner Schools and 5,867 children being examined and treated.

Free Milk: At 30th June, 1958, some 6,892 children attending twenty schools in the Australian Capital Territory were each receiving one-third of a pint of milk each school day. An additional school was opened during 1957-58 and the increase in the number of children receiving free milk was approximately 400 during that year.

The milk was provided under the *States Grants (Milk for School Children) Act, 1950*.

VETERINARY SERVICES

The previous report included comments on the unusually wet conditions and cold weather in 1955-56 and the consequent stock problems which required assistance and advice from the Division of Veterinary Hygiene. Wet weather continued through to October, 1956, followed by low rainfall months for the remainder of 1956-57 and for most of 1957-58.

Foot ailments in general and footrot in particular, were the problems of 1955-56 and continued to be so into the 1956-57 year. Other ailments favoured

by wet weather, including wool rot, mycotic dermatitis and internal parasites also continued as problems into the early part of the period but abated after November, 1956.

There was less trouble with internal parasites during the latter part of the period under review than there had been in the previous year.

Liver fluke infestations were worse during 1957-58 than they had been for many years and treatment of affected sheep with carbon tetrachloride was attended with much greater risk than usual, owing to the susceptibility of stock during the past year, to carbon tetrachloride poisoning.

Black Disease mortalities were widespread in sheep which had not been vaccinated against this clostridial infection. This incidence of Black Disease was related to the widespread heavy fluke infestations.

Mortalities and Notifiable Diseases: Other conditions where the assistance of the Division of Veterinary Hygiene was sought, were attributable to contagious footrot, contagious pustular dermatitis, copper poisoning, rock fern poisoning, streptococcal and staphylococcal mastitis, neo-natal mortalities from exposure in calves and lambs, enterotoxaemia or pulpy kidney in lambs, lice on cattle, abortion in cattle associated with malnutrition, pneumonia in sheep, blackhead and sinusitis in turkeys, suspected psittacosis, salt poisoning, leucosis and red mite infestation in poultry.

Mortalities among sheep due to rock fern poisoning occurred on some properties during 1957-58, owing to the dry conditions and in the late autumn, isolated cases of Phalaris grass poisoning came to notice.

Notifiable stock diseases which were reported and received attention during 1957-58, included actinomycosis, brucellosis, mastitis and tuberculosis in cattle, enterotoxaemia, ked and psorergates ovis infestations in sheep, salmonellosis in pigs and fowl pox and suspected psittacosis in poultry and birds.

In addition to these notifiable diseases and the mortalities from poisoning mentioned earlier, mortalities were also investigated where the causes were, in cattle—bloat; in sheep—infection following lamb marking, malnutrition, including neo-natal mortalities in lambs 2-3 days old where the ewes had received insufficient feed, exposure, pneumonia and hypocalcaemia; and in poultry—leucosis and coccidiosis.

Other conditions investigated during 1957-58, where no mortalities were involved, included cancer of the eye, osteomalacia and ringworm in cattle, balanitis, foot abscess and photosensitization in sheep and red mite and lice infestations in poultry.

Hormone Treatment Trial: During 1957-58, a small controlled experiment was initiated, at the request of the stock-owner concerned, to determine the effect of a hormone injection, intended to improve the weight gain and quality of fat lambs. The experiment is in respect of 68 lambs and these will be followed through the abattoir where carcass weight gain and grading will be recorded.

Veterinary Extension Services: At the invitation of the Department of the Interior, the two field veterinary officers attended a field day organized at Kambah in September, 1956 and gave lectures on topical veterinary problems and animal nutrition for sheep and cattle.

Radio talks were given from time to time during the period, on the dipping of sheep to control external parasites, carbon tetrachloride poisoning, footrot in sheep, internal parasites of stock, and the Canberra abattoir.

Veterinary advice was given to stock-owners as problems were brought to notice, either at the laboratory on specimens submitted, in the field where the trouble was occurring, or by telephone when details of routine flock or herd treatments were requested.

Dairy Farms and Milk Supply: The cattle on all registered dairies were examined and diseased animals isolated and removed from the herds. A total of 2,641 cattle were tuberculin tested in 1956-57 and 2,747 similarly tested in 1957-58. Four reactors to the tuberculin test in the first twelve months of the period and one in the second twelve months were destroyed.

Inspections were made of the registered dairies within the A.C.T. to ensure that the buildings and equipment were in satisfactory condition and that the milk was produced under hygienic conditions.

All female calves on registered dairies, 347 and 477 in 1956-57 and 1957-58 respectively, were inoculated with strain 19 brucella abortus vaccine as a protection against subsequent infertility.

In the veterinary laboratory 342 milk samples submitted each year by the health inspectors or collected on dairy inspections, were subjected to bacteriological examination.

Piggery Control: Periodical inspections were made to ensure that the local piggeries conform to Public Health requirements.

Canberra Abattoir: Considerable extensions planned for the abattoir buildings in recent years, have increased the capacity of the abattoir to cope with the greatly increased population of the area over the last ten years. By the end of 1957-58, extensions to the by-products buildings and the pens and yards had been completed. The drying beds have been doubled in size and extensions designed to double the chilling capacity, which were commenced in 1956-57, were nearing completion at the close of 1957-58.

Two meat inspectors are employed full time at the abattoir to maintain a meat inspection standard comparable to that observed at export works.

The number of stock slaughtered during the two years were—

	1956-57.	1957-58.
Cattle	7,384	9,346
Calves	2,417	2,593
Pigs	4,318	5,794
Lambs and Sheep	61,803	69,673

The production of by-products at the abattoir increased proportionately during the two-year period in respect of osatein meat and bone meal, blood and bone fertilizer, bone meal, concentrated ox gall, tallow, sausage casings, glue pieces, hair, horns, sinews and hooves.

CANBERRA COMMUNITY HOSPITAL

A statistical summary of the activities of the Canberra Community Hospital for the two years ended 30th June, 1957 and 30th June, 1958, is set out below:—

	1956-57.	1957-58.
Total number of daily occupied beds	60,187	61,527
Daily average number of patients	165	182
Total number of births	1,127	1,187
Total number of deaths	97	140
Total number of major operations	749	800
Total number of minor operations	4,029	4,829
Out-patients—		
Total number of out-patients treated	8,592	10,482
Total number of treatments	14,798	15,772
X-ray Department—		
Number of examinations	7,537	7,914
Number of examinations (miniature machine)	6,778	5,412
Ambulance Service—		
Number of calls attended	2,077	2,773
Number of miles travelled	27,392	32,488
Physiotherapy Department—		
Number of patients	2,174	1,970
Number of treatments	13,420	10,506
Dental Clinic—		
Number of patients treated	561	669
Number of attendances	4,149	4,673
Pre- and post-natal clinic—		
Number of patients attending	790	775
Number of attendances	6,646	2,800

NORTHERN TERRITORY

Any report concerning the Northern Territory Medical Service which is composed merely of statistics will fail to convey a picture of the comprehensive health service given to both white and native residents of the Territory. Even in this modern age the picture is quite a romantic one because of the many facets in its construction. The Aerial Ambulance, flying to the aid of the sick or the injured, be they white or black, at distant missions, stations, or settlements introduces an element of drama into the account of the comprehensive service provided for the people in the Northern Territory.

The activities of the Aerial Ambulance Service itself depend upon an organization of pilots and ground crews as well as doctors and nurses, and behind them are the established hospitals, those at Darwin and Alice Springs being now quite large and increasing in activity with the growth of population. The smaller hospitals at Katherine and Tennant Creek remain active in the service of the local inhabitants as well as those in the outlying parts.

The Flying Doctor is now being joined by the Flying Dentist as well as the Flying Sister and the dental service is being extended as much as possible to the missions and settlements as well as to the more accessible areas by a mobile unit mounted on a truck.

In short the activities of the department in the Northern Territory comprise a complete health service made up of the following:—

1. Hospital establishments, with out-patient services.
2. Dental clinics.
3. Native surveys.
4. Infant welfare centres.
5. Public health, administration, &c

HOSPITAL AND MEDICAL SERVICES

Hospitals: The Native Hospital attached to the Bagot Native Reserve, was taken over completely by the Department of Health during 1956-57, by mutual agreement with the Department of Territories. This hospital has now been incorporated within the administration of the Darwin Hospital. Complete rehabilitation of the hospital is planned and already two of the wards have been redecorated internally and refurnished.

Major building projects completed during 1956-58 were—

Hospital.	Project.
Darwin	Midwifery Block.
„	Out-patients Department.
„	Installation of New Boiler.
„	Drainage and Paving.
Tennant Creek	Midwifery Block
Katherine	Native Ward.
„	Renovations to Hospital Buildings.
Alice Springs	Sisters' Quarters.
„	Infant Welfare Centre.
„	Sewerage.
„	Alterations to Boiler House and Laundry.

Two Sisters conduct daily clinics at the Batchelor Hospital and the visiting Medical Officer conducts an out-patients' clinic and an ante-natal clinic every Monday. The numbers attending the latter have increased considerably during the period under review.

Medical Services: The Medical Officer from Katherine Hospital visits Pine Creek and North Hercules Mines at approximately monthly intervals and Mataranka, Larrimah and Daly Waters at intervals of approximately six to eight weeks. However, North Hercules Mine is inaccessible during the "wet" season. The Beswick Native Reserve is visited at monthly intervals.

A visiting ophthalmic surgeon was appointed during 1957-58 and he made three two-week visits to the Northern Territory. A considerable number of children requiring specialist attention for their eyes were treated, particularly at Darwin and Alice Springs.

Since the last report, the number of medical practitioners in private practice at Darwin has increased to four and one private practitioner commenced in Alice Springs during November, 1957. However, the effect on attendances at out-patient departments is not marked although the figures for 1957-58 have decreased slightly.

Routine X-rays, Mantoux testing and B.C.G. of exposed negative reactors has been continued at Alice Springs. Triple antigen immunization of children was continued throughout the two-year period. An epidemic of influenza placed a great strain on the medical and nursing staff of the Alice Springs Hospital during September, 1957.

The Salk Immunization Campaign: The Salk anti-poliomyelitis campaign was introduced in the Northern Territory during 1956-57 and continued during 1957-58.

The majority of school children have now completed their course of injections. Infants were also immunized in a mass campaign and have completed their course. The programme has been extended to include all adolescents and adults up to 45 years of age at all centres.

The Schools Medical Officer was responsible for the campaign and gave the majority of injections to children and adults in Darwin and Alice Springs. Local medical officers were generally responsible for the conduct of the campaign in most of the other centres.

School Medical Service: During the school year 1956, a total of 1,277 children were medically examined. Children at Alice Springs were examined for the first time. A total of 948 children were medically examined during the school year 1957, about half of which were first examinations. Details are as follows:—

School or Centre.	1956.	1957.
Darwin Kindergartens	54	145
Darwin Public School	282	..
Darwin Convent School	50	360
Batchelor School	19	..
Adelaide River Primary School	15	10
Katherine School	30	80
Tennant Creek School	37	75
Alice Springs Higher Primary School	605	125
Alice Springs Convent School	141	26
Alice Springs Kindergarten	44	57
Croker Island School .. .. .	..	50
Pine Creek School .. .. .	..	9
North Hercules School .. .. .	..	11
	1,277	948

The health of the children examined was generally good. Trachoma was found in about 50 children of mixed blood in Alice Springs, visual defects being the most common feature of the disease. The teeth of the children at Alice Springs showed less dental caries than the teeth of Darwin children.

A paediatric outpatient clinic and an immunization clinic are conducted each week at the Darwin and Alice Springs hospitals and these were generally well attended.

Early in 1958 Asian influenza became prevalent in the schools and many children were absent from school.

Because of the rather dry "wet" season in the northern part of the Territory in 1957-58, infected prickly heat, impetigo and furunculosis became quite a problem and more children than usual were affected. Otitis externa, otitis media and gastro-enteritis were also common during this time.

The Commonwealth Free Milk Scheme is now operating satisfactorily in schools at some of the smaller centres in the Territory as well as at the larger ones.

Aerial Medical Service: In November, 1957, the arrival of the first Dove aircraft enabled the Department to improve its aerial medical service. This aircraft is more efficient than the Drover aircraft already in service and has been reserved mainly for emergency flights. Arrangements have been made for the purchase of a second Dove aircraft to be stationed at Darwin.

The following figures indicate the work done by the aerial medical service during 1956-57 and 1957-58:—

	1956-57.	1957-58.
Number of trips	246	293
Hours flown	1,298	1,516
Miles flown	127,970	166,955
Landings	819	1,007
Number of patients carried	520	612

DENTAL SERVICE

Darwin Clinic: Continuous improvements have been made to keep this clinic in line with the most modern dental hospitals in the Southern States.

All pupils were treated at the Darwin Infant School Clinic during 1957 and 1958 and full records made of their oral condition. For this purpose the D.M.F. (decayed, missing, filled) system was introduced.

It is expected that the Primary School Clinic will be in operation by the latter part of 1958.

The road mobile unit journeyed the length of the Stuart Highway several times during the last two years treating patients as required.

Aerial mobile dentistry was placed on a more permanent basis by the use of the Department's aircraft every month. The various missions, Groote Island and the Kimberleys were serviced at three-monthly intervals during 1957 and in 1958 a new service to Cocos (Keeling) Island commenced. Half-yearly visits each of three weeks duration are sufficient to cope with present requirements.

The school dentist worked at the East Arm Settlement during school vacations.

Alice Springs Clinic: The Town clinic at Alice Springs provides a dental service to the general public, covering all aspects of dental treatment. It is also the centre of organization for the Mobile Dental Service and the School Dental Service.

During 1956-57 the Mobile Dental Service visited native settlements and mission stations at Santa Teresa, Yuendumu, Haasts Bluff, Areyonga Bungalow and Hermannsburg.

The School Dental Service examined and treated children from the Kindergarten, Primary School, Higher Primary and the Convent School. A permanent, fully equipped clinic is established at the Primary School, where most children attend for treatment and a mobile clinic is set up in the Higher Primary School for several months each year.

The following figures illustrate the work carried out at the Darwin and Alice Springs Dental Clinics during the past three years:—

	Darwin.			Alice Springs.		
	1955-56.	1956-57.	1957-58.	1955-56.	1956-57.	1957-58.
Examinations	1,306	1,955	2,012	1,631	2,508	1,585
Extractions	2,735	2,780	2,436	1,480	1,364	1,359
Fillings	4,255	4,643	3,987	2,780	2,648	2,111
Other treatment	5,522	5,444	4,566	2,406	1,957	1,955
	13,818	14,822	13,001	8,297	8,477	7,010

INFANT WELFARE CLINIC

Attendances at the Darwin Clinic and sub-centres were—

	1956-57.	1957-58.
Darwin	4,891	5,175
Royal Australian Air Force	616	494
Berrimah	95	325
Winnellie .. .. .	..	445
Stuart Park .. .. .	..	171
Nightcliff .. .. .	..	54
	5,602	6,664

The establishment of three new sub-centres during the past year at Winnellie, Stuart Park and Nightcliff, has considerably reduced the need for home visiting. Clinics at these centres are held fortnightly.

Attendances at all clinics have remained fairly steady while the numbers of infants at most centres are increasing. The total number of babies enrolled at all centres during the past two years, was 721.

Hospital visiting was carried out as usual, each mother being invited to attend the clinic regularly after leaving hospital. Home visits were made where necessary, 635 home visits being made during 1957-58. Occasional visits to the Children's ward at the hospital have been made when necessary.

The actual activities of the Clinic include the usual weighing, advising and feeding, with a few minor medical treatments.

MEDICAL SERVICES TO NATIVES

The health of natives in remote areas, including Missions and settlements, was cared for by Surveys Medical Officers and the Surveys Sister. Routine visits were also made during 1957 by other Medical and Dental Officers from Darwin and Alice Springs. However, during 1958 the lack of medical staff has restricted the native health surveys, with a consequent reduction in medical attention for the native population of the Territory.

During 1957-58, work has been directed towards the problem of infant and pre-school child nutrition and the frequently associated problem of anaemia in young children. Malnutrition is now regarded as the most serious medical condition and the most frequent cause of death, directly or indirectly, of natives in the Northern Territory.

The Surveys Sister, who is trained in infant welfare, has visited the majority of Missions and settlements in the northern part of the Territory. Attention is given to the increased ante and post-natal care of the mothers and particularly to extra dietary requirements of expectant and lactating women. Iron and vitamins are also supplied to young children and a system of weight cards had been introduced recording children's weight for the first five years of life.

Almost all the tropical diseases which exist in the Northern Territory are found in the native patient. A concentrated effort was made, particularly during 1957, to treat trachoma, which is prevalent among natives at Missions and settlements. Treatment with a "Sulpha" drug appeared to be effective, while

Aureomycin eye ointment was used in areas where secondary infection is prevalent. Check surveys were conducted towards the end of 1957 and a considerable reduction in active cases of trachoma was observed.

The treatment of natives for hookworm disease was continued on Mission stations by Sisters, with the aid of native assistants. Education in sanitary practices and the provision of more latrines appear to have had some effect in the control of this disease.

Only eleven cases of malaria were notified during 1957-58, compared with 41 notifications during the previous twelve months. Of the eleven cases notified, only two were imported, one vivax infection being contracted in New Guinea, the patient's occupation involving travel through epidemic areas. During the "dry" season in 1957, there were at least nine imported cases, six being falciparum malaria from Timor.

The possible introduction of malaria, particularly from Timor, has become a real threat. Falciparum malaria could easily become endemic in the northern parts of Australia, and it is a major public health risk in the Territory.

Tuberculosis is still in evidence in the native population throughout the Territory. However, it is hoped to commence a Tuberculosis Survey in the near future.

Despite the prevalence of whooping cough in the European centres in 1956-57, no cases occurred in native communities. This demonstrates the value of the extensive immunization campaigns as the previous epidemics of whooping cough in 1949-50 had spread through native communities causing a number of deaths.

During 1956-57, eighteen new cases of Leprosy were discovered, following medical surveys in some of the more remote areas. These cases were admitted to the Leprosarium at East Arm. During the first medical survey at the new welfare settlement at Maningrida, 370 natives were examined, including 26 new cases of leprosy, who are being treated in isolation at the Settlement. Sixty cases were notified during 1957-58, none of whom have been admitted to the East Arm Settlement.

The position at the East Arm Leprosarium has shown some improvement, with an excess of 21 discharges over admissions during 1957-58. At 30th June, 1958, there were 180 patients at the settlement.

PUBLIC HEALTH

Quarantine: During 1956-57 disinsectization and plant and animal quarantine precautions were carried out on 1,044 aircraft and 34 ships arriving at Darwin. Interstate and overseas ships totalling 86 and 33 respectively and 1,031 aircraft were inspected at Darwin during the year ended 30th June, 1958.

Close co-operation is maintained with Customs officers in the examination of articles and parcels arriving in Australia by post.

A considerable amount of animal and plant matter was confiscated from aircraft and from passengers' personal luggage, particularly during 1957-58. These goods, together with quantities of straw and wood packing, were destroyed.

Food Supplies and Storage: Regular inspections were made of premises at which foodstuffs are stored, prepared or sold, and much improvement has been effected by the installation of a considerable amount of modern equipment, including cold storage units. This may be attributed at least in part, to the removal of the former feeling of uncertainty and indecision associated with

the granting of leases in respect of business premises in Darwin. Towards the end of the period under review, many improvements in layout and a number of rebuilding projects, are converting old buildings into modern business premises.

Hotel premises in the northern parts of the Territory have received attention, resulting in considerable extensions and improvements, either completed or in process.

There are now four modern butchers shops operating in Darwin, all with good cold storage equipment. However, the slaughter yards serving the population of Darwin are inadequate in all respects. Lack of suitable chilling facilities at the yards places an added strain on the available cold storage at present provided by the Government.

Water Supply: The Darwin water supply is drawn from the Manton Dam. The supply is adequate for present needs and of good quality. It has been suggested that the dam may be enlarged to cope with the rapidly increasing population. Two new pressure tanks were brought into use during 1958.

Water supplies available to most of the towns and centres in the Territory are adequate for normal requirements although present supplies to Tennant Creek and Pine Creek are not entirely satisfactory. However, the construction of new wells, bores and storage tanks is expected to ease the situation at these centres after the necessary tests have been completed.

Owing to poor absorbent quality of the soil at Katherine, the disposal of waste water from all sources is difficult.

Nightsoil and Garbage Disposal: The sewerage system at Darwin is practically completed but delay in the installation of treatment plant has prevented many mains from being used.

Most other centres in the Territory have adequate and efficient facilities for disposal of nightsoil and garbage.

Mosquito Control: During 1957, Health Inspectors visited those cattle stations and native settlements from which malaria had been reported or where contact had been made with reported malaria suspects. All buildings and camps were treated with 10 per cent. D.D.T., swingfog machines being used for this purpose. These machines have been proved effective and reliable and can be transported easily by vehicle or aircraft.

Complaints of mosquito plagues were infrequent during 1957-58, the T.L.F.A. machines being used only on a few occasions.

In 1957 a survey was conducted by an entomologist from the School of Public Health and Tropical Medicine, of mosquito breeding and infestation at the Roper River Mission and the Humpty Doo Rice Project. A comprehensive report was furnished on his findings. A similar survey was made during 1957-58, on the type and breeding habits of sandfly within the Darwin area.

Mosquito control is now a function of the Darwin Municipal Council.

CONCLUSION

As the Territory advances in its developmental stages the Department of Health will need to enlarge its services with the growing population. At the same time it is encouraging the establishment of private practice wherever possible and in fact four private doctors including one well qualified surgeon are now in practice in Darwin and one private doctor is in practice in Alice Springs.

HEALTH SERVICES PROVIDED AT MAIN NORTHERN TERRITORY HOSPITALS

	Darwin.			Alice Springs.			Tennant Creek.			Katherine.		
	1955-56.	1956-57.	1957-58.	1955-56.	1956-57.	1957-58.	1955-56.	1956-57.	1957-58.	1955-56.	1956-57.	1957-58.
Total number of daily occupied beds ..	47,049	46,538	52,705	23,863	28,173	32,176	5,749	5,245	5,848	6,229	6,601	7,412
Daily average number of patients ..	128	128	145	65	77.2	88	16	14	15	17	18	20
Total number of births ..	358	420	452	130	163	190	31	25	33	40	33	43
Total number of deaths ..	59	86	73	54	85	63	11	10	19	9	7	16
Total number of post-mortem examinations ..	45	91	74	18	18	25	2	5	18	3	3	34
Total number of major operations ..	273	223	371	117	190	82	3	2	9	2	..	..
Total number of minor operations ..	899	906	1,213	427	327	426	37	19	62	111	91	102
Total number of out-patients treated ..	38,836	36,401	35,824	15,313	23,965	18,687	5,447	8,958	7,577	5,341	7,475	7,445
Dispensary—												
Prescriptions dispensed ..	21,026	18,964	15,837	12,581	11,039	6,562	6,749	9,427	8,202	1,721	3,083	4,770
Daily average per working day ..	85	76	64	49	44	28	24	30	26	6	10	15
X-ray Department—												
Number of examinations ..	7,216	7,613	7,370	3,253	3,310	3,599	341	371	256	199	294	217
Number of exposures ..	11,977	18,964	12,686	4,896	5,145	5,478	413	426	340	302	435	256
Ambulance Service—												
Number of trips ..	872	1,196	1,996	163	307	366	77	88	110	454	413	292
Number of patients carried ..	655	994	2,332	183	287	347	86	106	115	323	311	291
Number of miles travelled ..	10,852	10,837	18,278	6,336	8,832	7,650	9,006	11,303	8,823	18,216	19,578	14,082
Physiotherapy Department—												
Number of patients ..	..	994	1,209	21	343	602	..	..	..	..	..	..
Number of treatments ..	..	5,799	6,292	165	1,587	3,051	..	..	..	..	..	..

COMMONWEALTH SERUM LABORATORIES

PRODUCTION DIVISION

Considerable re-organization of the laboratories took place during 1956-57, resulting in the number of Production Sections being reduced to six, and the establishment of a Development Section.

Sections now operating are—

- Antibiotic.
- Bacterial Products.
- Biochemical Products.
- Veterinary Products.
- Virus Products.
- Packaging.
- Development.

The former Microbiology Sections I., II. and III. were consolidated in the Bacterial Products Section and the Endocrine and Serum Products Section in the Biochemical Section. The sections formerly known as the Poliomyelitis Section and the Virology Section were combined to form the Virus Products Section.

Antibiotics Section: Penicillin production has been maintained throughout the period near the maximum level. A further increase in production was achieved by a change to the use of a new strain of the penicillin-producing culture, which proved capable of increasing yields by about 15 per cent., in the broth stage.

There was an increasing demand for penicillin G products during 1956-57 but this demand slackened during 1957-58. An appreciable amount of penicillin V was prepared during 1957-58 to meet an increasing demand for these products, particularly during the last quarter of that year.

During April, 1958, a 240-mg. penicillin V tablet was produced for the first time. Other new products were introduced in 1957-58, including the new "Aquacaine" series of procaine penicillin. These products are based on a formulation designed to eliminate certain disadvantages of the "Penaquacaine" series formerly produced by the laboratories.

Developmental work throughout the whole Antibiotics Section was transferred to the Development Section, except for certain projects such as the formulation of penicillin V tablets, which were investigated within the producing department.

The dispensing of all products (other than in bulk) into final containers was transferred to the new Packaging Section.

Bacterial Products Section: The re-organization of departments having production activities with a bacteriology basis was undertaken in August, 1956. Smaller departments were incorporated into larger ones with similar functions and diverse activities transferred to more appropriate departments.

This resulted in a reduction of both departments and staff, leaving a group of nine departments which now form the Bacterial Products Section. Further changes among the professional staff took place during 1957-58.

Some of the main products produced during the period were—

- Anti-Typhoid Paratyphoid Vaccine.
- Influenza Bacterial Vaccine.
- Dried B.C.G. Vaccine.

Tetanus, Diphtheria and Whooping Cough Antigens.
 Allergy Extracts for testing and for treatment.
 Tuberculin P.P.D.
 Vaccines made to prescription.
 Staphylococcal Toxoid.

In addition, the usual diagnostic services, such as rat examinations, blood counts and brucellosis titres in sera, were performed and some sterility testing was carried out on material forwarded by outside bodies.

Three departments, Sterility, Diagnostic, and Agents and Allergens, were set up in new or remodelled laboratories during 1957-58.

In the Media Department, a major change was made with the installation of modern American-style sterilizers and the conversion of the Thompson autoclave to cyclomatic control and carriage loading.

Principal developmental work sponsored by the section has been related to tetanus toxin production, the stability of purified toxoid in various diluents, colour-coding of blood grouping serum and both increased viability and improved storage of B.C.G. vaccine. Consideration was also given to the possible uses of mould extracts in sensitivity testing and in treatment of certain allergies.

As part of the national survey of soft-tissue infections, some thousands of serum swabs have been prepared and issued.

Biochemical Products Section: Organizational changes made in the section during 1956-57 proved to be very effective, particularly in the handling of human blood.

In the Serum Fractionation Department a steady increase in plasma intake was recorded in 1956-57 and maintained during 1957-58. The intake of plasma rose by 16 per cent. each year to 14,380 units in 1956-57 and 16,672 units in 1957-58, while issues of albumin increased by 32 per cent. and 19 per cent. respectively. However, the increased intake allowed stocks of albumin to be built up to give a reserve of approximately eighteen months' requirements, at 30th June, 1958. Pooled human serum remained fairly steady, but fibrinogen issues showed a decrease of approximately 20 per cent.

In general, the products of the Serum and Serum Concentration Department, e.g. Diphtheria, Tetanus and *Perfringens* Antitoxins, remained fairly steady in regard to production levels and issues, with the exception of Pulpy Kidney Antitoxin, which showed a marked drop of approximately 40 per cent. in 1956-57.

The production and issue of Red-back Spider Antivenene was initiated at the beginning of the period under review, while stocks of Tiger Snake and Taipan Antivenenes were satisfactory. Production of Death Adder and Papuan Black Snake Antivenenes was commenced in 1957-58.

Overall production fell slightly during 1957-58 and the most marked fall in issues during that year was approximately 25 per cent. in respect of Diphtheria Antitoxin. Other products remained in fairly steady demand.

Results from the Insulin Department indicated a rise of 40.5 per cent. over the previous year's figures, in the production of crystalline Insulin during 1956-57. However, in 1957-58, fewer glands were processed, with a consequent reduction in production, of approximately 25 per cent.

Considerable effort was directed towards the installation of new Insulin plant, to remedy certain deficiencies in the existing plant.

The production of Lente Insulin was investigated.

Veterinary Products Section: During August, 1956, this section was divided into two sub-sections, one dealing with production of veterinary viral and bacterial vaccines and immune plasma, and the other with animal management.

Production activities of the Veterinary Products sub-section included the expanded production of cattle, sheep, dog and poultry vaccines. A number of vaccines were converted to tank growth, and purchase of further equipment for this facility initiated.

The Hyperimmunization Department, which controls all immune plasma production, carried out 2,004 hyperimmunization courses and 2,737 serum assays. Resting agistment of horses at the Metropolitan Farm, Werribee, between serum production courses has greatly improved the condition of the animals and relieved animal population pressure at the Broadmeadows Farm.

The Animal Management sub-section underwent considerable re-organization and an extensive building programme to provide essential facilities was commenced.

The Broadmeadows Farm property was enclosed by the erection of a man-proof fence, and extensive paddock sub-division was made. As an adjunct to animal husbandry activities, a limited programme of fodder conservation was carried out.

To supplement the rapidly decreasing supply of horses suitable for serum production, a programme of horse breeding was commenced with a herd of two stallions and 73 mares at the Metropolitan Farm property at Werribee.

A large heated and ventilated building for the housing of monkeys used in the production of poliomyelitis vaccine, was erected at Broadmeadows Farm.

A greatly increased demand for small laboratory animals has been met despite inadequate facilities. Commencement was made on the erection of new buildings for the production of laboratory animals at Broadmeadows Farm.

Virus Products Section: The major production activities of the section were devoted to Poliomyelitis (Salk) Vaccine and Influenza Virus Vaccine.

The amount of Poliomyelitis Vaccine which satisfactorily passed all safety and potency tests was equivalent to 4,814,000 doses in 1956-57 and 3,544,000 doses in 1957-58. This increased the total amount of vaccine prepared since the beginning of distribution to 8,748,000 doses.

A total of 29,000 doses of Influenza Virus Types A and B were issued prior to the isolation of the Type A/Asian/57 strain in May, 1957, and 9,900 doses of vaccine which included this new strain were produced in May and June, 1957. During July-August, 1957, an additional 155,000 doses of the vaccine containing the A/Asian/57 strain were produced and distributed.

In response to a request from the World Health Organization, 200,000 doses of a special formulation of this vaccine were made available to Italy during October-November, 1957.

The vaccine produced for use during the 1958 season in Australia was of the American polyvalent type. Six strains were included in the vaccine—four of type A (Swine, A, A prime and A/asia) and one each of type B and type D. The production of this vaccine was 700,000 doses.

With Vaccine Lymph, 1957-58 production totalled 410,000 doses, while issues were 108,000 doses.

Yellow Fever Vaccine was produced at a much greater rate than normal during 1956-57, total production for the year being 10,700 doses.

As in the case of Yellow Fever Vaccine, production of Anti-Typhus Vaccine (Epidemic and Murine) was increased to 50,000 doses.

Packaging Section: This new section was developed during 1956-57 and has been taking over the packaging functions of the various production sections as required.

Steady progress was made in the mechanization of this section and several new machines, including a Tablet Foiling Machine and an Electronic Tablet Counter, were put into operation.

Improved packs were developed for several lines including Veterinary Virus Vaccines, Tetanus Antitoxin and Influenza Virus Vaccines. Work was in progress in other sections on the change from 1 c.c. ampoules to 1 c.c. bottles to take advantage of mechanized packing by the Redington Cartoning Machine.

Development Section: This section was created as part of the production Division. Its function is to handle problems connected with the development of new methods for the production of the present biological products, and methods of production of new products resulting from research activities at the Laboratories or overseas. During the period the work in the section has ranged over a wide field of the Commonwealth Serum Laboratories activities, the main results being set out below:—

Toxoids and Vaccines (Human)

- (a) The stability of a proposed new product, Purified Tetanus Toxoid, in two diluents and the strengths required for effective immunization of animals was established. Several trials of the effects of injection in humans have also been made. Consideration is now being given to wider trials.
- (b) Efforts to increase the number of viable organisms in dried B.C.G. vaccine were made. Some progress was made by freezing the suspension of organisms slowly instead of quick freezing.
- (c) It was shown that satisfactory production of Staphylococcus toxin can be obtained by shake-flask culture. Certain other changes in the production of Staphylococcus toxoid are being studied.

Toxoids and Vaccines (Veterinary)

- (a) Several types of Pulpy Kidney Vaccine were compared at different dosage levels under field conditions. All preparations were found to be highly effective in immunizing lambs. A flocculation test for the testing of batches of vaccine has been developed, and it is being applied to routine production.
- (b) Conditions for the satisfactory freeze-drying of Strangles Vaccine have been worked out, and are now being applied successfully.

Endocrine

- (a) Work was continued on the improvement of the insulin production process.
- (b) Some work on the production of serum gonadotropin was done, but assay difficulties have halted the project for the present.

Sera and Blood Products

- (a) A satisfactory method for the preparation of serum albumin from out-dated dried serum was evolved.
- (b) The production of plasminogen from blood plasma was studied, and reasonably satisfactory preparations are now available.

Antibiotics

- (a) Throughout 1957-58 experiments were run in small fermentation vessels to determine the optimal compositions of various types of media for penicillin production. Various strains were used, including one imported from U.S.A. during the year.
- (b) Some preliminary work has been done on penicillin formulations, viz., Penicillin V for parenteral injection, Penicillin V elixir and aquacaine suspensions.

Enzymes

- (a) Investigations into the production of streptokinase have been under way throughout 1957-58. Large-scale production is now possible.
- (b) Work has commenced on the preparations of penicillinase for clinical use.

Virus Vaccines

- (a) Work is in progress on various aspects of the production of influenza virus vaccine, including stabilization of seed virus, methods of assay and standardization concentration of virus fluids, and the determination of antibody levels following immunization.
- (b) Efforts are being made to develop a satisfactory production method for avianized distemper vaccine.
- (c) Several small lots of dried calf lymph (vaccinia) have been prepared and are proving to be viable on storage.

Miscellaneous

- (a) Long-term trials were begun to determine the persistence and stability of various products during storage in contact with rubber closures. Several reports have been made on this project.
- (b) A review of pharmacopoeial standards and certain product listing methods has been made, and recommendations made for improved and more economic techniques.
- (c) The isolation of strains of influenza virus from throat washings and the examination of sera for influenza antibodies for the W.H.O. Influenza Centre has also been a function of the Development Section during the period.

RESEARCH DIVISION

During the past year the Research Division was organized into eight departments, as follows:—

- Veterinary Research.
- Protein Chemistry Research.
- Virus Tissue Culture Research.
- Virus Cytology Research.
- Virus and Cell Immunology.
- Exotic Virus Research.
- Venom and Antivenene Research.
- Staphylococcal Research.

The activities of the Veterinary Research Department were devoted almost entirely to the development of a vaccine to control Leptospirosis pomona, a zoonosis of importance to Australia. The results of preliminary tests in calves have been encouraging.

The main activities in the Department of Protein Chemistry have been—

- (a) the introduction and setting up of modern apparatus and equipment;
- (b) the selection and training of personnel; and
- (c) the development of appropriate techniques.

In addition to other investigations, a study has been undertaken to identify and characterize those entities in sera which are responsible for the growth inhibition and growth stimulation of tissue cultures of animal organs.

The energies in those departments concerned with various aspects of virus research were directed mainly towards the development of techniques for culture of tissue cells and to the assessment of polio vaccination efficiency.

Polio antibody levels following three doses of Salk Vaccine have been found satisfactory. A small epidemic of poliomyelitis in New Guinea was found to be associated with polio type 1 virus.

Attempts to confirm the claims that the virus of infectious hepatitis has been grown in tissue culture have been inconclusive.

Studies have been continued on the venom of various Australian venomous animals.

It was shown that antivenene treatment of persons bitten by the Red-back Spider reduced the duration of symptoms to one day. In untreated cases, the average duration of illness was four days.

Staphylococcal research included investigations into—

- (a) Staphylococcal antigen antibody reactions by the agar diffusion plate technique;
- (b) The accuracy and significance of phage typing;
- (c) Antigenicity of staphylococcal toxin and toxoid together with factors influencing them;
- (d) Antagonism between staphylococcal toxin and the venoms of certain snakes and insects.

CONSULTANT DIVISION

The Consultant Division consisting of three sections, was formed during the year ended 30th June, 1958, these sections being medical, veterinary and general scientific.

The medical section has undertaken and carried out clinical trials with Penicillin V, Polio immunization, Influenza Virus Vaccine immunization, and investigations into sensitivity of Tetanus Toxoids and reactions to horse serum proteins, with special attention to Tetanus Antitoxin. A clinical trial is still being conducted, employing small diluted doses of Tetanus Antitoxin subcutaneously as a test for sensitivity to horse serum protein.

During the year the Medical Consultant Division has assisted the Production Division in advice on dosage schedules, modifications of existing products, suggestions for new biologicals to keep pace with modern trends, problems related to packing of products, preparation and revision of pamphlets and inquiries concerning the use of and reactions to products.

This section has undertaken the small animal and monkey tests in connexion with safety testing of poliomyelitis vaccine, and it has also carried out the small animal testing of B.C.G. Vaccine.

A good liaison has been formed between the Consultant Medical Officers and general practitioners, specialists, medical institutes and hospitals in all States.

This section has also undertaken immunization of the staff of the Commonwealth Serum Laboratories against infections to which individuals preparing various vaccines may be exposed within the Laboratories and also many of the common infectious diseases.

The Veterinary Consultant Section has conducted field trials in connexion with the preparation of a new Enterotoxaemia vaccine in sheep. Potency testing of Blackleg vaccine has also been undertaken. General consultative advice has been given to practising veterinary surgeons, and there has been close liaison with various veterinary institutes and Departments of Agriculture.

The Veterinary Section has been responsible for the supervision of purchase and transportation of monkeys from overseas to Melbourne, and the maintenance of their health. The high standard of animal husbandry has safeguarded these animals whilst being held for preparation of Poliomyelitis Vaccine.

The general supervision of all veterinary problems and animal husbandry of all other animals held at the Commonwealth Serum Laboratories has been maintained by this section.

A project has been undertaken for the breeding of suitable horses for the production of hyperimmune serum as a result of the inability to obtain suitable horses for this purpose in Australia.

The general scientific section has undertaken the scientific checking of all methods of production being prepared by the production division. It has been responsible for the maintenance of the blood grouping reference laboratory, and a large amount of consultant work in connexion with all aspects of blood grouping, involving close liaison with the Blood Transfusion Centres of the Australian Red Cross.

This Section has provided a statistical and biometrical service within the laboratories for all scientific sections as well as for the Poliomyelitis Surveillance Committee and has also provided a consultant service both within and without the laboratories on many problems connected with biochemistry, bacteriology, mycology, blood grouping and statistics.

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COMMONWEALTH SERUM LABORATORIES

PROFIT AND LOSS APPROPRIATION STATEMENT

For the Year ended 30th June, 1957

	£
Trading Revenue:	
Sales of products, including reimbursements for issues, by authority, free of charge	2,120,858
Trading Expenditure:	£
Costs of Manufacture	1,490,642
Administrative and Selling Expenses	253,652
	<hr/> 1,744,294
Operating Surplus:	376,564
Less Appropriations	
(i) Consultative Services	24,171
(ii) Research Expenses not recovered	15,485
(iii) Transfer to Plant obsolescence Replacement Reserve	200,000
	<hr/> 239,656
Net Surplus:	<hr/> 136,908

COMMONWEALTH SERUM LABORATORIES—continued.

Balance Sheet as at 30th June, 1957.

<i>Current Liabilities.</i>		<i>Current Assets.</i>	
	£		£
Sundry Creditors	98,928	Cash in hand and bank	218,313
		Stocks	1,299,843
Funds employed	4,447,753	Sundry debtors	469,481
	<u>4,447,753</u>		<u>1,987,637</u>
		<i>Fixed Assets.</i>	
		Land, Buildings and Plant, less provision for depre- ciation	2,559,044
	<u>4,546,681</u>		<u>2,559,044</u>
			<u>4,546,681</u>

PROFIT AND LOSS APPROPRIATION STATEMENT

For the Year ended 30th June, 1958

<i>Trading Revenue:</i>		£
Sales of products, including reimbursements for issues, by authority, free of charge	.. .. .	2,092,809
<i>Trading Expenditure:</i>		£
Costs of Manufacture	.. .. .	1,522,475
Administrative and Selling Expenses	.. .. .	310,688
		<u>1,833,163</u>
<i>Operating Surplus:</i>		259,646
<i>Less Appropriations</i>		
(i) Consultative Services	.. .. .	28,573
(ii) Research Expenses not recovered	.. .. .	21,027
(iii) Development Expenses not recovered	.. .. .	43,614
(iv) Transfer to Plant obsolescence Replacement Reserve	.. .. .	100,000
		<u>193,214</u>
<i>Net Surplus:</i>		<u>66,432</u>

Balance Sheet as at 30th June, 1958

<i>Current Liabilities</i>		<i>Current Assets</i>	
	£		£
Sundry Creditors	69,493	Cash in hand and bank	429,321
		Stocks	1,692,124
Funds employed	5,105,289	Sundry debtors	219,048
	<u>5,105,289</u>		<u>2,340,493</u>
		<i>Fixed Assets</i>	
		Land, Buildings and Plant, less provision for depre- ciation	2,834,289
	<u>5,174,782</u>		<u>2,834,289</u>
			<u>5,174,782</u>

COMMONWEALTH X-RAY AND RADIUM LABORATORY

RADIUM SERVICES

The Laboratory acts as the central reserve for the national holding of radium, from which loans are made when required by approved hospitals.

The national holding of radium is subject to audit, and periodical checks of the radium are made in terms of the "radium ledger" maintained at the Laboratory.

Data on radium service is summarized in Appendix I.

RADON SERVICES

Radon, the gaseous decay product of radium, has a number of practical and economic advantages over radium for use in treatment. Radon is regularly prepared and issued to supply the treatment requirements of hospital and private patients in Victoria, South Australia, Tasmania and Western Australia. The requirements of New South Wales and Queensland are met from radium solutions, made available from the Commonwealth radium holdings to local physical services in those States.

The important place which radon held in industry by reason of its low monetary value and the small size of the highly active sources obtainable, has largely been taken over by radioactive isotopes, principally Co 60, Cs 137 and Ir 192. During the period under review only three radon industrial sources were issued.

Data on radon services is contained in Appendix II., Tables 1, 2 and 3.

Construction and Distribution of Radon Containers: For many years radon issued in Australia for medical purposes has been supplied in capillary tubing of pure gold. The laboratory constructs all the gold tubing used in the various radon centres in Australia and in the Dominion X-ray and Radium Laboratory, Christchurch, New Zealand. In addition to the gold tubing, 37 "nasal applicators" were constructed during 1956-57, and 36 during 1957-58.

The distribution to the various centres, of tubing made during the two year period, is set out in Appendix II., Table 4.

X-RAY SERVICES

X-ray Therapy: An excessive dose of X-rays in treatment may cause irreparable damage and too small a dose may make further treatments impossible. Therefore, the dose delivered in each case must be known with accuracy.

The calibration of dosimeters is a function of the Laboratory and is not restricted to equipment owned by the local physical services in each State. Inspection and necessary adjustment of dosimeters before calibration are routine procedures. Nine dosimeters have been calibrated in the last two years and one repaired. In 1956-57, four calibrations of deep-therapy equipment and twenty-two of superficial-therapy equipment were made by the Laboratory and five calibrations of deep-therapy equipment and twenty-two of superficial-therapy equipment were completed in 1957-58.

In addition to the investigational and calibration work in this section, irradiations of biological materials were carried out for the Department of Zoology, Botany and Pathology in the University of Melbourne, the Department of Agriculture (State Research Farm, Werribee), the Division of Plant Industry, C.S.I.R.O., Canberra, and for the Hop Research Station of the Carlton United Breweries, Melbourne.

X-ray Diagnosis: Investigation of the physical problems of diagnostic radiology were continued. The Laboratory is actively engaged on projects for assessing the radiation dose received under various conditions by patients undergoing diagnostic radiography and fluoroscopy. During 1957-58, measurements were undertaken on thirteen diagnostic units with a view to recommending means by which the dose received by patients could be reduced. Investigations of radiation dose to patients will be continued in association with the Radiation Hazards Committee of the National Health and Medical Research Council.

The performance of several diagnostic X-ray equipments have been compared by means of a copper step-wedge. This has also been found useful for detecting departures of processing conditions from standard, and for comparing the relative speeds of intensifying screens of different makes, and types of X-ray films.

The resolving powers of intensifying and fluoroscopic screens have been determined by means of a graticule consisting of radio-opaque and radio-lucent material in alternate strips of progressively increasing width. This graticule has also proved very satisfactory as a test object for focussing the optical systems of miniature radiographic units.

The tuberculosis case-finding programme for staff and students at the Melbourne Dental Hospital and for sections of the staff at the Commonwealth Serum Laboratories was continued. Direct (full size) radiographs have been made of those whose miniature radiographs indicated that further examination was desirable. Workers in the B.C.G. Unit of the Commonwealth Serum Laboratories and those in the Department of Bacteriology in the University of Melbourne, who are engaged in the examination of sputum, have been periodically examined by direct radiographs.

By arrangement with the Australian College of Dentistry, an encephalometer unit was installed at the Laboratory in 1951. This device is so designed that posterior-anterior and lateral radiographs of the skull, taken at intervals, may later be superimposed accurately, thus enabling investigations to be made of the growth of facial bones. The Laboratory continues to co-operate with the Department of Anatomy in the University of Melbourne in such a project and during the two year period 742 patients were radiographed. The encephalometer is available by arrangement to orthodontists in private practice, 274 patients being examined in 1956-57, and 362 in 1957-58.

Advice on the purchase of new equipment for hospital departments and on the condition of existing equipment, is frequently sought from the Laboratory by the State Governments and by hospital authorities.

As a result of the tuberculosis arrangements between the Commonwealth and the States, the Laboratory has purchased X-ray equipment and accessories for distribution to those States which have requested the Commonwealth to undertake the selection and ordering of such equipment.

At the request of the Department of External Affairs, equipment being sent abroad under the Colombo Plan has been inspected and tested, before leaving the factory, to ensure that it complies with specifications.

RADIOACTIVE ISOTOPE SERVICES

The Laboratory has established a system of procurement and distribution of these materials and all radio-isotopes imported into Australia, whether for medical use or otherwise, are delivered to the Laboratory for inspection and distribution.

During 1956-57, 431 orders involving shipments of 41 different isotopes, were delivered to the Laboratory for distribution. Of these, nine isotopes were required for medical purposes and the remainder for research and industry. In the twelve months ended 30th June, 1958, 650 shipments involving 122 different compounds and 36 isotopes were obtained and distributed by the Laboratory. Eight isotopes, incorporated in thirteen different compounds, were required for medical purposes, the remainder being used in research and industry. Statistical data on the use made of radio-isotopes have been collated in Appendix III.

Isotopes for Medical Purposes: Radio-isotopes used regularly in medical practice are purchased in bulk supplies, subdivided in and distributed from the Laboratory. Of the radio-isotopes imported for medical purposes, phosphorus-32 (P^{32}) and iodine-131 (I^{131}) continued to be most in demand. There was a steady increase in the demand for colloidal gold-198 used in the treatment of peritoneal and pleural effusions associated with malignancies. Trial investigations with phosphorus-32 labelled colloidal chromic phosphate, have been continued in the treatment of malignant effusions.

Chromium-51, iron-59 and radio-iodinated human serum albumin (RIHSA) were distributed regularly and various iodine-131 labelled compounds were imported and distributed. Strontium-90 in the form of plates was used for the treatment of superficial lesions.

Arrangements were made during 1957-58 for the regular supply of tantalum-182 "hairpins", available on loan to hospitals. Cobalt 58 labelled vitamin B.12 is regularly obtained and distributed.

Reference to Appendix III., Table 2, will show the increase in quantities used. Radioactive decay of short-lived isotopes between the arrival in bulk supplies in the Laboratory and administration of individual doses, is considerable; therefore the doses are dispensed to contain the desired activity at the time of administration. In spite of this decay and of variations in demand, 86 per cent. of the phosphorus-32 and 81 per cent. of the iodine-131 arriving in the Laboratory during 1956-57 were utilized. The percentages used during 1957-58 were 79 per cent. and 72 per cent. respectively.

The quantities of the isotopes used medically have increased considerably during the period under review. The increase in the number of iodine-131 doses reflects not only an increase in the use of the isotopes in proven cases of diffuse toxic goitre, but also an increase of its appreciation for ablating the thyroid in other conditions and of its use in treatment of carcinoma of the thyroid with metastases.

Isotopes for Industrial and Research Purposes: The use of radio-isotopes in industry is increasing and the Laboratory has been called on for advice in a number of possible applications which have involved the development of

suitable techniques. These applications involve considerable assistance with scientific techniques unfamiliar to industry, such as advice on the choice of suitable equipment (often requiring preliminary investigation), detailed consideration of protection problems, planning of disposal of radioactive wastes and provision of suitable information, so that all personnel using the isotopes will be fully informed of the possible hazards and methods of avoiding them.

In several fields of scientific research, extensive use of radio-isotopes is being made by University Departments and the C.S.I.R.O. When required, the Laboratory provides advice regarding the design and construction of suitable rooms and ancillary equipment and on proposed procedures. Often preliminary investigations are carried out under the supervision of the Laboratory and, in cases where an organization has not yet established its own isotope section, the Laboratory has provided working facilities.

PROTECTION SERVICES

The ever-increasing use of ionizing radiations in medicine, research and industry could, if uncontrolled, lead to serious hazards to health, not only among those actively engaged in their use, but also among those working or living in the vicinity. Investigations of the degree of protection necessary in particular applications of X-rays and radioactive materials continue to be an important activity of the Laboratory.

In the past two years specifications have been prepared for the installation of protective materials in 27 X-ray departments, of which two are intended for therapy, twenty for medical diagnosis and five for industrial radiography. The "background" radiation was measured in six diagnostic X-ray departments, three industrial laboratories and four research centres.

The dose-rate due to stray radiation was measured in eight diagnostic departments, six industrial premises and eight research centres during 1957-58 and tests for contamination by radioactive substances were made at five centres.

So that the radiation dose to the individual worker may be regularly assessed, the Laboratory provides a film-badge service for those occupationally exposed to radiation. A total of 12,548 film badges worn by people working with radiation during 1956-57 was received for processing, and assessment of exposure from 112 centres: the corresponding figures for 1957-58 were 16,010 films and 132 centres. When an excessive exposure is indicated by a film badge, the cause of such exposure is sought with a view to preventing repetition.

Protective clothing is frequently sent to the Laboratory by local manufacturers and X-ray firms for inspection. The articles are inspected for flaws, and measurements are made of the lead-equivalent thickness in order to ensure compliance with recognized standards. During the period, 142 gloves, 141 aprons and 48 sheets were examined.

The Laboratory has continued to provide assistance to those who supervise the use of radioactive paint in luminizing instrument dials. Four tests were made on the exhaled breath of people employed in this industry as a check that they had not ingested radium from the paint during the work.

Since early in 1956, fall-out samples collected at a number of systematically selected places throughout Australia have been measured at a special low-level counting laboratory. The establishment of the sampling network was carried out in conjunction with the Department of Meteorology and Supply at the request of the Australian Atomic Weapons Tests Safety Committee.

ADVISORY SERVICES

A comprehensive library service is provided by the specialized library maintained at the Laboratory. A Library Information Bulletin is published at intervals and is at present sent to over 100 institutions and individuals.

Under the Colombo Plan Training Scheme, the Laboratory has been responsible for placing sixteen trainees in X-ray Diagnostic and Radiotherapy Departments of a number of hospitals. The progress of these trainees has been watched by the Laboratory and special assistance has been provided where necessary.

The Laboratory is represented on several Committees set up by the National Health and Medical Research Council. These Committees are: The Standing Committee on X-rays, the Standing Committee on Radio Isotopes, the Radiotherapy Advisory Committee, the Radiation Hazards Committee and the Industrial Hygiene Committee. The Laboratory is also represented on the Committee on X-rays of the Hospitals Commission of Victoria, the Board of the Cancer Institute of Victoria and the Committees on X-ray Equipment and on Anaesthetics, of the Standards Association of Australia.

Two members of the Laboratory staff are members of the Conjoint Board of the College of Radiologists of Australasia and the Australasian Institute of Radiography. This Board is the body responsible for the training of radiographers and radiotherapy technicians in Australia.

In addition, the Director of the Laboratory, Mr. D. J. Stevens, is the Australian representative on the United Nations Scientific Committee on the Effects of Atomic Radiations and is a member of the Australian National Radiation Advisory Committee.

APPENDIX I

RADIUM SERVICES

1st July, 1956 to 30th June, 1958

Item.	Quantity.	
	1956-57.	1957-58.
1. Total movement of Commonwealth Radium (mgm)	1,046	2,055
2. Quantity of radium measured (mgm)	11	45
3. Number of radium containers tested—		
Commonwealth .. .. .	..	119
Private	53	57
4. Number of searches for lost radium or radon containers	1	..
5. Number of calculations of gamma-ray dosages	7	..

APPENDIX II

RADON SERVICES

1st July, 1956 to 30th June, 1958

Table 1—Radon Services. C.X.R.L.

Quantities of radon issued are those at time of use

Item.	Quantity.	
	1956-57.	1957-58.
1. Radon issued for all purposes (including amounts in items 11 and 13) (mc)	88,393	77,572
2. Radon issued for treatment purposes only (including amounts in items 11 and 13) (mc)	86,798	75,926
3. Radon issued to hospitals (including radon re-issued in nasal applicators and radon plates) (mc)	59,880	47,500
4. Location of hospitals to which radon was issued—		
Metropolitan	7	8
Country	7	9
Interstate	4	4
5. Radon issued to private practitioners (including radon re-issued in nasal applicators) (mc)	26,918	28,426
6. Location of private practitioners to whom radon was issued—		
Metropolitan	11	16
Country	3	2
Interstate	3	5
7. Containers issued (including only capillary implants, needles and tubes of all classes)	7,352	7,447
8. Returnable containers not returned	10	2
9. Implants (0.5 mm. Pt. eq) received from Sydney*—		
Number	781	340
Total radon (mc)	538	266
10. Nasal applicators—		
Number issued	36	36
Total radon (mc)	54,098	46,053
Total patients treated	2,399	2,188
11. Radon re-issued in nasal applicators (mc)	34,938	27,771
12. Radon plates (eye applicators)—		
Number issued	16	12
Total radon (mc)	1,610	1,251
13. Radon re-issued in radon plates (mc)	81	..
14. Industrial sources—		
Number issued	2	1
Total radon (mc)	820	600
15. Radon issued for research purposes (mc)	775	1,047
16. Total radon extracted from solution (mc)	102,914	102,633
17. Total radon at time of use (mc)†	52,836	49,535
Item 17		
18. Ratio $\frac{\text{Item 17}}{\text{Item 16}} \times 100$	51.3	48.5
19. Number of purifications	197	184

* Victorian requirements of radon in gold capillary of 0.5 mm. Pt. eq. filtration, are obtained from the Bureau of Physical Services, Sydney.

† These figures do not include radon received from Sydney in implants of 0.5 mm. Pt. eq. filtration, nor the radon issued for use a second time in nasal applicators or radon plates.

APPENDIX II—continued

Table 2—Radon Services. Other Centres
Quantities of radon used are those at time of use

Item.	Quantity.	
	1956-57.	1957-58.
(a) Sydney.		
1. Radon issued—		
Hospitals (mc)	6,056	7,850
Private Practitioners (mc)	3,871	2,649
Research purposes (mc) .. .. .	..	..
2. Total radon extracted from solution (mc)	24,417	25,744
3. Total radon at time of use (mc)	9,867	10,499
Item 3		
4. Ratio $\frac{\text{Item 3}}{\text{Item 2}} \times 100$	40.4	40.8
5. Number of purifications	71	71
(b) Brisbane.		
1. Radon issued—		
Hospitals (mc)	16,090	12,604
Private Practitioners (mc)	1,252	871
Research purposes (mc) .. .. .	..	20
2. Total radon extracted from solution (mc)	33,337	28,860
3. Total radon at time of use (mc)	17,342	13,495
Item 3		
4. Ratio $\frac{\text{Item 3}}{\text{Item 2}} \times 100$	52.0	46.7
5. Number of purifications	251	229

Table 3—Useful Radon Yields

Millicuries of total radon issued per milligram of radium in solution

Centre.	Year.	Radium in Solution (mgm).	Radon Issued (mc).	Useful Yield (mc/mgm).
Melbourne	1956-57	2,617	88,393	33.8
	1957-58	2,617	77,572	29.8
Sydney	1956-57	877	9,867	11.3
	1957-58	877	10,499	12.0
Brisbane	1956-57	933	17,342	18.6
	1957-58	933	13,495	14.5

Table 4—Gold Tubing Issued to Radon Centres, 1st July, 1956 to 30th June, 1958
Length in feet

Radon Centre.	Gold Capillary 0.3 mm. pt. eq.		Gold Capillary 0.5 mm. pt. eq.		Gold Casing for Needles 0.8 mm. pt. eq.	
	1956-57.	1957-58.	1956-57.	1957-58.	1956-57.	1957-58.
Melbourne	707	733	..	..	24	24
Sydney	62	44	72	60	7	7
Adelaide .. .. .	..	..	..	..	4	3
Brisbane .. .. .	..	..	532	511	..	..
Christchurch .. .. .	..	28	34	68	..	9
Total	769	805	638	639	35	43

APPENDIX III

RADIO-ISOTOPE SERVICES

Table 1—Isotopes delivered to the Laboratory

1st July, 1956 to 30th June, 1957

In the case of isotopes required for medical use the quantity given are those at time of arrival at the Laboratory; in all other cases the quantities given are those at time of despatch from the overseas centre.

Isotope.	No. of Orders.	Quantity. (mc)	Use.*	Remarks.
Au ¹⁹⁶	42	5,700	M	
Ba ¹⁴⁰ + La ¹⁴⁰ ..	1	2	R	
Be ⁷	1	2	R	
Cl ¹⁴	76	45.5	R	44 compounds
Ca ⁴⁵	2	0.11	R	
Ce ¹⁴¹	2	10	R	
Ce ¹⁴⁴	1	10	R	
Cl ³⁶	6	0.2	R	
Co ⁶⁰	2	143.5	M	
Co ⁶⁰	2	428	I	
Co ⁶⁰	4	5,238	R	
Co ⁶⁰ Cl ₂	1	4	R	
Cr ⁵¹	11	63	M	
Cr ⁵¹	7	17	R	
Cs ¹³⁴	1	5	R	
Cs ¹³⁷	5	63	R	
Fe ⁵⁵	1	0.2	R	
Fe ⁵⁹	10	1.5	M	
Fe ⁵⁵ + Fe ⁵⁹ ..	4	0.04	R	
I ¹³¹	53	10,700	M	
RIHSA-I ¹³¹	2	2.2	R	
RIHSA-I ¹³¹	7	9	M	
Ir ¹⁹²	26	10,623	I	
Mixed Fission Products ..	1	10	R	
Na ²²	5	2.6	R	
Ni ⁶³	1	1	R	
P ³²	29	1,495	M	
P ³²	1	5	M	Chromic phosphate
P ³²	3	5	M	Isotonic solution
Pb ²¹⁰	1	2	R	
Po ²¹⁰	2	11	R	Air ionizing electrode
Pu ²³⁹	1	..	R	2 sources
Ra	4	..	R	Various types of sources
Ra-Be	15	98 mgm	R	Neutron sources
Rb ⁸⁶	1	5	R	
Ru ¹⁰⁶	2	11	R	
S ³⁵	34	193	R	8 compounds
Sb-Be	1	1,000	R	
Sr ⁹⁰	5	19	R	Solution
.. ..	4	..	R	4 foils
.. ..	23	..	M	23 plates of varying activation
.. ..	1	500	R	Source
Sr ⁸⁹	1	10	R	
Ta ¹⁸²	1	21.7	M	Wires
H ³	2	..	R	8 targets
H ³	1	1,000	R	Gas
H ³	1	1,000	R	Water
U (natural) ..	2	101 gms.	R	

* Use—I: Industrial; M: Medical; R: Research.

APPENDIX III—continued

Table 1 (a) Isotopes delivered to the Laboratory as Irradiation Units
1st July, 1956 to 30th June, 1957

Isotope.	No. of Orders.	Quantity (gm).	Use.*	Remarks.
Ag ¹¹⁰	1	2	I	10 units
Hg ²⁰³	1	400 mc.	I	
S ³⁵	1	20	R	
Sn ¹¹³	1	2	R	
Se ⁷⁵	1	2	R	
Th (natural) ..	1	140	R	
Eu ¹⁵² + Eu ¹⁵⁴ ..	1	..	R	

Table 1 (b)—Stable Isotopes delivered to the Laboratory
1st July, 1956 to 30th June, 1957

Isotope.	No. of Orders.	Quantity.	Use.*	Remarks.
Au ¹⁹⁷	3	300 ml.	M	
B ¹⁰	1	2 targets	R	
Li ⁶	1	5 targets	R	

* Use—I: Industrial; M: Medical; R: Research.

Table 2—Isotopes delivered to the Laboratory
1st July, 1957 to 30th June, 1958

Isotope.	No. of Orders.	Quantity (mc).	Use.*	Remarks.
Au ¹⁹⁸	107	8,893	M	
Ba ¹³³ + Cs ¹³⁷ ..	1	..	R	Mock iodine capsules—two only
Be ⁷	1	4	R	
C ¹⁴	152	85.4	R	72 different compounds
Ca ⁴⁵	9	11.2	R	
Ce ¹⁴¹	1	5.6	R	
Ce ¹⁴⁴	2	20	R	
Cl ³⁶	5	0.22	R	
Co ⁵⁸	7	0.24	M	Labelled vitamin B.12
Co ⁶⁰	12	7,217	I	
Co ⁶⁰	5	91.9	R	
Cr ⁵¹	24	195	M	
Cr ⁵¹	4	11	R	
Cs ¹³⁷	6	143	R	
Fe ⁵⁵	1	0.05	R	
Fe ⁵⁹	22	3.8	M	
Fe ⁵⁹	7	0.68	R	
H ³	2	6,000	R	Gas
H ³	1	5,000	R	Tritiated water
H ³ -Ti	1	..	R	Four targets
Hg ²⁰³	3	1,660	I	
I ¹³¹	50	13,220	M	
I ¹³¹	2	526	R	

APPENDIX III—continued

Isotope.	No. of Orders.	Quantity (mc).	Use.*	Remarks.
I ¹³¹	1	0.1	M	Reference standard
I ¹³¹	1	2	M	Diodrast
I ¹³¹	11	21	M	Raolein
I ¹³¹	32	34.6	M	RIHSA
I ¹³¹	11	21	R	RIHSA
I ¹³¹	1	2	M	Rose bengal
Ir ¹⁹²	33	110,460	I	
Mn ⁵⁴	1	0.1	R	
Nd ¹⁴⁷	1	0.15	R	
Ni ⁶³	1	1	R	
P ³²	30	1,670	M	
P ³²	5	23	R	
P ³²	1	7	M	Isotonic solution
P ³²	13	121	M	Colloidal chromic phosphate
P ³²	1	5	R	Sodium glycerophosphate
Po ²¹⁰	6	122	R	
Pr ¹⁴³	1	0.15	R	
Ra ²²⁶	2	..	R	Metal foils of low activity
Ra ²²⁶ -Be ..	4	20	R	Neutron sources
Rb ⁸⁶	2	5.7	R	
Ru ¹⁰⁶	1	4	R	
S ³⁵	30	352	R	Eight different compounds
Sb ¹²⁴	1	30	R	
Sb ¹²⁴ -Be ..	1	2,000	R	Neutron source
Sr ⁸⁹	2	30	R	
Sr ⁹⁰	15	370	M	Fifteen plaques
Sr ⁹⁰	2	80	R	Two plaques
Sr ⁹⁰	8	(18)	M	Eight ophthalmic applicators
Sr ⁹⁰	1	..	M	One metal foil
Sr ⁹⁰	2	0.5	R	Two metal foils
Ta ¹⁸²	4	192	M	Twelve wire "hairpins"
Tm ¹⁷⁰	1	8	R	
W ⁸⁵	2	25	R	

* Use—I: Industrial; M: Medical; R: Research.

Table 2 (a)—Isotopes delivered to the Laboratory as Irradiation Units
1st July, 1957 to 30th June, 1958

Isotope.	No. of Orders.	Quantity.	Use.*	Remarks.
Gd ¹⁹³	1	1	R	Two units
S ³⁵	2	7.7	R	Two units

Table 2 (b)—Stable Isotopes delivered to the Laboratory
1st July, 1957 to 30th June, 1958

Isotope.	No. of Orders.	Quantity.	Use.*	Remarks.
Hg ¹⁹⁸	1	5 mgm	R	

* Use—I: Industrial; M: Medical; R: Research.

APPENDIX III—continued

Table 3—Distribution of Isotopes for Medical Use
1st July, 1956 to 30th June, 1958

In this table the word "issue" denotes an isotope container despatched from the Laboratory. The isotope in the container may consist of an individual dose, a number of such doses, or a bulk issue from which individual doses will be dispensed. The number of patients treated will therefore be at least as great as the number of issues.

Isotope.	Chemical Form.	Use.	1956-57.		1957-58.	
			No. of Issues.	mc at Use.	No. of Issues.	mc at Use.
P^{32}	Orthophosphate in hydrochloric acid Orthophosphate in isotonic solution Colloidal chromic phosphate ..	Therapy diagnosis ..	295	1,157	237 26	1,237 12
		Diagnosis ..	50	1			2	1
		Therapy ..	..	..	13	121
		Total ..	345	1,158	278	1,371
I^{131}	Iodide Human serum albumin .. Diodrast .. Rose bengal .. Triolein	Therapy— General ..	410	3,778	515	5,391
		Carcinoma ..	70	4,599	42	3,887
		Diagnosis ..	3,762	159	4,305	192
		Diagnosis ..	7	5	32	17
		Diagnosis ..	..	..	1	1
		Diagnosis ..	..	..	1	1
		Diagnosis ..	..	..	11	10
Total ..	4,249	8,541	4,907	9,499		
Cr^{51}	Chromate in isotonic saline	Diagnosis ..	990	70	907	129
Au^{198}	Colloidal gold ..	Therapy ..	43	4,983	55	7,583
		Tracer ..	10	1	25	5
		Total ..	53	4,984	80	7,588
Fe^{59}	Ferric chloride ..	Diagnosis	64	0.7
Co^{58}	Vitamin B.12 ..	Diagnosis	42	0.25

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COMMONWEALTH ACOUSTIC LABORATORIES.

CLINICAL

The existing arrangement with the Department of the Army, under which Army personnel could attend the Laboratories for examination and tests, has been extended to include serving members of the R.A.A.F. and Navy. If

recommended for a hearing aid, servicemen may be fitted with a Calaid, the cost of fitting and maintenance being reimbursed to the Department of Health by the appropriate Service Department in each case.

A further arrangement was commenced during the period, under which the Directors of Health in all States were requested to refer any Public Service appointees suspected of having a hearing loss, to the Laboratories for investigation.

With greater numbers of children leaving school and certain Army, Navy, R.A.A.F., Repatriation and Social Services cases becoming ineligible for benefits under their respective schemes, approval was given for such cases to retain their hearing aids with free maintenance while, however, paying their own individual battery costs. For statistical purposes a new category, "Health", was started to record these cases.

A study on the factors associated with deaf adolescents, that affect their optimum employment, is being carried out and close liaison is maintained between the Department of Labour and National Service and the Laboratories regarding vocational guidance for these cases. Where possible, interviews are arranged with adolescents before they leave school to ensure that they are clear about future services and that proper vocational and associated educational guidance is being obtained.

The conversion to one-piece transistor calaids from the older valve type aids was continued and as at 30th June, 1958, there were 77.84 per cent. of the total cases using transistor hearing aids. It is anticipated that the changeover programme will be completed within the coming financial year (1958/59). Appended are statistics of the new cases attending and the number of new aids fitted during the period, along with Civil Aviation referrals and the total number of aids on loan as at 30th June, 1958.

A. NEW CASES ATTENDING THROUGHOUT AUSTRALIA

	1956-57.		1957-58.	
	Attending.	Fitted with aid.	Attending.	Fitted with aid.
Children	2,580	288	2,206	274
Repatriation	1,249	421	1,271	456
Miscellaneous (on behalf hospitals and E.N.T. Specialists)	775	..	494	..
Social Services	20	12	22	20
Army	76	6	38	8
Navy .. .. .	..	..	88	4
Royal Australian Air Force	3	1	45	3
Directors of Health (new appointees, compensation cases suspected of deafness)	20	..	245	..
Total	4,723	728	4,409	765

B. CIVIL AVIATION REFERRALS (Six-monthly medical Air Crew Licence)

	1956-57.	1957-58.
New	728	567
Repeat	2,274	2,301
Total Tests	3,002	2,868

C. TOTAL AIDS ISSUED ON LOAN UP TO 30th JUNE, 1958

	Valve.	Transistor.	Total.	Per Cent. Transistor Aids to Total.
Repatriation	1,701	4,264	5,965	71.48
Health	297	1,007	1,304	77.24
Commonwealth Social Services	1	34	35	97.14
Army .. .. .	..	16	16	100
Children	151	2,227	2,378	93.65
Navy .. .. .	..	2	2	100
Royal Australian Air Force .. .. .	..	2	2	100
Total	2,150	7,552	9,702	77.84

RESEARCH

Investigations are being undertaken on behalf of the Department of the Navy into the reduction to safe working levels for crews of noise within ship engine-rooms and analysis of gear-box noise measurements taken at dockyards is being carried out to permit corrective action where necessary before installation of same in ships.

Throughout 1956-58 the Laboratories have been engaged on aircraft noise problems for the R.A.A.F. and Civil Aviation authorities. A noise survey of all aircraft landing and taking-off at Sydney Airport (Mascot) was undertaken, including differences in noise levels at various altitudes as well as under different atmospheric conditions.

An Occupational Deafness Committee comprising representatives of the New South Wales Industrial Hygiene Division, the New South Wales Department of Labour and Industry and the Director of the Commonwealth Acoustic Laboratories, has been formed to survey noise in industry and make recommendations as to the possible need for protections and to determine noise levels beyond which it is imperative that protective apparatus be made available.

Following recommendations of this Committee a conservation of hearing programme is now being carried out and measurements of industrial employees' hearing are being taken, along with recordings of industrial noise in the field for later analysis. Instruments used are calibrated to correct standards by the Laboratories.

A noise survey at the site of the proposed Opera House was carried out on behalf of the Sydney Opera House Committee for the designers. The survey was also of interest to the Laboratories, as it forms part of a long-term study of city traffic noises and the site chosen, Bennelong Point, is adjacent to the busiest section of Sydney's waterways. The survey covered measurements taken during the day and night and included shipping, aircraft and traffic noise.

PUBLICATIONS

AIRCRAFT NOISE AROUND SYDNEY AIRPORT. Report C.A.L. 11, July, 1957.

SPEECH HEARING TESTS FOR CIVIL AVIATION AIRCREW. Report C.A.L. 12, November, 1957.

NOISE AT SYDNEY OPERA HOUSE SITE. Report C.A.L. 13, July, 1958.

THE AUDIOMETRIC TESTING OF CHILDREN IN SCHOOLS AND KINDERGARTENS. Report C.A.L. 14, March, 1958.

COMMONWEALTH BUREAU OF DENTAL STANDARDS

STANDARDS

The Bureau has continued to assist in the preparation of Australian dental standards and is also contributing to the work on international standards for dental materials.

Through the Standards Association of Australia, specifications for the following were published or completed during the period:—

Australian Standard T. 9—Wrought Golds for Dental Purposes.
" " T.10—Dental Sticky Wax.
" " T.11—Denture Base Resin.
" " T.13—Denture Casting Gold.
" " T.15—Alginate Impression Material.
" " T.16—Agar Impression Material.

Drafts for local anaesthetic solution, impression paste and modelling wax have been issued for public critical review and standards for several other materials were in various stages of development at 30th June, 1958. A new sub-committee has been formed to handle dental photographic materials and others are approved for amalgams and dental equipment.

Through the Federation Dentaire Internationale, international specifications for dental mercury and amalgam alloy have been approved at a meeting held in Rome. Assistance has also been given the Specifications Committee of the International Association for Dental Research in its standards programme.

TESTING

An analysis of the testing carried out during the period gave the total number of samples for which reports were issued as 435 with the following distribution:—

Mineral products	29
Cements	34
Waxes and impression materials	47
Synthetic resins	110
Metals and alloys	162
Instruments	21
Surgical and therapeutic materials	32

Of these, 52 samples were tested for public instrumentalities, 55 for overseas firms and the remainder chiefly for Australian firms.

RESEARCH

Investigations have continued on the manufacture of amalgam alloys, acrylic teeth and denture base resin and also various aspects of the hygroscopic expansion of casting investments, the setting of gypsum plasters, the welding and soldering of orthodontic wires, and the properties of amalgam fillings.

In relation to the development or revision of Australian Standards, investigations have been conducted on the direct determination of the efficacy of casting investments, the strength of investments at elevated temperatures, the testing of stainless steel wire and solders, the controlled preparation of amalgam specimens, and the acidity of local anaesthetic solutions.

Other projects include the quality of the surface of gypsum models, the effect of coarse particles on the strength of plaster, cold-curing acrylic model material, orthodontic helical springs and stainless steel wires, the expansion of amalgam over long periods, the manufacture of hypodermic needles and the causes of their breakage, and defects in acrylic teeth.

INFORMATION

Considerable assistance on a wide variety of topics has been given in a consultative or lecturing capacity to dental schools, dentists individually and collectively, and to manufacturers and distributors of dental materials. Government organizations, including the Department of Customs and Excise, have sought advice on a number of items.

Lectures and demonstrations have been given to various groups including branch meetings of the Australian Dental Association in Melbourne, Adelaide and Perth, country conventions at Warrnambool and Geelong, Victoria, Wagga Wagga, New South Wales, and Albany, Western Australia.

Five talks and demonstrations were presented to the Study Group of Western Australia, Perth, in a seminar on dental materials.

CONFERENCES

The Director of the Bureau presented a report entitled "Dental Materials—Specification and Standardization" at the International Dental Congress held in Rome and also gave the opening address at the round-table discussion on testing and standardization. Prior to this Congress the Director participated in conferences leading to the preparation and adoption of the first international dental standards.

The Director also spoke on Australian dental materials research, teaching and standards, at the University of Medical Sciences, Bangkok, Thailand and at a conference on teaching of Dental Materials, Chicago, U.S.A.

PUBLICATIONS.

In addition to the regular "Dental Materials—Current Notes" series and various minor reports, the following papers were published:—

THE PRESENT STATUS OF SELF-HARDENING RESINS IN CONSERVATIVE DENTISTRY. *Bull. Alabama Dent. Assoc.*, Vol. 41, 1957, pp. 6-14.

AUSTRALIAN RESEARCH ON FILLING MATERIALS. *Dent. Delineator*, Vol. 8, 1958, pp. 3-8.

THE STUDY OF DENTAL MATERIALS IN THE UNIVERSITY COURSE. *Aust. Dent. J.*, Vol. 2, 1957, pp. 264-6.

THE EFFECT OF SURFACE AREA ON THE HYGROSCOPIC SETTING EXPANSION AND STRENGTH OF CASTING INVESTMENTS. *J. Dent. Res.*, Vol. 36, 1957, pp. 967-73.

THE RELATIONSHIP OF HYGROSCOPIC TO NORMAL SETTING EXPANSION OF CASTING INVESTMENTS. *J. Dent. Res.*, Vol. 36, 1957, pp. 974-6.

COMMONWEALTH HEALTH LABORATORIES

The various health laboratories established throughout Australia have continued to perform the functions for which they were set up, namely, laboratory work in the public health field, investigation of disease epidemics, examination of clinical specimens and the distribution of C.S.L. products. In addition, the laboratories have assisted in the collection of specimens for the W.H.O. Influenza Centre, established at the Commonwealth Serum Laboratories during 1957.

The numbers of pathological examinations and laboratory tests performed at each laboratory from 1st July, 1956, to 30th June, 1958, were as follows:—

Location.	1956-57.	1957-58.
Albury	25,835	27,700
Alice Springs*	2,906	7,264
Bendigo	28,700	47,086
Cairns	36,212	43,612
Canberra	66,543	72,371
Darwin	25,625	25,499
Hobart	34,967	39,235
Kalgoorlie	27,464	40,385
Launceston	34,526	20,462
Lismore	42,448	52,087
Port Pirie	10,780	11,816
Rockhampton	30,222	38,813
Tamworth	27,737	36,892
Toowoomba	41,643	56,008
Townsville	67,121	72,379

* Commenced operations during December, 1956.

Survey of Soft Tissue Infection: On 28th April, 1958, a Survey of Soft Tissue Infections in General Practice throughout Australia, was commenced by the Commonwealth Department of Health in co-operation with the Australian College of General Practitioners.

This project has been organized on a nation-wide basis with the Commonwealth Health Laboratories, the Commonwealth Serum Laboratories, Melbourne, and the laboratories of the School of Public Health and Tropical Medicine, Sydney, as the focal points. The swabs from several practices in Adelaide are being examined at the Institute of Medical and Veterinary Science in that city.

Lesion swabs and nasal swabs are being taken from 100 consecutive cases of soft tissue infection occurring in each practice and culture and sensitivity tests are being carried out against penicillin, streptomycin, chloramphenicol, erythromycin and tetracycline.

It is hoped to obtain information on the following aspects of the problem:—

- (1) Relationship of lesions to nasal carriage.
- (2) The actual phage types present in each locality and the overall distribution in Australia.
- (3) Morbidity statistics.
- (4) Anatomical distribution of lesions.
- (5) Occupational incidence.
- (6) Sex incidence.
- (7) Family spread.
- (8) Investigations of recurrence and chronic cases.
- (9) Antibiotic sensitivity in the various localities.

A detailed report of the Survey should be ready for publication in 1959.

Albury: Investigations at the laboratory into cases of hepatitis increased towards the end of 1956-57. Penicillin resistant staphylococci were encountered in an increasing number of cases, but the use of penicillin in increasingly larger doses seemed to have the desired clinical result in many cases.

There has been an increase in the amount of haematology associated with transfusions as the Red Cross Blood Bank is well established and greater use has been made of the facilities available.

Hepatitis remains endemic in some local areas and the dairy districts have produced the usual number of cases of brucellosis.

During 1957-58, there was a high incidence in both children and adults of a disease characterized by mild pyrexia, malaise, enlargement of the lymph glands and an absolute lymphocytosis. The majority of these cases did not show a positive Paul Bunnell reaction.

Alice Springs: A laboratory was established at Alice Springs during December, 1956, and since that date has functioned satisfactorily, the work being undertaken by a Technical Officer.

Cairns: This laboratory is one of the few which still directly assist in quarantine matters. Pratique was granted in respect of 67 ships during the two year period, 33 in 1956-57 and 34 in 1957-58.

Much work has been done in the field of the extermination of rats and vermin on ships and wharfs, particularly in respect of the development and use of Warfarin as a rat poison. The number of poisonings with "1080" on ships decreased from fifteen in 1956-57, to eight in 1957-58. Twenty ships were sprayed for cockroaches in 1956-57 and 27 insecticide sprayings were carried out on ships during 1957-58.

A severe epidemic of Leptospirosis, which has been associated with the very high rainfall experienced at the beginning of the cane-cutting season in 1957, occurred in and around Babinda during May and June, 1957. Of the 140 blood cultures for 1956-57, mainly in May and June, 53 were positive. In February, 1957, a death occurred in this area, attributable to the recently identified organism, leptospirae celledoni.

The laboratory played a major part in the successful blood donor drive for the Cairns Blood Bank, in February, 1957.

Blood samples from Aborigines and Torres Strait Islanders were forwarded to Dr. Smithies, of the Connaught Medical Research Laboratories, at the University of Toronto, Canada, during 1957. He is using a sensitive electrophoretic method for separating serum proteins for investigation. This work was continued during 1958, and a joint paper on the subject is now in the final stages of preparation. It is considered that the results of this project should be of great interest to anthropologists.

Work on haemoglobin values in the tropics has been summarized in a paper on the subject, which was presented at the annual meeting of the College of Pathologists, held in Sydney, in August, 1957.

The incidence of kerato-acanthoma or molluscum sebaceum in the district has been a subject of investigation at the laboratory during the period under review.

Darwin: During 1956-57, over 400 native children were examined at various missions and settlements in connexion with the investigation of native children's anaemia and malnutrition. These investigations were continued into 1957-58 and a clearer picture of these conditions is emerging.

Large groups of malarial slides from Roper River, Goulburn Island, Oenpelli, Caledon Bay and some stations, have been made following the occurrence of malaria at the end of the wet season in 1957.

A special project was commenced in 1958, to collect data on the incidence and distribution of helminthic and parasitic bowel infestations in the northern part of the Northern Territory.

Work relating to blood transfusions has increased, particularly in respect of anaemic natives. Co-operation with the Red Cross in this respect has permitted this increase to be met.

Hobart: In April, 1957, an outbreak of diphtheria occurred in southern Tasmania, resulting in over 1,000 swabs being examined in the laboratory. In addition, there has been a greatly increased demand for biochemical and bacteriological tests at the laboratory.

Kalgoorlie: Following the appointment of a chest physician at the local hospital there was a marked increase in associated tuberculosis laboratory investigations.

Launceston: The past two years have been marked by a changing distribution of work at this laboratory, with increasing bacteriological work from general practitioners, as opposed to haematology.

All the local Blood Transfusion Service serology is done at the laboratory and this aspect of the work has increased steadily.

Lismore: Bacteriological work and general microscopy have increased considerably over the period. Antibiotic sensitivity has become a major function of the bacteriology laboratory.

The completion of the thoracic block at the local base hospital has been reflected in the marked increase in work on tuberculosis, both cultural and microscopical, performed at the laboratory.

Since the opening at this laboratory of a serology centre for the detection and estimation of Rh and other antibodies, the Coombs tests, both direct and indirect, have increased by approximately 100 per cent. Compatibilities and their allied tests, grouping and Rh factor, have also increased.

Port Pirie: Several cases of infectious mononucleosis, one meningococcal meningitis, two influenza meningitis and an isolated outbreak of diphtheria occurred in the area during 1956-57. The incidence of rheumatic fever in the district has been high, both in 1956-57 and 1957-58. One case of mumps encephalitis was seen in 1957-58.

Wide use of the Laboratory's services has been made by general practitioners in the outlying areas, particularly in respect of ante-natal blood examinations and antibiotic sensitivity tests on pathogenic organisms.

The Blood Donor Panel operated successfully at Port Pirie, arrangements for transfusion of blood at the local hospital and the necessary technical procedures being carried out by the Laboratory.

Routine blood examinations have been carried out in respect of employees of the locally established uranium processing plant, as well as blood and urine

analyses for evidence of lead poisoning in employees at the Broken Hill Associated Smelting Works.

Tamworth: Bacteriological examinations increased considerably at this laboratory during 1956-57. Tissues submitted from operative procedures increased greatly in number during 1958, possibly due to an increase in the amount of surgery performed at local hospitals.

An increasing volume of work has come from the Blood Bank. Klines and Haemoglobin estimations as well as the routine cross matching tests, were performed on all donors.

A considerable number of cases of infective hepatitis occurred in the district, two cases of which were fatal with death in hepatic coma. Replacement transfusion was attempted in both these cases.

Toowoomba: This laboratory is now located in the new premises in the Thoracic Block at the Toowoomba General Hospital. The move to these new premises was made during September, 1957.

Townsville: The laboratory at this centre is a base establishment for the rapidly developing southern half of north Queensland, performing all routine and many special investigations required in the area. Due to considerable industrial growth the laboratory has been consulted in industrial hygiene matters.

There has been a steady increase in routine work, particularly with regard to blood grouping and cross-matching techniques. Investigation of tuberculosis and biochemical tests increased during 1957-58.

A small parcel of known blood genotypes was established during 1956-57, with a view to increasing efficiency in the screening of Rh negative mothers, for antibodies. A start was made in blood volume estimations using Evans blue dye, and this method was introduced successfully in 1957-58, together with Bromsulphthalein liver function tests.

WORLD HEALTH ORGANIZATION

TENTH WORLD HEALTH ASSEMBLY

The Tenth World Health Assembly was held at Geneva from 7th to 24th May, 1957. It was attended by 79 Member States and Associate Members, representatives of the United Nations and its specialized agencies, observers for 36 intergovernmental and non-governmental organizations in official relations with W.H.O., and observers from several non-member States.

The Australian delegation at the Assembly consisted of Dr. D. A. Cameron, Minister for Health, Dr. A. J. Metcalfe, Director-General of Health, and Mr. G. A. Jockel, Permanent Representative of Australia to the European Office of the United Nations. The alternate delegates were Dr. J. B. Mathieson, who was at the time Chief Medical Officer, Commonwealth of Australia, Australia House, London, and Dr. J. J. Gard, formerly Chief Medical Officer, Australian Legation, Rome.

Dr. Cameron was appointed as one of the three vice-presidents to the Assembly. He became the first Australian Minister for Health to address the World Health Assembly, and spoke of Australia's contribution towards international health work.

At this Assembly, Dr. Metcalfe was appointed as a member of the Executive Board of W.H.O., and was subsequently elected Chairman for the Technical Discussions. The appointment is for a term of three years, and meetings of the Board are held twice a year.

The programme of work for 1958 was planned in conformity with the policy outlined in the General Programme of Work for the period 1957-60, as adopted by the Eighth Assembly. Increased attention was to be given to the development of public health laboratory services. Problems in the field of maternal and child health, nutrition and dental health were to receive attention.

The mental health programme was to concentrate on the influence of social conditions in the causation of mental ill health and on the problems of recovery and rehabilitation of the mentally sick.

The teaching of preventive and social medicine was to be established on a firmer and wider basis than before. Considerable training as part of the extensive malaria-eradication programme was also to be undertaken by a great number of countries.

In the endeavour to eradicate communicable diseases increased work will be undertaken on the collection and dissemination of scientific data on resistance, liaison with laboratories collaborating in world-wide research activities, and the establishment of standard tests.

Work on the peaceful uses of atomic energy will be continued in particular on the standardization of radiochemical methods of analysis in health studies and on the genetic effects of radiation in man.

Among some of the other significant resolutions adopted by the Assembly were the following:—

Health and Vital Statistics: Investigations were to be commenced on the most effective means of developing both technical and programme aspects of vital and health statistics systems. These are of major importance in the field of public health.

Epidemiology of Cancer: It was resolved that an expansion of work on cancer epidemiology and statistics was desirable in view of the extent of the disease in the world.

Malaria Eradication: Because of the large financial burden of maintaining the malaria eradication programme the Assembly stressed that new methods of fund-raising be investigated. It was also mentioned that there was a need for stimulation of malaria research.

Technical Discussions: The subject discussed was "The role of the hospital in the public-health programme". Although the subject was one on which there could be no final conclusions the informal exchange of views proved of considerable value to all participants. Dr. Metcalfe in his capacity as Chairman, reported to the Assembly on the findings of the 200 members who took part in the discussion.

REGIONAL COMMITTEE FOR WESTERN PACIFIC

Dr. H. E. Downes, Assistant Director-General of Health, and Miss E. Warren of the Department of External Affairs attended the seventh session of the Western Pacific Region as representatives from Australia, which is one of the twelve member countries of this Regional Committee. The meeting was held in Manila, Philippines, from 7th to 13th September, 1956.

Problems discussed were the eradication of malaria and other insect-borne diseases, the integration of preventive and curative medicines, the control of leprosy and tuberculosis, mental health and smallpox.

ELEVENTH WORLD HEALTH ASSEMBLY

The Eleventh World Health Assembly took place at Minneapolis, Minnesota, U.S.A., from 28th May to 13th June, 1958. The delegates of 85 Member States and Associate Members were present, as were also representatives of the United Nations and its specialized agencies, of two inter-governmental and 32 non-governmental organizations in official relations with W.H.O., and observers from several non-member States.

The Australian delegation consisted of Dr. A. J. Metcalfe, Director-General of Health, Mr. T. Pyman, Councillor, Australian Embassy, Washington, D.C., and Dr. C. R. Wiburd, Commonwealth Director of Health for New South Wales.

For 1959 the programme planned was to be mainly a continuation and consolidation of the main features of the previous two years. In the field of communicable diseases increased emphasis has been planned for malaria eradication and treponematosi eradication. Tuberculosis control will be more extensive. In this respect the Western Pacific region will hold a study group to meet in Manila at which representatives of five countries producing B.C.G. vaccine in this region will meet (Australia, China, Japan, the Philippines and Viet Nam).

Further projects on bilharziasis, leprosy and cancer have been proposed.

Ever-increasing attention is being given to projects which directly contribute to the strengthening of national health services. In the field of dental health a seminar on dental health was planned to be held in Australia early in 1959. In mental health the proposed programme included increased assistance to several countries in integrating mental health activities into general public-health work, and in studying juvenile delinquency. In the important field of peaceful

uses of atomic energy, special emphasis was proposed on the education and training of health workers in the preventive aspects of radiation hazards arising from the use of nuclear energy.

Some of the important resolutions passed at the Assembly were:—

Environmental Sanitation: The World Health Organization will review the assistance given to governments in this field, with particular reference to the provision or improvement of potable water supplies and the adequate disposal of human wastes. From this review suggestions and proposals for further activities in this field may be made.

Intensified Research Programme: Following a proposal by the United States of America and the offer of a substantial financial contribution, expansion of the role of the World Health Organization in research is planned. Further knowledge is needed particularly on the aetiology, treatment and prevention of diseases common to mankind, including chronic diseases such as cancer, heart disease and other diseases.

Review and Appraisal of W.H.O. Fellowships: It was proposed that further improvements be made in the planning of requests, the selection of candidates and the proper employment of full utilization of fellows on return.

Eradication of Smallpox: The Assembly recommended that smallpox vaccination be carried out in countries in which principal endemic foci of smallpox exist.

REGIONAL COMMITTEE FOR WESTERN PACIFIC

Dr. H. E. Downes, Assistant Director-General of Health, attended the eighth session of the Western Pacific Regional Committee as the representative of Australia. The meeting was held in Hong Kong from 5th to 10th September, 1957.

The Committee noted the closer co-operation with member countries that had followed the appointment of area representatives. In addition to discussions which took place on procedural and administrative matters, technical discussions were held on leprosy control, malaria control and medical uses of radioactive substances.

Immediately following the Regional Committee meeting a Public Health Conference and Study Tour was held for a period of two weeks in Taiwan and Japan. Dr. Downes remained overseas as Australian representative for this tour.

TENTH ANNIVERSARY COMMEMORATIVE SESSION

The Anniversary Session was held immediately prior to the Eleventh Assembly at Minneapolis from 26th to 28th May, 1958. At this session addresses were given to the progress made by the World Health Organization, its accomplishments and its relationships with other United Nations agencies. The publication "The First Ten Years of the World Health Organization" gives the story of the development and work of the Organization during the initial ten years of its existence. At this Anniversary Session a number of the delegates of the Member States spoke of the benefits they have derived from the Organization. In a speech made by Dr. A. J. Metcalfe, Commonwealth Director-General of Health, it was mentioned that although Australia had not had to call on W.H.O. for any field assistance there were certain services provided which were of particular value to this country. Such services include the International Pharmacopoeia, the Manual of the International Statistical Classification of Diseases,

Injuries, and Causes of Death, the Epidemiological Intelligence Service which maintains a world-wide system of reception and distribution of notifications of quarantinable diseases, latest information on health laboratory techniques, and publications in the "Technical Report Series" which include reports of the various expert committees. In addition promising students have been given fellowships which enable them to have opportunities for study not available in this country.

SEMINAR ON ENVIRONMENTAL SANITATION

A seminar on Environmental Sanitation was held at Port Moresby, Territory of Papua and New Guinea from 5th to 23rd May, 1958. Dr. G. C. Scott, School of Public Health and Tropical Medicine, Sydney, represented Australia. This Seminar was the third of a series of three zonal seminars on environmental sanitation of the South Pacific Islands.

SEMINAR ON VENEREAL DISEASE CONTROL

A seminar on Venereal Disease Control for Western Pacific Region countries was held at Tokyo from 17th to 29th March, 1958. Twenty-two participants were invited to the seminar. The Australian representative at this seminar was Dr. H. C. Johnston of the New South Wales Department of Public Health.

COMMONWEALTH GRANTS

RED CROSS BLOOD TRANSFUSION SERVICE

Prior to 30th June, 1952, the cost of the Blood Transfusion Service conducted by the Australian Red Cross Society in all States, was borne by that Society with some assistance from the State Governments. In 1952, the Commonwealth agreed to make an amount of £50,000 available to the Society through the State Governments and a further grant of £44,000 was made available by the Commonwealth during the year ended 30th June, 1954. State assistance was to be continued at the previous level, with arrangements with the Society to share any deficit still remaining.

A further offer was made by the Commonwealth in March, 1954, of a grant to each State Government, equal to 30 per cent. of the certifiable operating costs of the Blood Transfusion Service incurred by the Society in each State. All States accepted the offer on the condition that 60 per cent. of the operating costs would be met by the State concerned, leaving 10 per cent. of the expense to be met by the Society, thus ensuring adequate maintenance of this important community service at a high level of efficiency.

Details of grants made by the Commonwealth during the period under review are included in the following table:—

State.	1956-57.	1957-58.
	(Based on Expenditure for year ended 30th June, 1956.)	(Based on Expenditure for year ended 30th June, 1957.)
	£	£
New South Wales	30,809	34,677
Victoria	31,698	37,655
South Australia	10,261	12,785
Queensland	19,352	22,069
Western Australia	11,079	13,106
Tasmania	3,938	4,971
	107,137	125,263

ROYAL FLYING DOCTOR SERVICE

A further increase was made in the Commonwealth annual grant towards maintenance, made to the Royal Flying Doctor Service of Australia, from £20,000 to £25,000, with effect from 1st July, 1957. The Commonwealth grant towards capital expenditure by the Service remained at £15,000 per annum for the two years under review. The capital expenditure grant is made on a £1-for-£1 basis in respect of approved projects.

The Commonwealth continues to meet the cost of the contents of standard medicine chests supplied for use in the various centres served by the Royal Flying Doctor Service when doctors give medical advice by radio.

HOME NURSING SUBSIDY SCHEME

Details of this scheme, which came into operation on 1st January, 1957, are included under the Nursing section of this report, on page 48.

COMMONWEALTH GRANTS

RED CROSS BLOOD TRANSFUSION SERVICE

From 1st July 1952 to 30th June 1953 the cost of the Blood Transfusion Service controlled by the Australian Red Cross Society in all States was borne by that Society with some assistance from the State Government. In 1952 the Commonwealth agreed to make an amount of £50,000 available to the Society through the State Government and a further grant of £44,000 was made available by the Commonwealth during the year ended 30th June 1954. State assistance was to be continued at the previous level with arrangements with the Society to share any deficit still remaining.

A further offer was made by the Commonwealth in March 1954 of a grant to each State Government equal to 10 per cent of the net operating costs of the Blood Transfusion Service incurred by the Society in each State. All States accepted the offer on the condition that 50 per cent of the operating costs would be met by the State concerned leaving 10 per cent of the expenses to be met by the Society, that essential maintenance of the important Commonwealth service at a high level of efficiency.

Details of grants made by the Commonwealth during the period under review are included in the following table.

State	1952-53	1953-54
New South Wales	10,000	10,000
Victoria	10,000	10,000
South Australia	10,000	10,000
Queensland	10,000	10,000
Western Australia	10,000	10,000
Tasmania	10,000	10,000
Total	50,000	50,000

ROYAL FLYING DOCTOR SERVICE

A further increase was made in the Commonwealth annual grant towards maintenance made to the Royal Flying Doctor Service of Australia from £30,000 to £25,000 with effect from 1st July 1957. The Commonwealth grant towards capital expenditure by the Service remained at £12,000 per annum for the two years under review. The capital expenditure grant is made on a £1-for-£1 basis in respect of approved projects.

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