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CHAPTER XII. PUBLIC HYGIENE.

§ 1. Public Health Legislation and Administration.

1. **General.**—(i) *Commonwealth.* The Commonwealth Department of Health, which was created on the 3rd March, 1921, and commenced its administration as from the 7th March, 1921, is controlled by the Commonwealth Minister for Health. The Department was formed by the extension and development of the Commonwealth Quarantine Service, the Director of Quarantine becoming the Commonwealth Director-General of Health and Permanent Head of the Department.

The functions of the Department are as follows :—

The administration of the Quarantine Act : The investigation of causes of disease and death and the establishment and control of laboratories for this purpose : The control of the Commonwealth Serum Laboratories and the commercial distribution of the products manufactured in those laboratories : The methods of prevention of disease : The collection of sanitary data, and the investigation of all factors affecting health in industries : The education of the public in matters of public health : The administration of any subsidy made by the Commonwealth with the object of assisting any effort made by any State Government or public authority directed towards the eradication, prevention, or control of any disease : The conducting of campaigns of prevention of disease in which more than one State is interested : The administrative control of the Australian Institute of Tropical Medicine : The administrative control of infectious disease amongst discharged members of the Australian Imperial Forces : The study of the behaviour of communicable diseases throughout the world and acting as an intelligence bureau for the collection and dissemination of information : The control of venereal disease and infectious diseases in the Mercantile Marine : The inspection of vessels, and the medical inspection of seamen under the Navigation Act : The control of the importation of food and drugs under the Commerce Act : Generally to inspire and co-ordinate public health measures : Any other functions which may be assigned to it.

As noted above, the Department controls the Australian Institute of Tropical Medicine at Townsville, and it directs the campaign in connexion with hookworm disease. These matters, together with the control exercised by the Department over malaria and bilharziasis introduced by returned soldiers and sailors, are dealt with separately in subsequent pages in this chapter (see § 5). Reference to the Commonwealth Serum Laboratories will be found in § 4, 5.

(ii) *New South Wales.* The Department of Public Health is controlled by the Minister of Public Health. The Director-General of Public Health is the chief executive officer, and is assisted by various staffs medical, bacteriological, chemical, veterinary, dairy inspection, meat inspection, sanitary, pure food, and clerical. The work of the Department extends over the whole of the State, and embraces all matters relating to public health and the general medical work of the Government, the Director-General of Public Health holding the position of Chief Medical Officer of the Government as well as being permanent head of the Department.

The Board of Health has certain statutory duties imposed upon it by various Acts of Parliament, and the Director-General is President of the Board. These duties consist largely in supervision of the work of local authorities (Municipal and Shire Councils), so far as that work touches upon public health matters connected with the following Acts :— Public Health Act 1902, Public Health (Amendment) Acts 1915 and 1921, Dairies Supervision Act 1901, Noxious Trades Act 1902, Cattle Slaughtering and Diseased Animals and Meat Act 1902, Pure Food Act 1908, and the Private Hospitals Act 1908. The Board further possesses certain powers connected with public health matters under the Local Government Act 1919. The Board of Health is a nominee Board, created in 1881 and incorporated in 1894.

The Director-General of Public Health acts independently of the Board of Health as regards the State hospitals and asylums and the various public hospitals throughout the State which receive subsidies from the Government.

(iii) *Victoria.* In this State the Public Health Acts 1915, 1919, and 1922 are administered by a Commission composed of the Chief Health Officer and six members appointed by the Governor-in-Council. The medical and sanitary staffs of the Commission consist of (a) the chief health officer, who is also chairman, (b) nine district health officers, (c) chief sanitary engineer and assistant sanitary engineer, three building surveyors and four building inspectors, and (d) twelve health inspectors. The main function of the Commission is to enforce the execution of the Health Acts by the local municipalities, but it has been found advisable to supplement this supervisory function by an active policy of inspection of the sanitary condition of various districts, and the sampling of articles of food. The supervision of the sanitary conditions of milk production is under the Dairy Supervision Branch of the Department of Agriculture, but distribution is supervised by the Commission. Acts administered by the Department of Public Health are:—The Health Acts (in which are now included the Adulteration of Wine Act, the Pure Food Act, the Meat Supervision Act) and the Cemeteries Act, which includes the Cremation Act. The Department administers also the Midwives Acts, the Goods Act, the Venereal Diseases Act, the Infectious Diseases Hospital Acts, the Heatherton Sanatorium Act, the Masseurs Act, and the Nurses Registration Act.

(iv) *Queensland.* The Public Health Acts 1900 to 1922 are administered by the Commissioner of Public Health under the Home Secretary. The executive staff of the Department includes a health officer, a medical officer for the tuberculosis bureau, five part-time medical officers for venereal diseases, nineteen food and sanitary inspectors, including assistant inspectors, and one staff nurse. There is, in addition, a rat squad in Brisbane. Northern offices, in charge of inspectors, are located at Rockhampton, Townsville, Cairns, and Mackay, and inspectors are stationed at Toowoomba. A laboratory of microbiology, in charge of a bacteriologist, is controlled by the Department, and performs a wide range of microbiological work for the assistance of medical practitioners and the Department.

One function of the Department is to stimulate and advise local sanitary authorities on matters pertaining to the Health Acts, and, where necessary, to rectify or compel rectification, at the cost of the local authority, of sanitary evils produced by local inefficiency or apathy. Its powers and responsibilities were widely increased by the Amending Acts of 1911, 1914, 1917, and 1922.

The inspectorial staff of the Department have been gazetted as Inspectors under the Liquor Acts 1912–1926 in order to deal with hotel premises under the provisions of the sanitation regulations issued for licensed victuallers' premises in 1928.

(v) *South Australia.* The Central Board of Health consists of five members, three of whom (including the chairman, who is the permanent head of the Department) are appointed by the Governor, while one each is elected by the city and suburban local Boards and the country local Boards. The Health Act 1898 to 1925 provides that the municipal and district councils are to act as local Boards of Health for their respective districts. There are 197 of these local Boards under the general control and supervision of the Central Board. A senior inspector and an inspector under the Health and Food and Drugs Acts periodically visit the local districts, and see generally that the Boards are carrying out their duties. The senior inspector, in company with an analyst, visits country districts and takes samples of milk, which are analysed on the spot. There are two nurse inspectors employed in advising and assisting local Boards in connexion with outbreaks of infectious diseases and in carrying out generally similar duties to those of male inspectors, with the exception of certain work under the Food and Drugs Act. In the outlying districts there is an officer of health and also fifteen inspectors directly responsible to the Board. The Venereal Diseases Act 1920, which provides for the prevention and control of venereal diseases, has not yet been proclaimed.

(vi) *Western Australia.* The legislation in this State comprises the Health Act 1911, with the amending Acts of 1912 (2), 1915, 1918, and 1919, which have been partly consolidated and reprinted as "The Health Act 1911–19." Further amending Acts were passed in 1920, 1921 and 1926. The central authority is the Department of Public Health, controlled by a Commissioner, who must be a qualified medical practitioner. The local

authorities comprise :—(a) Municipal Councils, (b) Road Boards where the boundaries of a Health District are coterminous with those of a Road District, and (c) Local Boards of Health, composed of persons appointed by the Governor. These local Boards are utilized only where neither Municipal Councils nor Road Boards are available. Generally speaking, the Act is administered by the local authorities, but the Commissioner has supervisory powers, also power to compel local authorities to carry out the provisions of the Act. In cases of emergency, the Commissioner may exercise all the powers of a local health authority in any part of the State.

All the usual provisions for public health legislation are contained in the Act, and, in addition, provision is made for the registration of midwifery nurses, the medical examination of school children, the control of public buildings (*i.e.*, theatres, halls, etc.), the control of food, and the provision of standards therefor. The amending Acts of 1915 and 1918 deal exclusively with venereal diseases.

(vii) *Tasmania.* The office of Director of Public Health was established under the Director of Public Health Act 1920, and the person holding the office of Chief Health Officer under the Public Health Act 1903 at the time of the passing of the first-named Act is the Director of Public Health, and is also the permanent head of the Department. The Director has very wide powers, and in the event of the appearance of dangerous infectious disease (small-pox, plague, etc.) in the State, is vested with supreme power, the entire responsibility of dealing with such an outbreak being taken over by him from the local authorities. Local executive is vested in local authorities, who possess all legal requirements for the efficient sanitary regulation of their districts. Controlling and supervisory powers over these bodies are possessed by the Department of Public Health, and many of the powers conferred upon them may be converted into positive duties. One function of the Department is to advise local authorities on matters pertaining to the Health Act, and, where necessary, to rectify sanitary evils produced by local inefficiency or apathy. The Department has three full-time inspectors, who assist and instruct the local sanitary inspectors, but full-time district health officers are not provided for. The number of local authorities under the Public Health Act has been reduced to forty-nine since the Local Government Act 1906 came into force. All parts of Tasmania are now furnished with the administrative machinery for local sanitary government.

The Public Health Acts 1917 and 1918 deal with venereal diseases. Regulations under the Public Health Act 1903, as amended, for checking or preventing the spread of any infectious disease, came into force in February, 1918.

The Places of Public Entertainment Act 1917 is administered by the Director of Public Health under the Minister. This Act provides, *inter alia*, for the licensing and regulation of places of public entertainment, for the appointment of a censor or censors of moving pictures, and for the licensing of cinematograph operators. Comprehensive regulations have been framed under the Act. Inspectors under the Public Health Act 1903, are Inspectors of Places of Public Entertainment under this Act.

(viii) *Federal Capital Territory.* The formation of a Department of Health as part of the administrative machinery of the Federal Capital Commission was authorized during 1927, and initiated as from 1st October of that year by the appointment of a medical officer of health. The staff at present maintained is a part-time medical officer, a health inspector, and a clerical officer. The functions of the Department include inspection and report upon all matters affecting the health of the community, the registration and control of shops, factories, etc., and generally the detailed administration of the Public Health Ordinance 1928.

§ 2. Inspection and Sale of Food and Drugs.

1. *General.*—Under the Acts referred to later, and the regulations made thereunder, the importation of articles used for food or drink, of medicines, and of other goods enumerated, is prohibited, as also is the export of certain specified articles, unless there is applied to the goods a "trade description" in accordance with the Act. Provision is made for the inspection of all prescribed goods which are imported or which are entered for export.

2. Commonwealth Jurisdiction.—Under Section 51 (i) of the Commonwealth Constitution Act 1900, the Commonwealth Parliament has power to make laws with respect to trade and commerce with other countries and among the States. By virtue of that power, the Federal Parliament passed the Commerce (Trade Descriptions) Act 1905, to which reference has already been made in Chapter VI.

3. State Jurisdiction.—The inspection and sale of food and drugs are also dealt with in each State, either under the Health Acts or under Pure Food Acts. This work is carried out in each State by the Executive Officer of the Health Department. There is, in addition, a number of Acts dealing with special matters, such as the adulteration of wine and the oversight of bread and meat supply. The supply and sale of milk are also subject to special regulations or to the provisions of special Acts.

The existing law of the Federal Capital Territory is the Pure Food Act in force in the State of New South Wales prior to the 1st January, 1911. Special provision is now being made for the introduction of Food and Drug Regulations under the powers conferred by the Public Health Ordinance 1928.

The general objects of these Acts are to secure the wholesomeness, cleanliness, and freedom from contamination or adulteration of any food, drug or article; and the cleanliness of receptacles, places, and vehicles used for their manufacture, storage or carriage. The sale of any article of food or any drug which is adulterated or falsely described is prohibited, as also is the mixing or selling of food or drugs so as to be injurious to health.

Power is given to any authorized officer to enter any place for the purpose of inspecting any article to be used as a food or drug, and to inspect articles being conveyed by road, rail, or water. The officer may take samples for analysis or examination, and may seize for destruction articles which are injurious to health or unwholesome. Special provision is generally made in the Acts with regard to the sale of preservatives and disinfectants.

In every State except Queensland, Advisory Committees have been appointed for the purpose of prescribing food standards, and for making recommendations generally with a view to carrying out the provisions of the Acts. The duty of enforcing these regulations is entrusted to the local authorities.

4. Food and Drug Standardization.—Conferences with the object of securing uniformity in these matters were held in Sydney in 1910, in Melbourne in 1913, in Sydney in 1922 and in Melbourne in 1927. In conformity with the determinations arrived at, each State issued regulations which have had the effect of ensuring uniformity as far as practicable throughout Australia.

5. Sale and Custody of Poisons.—In New South Wales, Victoria, Western Australia and Tasmania, the enactments for regulating the sale and use of poisons are administered by the Pharmacy Boards in the respective States. In South Australia, the sale of poison is provided for by regulations under "The Food and Drugs Act 1908," administered by the Central Board of Health. In Queensland, the sale of poisons is under the control of the Health Department. The law of the Federal Capital Territory relating to the sale of poisons is the Poisons Act of New South Wales, which was in force in that State prior to 1st January, 1911.

In New South Wales, Victoria, and Tasmania the Government formerly subsidized the Pharmacy Board, in order to enable it to carry out the provisions of the Poisons Act. The subsidy to the Victorian Board was withdrawn in March, 1921, provision having been made for the payment of a 10s. licence fee under the Poisons Act 1920.

No persons, other than legally qualified medical practitioners and registered pharmaceutical chemists, are permitted to sell poisons, without special licences from the bodies administering the legislation in the respective States. These licences are issued to persons in business distant from four to five miles from a registered chemist, on production of certificates from medical practitioners, police, or special magistrates or justices as to the applicant's character and fitness to deal in poisons. Annual licence fees, ranging from 5s. to 40s., are charged. New poisons regulations were approved in Queensland on the 26th November, 1924, amongst which are stringent restrictions on the sale of potassium cyanide. A revised list of standard poisons was gazetted in Western Australia in December, 1922.

In Victoria the Poisons Act 1927, operative from 1st February, 1928, provides for the control of the sale of potassium cyanide and methylated spirits. The former may legally be bought or sold by licensed persons only. It is made an offence to drink methylated spirits, which may be sold only by persons licensed under the Poisons Acts 1915 or 1920. Regulations under this Act place further restrictions on the sale of methylated spirits (to be sold only by licensed persons) and on cyanide of potassium. Persons requiring the latter poison must obtain an order from the police. On and after 1st July, 1929, it is made compulsory to print an antidote on the label of certain poisons.

Special conditions attaching to the sale of poisons were alluded to on p. 1055 of Official Year Book No. 12.

Partial exemptions from the regulations are made in some States in the case of sales of poisons for agricultural, horticultural and photographic purposes, in so far that any person may sell such poisons subject to the restrictions as to the class of container and the manner in which they may be sold. The sale of what are generally known as industrial poisons—such as sulphuric acid, nitric acid, hydrochloric acid, soluble salts of oxalic acid, formalin, etc.—is governed by regulations, as also is the sale of poisons for the destruction of rats, vermin, etc. Under the existing laws these poisons may, in most of the States, be sold by any one. The Victorian Parliament, in December, 1920, passed an amending Poisons Act, in which the word "wholesale" has for the first time been defined as meaning "sale or supply for the purposes of re-sale," providing for an annual fee of 10s. and the issuing of licences to dealers in exempted poisons. A new principle is introduced into the Victorian Poisons Act of 1920. Certain drugs are declared to be "potent drugs" and may be sold by pharmaceutical chemists only. These drugs include acetanilid, adrenalin, oil of tansy, pituitary extract, thyroid gland preparations, and any serum or vaccine for human use. Under the Victorian Dangerous Drugs Regulations 1922, which came into effect on the 1st January, 1923, further restrictions were imposed on the manufacture and sale of abortifacients and of habit-forming drugs such as ergot, morphine, opium, heroin, cocaine, veronal, etc. Regulations regarding dangerous drugs (cocaine, morphia, etc.) are included in the amended Queensland regulations of 26th November, 1924, referred to above. An amending Poisons Act which came into force in Victoria on 1st January, 1926, prohibits the hawking or peddling of poisons, or the distribution of poisons as samples in any street or public place. Magistrates may order the confiscation of opium smoking pipes and paraphernalia in addition to the opium itself. It is made an offence under heavy penalties for any person to obtain narcotic drugs by false representations or to have any morphine, cocaine, medicinal opium, etc. in his possession without lawful authority. A comprehensive act dealing with the sale and distribution of dangerous habit-forming drugs was passed by the New South Wales Parliament early in 1927.

§ 3. Supervision of Dairies, Milk Supply, etc.

1. **General.**—In Official Year Book No. 12 and preceding issues, allusion is made in general terms to the legislation in force in the various States to ensure the purity of the milk supply and of dairy produce generally, but limits of space preclude the repetition of this information in the present issue.

2. **Number of Dairy Premises Registered.**—The following table shows, so far as the particulars are available, the number of dairy premises registered and the number of cattle thereon. Compulsory registration is not in force throughout the whole area of the various States.

DAIRY PREMISES REGISTERED, AND CATTLE THEREON, 1928.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.
Premises registered ..	21,640	22,305	(a)23,047	1,408	(b)	(b)
Cattle thereon ..	910,000	301,923	645,000	8,618	(b)	(b)

(a) Approximate number of dairies operating.

(b) Not available.

3. **New South Wales.**—The provisions of the Dairies Supervision Act 1901 extend to the whole of the Eastern and Central Divisions and to all important dairying districts further inland. Other districts are brought under the operation of the Act by proclamation from time to time. Every dairyman, milk vendor, and dairy factory or creamery proprietor is required under penalty to apply for registration to the local authority for the district in which he resides, also to the local authority of every other district in which he trades. Registration must be applied for prior to commencing trade, and must be renewed annually. The Chief Dairy Inspector is in charge of all inspectorial work under the Dairies Supervision Act 1901, and has assisting him eighteen qualified dairy inspectors, each in charge of a district.

4. **Victoria.**—The registration, inspection and supervision of dairies, dairy farms, dairy produce, milk stores, milk shops, milk vessels, dairy cattle and grazing grounds are provided for by the Dairy Supervision Act 1915 and the Milk Supply Act 1922, administered by the Minister of Agriculture. The supervision of butter and cheese factories is provided for by the Dairy Produce Act 1919. Under the Health Act, however, the Department of Public Health is empowered to take samples of food (including milk, cream, butter, cheese, and other dairy products) for examination or analysis, and to institute prosecutions in case of adulterated or unwholesome food. By the end of the year 1928, 129 municipal districts, comprising almost one-half of the area of the State, had been brought under the operation of the Dairy Supervision Act. The municipal councils have the option of carrying out the administration of the Act, or of deciding that the work should devolve upon the Department of Agriculture; up to the present all the municipalities in which the Act has been proclaimed have elected for departmental administration.

The Milk Supply Act 1922 provides for the appointment of a Milk Supply Committee with power to issue regulations to govern the milk supply of the metropolis, and to disseminate information concerning the best methods of handling the product.

The Council of any metropolitan municipality, or a group of councils acting together, may establish depots at which milk may be brought, treated, and sold. The Committee may, however, issue certificates authorizing persons to sell milk, but, in an area in which there is a municipal depot, no milk may be sold unless it has been treated in a depot or, by approved methods, in a factory. Milk sold in containers must have the grade specified on the label. A laboratory has been established to undertake the bacteriological examination of the milk purveyed and generally to carry out researches in matters relating to the milk supply.

5. **Queensland.**—The control and supervision of the milk supply, of dairies, and of the manufacture, sale, and export of dairy produce are provided for by the Dairy Produce Act 1920, administered by the Department of Agriculture and Stock. This Act and the regulations made thereunder apply only to prescribed areas, which comprise the whole of the coastal district from Rockhampton down to the New South Wales border, and the Darling Downs, Maranoa, Mackay, Cairns, and Atherton districts. In certain proclaimed areas the sale of milk is restricted to persons registered under the Dairy Produce Act 1920, and licensed under the Milk Sellers' Regulations of 1924, both Act and Regulations being administered by the Department of Public Health. Milk for sale is supervised by inspectors of the Health Department under the Health Acts 1900-1922. During the year ended 30th June, 1928, 866 samples of milk were analysed, and 253 samples were bacteriologically tested.

6. **South Australia.**—The Food and Drugs Act 1908, and the Regulations made thereunder, provide for the licensing of vendors of milk, and the registration of dairies, milk stores and milk shops. The Metropolitan County Board carries out the requirements of the metropolitan area. In the country, the majority of local authorities has not made statutory provision for the licensing of vendors of milk and the registration of dairy premises, and, in consequence, the Central Board of Health provides for such under the Act.

7. **Western Australia.**—Under the provisions of the Health Act, control of dairies throughout the State is in the hands of the Public Health authorities. The premises of dairymen and milk vendors must be registered by a local authority. The inspectors under the Act supervise the sanitary condition of the premises, the examination of herds being carried out for the Health Department by officers of the Department of Agriculture. Inspection of herds is made at regular intervals, and the tuberculin test is applied in cases of suspected disease.

8. **Tasmania.**—Local authorities are responsible for the dairies in their respective districts. By-laws for the registration and regulation of dairies have been drafted by the Public Health Department, and in the majority of cases have been adopted by the local authorities. The Food and Drugs Act 1917 provides that the municipal council of every city or municipality shall submit for analysis such samples of food or drugs as may be specified by the Chief Officer. The sampling is, in the majority of municipal districts, carried out by the Public Health Department, and particular attention is paid to milk. An Act also provides for the registration and inspection of dairies and other premises where dairy produce is prepared, and regulates the manufacture, sale, and export of such produce.

9. **Federal Capital Territory.**—The production of milk is controlled and its distribution is supervised by the Health Department of the Federal Capital Commission. Systematic bacterial and chemical analyses are made, in addition to a close supervision by the health inspector. The Lands Department of the Federal Capital Commission is responsible for the registration and control of dairies and dairy herds, all animals being tuberculin-tested by the Commission's veterinary officer.

§ 4. Prevention and Control of Infectious and Contagious Diseases.

1. **General.**—The provisions of the various Acts in regard to the compulsory notification of infectious diseases and the precautions to be taken against the spread thereof may be conveniently dealt with under the headings—Quarantine; Notifiable Diseases, including Venereal Diseases; and Vaccination.

2. **Quarantine.***—(i) *General.* The Quarantine Act is administered by the Commonwealth Department of Health, and uniformity of procedure has been established in respect of all vessels, persons, and goods arriving from overseas ports or proceeding from one State to another, and in respect of all animals and plants brought from any place outside Australia. In regard to inter-state movements of animals and plants, the Act becomes operative only if the Governor-General be of opinion that Federal action is necessary for the protection of any State or States; in the meantime the administration of inter-state quarantine of animals and plants is left in the hands of the States. The Commonwealth possesses stations in each State for the purposes of human and of animal quarantine.

* From information furnished by the Commonwealth Director-General of Health.

(ii) *Administration of Act.* The administration of the Act in respect of the general division, *i.e.*, vessels, persons, and goods, and human diseases, is under the direct control of the Commonwealth in all States except Tasmania. A medical chief quarantine officer with assistant quarantine officers, has been appointed in each State. This officer is charged with responsible duties, and is under the control of the Director-General of Health. In Tasmania, the chief health officer of the State acts as chief quarantine officer, and payment is made to the State for his services. The administration of the Act in the Northern Territory has been combined with that of Queensland under the chief quarantine officer for the North-eastern division. The administration of the Acts and Regulations relating to oversea animal and plant inspection and quarantine is carried out by the officers of the State Agricultural Departments acting as quarantine officers.

(iii) *Chief Provisions of Act.* The Act provides for the inspection of all vessels, including air-vessels, from oversea, for the quarantine, isolation, or continued surveillance of infected or suspected vessels, persons, and goods, and for the quarantining and, if considered necessary, the destruction of imported goods, animals, and plants. The obligations of masters, owners, and medical officers of vessels are defined, and penalties for breaches of the law are prescribed. Power is given to the Governor-General to take action in regard to various matters by proclamation, and to make regulations to give effect to the provisions of the Act. Quarantinable diseases include small-pox, plague, cholera, yellow fever, typhus fever, leprosy, and any other disease declared by the Governor-General, by proclamation, to be quarantinable. "Vessel" means "any ship, boat or other description of vessel or vehicle used in navigation by sea or air." "Disease" in relation to animals means certain specified diseases, or "any disease declared by the Governor-General by proclamation, to be a disease affecting animals." "Disease" in relation to plants means "any disease or pest declared by the Governor-General, by proclamation, to be a disease affecting plants." The term "plants" means "trees or plants, and includes cuttings and slips of trees and plants and all live parts of trees or plants and fruit."

(iv) *Proclamations.* The proclamations so far issued specify the diseases to be regarded as diseases affecting animals and plants; appoint first ports of landing for imported animals and plants, and first ports of entry for oversea vessels; declare certain places beyond Australia to be places infected or places to be regarded as infected with plague; prohibit the importation (a) of certain noxious insects, pests, diseases, germs, or agents, (b) of certain goods likely to act as fomites, and (c) of certain animals and plants from any or from certain parts of the world; fix the quarantine lines, and define mooring grounds in certain parts of Australia.

(v) *Miscellaneous.* At present, instead of all oversea vessels being examined in every State, as was formerly the case, those arriving from the east and west are now examined only at the first port of call, and pratique is given for the whole of the Commonwealth except in cases of suspicious circumstances, while vessels arriving from the northern routes are examined only at the first and last ports. Restrictions placed upon oversea vessels are being removed as the machinery of quarantine is improved. The present freedom from certain diseases which are endemic in other parts of the world would, however, appear to justify the Commonwealth in adopting precautionary measures not perhaps warranted in the already infected countries of the old world.

3. *Notifiable Diseases.*—A. *General.*—(i) *Methods of Prevention and Control.* Provision exists in the Health Acts of all the States for precautions against the spread, and for the compulsory notification of infectious diseases. When any such disease occurs, the Health Department and the local authorities must at once be notified. In some States notification need only be made to the latter. The duty of giving this notification is generally imposed, first, on the head of the house to which the patient belongs, failing whom on the nearest relative present, and, on his default, on the person in charge of or in attendance on the patient, and on his default, on the occupier of the building. Any medical practitioner visiting the patient is also bound to give notice.

As a rule the local authorities are required to report from time to time to the Central Board of Health in each State as to the health, cleanliness, and general sanitary state of their several districts, and must report the appearance of certain diseases. Regulations

are prescribed for the disinfection and cleansing of premises, and for the disinfection and destruction of bedding, clothing, or other articles which have been exposed to infection. Bacteriological examinations for the detection of plague, diphtheria, tuberculosis, typhoid, and other infectious diseases within the meaning of the Health Acts are continually being carried out. Regulations are provided in most of the States for the treatment and custody of persons suffering from certain dangerous infectious diseases, such as small-pox and leprosy.

(ii) *New South Wales.* The proclamation and notification of infectious diseases are dealt with in Part II. of the Public Health Acts 1902 and 1915. Notification of infectious disease must be made to the local authority by the head of the family, etc., and by the medical practitioner. Provision is made for the disinfection or destruction of premises. Restrictions are placed upon the attendance at school of children suffering from infectious disease or residing in a house in which infectious disease exists. Special provisions have been made with regard to typhoid fever, tuberculosis, small-pox, and leprosy, and legislation has been passed dealing with venereal diseases.

(iii) *Victoria.* Under the Health Act 1919 any disease may be declared to be notifiable throughout the State. The occupier of a house containing a case of infectious disease, and the medical practitioner in attendance, must report the fact to the Council. The Medical Officer of Health may order the removal of a patient to a hospital when such is available. The occupier of the house must also inform the head teacher of the school of any child suffering from a notifiable disease or residing in an infected dwelling. The notification of venereal diseases is dealt with in the Venereal Diseases Act 1916.

(iv) *Queensland.* Part VII. of the Health Act 1900-1922 stipulates that all cases of infectious disease must be notified by the occupier of the house, and the medical practitioner attending the case. Restrictions are placed on the attendance at school of children suffering from a notifiable disease. Special measures must be taken against typhoid, small-pox, and venereal diseases. Leprosy is dealt with under the Leprosy Act 1892. Regulations issued in 1929 provide for suspect cases of diphtheria, typhoid, and scarlet fever being treated in hospital at the cost of Local Authorities, in addition to actual cases.

(v) *South Australia.* Cases of infectious disease must be reported to the local board, under the provisions of Part VIII. of the Health Act 1898. The duty of notification rests primarily on the head of the family, and, in addition, the medical practitioner must report the case. Children suffering from or resident with a person suffering from an infectious disease must not attend school till they have had their clothes disinfected and hold a certificate that there is no risk of infection. Venereal diseases will be dealt with under the provisions of the Venereal Diseases Act 1920, which, however, is not yet in operation.

(vi) *Western Australia.* The Health Acts 1911 to 1922 provide for the notification and control of infectious diseases, including venereal diseases. The occupier of a house containing a case of infectious disease, and the medical practitioner, must report the case to the local authority. Children may not attend school within three months of suffering from any infectious disease unless they possess a certificate of freedom from infection. Special provisions apply to typhoid fever, tuberculosis, and venereal diseases.

(vii) *Tasmania.* The provisions regarding the notification and prevention of infectious diseases are contained in the Public Health Act 1903 and amending Acts. Notification of cases devolves upon the medical practitioner in attendance or the occupier of the house.

(viii) *Federal Capital Territory.* Regulations under the Health Ordinance 1912 provide for the notification and prevention of infectious diseases.

(ix) *Diseases Notifiable in each State.* In the following statement diseases notifiable in each State and the Federal Capital Territory are indicated by a cross :—

DISEASES NOTIFIABLE UNDER THE HEALTH, ETC., ACTS IN EACH STATE
AND THE FEDERAL CAPITAL TERRITORY.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	Fed. Cap. Ter. (e)
Acute lobar pneumonia ..	..	..	..	(c)	+	..	..
Anthrax .. ..	..	+	..	+	+	+	..
Ankylostomiasis .. ..	..	+	+	..	+	..	..
Beri-beri .. ..	..	..	..	..	+	..	+
Bilharziasis .. ..	..	..	+	+	+	+	..
Brills Disease	+	+	+	+	+	+	..
Bubonic plague	+	+	+	+	+	+	+
Cerebro-spinal fever ..	+	+	+	+	..	..	..
Cerebro-spinal meningitis ..	+	+	+	+	+	+	+
Chicken-pox .. ..	..	..	..	+	..	..	..
Cholera	+	+	+	+	+	+	+
Colonial fever .. ..	..	..	..	..	+	..	+
Continued fever .. ..	..	..	+	..	+	..	Cap.
Dengue fever .. ..	..	..	..	..	+	..	+
Diphtheria	+	+	+	+	+	+	+
Dysentery .. ..	..	+	+	(a)	+	..	..
Encephalitis lethargica ..	..	+	+	+	+	+	+
Enteric fever	+	+	+	+	+	+	+
Erysipelas .. ..	..	..	..	+	+	..	+
Favus .. ..	..	..	..	+	..	..	..
Hæmaturia .. ..	..	..	..	+	+	+	..
Hydatids .. ..	..	+	..	..	..	..	..
Infantile paralysis	+	+	+	+	+	+	..
Influenza .. ..	..	..	..	+	(c)	+	..
Leprosy	+	+	+	+	+	+	+
Low fever .. ..	..	..	..	..	+	..	+
Malarial fever .. ..	..	+	+	+	+	+	+
Malta fever .. ..	..	..	..	..	+	..	+
Measles .. ..	..	..	..	..	+	..	+
Membranous croup	+	..	+	..	+	..	+
Pneumonic influenza .. ..	..	..	..	+	(c)	+	+
Polioencephalitis .. ..	..	+	..	..	..	..	..
Poliomyelitis anterior acuta ..	+	+	+	+	+	+	+
Puerperal fever .. ..	..	+	+	+	+	+	+
Pulmonary tuberculosis (phthisis)	+(a)	+	+	+	+	+	+
Pyæmia .. ..	..	..	..	..	+	..	+
Relapsing fever .. ..	..	..	..	+	+	..	+
Scarlet fever	+	+	+	+	+	+	+
Scarlatina	+	+	+	+	+	+	+
Septicæmia .. ..	..	..	..	..	+	..	+
Small-pox	+	+	+	+	+	+	+
Tetanus .. ..	..	+	+	..	..	..	..
Trichinosis .. ..	..	..	..	..	+	..	..
Tuberculosis .. ..	..	+	..	..	+	..	..
Tuberculosis in Animals .. ..	..	..	..	..	+	..	..
Typhoid	+	+	+	+	+	+	+
Typhus fever	+	+	+	+	+	+	+
Veneral Diseases :—							
Chancroid (soft chancre) ..	+	+	+	+(d)	+	+	..
Gleet .. ..	+	..	..	+(d)	+	..	..
Gonorrhœa	+	+	+	+(d)	+	+	..
Gonorrhœal ophthalmia ..	+	+	..	+(d)	+	+	..
Infective granuloma of the pudenda	+	+	+	+(d)	+	..	..
Ophthalmia neonatorum ..	..	+	..	..	+	+	+
Syphilis	+	+	+(b)	+(d)	+	+	..
Venereal warts	+	+	+	+(d)	+	+	..
Whooping cough .. ..	..	..	..	+	..	..	..
Yellow fever	+	+	+	+	+	+	..

(a) Notifiable in certain areas only. (b) Primary and secondary stages only. (c) In South Australia influenza vera is notifiable, and any febrile toxic-septicæmic condition similar to influenza, including pneumonic influenza. (d) Act not yet in operation. (e) The list of notifiable diseases is provisional pending the introduction of regulations to be made in pursuance of the Public Health Ordinance 1928.

B. Venereal Diseases.—(i) *General.* The prevention and control of venereal diseases are undertaken by the States. Each State has a Venereal Diseases Act, or provisions in the Health Act govern the working of the measures taken to combat these diseases. In every State notification has been made compulsory. A list of notifiable forms of venereal complaints is given in the table on the preceding page. Steps have been taken to ensure free treatment by medical practitioners or in subsidized hospitals. Registered pharmaceutical chemists are allowed to dispense prescriptions only when signed by medical practitioners. Clinics have been established, and, in some cases, beds in public hospitals have been set aside for patients suffering from these diseases.

Penalties may be imposed on a patient who fails to continue under treatment. Clauses are inserted in the Acts which aim at preventing the marriage of any patient or the employment of an infected person in the manufacture and distribution of foodstuffs.

The Commonwealth Government has granted a subsidy of £15,000 per annum to the various States to assist in providing hospital treatment and administrative control. The supervision of this work, in so far as it relates to the expenditure of the subsidy, is undertaken by the Commonwealth Department of Health. In February, 1922, a conference was held to consider the means of securing the best results from this subsidy.

The question of Commonwealth assistance has now been taken up by the Federal Health Council. In the Commonwealth Department of Health, a Division of Tuberculosis and Venereal Disease was established in 1927 with a medical officer as Director.

(ii) *New South Wales.* The Venereal Diseases Act 1918 came into operation on 1st December, 1920. The Act, which is administered by a Commissioner, aims at ensuring that all cases of venereal disease will have immediate and continued treatment. Clinics have been established at subsidized hospitals. Notification is compulsory; a person suffering from the disease is required to place himself under the treatment of a medical practitioner or to attend a hospital within three days of becoming aware of the existence of the disease, and to continue treatment until a cure is effected. During the year ended 30th June, 1928, notifications numbered 5,796. Satisfactory results are being obtained from action taken in cases where patients have been reported for failure to continue treatment as required by the Act. A number of prosecutions—all of which have been successful—has been undertaken for (a) sale of drugs prohibited under the Act, (b) treatment of venereal disease by a person other than a medical practitioner, and (c) for failing to undergo treatment when required.

(iii) *Victoria.* Under the Venereal Diseases Acts 1916 and 1918 the control of venereal disease is undertaken by the Department of Public Health. The Acts provide for compulsory treatment by qualified medical practitioners of all persons suffering from the disease. All hospitals in receipt of State aid treat patients. Three evening and three day clinics have been established at hospitals in Melbourne, and in June, 1918, a special departmental clinic was instituted. Notification of the disease is compulsory, and 5,498 cases were notified in 1928. During the period 1st July, 1917, to 31st December, 1928, there were notified 50,229 cases of gonorrhoea (M. 45,536, F. 4,693); 14,561 cases of syphilis (M. 10,028, F. 4,533); 1,571 cases of soft sore (M. 1,517, F. 54); and 940 cases of congenital syphilis (M. 487, F. 453). At the departmental clinic there were treated from 17th June, 1918, to 31st December, 1928, 23,664 cases, and the attendances were 958,259.

(iv) *Queensland.* The Health Act 1900–1922 confers power on the Commissioner of Public Health to deal with the prevention and control of venereal disease, and affected persons must place themselves under treatment by a medical practitioner. Persons other than medical practitioners are prohibited from treating the disease. Subsidized hospitals are required to make provision for the examination and treatment of cases reported to them, and clinics have been established in Brisbane and ten other towns. Notification is compulsory, and during the year ended 30th June, 1928, 1,508 patients were reported, of whom 135 had been previously notified; there were thus 1,373 cases, as against 1,319 for the previous period, the respective number of males and females being 1,121 and 252. At the Brisbane male clinic the medical officers were consulted on 8,146 occasions, as against 7,513 for 1926–1927, and 629 new cases presented themselves for examination, of whom 250 were undiagnosed or suffering from conditions other than venereal. Forty-two females were examined by medical officers under an

arrangement with the Department of Public Health in Brisbane, and 25 of them were reported as suffering from venereal disease in consequence. Twenty-one male and 5 female prisoners were detained under section 164 (2) (c) of the Act above referred to, whilst serving civil sentences in His Majesty's prisons throughout the State. In accordance with the provisions of Regulation 10 of the Venereal Diseases Regulations of 1928 812 professional prostitutes were examined in Brisbane, and 745 in the fourteen centres outside the metropolis, a total of 1,557 for the year, and, as a result, 86 were detained for medical treatment. Seventy-eight prosecutions were instituted for breaches of the Venereal Diseases Regulations 1928 and the sections of the Health Act relating to venereal disease, including 3 males and 3 females who occupied or resided in premises frequented by prostitutes (section 168 (1) (iv)), and a chemist for unlawfully treating venereal disease. Thirty cases were investigated during 1927-28, where notification forms showed the patients to be employed in food handling or preparation, to ensure compliance with Regulation 14 (1) of the Venereal Diseases Regulations of 1928.

(v) *South Australia.* The provisions of the Venereal Diseases Act 1920 (not yet in operation) are to be carried out by the Inspector-General of Hospitals. The Minister administering the Act may arrange with any public hospital to provide free accommodation and treatment, and may also establish hospitals and arrange for free examinations and free supply of drugs. Persons suffering from venereal disease will be compelled to consult a medical practitioner or attend a hospital and place themselves under treatment. No person other than a medical practitioner may attend or prescribe for patients.

(vi) *Western Australia.* The Health Act gives power to the Commissioner of Public Health to deal with venereal diseases, and persons suffering from these diseases must consult a medical practitioner and place themselves under treatment. No treatment may be given except by qualified medical practitioners. Free examination and treatment are given by subsidized hospitals.

(vii) *Tasmania.* The Public Health Act 1917-1918 authorizes the Director of Public Health to take steps for the control of venereal diseases, and persons affected must place themselves under the care of a medical practitioner or of a hospital. The State-aided hospitals are required to provide treatment. During 1928, 390 cases were notified by medical practitioners. In accordance with an agreement between the Commonwealth and the State authorities, the latter have made provision for the free maintenance and treatment of persons suffering from venereal diseases.

(viii) *Federal Capital Territory.* No special regulation has been enacted with regard to the prevention and control of venereal diseases, but this matter is now under consideration.

4. **Vaccination.**—(i) *Demand for Vaccine.* In New South Wales there is no statutory provision for compulsory vaccination, though in all the other States such provision has been made. Jennerian vaccine for vaccination against small-pox is prepared at the Commonwealth serum laboratories in Melbourne. A moderate demand exists for the vaccine in Victoria, but in the other States the normal requirements are small. During the years 1912, 1913, and 1914 the output of the vaccine in doses from the depot was respectively 65,000, 570,000, and 146,000. The number of doses issued in 1913 was, however, abnormal, and was due to the epidemic of small-pox which broke out in Sydney at the end of June, and was followed by large numbers of vaccinations in each State.

(ii) *New South Wales.* Although there is no provision for compulsory vaccination, public vaccinators have been appointed. No statistics are available as to the proportion of the population which has been vaccinated, but a report of the Principal Medical Officer of the Education Department states that out of 55,740 children medically examined during 1919, 9,487, or 17 per cent., had been vaccinated.

(iii) *Victoria.* Compulsory vaccination under Part VII. of the Health Act 1919 has not been enforced since September, 1927. During the period 1873 to 1918, it is estimated that 72 per cent. of the children whose births were registered were vaccinated. From the year 1920, when the "conscience" clause came into force, the number of children vaccinated decreased from 4396 in 1920 to 943 in 1927. In 1928, the first complete year of non-enforcement of the Act the proportion of vaccinations to births was less than 1 per cent. Free lymph is provided.

(iv) *Queensland.* Although compulsory vaccination is provided for under Part VII. of the Health Act, 1900-1922, its operation has not been proclaimed. Vaccination thus being purely voluntary, medical practitioners do not notify vaccinations.

(v) *South Australia.* The Vaccination Act, 1882, which applies to South Australia and the Northern Territory, is administered by the vaccination officer of the State. Under this Act vaccination was compulsory, but in 1917 an Act to suspend compulsory vaccination was passed. There were no vaccinations reported in 1928.

(vi) *Western Australia.* Vaccination is compulsory under the Vaccination Act, 1878, which, however, remains almost a dead letter, seeing that under the Health Act, 1911, a "conscientious objection" clause was inserted, which is availed of by the majority of parents. The number of children vaccinated is very small. All district medical officers are public vaccinators, but they receive no fees for vaccinations.

(vii) *Tasmania.* All infants are nominally required under the Vaccination Act 1898 to be vaccinated before the age of 12 months, unless either (a) a statutory declaration of conscientious objection is made, or (b) a medical certificate of unfitness is received. Information in regard to vaccinations in recent years is not available.

(viii) *Federal Capital Territory.* No provision has yet been made in regard to compulsory vaccination.

5. **Commonwealth Serum Laboratories.**—The establishment for the preparation of Jennerian Vaccine situated at Royal Park, near Melbourne, formerly known as the "Calf Lymph Dépot," was in 1918 greatly enlarged by the Commonwealth. The remodelled institution is designated the "Commonwealth Serum Laboratories," and forms a division of the Commonwealth Department of Health. The list of Bacteriological preparations produced by the laboratories has been extended to cover a wide range, thus forming a valuable national provision for the protection of public health.

6. **Health Laboratories.**—The Commonwealth Department of Health has established Health Laboratories at Rabaul in New Guinea, at Lismore in New South Wales, at Bendigo in Victoria, at Townsville, Toowoomba, Rockhampton and Cairns in Queensland, at Port Pirie in South Australia, and at Kalgoorlie in Western Australia, and arrangements are being made for the organization of similar laboratories in other parts of Australia.

The laboratory at Rabaul is carried on in conjunction with the hookworm campaign, and is working in close co-operation with the health organization of the New Guinea Administration.

The Bendigo Laboratory was opened in 1922. Besides carrying on the ordinary diagnostic and educational work of a health laboratory, it possesses an X-ray equipment, and undertakes the examination, diagnosis, and treatment of persons suffering from miner's disease and tuberculosis.

The laboratory at Townsville is carried on in conjunction with the Australian Institute of Tropical Medicine at Townsville. The laboratory at Toowoomba was opened on 18th December, 1923.

All of these laboratories are undertaking successfully the diagnostic, educative, and research work for which they were created.

By arrangements between the Commonwealth and Western Australian Governments a special medical survey of persons engaged in the mining industry in Western Australia was carried out in 1925-26 by the Commonwealth Health Laboratory at Kalgoorlie, when 4,067 mine employees were examined. A further arrangement provides for the re-examination annually of mine employees in the Kalgoorlie district for a period of three years.

7. **Industrial Hygiene.**—The Industrial Hygiene Division of the Commonwealth Department of Health was established in December, 1921. Its objects are the collection of reliable data, the investigation of industrial conditions affecting health, and the issue of advice to employers and employees for the improvement of conditions of work and for the safeguarding of health. Publications have been issued dealing with the scope of industrial hygiene, and with health hazards in industry. Expert advice is available to employers and employees, and it is anticipated that the work of the division will be of great value in guiding the development of industry along hygienic lines, and in improving generally the condition of workers. With a view to the adoption of a concerted scheme

of action and a uniform basis for standards and records throughout Australia, conferences of delegates from the State Health and Labour Departments and the Commonwealth Department of Health were held in 1922, 1924, and in 1927.

A special article entitled "Industrial Hygiene in Australia" will be found in Official Year Book No. 18, pp. 522 to 555.

8. Public Health Engineering.—A division of sanitary engineering was established in the Commonwealth Department of Health early in 1923. Investigation has been made into numerous sanitary engineering problems affecting Australia, including a number referred to the Department by various State Governments. Advice is given generally on the protection of water supplies, drainage, and other engineering questions affecting health.

In 1927 a special conference convened by this Division was attended by official representatives of Government and municipal authorities concerned with Health, Water Supply, Sewerage and similar activities. Numerous papers on Public Health problems were read and discussed.

9. Veterinary Hygiene and Plant Quarantine.—In 1927 Directors were appointed to control divisions of the Commonwealth Department of Health, which have been created to deal with veterinary hygiene and plant quarantine.

§ 5. Tropical Diseases.

1. General.—The remarkable development of parasitology in recent years, and the increase in knowledge of the part played by parasites in human and animal diseases, have shown that the difficulties in the way of tropical colonization, in so far as these arise from the prevalence of diseases characteristic of tropical countries, are largely removable by preventive and remedial measures. Malaria and other tropical diseases are coming more and more under control, and the improvements in hygiene and the production of new synthetic drugs for treatment, which science has accomplished, furnish a new outlook on the question of white settlement in countries formerly regarded as unsuitable for colonization by European races. In Australia, the most important aspect of this matter is at present in relation to such diseases as filariasis, hookworm, dengue fever, and to a lesser extent, malaria, which, although practically unknown in southern Australia, occur in many of the tropical and sub-tropical parts.

Systematic attention is being directed to these diseases and to other aspects of tropical hygiene by the Division of Tropical Hygiene of the Commonwealth Department of Health.

2. Transmission of Disease by Mosquitoes.—(i) *Queensland.* The existence of filariasis in Queensland was first discovered in 1876. The parasite of this disease is transmitted by *Culex quinquefasciatus* (*Culex fatigans*), a domestic mosquito very prevalent in Queensland. A survey in 1922 showed that of 8,493 persons examined in various areas 2.6 per cent. had microfilariae in their blood. So far, experience seems to show that severe sequelae caused by this disease, for example, elephantiasis, are comparatively rare in Australia, but sufficient time has not yet passed to be certain of this assumption. Much needed mosquito work is now being done in certain areas. The mosquito *Aedes aegypti* (*Stegomyia fasciata*), conveyor of yellow fever and of dengue fever, is another common domestic mosquito throughout Eastern Queensland during the summer. Owing to quarantine measures this mosquito has never been infected from abroad with yellow fever, but it has become infected with the virus of dengue fever, and is responsible for a large number of human cases of this disease in the northern part of Australia. Occasional limited outbreaks of malaria occur in the northern parts of the State; one at Kidston, in 1910, resulted in 24 deaths. The infection was traced to newcomers from New Guinea. Allusion to the efforts made to deal with the mosquito, under the Health Act of 1911, will be found in Official Year Book No. 12, p. 1063. By an Order in Council the local authorities are now responsible for the taking of measures for the destruction and the prevention of breeding of mosquitoes.

(ii) *Other States.* In Western Australia it is stated that malaria is not known to exist south of the 20th parallel, while filariasis has never been discovered. Mosquito-borne diseases are unknown in Victoria, South Australia, and Tasmania. Dengue is sporadic in Northern New South Wales with occasional outbursts. In a survey of the Northern Rivers district of New South Wales in 1922-1923 microfilariae were found to grow in the blood of 6 out of 145 persons examined. Considerable activity is now being shown by municipalities in dealing with the eradication of mosquitoes. Kerosene and petroleum have been successfully used, both by municipalities and private individuals, to destroy larvae of mosquitoes at various places in these States.

(iii) *Northern Territory.*—While the Territory is conspicuously free from most of the diseases which cause such devastation in other tropical countries, malaria exists, and, although cases rarely end fatally, the Administration is taking measures for the destruction of mosquito larvae wherever settlements or permanent camps are formed, and precautions are being taken to prevent the collection of stagnant water in such localities.

3. **Control of Introduced Malaria and Bilharziasis.**—(i) *General.* The control of returned soldiers and sailors suffering from malaria and bilharziasis, which was undertaken by the Commonwealth Department of Health at the request of the Departments of Defence and Repatriation, is still being carried out in conjunction with State Health Departments.

(ii) *Malaria.* Steps were taken to have all recrudescences in returned sailors, soldiers, and nurses in all parts of Australia notified direct to the Commonwealth Department of Health by the Medical Officers of the Repatriation Local Committees. Malaria is also notifiable to each State Health Department, except in New South Wales, and particulars of such notifications are transmitted to the Commonwealth Department of Health.

Treatment on intensive lines has been regularly carried out in connexion with malarial recurrences in returned sailors and soldiers in order to effect a cure as rapidly as possible. Steps were also taken to prevent the settlement of malaria-infected individuals in localities such as irrigation areas where mosquitoes capable of carrying malaria were known to exist.

From information received, it is evident that in the great majority of cases cure has now been established, and that where recrudescences do occur they have been greatly reduced in severity and frequency. The number of foci of infection has been reduced to unimportant dimensions, and the danger of spread of malaria in the community from this source has been practically eliminated.

(iii) *Bilharziasis.* With few exceptions the men who contracted this disease on active service have been brought in from all parts of Australia for expert re-examination and treatment.

Those who have suffered from the disease, and have undergone treatment as indicated above, are still kept under periodical observation, but owing to the success of the measures already taken it is believed that no danger of the spread of infection exists. Action is being taken in the case of a small number of men who have evaded treatment.

4. **Hookworm.**—In 1911, attention was drawn to the necessity for an investigation into hookworm infection in Queensland, and the view was expressed that notified cases did not accurately indicate the prevalence of the disease. Researches made subsequently tended to support this view.

An investigation made in Papua in 1917 by an officer of the International Board of Health of the Rockefeller Foundation disclosed the fact that half of all natives examined were infected with hookworm disease. In co-operation with the Government of Queensland and the Australian Institute of Tropical Medicine, the survey was extended to Queensland, and a considerable number of cases of hookworm infection was found in certain northern coastal areas. In October, 1919, the Australian Hookworm Campaign was begun. This campaign was supported jointly by the Commonwealth, the International Health Board of the Rockefeller Foundation, the State of Queensland, and the other States in which work in this direction was undertaken. By

the end of 1922, the survey of Australia and its dependencies had been completed. The total number of examinations up to 30th September, 1924, including those in Dr. Waite's survey in Papua and the earlier work in Queensland, was as follows:—

People examined for hookworm disease	..	..	394,578
Found to be infected with hookworms	..	..	62,051 (15.7%)

Endemic hookworm infection was found in intermittent areas along the eastern coast of Australia from Cape York to Macksville in New South Wales. The higher summer rainfall in these areas appears to be chiefly responsible for the localization of the infection. It is also found in the vicinity of Broome and Beagle Bay in Western Australia, in the northern part of the Northern Territory, and along the eastern coast of the Gulf of Carpentaria. In the Territory of Papua, 59.2 per cent. of the natives were found to be infected, and in the Territory of New Guinea, 74.2 per cent. There is no endemic hookworm infection in Victoria, South Australia, Tasmania, the interior of Queensland, New South Wales, except the north-eastern part, and Western Australia except the far north.

Metalliferous mines were examined in Victoria, South Australia, New South Wales, Tasmania, and Western Australia, and were found entirely free from hookworm infection. The examination of metalliferous mines in Queensland showed either no infection or a light infection which may have originated chiefly outside the mines. Coal mines in Victoria, Tasmania, and Western Australia were free from infection. Examinations were made in the coal mines of the Newcastle district, and among 1,226 miners examined in about 25 mines only five infected miners were found. In the Ipswich group of coal mines in Queensland, 31.5 per cent. of the miners were infected, and in the Howard-Torbanlea group (Queensland) 75.3 per cent. were infected. Recommendations were made with regard to the correction of the insanitary conditions responsible for these high infection rates.

Wherever operations are carried on by the hookworm campaign, emphasis is placed on the prevention of hookworm disease, in contrast to temporary relief through the cure of existing cases, and much work has been done to improve methods of night-soil disposal, and to teach the people the danger from soil pollution.

In October, 1924, the International Health Board withdrew from the work which was then continued under the direction of the Division of Tropical Hygiene of the Commonwealth Department of Health. From 1st October, 1924, to 30th September, 1928, under the new administration the field units engaged in the investigation examined 137,172 persons, of whom 11,386, or 8.3 per cent., were found to be infected with hookworm.

In the latter part of 1922, the scope of the campaign was widened to include a malaria and filaria survey in co-operation with the Division of Tropical Hygiene, Commonwealth Department of Health. This work is being carried out as opportunity arises.

Both of the species of hookworm which infest man are found in Australia. They differ in ways important to the practical sanitarian, and the need has been recognized for a new and more practicable method of determining their respective distribution. Such a method has been evolved at the Australian Institute of Tropical Medicine, and is being introduced as part of the routine of hookworm control within Australia.

A number of epidemiological and microbiological problems relating to hookworm and other intestinal parasites in tropical and sub-tropical Australia is being investigated by the Australian Institute of Tropical Medicine and the Commonwealth Health Laboratories in Queensland in co-operation with the work of the field units. It is anticipated that useful information will be obtained in regard to the control of hookworm among white people in the tropical and sub-tropical regions of Australia.

5. **Australian Institute of Tropical Medicine, Townsville.**—The Australian Institute of Tropical Medicine was founded at Townsville in January, 1910. Since 7th March, 1921, the Institute has been administered by the Commonwealth Department of Health. A full account of the activities of this Institute from its foundation up to 1922 will be found in Official Year Book No. 15, pp. 1010–1012.

Since 1922 a number of investigations has been carried out, including the physiology of white population in the tropics, causes of obscure tropical fevers, sociological survey of certain tropical areas of Queensland, the destruction of mosquito larvæ and the control of mosquitoes in the larger centres of population, tropical diseases among the aborigines on Palm Island, leprosy among aborigines in the Northern Territory, prevalence of filariasis in Cairns, Yarrabah Mission Station, Port Douglas, Mossman, and Innisfail, and reputed foci of malaria in tropical Queensland. Courses of instruction in tropical medicine and hygiene commence in May of each year, and continue for four months, and ten publications dealing with various aspects of tropical medicine, etc., have been issued.

6. Royal Commission on National Health.—This Royal Commission, which was appointed by the Commonwealth Government in December, 1924, submitted its report on 9th December, 1925. The report deals with and contains recommendations on the following subjects:—Ill-health in the Commonwealth; medical services; co-operation of Commonwealth and State health authorities; prevention of disease; venereal diseases; uniform legislation with regard to the purity of food and drugs; maternity hygiene; child welfare; industrial hygiene; encouragement and development of research work; relationship between public health authorities and medical practitioners, and between public health authorities and other public authorities rendering medical services; and the publication of information relating to public health.

The report was considered by a Conference of Ministers of Health of the Commonwealth and States of Australia in July, 1926. The Conference accepted generally the recommendations of the Royal Commission; adopted specially the recommendation with respect to the creation of a Federal Health Council with functions as specified by the Royal Commission; and referred the recommendations of the Royal Commission to the Council as the general policy to be followed.

The Federal Health Council, consisting of the principal medical officer in the Departments of Health of the Commonwealth and States, with two additional officers from the Commonwealth Department of Health nominated by the Minister, was constituted by the Federal Government in November, 1926.

The first session of the Council was held in January, 1927, when a series of resolutions was adopted with the view of carrying into effect many of the recommendations of the Royal Commission for securing co-operation between the Health authorities of the Commonwealth and States for promoting uniformity of legislation and administration, and for advancing public health generally within the Commonwealth. Since that date further sessions of the Federal Health Council have been held in March, 1928, and February-March, 1929, respectively, at which further resolutions on these subjects were adopted.

Action has been taken with respect to various resolutions of the Federal Health Council, and two new divisions have been created within the Commonwealth Department of Health, viz., Division of Tuberculosis and Venereal Disease, and Division of Epidemiology, and medical officers have been appointed as Directors of each Division. A Division of Maternal and Child Welfare is now being organized.

7. Travelling Study Tours under the League of Nations.—The Health Organization of the League of Nations has, during the past three years, arranged a series of study tours for medical officers of health of various countries, with resultant benefit by reason of interchange of views to those who have taken part in them. For the purposes of enabling officers to gain experience in public health methods, the Commonwealth Government was invited to nominate representatives for two such tours in 1925, one for three months' travel in Western Europe, and the other for a six weeks' visit to Japan and the neighbouring Asiatic countries.

For the tour in Japan and neighbouring Asiatic countries the Director of Tropical Hygiene in the Commonwealth Department of Health was nominated, and this officer during the latter part of 1925 visited Japan and took part in the conference of Medical Officers held at Tokio. Several other places of interest to Australia from the public health standpoint were visited, including Korea, Manchuria, Shanghai, and Manila, and much valuable information was accumulated.

The Director of the Division of Marine Hygiene in the Commonwealth Department of Health visited Europe during the latter part of 1925, and studied public health methods and administration in various countries.

An offer from the League of Nations of two further tours to officers of the Department of Health for the purpose of studying laboratory methods and administration in Western Europe and England was accepted by the Commonwealth Government for the year 1926. The Director and Assistant Director of the Laboratories Division in the Commonwealth Department of Health who were nominated for these tours visited Europe in 1926.

8. International Sanitary Convention.—A conference of representatives of the various signatory countries to the International Sanitary Convention of Paris of January, 1912, was held in Paris in April, 1925, to consider the draft proposals prepared by the International Office of Public Health for the revision of the Convention. The Director of the Division of Marine Hygiene represented the Commonwealth at this Convention, and the revised Convention has since been ratified.

9. Far Eastern Epidemiological Bureau, Singapore.—Under the auspices of the League of Nations, a Conference of the Advisory Committee of the Eastern Intelligence Bureau of the Far East was held at Singapore in January, 1926, and was attended by medical officers representing Australia, British India, British North Borneo, China, Federated Malay States, Hong Kong, French Indo-China, Japan, Netherlands Indies, Spain, and the Straits Settlements, while three medical representatives of the League of Nations, an observer on behalf of the Philippine Islands, and a visitor on behalf of the International Health Board under the Rockefeller Foundation were also present. The Director, Division of Tropical Hygiene in the Department of Health, represented the Commonwealth.

10. International Pacific Health Conference.—At the instance of the Commonwealth Government, the British Government in 1925 invited the Governments of the various countries having possessions in the Pacific to send representatives to a Conference to be held at Melbourne for the purpose of examining the problems relating to health and disease of the indigenous races of the various island groups of the Pacific, and of indicating the directions in which international action and co-operation might prevent the introduction of disease. Accordingly, in December, 1926, there assembled in Melbourne representatives of the Governments of Great Britain, France, United States of America, Japan, New Zealand, and the Commonwealth, and of the territorial administrations of the Federated Malay States and the Straits Settlements, Fiji, the Western Pacific, Samoa, Papua, and New Guinea. A delegate also attended from the Health Organization of the League of Nations. The resolutions which were adopted by the delegates formulated and recommended a definite plan for the development within the Austral-Pacific zone of an intelligence service, of quarantine co-operation, and of research.

§ 6. Medical Inspection of School Children.

1. General.—Medical inspection of school children is carried out more or less thoroughly in all the States. Medical staffs have been organized, and in some States, travelling clinics have been established to deal with dental, ocular, and other defects.

2. New South Wales.—A system of medical inspection of school children was organized in 1913, and arrangements have been made to examine each child at least twice during the period of school attendance (compulsory between the ages of 7 and 14 years). For this purpose, the staff attached to the Education Department consists of 20 medical officers, 19 dentists (including 8 part-time), 8 nurses, 15 dental assistants, and a clerical staff of 13.

Parents are notified of their children's defects, and are urged to have them treated. In the metropolitan district, children may be treated as out-patients at hospitals (general and special), or at the two school dental clinics. During 1923, the second School Dental Clinic was established at the out-patient department, Children's Hospital, chiefly to obtain strict oral and dental cleanliness before operations on the nose and throat.

Two school oculists have been working in country towns for some time past, while another such officer was appointed in 1928. The Travelling Hospital, which included a school oculist, two dental officers, one nurse, and one dental assistant, was disbanded during the year, the staff since carrying on the same work as three separate units, one school oculist and two school dental clinics. During 1927 the eleven travelling dental clinics treated 16,323 children, and the dental clinics in Sydney 7,025, viz., 6,099 at the Metropolitan School Dental Clinic, and 926 at the Children's Hospital.

Of 84,207 children fully examined during 1927, 41,256, or 48.9 per cent., were notified for treatment of various defects, including dental, and of those notified, 20,999, or 50.8 per cent., were treated. In addition review examinations were made in the case of 27,351 children, of whom 8,651 were notified. Medical defects (not including dental defects only) were found in 22.91 per cent. of children fully examined. In rural areas 40.83 per cent. of those notified were treated, while in the metropolitan area 43.37 per cent. obtained treatment for various defects. The improved result noted in the city was obtained after the following-up work of the school nurses, and because of improved facilities at hospitals, etc.

In the biennium 1926-1927, 156,724 children were fully examined medically, and of this total 73,138, or 46.67 per cent., were recorded as defective. The chief defects were:—dental, 53,106 cases; nose and throat, 20,167 cases; vision, 9,503 cases; and hearing, 3,831 cases. The number of children treated subsequently was 36,100. From the inauguration of the revised system of school medical inspection in 1913 up to the end of 1927, considerably over one million children have been fully examined.

In 1925 certain changes were made in the general scheme of medical inspection. The extra-metropolitan area was divided into three and the metropolitan into seven districts, and medical officers allotted accordingly. The work in the metropolis was arranged to permit of an annual, instead of a triennial, visit to every school, but about one-third only of the children are examined at each visit, viz., entrants, pupils leaving, and cases which are still under review.

The health supervision of High School girls in the Sydney, Newcastle, and Wollongong Districts is allotted to a woman medical officer; while another woman medical officer is attached to the Teachers' College. Every student, on entering the College, is medically examined, and any defects found must be remedied before final acceptance. A course of thirty lectures on hygiene is delivered, which every student attends.

A male medical officer undertakes the medical and psychological examination of delinquent boys brought before the Children's Court. Including review examinations, approximately 1,500 boys are examined each year. Examination of certain girl delinquents is undertaken by a woman medical officer attached to the Children's Court, and the examination and health supervision of subnormal children at Glenfield Residential Special School are also carried out by a woman medical officer.

From time to time mass investigations are undertaken into the prevalence and distribution of certain abnormal conditions affecting school children, such as goitre, acute rheumatism, trachoma, feeble mindedness, crippling, etc. At each triennial visit of the school medical officer to the North Coast area he has assisted in the campaign against hookworm infestation in school children, working in conjunction with the Federal Health Authority in that district. It is hoped that from 1928 an annual visit will be paid to the hookworm area by a school medical officer, who will visit every school at which hookworm infestation is known to exist.

3. Victoria.—The system adopted provides for the medical examination of each child once every three years during its school life. With the doubling of the medical staff in 1925 the Department concentrated on country work, and medical inspection has been undertaken since that date in country and rural districts, reaching the most remote corners of the State. Medical inspection is now undertaken in all High schools, in practically all country State schools, and in about half of the metropolitan State schools, but in only a few of the registered and institutional schools.

Each school is visited once in every three years, and each child examined. In schools with an attendance of 70 or more, the older boys are examined by a medical man and the older girls by a medical woman. At this inspection every child is first weighed and measured, vision and hearing tested, then undressed to the waist and medically examined as for life assurance, but with a fuller investigation of many hygienic factors, which, at that age, greatly influence the health and growth of the child. Opportunity is also taken to teach the child healthy habits, how to correct faults, and also to get into co-operation for the remedying of defects found.

School nurses employed by the Department are devoted to "follow-up" work, *i.e.*, visiting the homes and getting treatment for children found defective by the school medical officers. Owing to the smallness of the staff their work is confined to the metropolitan area. The result of their work is that the treatment received is much greater than that which is obtained without them.

In addition to the medical examination, each child receives dental treatment on entrance to school (if under 8 years of age), and each year thereafter, together with any necessary additional treatment, until it is 12 years of age, when it is left dentally fit.

The present staff is arranged so that 3 dentists and 4 dental attendants are always on duty at the Melbourne Dental Centre, where children from the infant classes in the inner metropolitan schools are brought by the teacher for dental treatment.

A dentist with a dental attendant and equipment travels along the railway line far enough to give one year's work, using practically every town large enough to provide a day's work as a base. The school committees of the outlying schools are notified of the visit, and the parents are invited to bring to the base all children eligible for treatment, *i.e.*, all children under 8 years of age, and all other children treated by the school dentists on previous visits. This method gives all schools in the district the opportunity of dental treatment.

The time of another dentist is fully occupied treating the children in the three largest country centres, Bendigo, Ballarat, and Geelong. In each of these cities a centre with a dentist, dental attendant, and equipment is established for about three months of the year, where children from the infant classes of the neighbouring schools are brought by the teacher or parents.

Another dentist with dental attendant is in charge of a fully-equipped dental van, which has an itinerary which it completes each year.

In no case is the same dental officer on the same trip for the whole year; work is distributed so that there is a change over at every school vacation—Christmas, May, and September. Those who have been in the country take a period of duty in the city and *vice versa*, while those who have been in the van on one trip will probably travel by train the next time, likewise there is constant change between dentist and dental attendants. By doing this it is felt that monotony is relieved, and that the standard of work is maintained at a higher level by the stimulus of change.

The staff of the medical branch consists of 8 full-time medical officers, 1 temporary medical officer, 6 dentists, 7 dental assistants, and 2 school nurses.

During the year ended 30th June, 1928, 50,209 children and 1,608 teachers were medically examined, and 22,407 received dental treatment. In addition, 10,913 homes were visited by the school nurses.

4. Queensland.—In matters affecting the general administration of the medical branch of the Department of Public Instruction, the Department acts on the advice of its Chief Medical Officer, who, while acting independently in all matters affecting individual schools, is in close touch with the Department of Public Health, and observes the policy of that Department in all matters connected with schools which may have direct bearing upon the health of the State.

Medical inspection of schools and school children is at present carried out by a staff of 4 full-time and 2 part-time medical officers. These officers examine all children for cardiac and pulmonary conditions, and in addition, make a thorough examination of all children referred to them by the school nurses. 12,478 were thus medically examined in 1928, and of these, 4,291 were notified as suffering from some condition requiring correction.

School nurses now numbering 10 have been appointed from time to time. To each nurse is assigned a group of schools, and she is instructed to make a list at each school of those children whom she considers should be seen by the medical inspector at his next

visit. She supervises the sanitation, cleanliness and ventilation of the school and notifies the head teacher of all infectious or verminous children or those suffering from impetigo, scabies, etc., who are then excluded. During the year 1928, school nurses examined 40,712 children. In the metropolitan area, the nurses examine the teeth and report all eligible carious cases to the Dental Hospital for treatment. The work of the school nurse is proving more and more valuable in keeping the standard of sanitation high and in controlling the general health of the children. Special nurses are being appointed and trained for work in the schools in connection with the hookworm campaign.

The Department has in its employ a staff of 14 dentists. These officers are each assigned a district, and such district is not changed for three years unless for reasons which the Chief Medical Officer, on the recommendation of the Chief Dental Inspector, considers advisable. During the year 1928, the dental officers examined 44,061 children; 29,850 extractions were performed; and there were 27,543 fillings and 15,297 other treatments. Children and parents alike are beginning to realise the very great value of early dental treatment. The former appreciate the fact that, in the early stages of decay, they are not called upon to suffer pain during dental manipulations, and the latter see in the increased health and vigour of their children the practical value of such treatment.

The Medical Branch, under the direction of the Chief Medical Officer, consists of three sections known respectively as the Medical, Dental and Nursing Sections. These combined constitute the School Medical Service of the State.

In addition to the ordinary activities of the Branch, there has recently been added the Wilson Ophthalmic School Hostel for the treatment and education of severe cases of trachoma. Such cases, on the recommendation of Dr. Johnson, the Departmental Ophthalmologist, are admitted from time to time. Beneficial results have already been obtained. The Institution is situated at Eildon Hill, Windsor, and is fully equipped to treat all types of eye case. The Ophthalmic Surgeon was engaged from London; he is at present organizing the work of some 30 part-time ophthalmic officers in Western Queensland.

Following the policy of the Government to give the same medical and dental facilities to the children of the back country as are obtainable by city dwellers, a Rail Dental Clinic has been constructed. This consists of a carriage 21 feet long, divided into—

- (a) Lavatory and shower accommodation.
- (b) Sleeping and living room, fitted with all conveniences, including ice chest and two-burner Gloria cooking-stove. Ample drawer space is provided in dressing table, and under the sleeping berth.
- (c) Dental surgery fitted with all the latest appliances for dental treatment, including Gloria sterilizer and pressure filtered water. The dental engine is electrically driven and foot controlled. Perfect illumination is obtained by a dental spot light which is part of the chair equipment.
- (d) A compartment for waiting patients which also contains the engine and generator and batteries for lighting the car throughout.

A motor car is carried on a railway waggon at the rear, and can be used at each stopping place to visit the surrounding villages served by the rail centre. This unit will operate in the distant and roadless parts of the State where there would be difficulty in taking the present Road Motor Clinic.

5. **South Australia.**—Medical inspection embraces the examination of all children attending primary, central, high and technical high schools. Each child is examined once in three years. Reports are furnished to parents of defects likely to interfere with educational progress. The staff consists of 1 principal medical officer, 4 medical inspectors, 1 psychologist, 1 dentist, 3 trained nurses, 2 dental assistants and a disinfecting officer. The dentists attend country schools and treat children. The dentist from the City Clinic was transferred in October, 1928, to the Dental Hospital, where school children are now treated. The medical inspectors meet the parents after the examination of the children, report any defects, and recommend treatment. It has been found that a personal talk is of greater value than a written notice. The psychologist examines mentally retarded children and supervises their work in the opportunity classes which have been established for their benefit.

During the year 1928, 27,443 children were examined by the medical inspectors ; of these 631 required notices for defective vision, 202 for defective hearing, and 1,125 for adenoids and enlarged tonsils. Two thousand three hundred and twenty-eight children received dental treatment.

6. **Western Australia.**—Under the Public Health Act 1911-1922, the medical officers of health appointed by the local authorities became medical officers of schools and school children. In the Health Department there are 2 full time and 1 half time medical officers for schools, whose duty is to conduct medical examinations, and three school nurses are employed. During 1928, 11,045 (5,164 country and 5,881 metropolitan) children were examined.

7. **Tasmania.**—To Tasmania belongs the credit of being the first State in Australia to provide for the medical inspection of State school children. As far back as 1906, 1,200 children from the Hobart State schools were examined. At the present time 2 full-time medical officers carry out medical inspections in country and convent schools, while 2 part-time medical officers conduct examinations of school children in Hobart and Launceston. There are also 4 nurses, whose chief duty is to visit the homes to advise the parents as to the treatment of defects disclosed by the medical examination. Country schools are visited by medical officers about once every two years. There are 4 full-time dental officers—two working at dental clinics in Hobart and Launceston, and two visiting the smaller country schools.

8. **Federal Capital Territory.**—By arrangement the education facilities are provided by the Education Department of New South Wales, and the medical inspection of school children is conducted on similar lines to those adopted in that State. Separate statistical information is not available, the figures for the Territory being included in those shown for New South Wales in 2 *supra*.

§ 7. Supervision and Care of Infant Life.

1. **General.**—The number of infantile deaths and the rate of infantile mortality for the last five years are given in the following table, which shows that during the period 1924 to 1928 no less than 36,533 children died in Australia before reaching their first birthday. With few exceptions, the rate of mortality in the metropolitan area is consistently greater than that for the remainder of the State. Further information regarding infantile mortality will be found in Chapter XXV.—Vital Statistics :—

INFANTILE DEATHS AND DEATH RATES, 1924 TO 1928.

State.	Metropolitan.					Remainder of State.				
	1924.	1925.	1926.	1927.	1928.	1924.	1925.	1926.	1927.	1928.
NUMBER OF INFANTILE DEATHS.										
New South Wales	1,299	1,282	1,336	1,161	1,045	1,866	1,719	1,724	1,797	1,963
Victoria	1,289	1,155	1,205	1,118	1,016	927	892	764	848	903
Queensland	367	318	318	365	298	644	599	683	715	603
South Australia	337	287	328	370	292	258	241	181	244	250
Western Australia	292	280	232	210	233	182	183	177	179	186
Tasmania	94	101	77	79	81	202	187	156	177	219
Australia (b)	3,618	3,423	3,496	3,303	2,965	4,079	3,821	3,685	3,960	4,124
RATE OF INFANTILE MORTALITY.(a)										
New South Wales	57.18	56.74	60.72	56.39	49.41	60.22	53.68	55.41	54.04	58.35
Victoria	66.32	59.81	62.91	62.46	57.14	55.49	53.70	47.14	49.38	54.62
Queensland	57.76	49.71	50.41	57.28	48.26	48.22	43.14	50.76	53.12	44.31
South Australia	56.45	48.95	53.03	64.00	49.09	45.89	43.08	34.16	42.72	45.79
Western Australia	53.13	65.71	53.85	57.30	60.74	46.26	49.04	44.33	37.10	38.21
Tasmania	61.32	67.83	53.73	55.71	80.92	52.47	50.15	43.88	51.83	59.35
Australia (b)	59.92	57.13	58.86	59.27	53.05	54.79	50.43	50.05	50.88	52.88

(a) Number of deaths under one year per 1,000 births registered.

(b) Exclusive of Territories.

During recent years greater attention has been paid to the fact that the health of the community depends largely on pre-natal as well as after care in the case of mothers and children. Government and private organizations are, therefore, taking steps to provide instruction and treatment for mothers before and after confinement, while the health and well-being of mother and child are looked after by the institution of baby health-centres, baby clinics, crèches, visitation by qualified midwifery nurses, supervision of milk supply, etc.

2. **Government Activities.**—In all the States Acts have been passed with the object of supervising and ameliorating the conditions of infant life and reducing the rate of mortality. Government Departments control the boarding-out to suitable persons of the wards of the State, and wherever possible the child is boarded-out to its mother or near female relative. Stringent conditions regulate the adoption, nursing and maintenance of children placed in foster-homes by private persons, while special attention is devoted to the welfare of ex-nuptial children. (See also in this connexion Chapter XI.—Public Benevolence.) Under the provisions of the Maternity Allowance Act 1912, a sum of five pounds is payable to the mother in respect of each confinement at which a living or viable child is born. Further particulars regarding Maternity Allowance are given in Chapter VIII.—Finance.

3. **Nursing Activities.**—(i) *General.* In several of the States, the Government maintains institutions which provide treatment for mothers and children, while, in addition, subsidies are granted to various associations engaged in welfare work.

(ii) *New South Wales.* Baby health centres were established by the Government in 1914. Attached to each centre is an honorary medical officer and a staff of trained nurses who instruct mothers in matters pertaining to the care of themselves and their children. In March, 1929, there were 77 centres in operation, of which 39 were in the metropolitan area, 16 in the Newcastle district, and the remainder in important industrial and rural centres. During 1928 the attendances at the clinics numbered 331,000, and the nurses paid 106,400 visits to newly-born babies—viz., 23,400 first visits and 83,000 subsequent visits. No charge is made for attention or advice.

The Royal Society for the Welfare of Mothers and Children conducts two welfare centres in the metropolis, and has two training schools where nurses may receive post-graduate training in infant hygiene and mothercraft. The nurses attached to health centres are required to take this course, and arrangements have been made to train the nurses engaged by the Bush Nursing Association. The Day Nursery Association maintains five nurseries where working mothers may leave their children during the day.

The Bush Nursing Association aims at providing fully-qualified nurses in country districts throughout Australia. Centres may be formed in any district where the residents can enrol sufficient members to guarantee the salary of a nurse. As the greater part of the nurses' work is that of midwifery, the nurses must be registered midwives. In March, 1929, there were 44 bush-nursing centres in New South Wales.

(iii) *Victoria.* The first Baby-Health Centre was opened in 1917. At the latest available date the Victorian Baby-Health Centres' Association had 90 centres in operation, 54 in the metropolitan area, and 36 in country towns. The Association receives subsidies from the State Government and the local municipal councils. During the year ended 30th June, 1928, 22,361 individual babies were taken to the centres, while total attendances numbered 201,177, and 54,258 visits were paid by the nurses to patients in their own homes. The Society for the Health of Women and Children also maintains six centres in the industrial suburbs of the metropolis and one centre in the country. There are, in addition, crèches where children may be left while the mothers are at work.

The Bush Nursing Association had in June, 1928, 59 centres in operation in the country districts. In connexion with this association there are fourteen cottage hospitals in operation and others are in process of preparation.

(iv) *Queensland.* Five Baby Clinics have been established in Brisbane by the Government, and others have been formed in ten of the larger provincial centres. A training school has been organized to train nurses for welfare work. For the year 1927–28 attendances at the clinics numbered 94,492, in addition to which the nurses visited 6,115 new-born babies and paid 6,959 subsequent visits in connexion with the after care of mothers and infants.

There are in the metropolitan area six kindergartens and four crèches where children may be left during the day. The Crèche and Kindergarten Association has established a Training College. The Playgrounds' Association aims at providing playgrounds for children in the populous parts of towns and cities.

The Bush Nursing Association has ten nurses stationed in the country districts.

(v) *South Australia.* Branches of the "Mothers' and Babies' Health Association," recently called "School for Mothers' Institute and Babies' Health Centre," have been established at 41 metropolitan and 4 country centres. This association receives a Government and municipal grant. During the year ended 31st July, 1928, the nurses paid 1,759 visits to expectant mothers and 35,459 to young babies. In August, 1921, baby clinics were established, to which, in 1927-28, 46,204 babies were brought for examination, advice and information being given where necessary to the mothers. There is a crèche at West Adelaide for the benefit of the children of women obliged to earn their own living.

The District Trained Nursing Society has 33 branches, of which 16 are in the metropolitan area. A hospital at Denial Bay has been taken over by the society. The nurses of this society paid 68,092 visits to homes. Nursing homes have been established by the Australian Inland Mission at Beltana and Oodnadatta in the far north of South Australia, and at three places in the Northern Territory.

(vi) *Western Australia.* The organizations which aim at improving the conditions of infant life include an ante-natal clinic established by the Government at the King Edward Maternity Hospital, a day nursery where children may be left and cared for while the mothers are away at work, and the Infant Health Association, which is subsidized by the Government and local authorities, and which controls fifteen centres, with a specially trained nurse in charge of each. During the year ended 30th June, 1928, the attendances at clinics numbered 32,469, in addition to which the nurses paid 10,208 visits to homes.

The Bush Nursing Trust maintains a rest-house for expectant mothers, and the Australian Inland Mission has nursing homes at Hall's Creek and Port Hedland.

(vii) *Tasmania.* There are four baby clinics in Hobart, two in Launceston, and one in the country controlled by Child Welfare Associations. During the year 1928, the nurses visited 9,673 homes, and attendances at the clinics for the same period numbered 19,459. The number of individual babies taken to the clinics was 2,271. A mothercraft home was opened in Hobart in August, 1925, with accommodation for 10 babies and 3 mothers. During 1928, 20 mothers and 70 babies were inmates of the home and 9 trained nurses completed a special course in infant hygiene.

The Bush Nursing Association, which is subsidized by the Health Department, the Red Cross Fund, and municipal councils, has stationed nurses in fifteen country districts.

(viii) *Federal Capital Territory.* Under the auspices of the Canberra Mothercraft Society a baby health centre has been established at Kingston, with a qualified nurse in charge, and there are baby clinics in various parts of Canberra. A subsidy is provided for the work by the Federal Capital Commission.

(ix) *Summary.* The following table gives particulars of the activities of the Baby Health Centres and the Bush Nursing Associations :—

BABY HEALTH CENTRES AND BUSH NURSING ASSOCIATIONS, 1928.

Heading.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
Baby Health Centres:—							
Metropolitan No.	41	60	5	41	(b)15	4	166.
Urban-Provincial, and Rural No.	38	37	10	4	..	3	92
Total No.	79	97	15	45	15	7	258
Attendances at Centres .. No.	331,000	201,177	94,492	46,204	32,469	19,459	724,801
Visits paid by Nurses .. No.	106,400	54,258	13,074	37,218	10,208	9,673	230,831
Bush Nursing Association, Number of Centres	44	59	10	(a)33	1	15	162

(a) District Trained Nursing Society.

(b) Includes Urban-Provincial and Rural.

NOTE.—Particulars for the Federal Capital Territory are not available.