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SECTION XXX.

PUBLIC HYGIENE.

§ 1. Introduction.

1. **General.**—Though the safeguarding of the public health as an organised department of administration is of comparatively modern growth, few branches of law have expanded more rapidly than the law relating to public health. The loss of potential wealth incurred through preventable diseases and deaths is of grave concern to the nation, and is a matter which has recently received an increased amount of attention both from the Commonwealth and State Governments and from the Health and other authorities in Australia. Numerous Acts of Parliament have been passed dealing with various aspects of the subject of public hygiene.

2. **State Legislation.**—In the first place there is a number of statutes, passed by the State Legislatures, such as Public Health Acts, Pure Food Acts, and Milk and Dairy Supervision Acts, providing, *inter alia*, for the constitution of Central Health Authorities, vested with definite powers, and furnishing the machinery necessary to enforce these powers. The general effect of this legislation has been to place local sanitary regulations and the execution of the Acts in the hands of the local authorities, subject to a general superintendence by a Government department.

3. **Commonwealth Legislation.**—Secondly, by the enactment of the Commerce (Trade Descriptions) Act 1905 and the Quarantine Act 1908, the Commonwealth Government has taken the first steps towards the exercise of its constitutional powers for the protection of the public health. Both these Acts are administered by the Department of Trade and Customs.

4. **Scope of Enquiry.**—In addition to the statutes already referred to, account should be taken of a large body of legislation which relates more or less indirectly to the subject of public hygiene. It deals with a great variety of subjects and matters, such as factories, conditions of employment, mines, merchant shipping, prevention of fire, buildings, dangerous performances, contagious diseases, and other matters. There is also a number of statutes which have been passed with the object of protecting and supervising infant life. Owing to exigencies of space it is not possible in this section to do more than give a brief description of the scope and results of the legislation relating to public hygiene in its more important aspects.

§ 2. The Public Health Acts.

1. **General.**—The most important statutes relating generally to the subject of public hygiene are the Health Acts which have been passed in each State. While the scope of these Acts differs considerably in some of the States, there is a general similarity in their chief provisions and range of operation. The administration of the Acts is generally carried on by a Central Board of Health under Ministerial control, while their actual execution is imposed on local Boards of Health or on the local authorities constituted

under the various Local Government Acts. Ordinarily the Central Board has general supervisory powers over local Boards and authorities, and also has power to act in case of default by a local Board or authority as to any duty under the Act, and to recover all expenses incurred. The Central Board may also make regulations, and the central and local Boards may make by-laws for various purposes generally specified in the Health Acts. Generally it may be said that the chief functions of the Central Health Authorities are:—(a) the collection and dissemination of useful information relating to health and the prevention of disease, and (b) to control, stimulate, and, where necessary, to supplement the efforts of the local authorities.

Inspectors are sent to make reports on the hygienic conditions of country towns or districts with a view to assisting the local authorities with advice, and keeping the central department posted as to the activity or otherwise of these various bodies.

Rating powers for sanitary purposes are conferred on local authorities by the Local Government Acts.

The general powers of local authorities under the Acts extend to a variety of subjects and matters, including—sewers and drains, sanitary conveniences, scavenging, cleansing, privies and cesspools, abatement of nuisances generally, offensive trades, public buildings, dwelling-houses and lodging-houses, hospitals, mortuaries, cemeteries and burial grounds, prevention of adulteration of food and drugs, unsound food, pollution of water, supervision of abattoirs and dairies, prevention of infectious diseases, and infant life protection.

2. New South Wales.—The Department of Public Health consists of a Permanent Head, Board and Secretary, together with the various staffs—medical, chemical and clerical; in addition there are five sanitary inspectors working under the medical officers of health and the chief sanitary inspector. The business carried on by the Department embraces public health and the general medical work of the Government. The Board is nominee; it was created in 1881, incorporated in 1894, and is charged with the administration of the following Acts:—Public Health Act 1902, Public Health (Nightsoil Removal) Act 1902, Dairies' Supervision Act 1901, Noxious Trades Act 1902, Cattle Slaughtering and Diseased Animals and Meat Act 1902, Sydney Abattoirs, etc., Act 1902, Quarantine Act 1897, Pure Food Act 1908, and Private Hospitals Act 1908. The Board also possesses advisory powers under the Local Government Act 1906.

3. Victoria.—In this State the Public Health Acts are administered by a Board composed of two members nominated by the Governor-in-Council and of seven members elected by the municipal councils. The medical and sanitary staffs of the Board consist of (a) the medical inspector, who is also chairman, (b) two assistant medical inspectors, (c) five port health officers, (d) five engineering inspectors, (e) one sanitary inspector, and (f) nine food inspectors. The main function of the Board 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 inspections as to the sanitary condition of various districts and the sampling of articles of food. The supervision of the sanitary condition of the milk supply is under the Dairy Supervision Branch of the Department of Agriculture. Acts administered by the Department of Public Health are:—The Health Act 1890, the Cemeteries Act 1890, the Cremation Act 1903, the Adulteration of Wine Act 1905, the Meat Supervision Acts 1900 and 1909, and the Pure Food Act 1905.

4. Queensland.—In this State a Department of Public Health was organised in 1901 under the authority of the Health Act 1900. Prior to that time a central authority—the Board of Health—existed, but was without legal power, and the responsibility of sanitary administration was thrown upon the local authorities. The Act of 1900 consolidated and amended prior health legislation and provided for the appointment of a Commissioner of Public Health, charged, under the Home Secretary, with the administration of the Act. The chief functions of the central authority are to advise and stimulate the local authorities on matters pertaining to the Act, and also, where neces-

sary, to compel the remedying of sanitary evils produced by local inefficiency or apathy. The production and sale of milk and the manufacture, sale, and export of dairy produce, in their hygienic aspects, are controlled by the Department of Agriculture and Stock under the Dairy Produce Acts 1904, 1905, and 1910.

5. **South Australia.**—The Central Board of Health in South Australia consists of five members, three of whom (including the chairman) 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 provides that the municipal and district councils are to act as local Boards of Health for their respective districts. There are 175 of these local Boards under the general control and supervision of the Central Board. A chief inspector periodically visits the local districts and sees generally that the Boards are carrying out their duties. There is also a chief inspector of food and drugs (under the Food and Drugs Act 1908), and a chief inspector of cattle, and there are nine other inspectors in outlying districts who are directly responsible to the Central Board.

6. **Western Australia.**—The Health Act 1898, which has been amended by Acts passed in 1900, 1902, 1904, 1906, and 1909, provides for administration on the following lines:—The principal authority (under the Minister) is the Central Board of Health, consisting of five nominee members, and has general supervisory powers, including the approval of all appointments of officers, and confirmation of all by-laws made by local Boards, and supervision of finances. Within municipal districts, local administration is in the hands of the municipal councils, which act as local Boards of Health; while for districts outside municipalities local Boards may be appointed by the Governor. The control of dairies and dairy herds and of food supply are both functions of the health authorities under the Health Acts. An Amending and Consolidating Health Bill was introduced into Parliament in 1909, but has not yet been passed.

7. **Tasmania.**—In this State a Department of Public Health, under the control of a chief medical officer, was constituted by the Public Health Act 1908. The department has one inspector, but district health officers are not provided for. The number of local authorities under the Public Health Act has been reduced to fifty-one since the Local Government Act 1906 came into force. All parts of Tasmania are now furnished with the administrative machinery for local sanitary government.

3. Inspection and Sale of Food and Drugs.

1. **Introduction.**—The importance of securing a pure and wholesome supply of food and drugs is recognised by both the Commonwealth and State Parliaments. 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.

(i.) *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 Commerce (Trade Descriptions) Act, to which reference has already been made in another part of this book (see page 609), was passed in 1905.

(ii.) *State Jurisdiction.* The inspection and sale of food and drugs is also dealt with in each State either under the Health Acts or under Pure Food Acts. There is, in addition, in the several States, a number of Acts dealing with special matters, such as the adulteration of wine and the supervision of meat. The sanitary condition of the milk supply is also subject to special regulations or to the provisions of special Acts; this subject is more particularly referred to in the next succeeding sub-section hereof.

(a) *General Objects of Acts.* The general objects of the Acts dealing with the inspection and sale of food and drugs are to secure the wholesomeness, cleanliness, and freedom from contamination or adulteration of any food, drug, or article, and for securing 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 are the mixing or selling of food or drugs so as to be injurious to health.

(b) *Inspection and Analysis.* Power is given to any authorised officer to enter any place for the purpose of inspecting any article intended to be used as a food or drug and also to inspect articles being conveyed through the streets, by water or by rail. He may take samples for examination or analysis, and may seize for destruction articles which are injurious to health or unwholesome. Chemical analyses and bacteriological examinations are made by qualified officers. Special provision is generally made in the Acts with regard to the sale of preservatives and disinfectants.

(b) *Advisory Committees.* In New South Wales, Victoria, and South Australia 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, but it is stated that up to the present comparatively few of the local councils seem to have realised the importance of guarding the food supplies of the people.

2. **New South Wales.**—Provisions as to the sale of food and drugs in New South Wales are contained in the Pure Food Act 1908 and in the regulations made thereunder. The administration and enforcement of these provisions are primarily duties of the Board of Health, but may, by direction of the Governor, be left to local authorities. Analyses are made by the Department of Public Health free of charge.

(i.) *Special Provisions.* The Act contains a number of special provisions. Drugs must comply with tests specified in the British Pharmacopœia, and packages of food must be labelled with description, weight, or measure of their contents. The advertising or sale of any injurious or useless food, drug, or appliance may be prohibited, as also may the sale of any substance as a disinfectant or preservative. A person selling prohibited articles may not be liable to penalties under the Act if he prove that he purchased such articles with a guarantee in writing that they were not adulterated or falsely described, that he had no reason to believe that the same were adulterated or falsely described, and that he sold them in the same state as when he purchased them. The person giving the guarantee must be a resident in New South Wales, or, if a company, must have a registered office in New South Wales. The Board of Health may require the council of any local authority to submit for analysis during each year not less than three samples of foods or drugs for each thousand persons of the population of its area.

(ii.) *The Advisory Committee.* The Pure Food Act 1908 provides for the constitution of an Advisory Committee on whose recommendation the Board of Public Health may make regulations prescribing food standards, prohibiting the manufacture or sale of food, or the use of appliances containing any specified substances, and for generally carrying out the purposes of the Act.

3. **Victoria.**—In this State the prevention of the adulteration of food and of the sale of unwholesome food are provided for by the Health Act 1890, as amended by the Adulteration of Wine Act 1900 and the Pure Food Act 1905 and regulations made thereunder. While differing considerably in detail, the general provisions of these Acts are in many respects similar to those of the New South Wales Act of 1908. The Meat Supervision Acts 1900 and 1909 specially deal with the supervision of the slaughtering of animals and the sale of meat in Victoria. The Pure Food Act provides, *inter alia*, for the establishment of a specially qualified Foods Standard Committee charged with the

functions of formulating standards of purity, quality, and composition, for articles of food and drugs. Various regulations as to both food and drugs have been made by this Committee. The Act requires explicit labelling of packages, and provides for the punishment, where possible, of the actual adulterator. The retail vendor is not penalised if it is clear that he has no guilty knowledge, and that he has taken reasonable precautions against committing an offence. A warranty or invoice may be available as a defence to any proceedings under the Acts, but if given by a person resident outside the State the defendant must prove that he had taken reasonable grounds to ascertain and did in fact believe in the accuracy of the statements contained in the warranty or invoice.

4. **Queensland.**—By Part VI. of the Health Act 1900 and by regulations made thereunder, provision is made for the inspection of food, and for the supervision of the sale of food and drugs by local authorities. The inspection and examination of food stuffs has, however, been almost entirely undertaken by the Department of Public Health, and it appears that very few of the local authorities make any attempt to carry into execution the provisions of the Health Act relating to food. Considerable activity was shewn by the Department during the year 1908-9 in carrying out a pure-food crusade, both in Brisbane and in provincial towns. Seventy prosecutions were carried through the courts in accordance with the food sections of the Act of 1900, and in sixty-three cases, fines were inflicted. During the year 1909-10 thirty-five prosecutions were undertaken and fines were imposed in thirty-three cases. In any prosecution for selling adulterated food or drugs no person may be convicted if he prove that he did not know of the adulteration, and that he could not, with reasonable diligence, have obtained that knowledge. It is also open to a defendant to prove that he purchased the goods with a written warranty from some responsible person carrying on business in Queensland.

5. **South Australia.**—The inspection and sale of food and drugs is now chiefly contained in the Food and Drugs Act 1908, and in the regulations made thereunder; certain special matters, such as water and meat supplies, are dealt with in Part VII. of the Health Act 1898. An important provision of the Food and Drugs Act is the constitution of the metropolitan area as a single district, so that the sale of food and drugs generally, as well as the inspection and supervision of dairy premises and cattle in the metropolis, is under the control of one central body—the Metropolitan County Board. Another important provision of the Food and Drugs Act is the appointment of an Advisory Committee to fix standards of foods and drugs, and to draw up necessary regulations. In addition to dealing with the supervision of the milk supply and dairies, the Act provides for the inspection and analysis of foods, drugs, chemicals, spirituous liquors, patent medicines, and proprietary articles, for the inspection and examination of all animals offered for sale or slaughter, and for the licensing of ice cream and aerated waters manufacturers. A warranty given by a person resident in South Australia is available as a defence to any proceeding under the Act, if the defendant prove that he bought the article in the same state as sold. Proof of absence of knowledge of adulteration is a sufficient defence if the defendant could not by analysis or other adequate test have obtained that knowledge.

6. **Western Australia.**—The adulteration of food and unwholesome food are dealt with under Part IV. of the Health Act 1898, the provisions of which, with regard to food control, are based on those of the English Health Act of 1875. Each local Board may be required to appoint its own analyst, but in many of the more remote country districts this is not insisted upon. Within municipal districts it is stated there is a fairly systematic inspection of various articles of food, while the samples submitted for analysis consist chiefly of milk. It is found that the effective supervision of imported tinned meats demands constant attention. Inspection of alcoholic beverages is carried out by spirit inspectors appointed under the Licensing Acts.

7. **Tasmania.**—Though provision exists under the Public Health Act 1903 for the inspection and supervision of food and drugs, it would appear that no systematic attempt at enforcement of food purity is made in Tasmania. The existing statutory powers leave these matters wholly in the hands of local authorities. The Department of Public Health has no power to take samples for examination or analysis. In any action under the Act a defendant must be discharged if he prove absence of knowledge or that he bought the article in the same state as sold, and with a warranty. A Bill to provide for the regulation of the sale of food and drugs was introduced in the Tasmanian Parliament in July, 1910.

8. **Food and Drug Standardisation.**—With the object of securing uniformity of food and drug standards of the principal manufactured products sold in the Commonwealth, a conference, which was attended by representatives of the Commonwealth and all the individual States except Western Australia, was opened in Sydney on 8th June, 1910. The result of this conference was that several adoptions of standards of food and drugs, and labelling of articles for consumption were made, so as to obtain uniformity in the several States. The recommendations of the conference deal with a variety of matters and are too lengthy for inclusion in this publication. Among the most important may be mentioned the following:—(a) The addition to articles of food of preservative substances, being other than common salt, sugar, spice, wood-smoke, vinegar, and acetic acid, should be prohibited as far as possible, and should be permitted only in minimum proportions. (b) The addition to any form of milk of any preservative (except sugar) should be prohibited. (c) The addition of foreign or artificial colourings or flavourings* should be avoided as far as possible, and when permitted should be declared.

§ 4. Milk Supply and Dairy Supervision.

1. **Introduction.**—Milk is pre-eminently the food which needs most careful protection at each successive stage of its production, carriage, storage, and delivery, from exposure to infection from extraneous matter. The problem of obtaining a pure and clean milk supply has accordingly, during the last few years, demanded an increasing amount of attention from the Health authorities, and in each State special laws and regulations have been passed governing the supervision of dairy farms and dairies.

(i.) *General Provisions of Acts and Regulations.* In general, it may be said that it is not lawful to sell or offer for sale any milk which is not fresh or wholesome, or which has been watered, adulterated, reduced, or changed in any respect by the addition of water or any other substance, or by the removal of cream. Regulations made under the Acts provide for the carrying-on of dairy farms, dairies, factories, and creameries, under proper and wholesome conditions; and supervisors and inspectors are appointed to enforce these provisions. Generally, the execution and enforcement of the Acts is left to the local authorities.

(ii.) *Registration of Dairymen and Milk Vendors.* Dairymen, milk vendors, and dairy-factory or creamery proprietors are required, under penalty, to be registered. In some States registrations must be applied for before commencing to trade; in other States they must be applied for within a specified time after the premises are first used.

(iii.) *Inspection of Premises.* Dairy inspectors employed by the central department traverse the principal dairying districts, and inspect dairy premises, dairy herds, appliances, and utensils, and ascertain in what fashion the various local authorities carry out the duties imposed on them. Regulations and instructions are issued by the central departments for the information and guidance of local authorities, dairymen, milk vendors, and others, as to precautions to be observed in order to protect milk from contamination, and to ensure cleanliness as to the structural arrangements, dimensions

and ventilation of premises, and as to the care and health of dairy cattle. If an inspector is satisfied that any premises or apparatus used therein are unclean, or unfit for the purposes of dairy produce, he may require the owner to put the same in a proper and wholesome condition.

(iv.) *Notification of Diseases.* Every dairyman or milk vendor is required to report immediately any case of certain prescribed infectious diseases occurring in any human being engaged at or residing on his premises. It is the duty of the local authority to take care that communication between all persons belonging to the infected household and the milk business in all its details is prevented. Cases of notifiable diseases occurring in animals at a dairy farm or dairy must also be reported immediately, and the owner must at once isolate the diseased animal. The sale of milk from an infected cow is prohibited, and, under certain circumstances, an inspector may order an infected animal to be branded or destroyed.

(v.) *Analysis of Dairy Produce.* The local authority generally has power to enter premises and to take away samples of the milk, cream, butter, or cheese there found, and of the water supply therein, for the purpose of examination or analysis.

2. **Number of Dairy Premises Registered.**—The following table shews the number of dairy premises registered and the number of cattle thereon in each State during the year 1909-10:—

NUMBER OF DAIRY PREMISES REGISTERED AND CATTLE THEREON, 1909-10.

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.
Premises registered ...	17,275†	11,581	10,275	244	282†	*
Cattle thereon ...	845,436†	97,623	253,294	2,137	4,525†	*

* Not available. † Figures are for year 1908-9.

3. **New South Wales.**—The provisions of the Dairies Supervision Act 1901 extend to the whole of the Eastern Division of this State 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, and also to the local authority of every other district in which he trades. Registrations must be applied for before commencing to trade and must be renewed annually.

4. **Victoria.**—The inspection and supervision in Victoria of dairies, dairy farms, dairy produce, milk stores, milk shops, milk vessels, dairy cattle, and grazing grounds are provided for by the Milk and Dairy Supervision Act 1905, administered by the Minister of Agriculture. Under the Health Act 1890 and the Pure Food Act 1905, 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 1909, eighty-seven municipal districts, comprising about one-sixth of the area of the State, had been brought under the operation of the Milk and Dairy Supervision Act. The municipal councils have the option of carrying out the execution of the Act themselves or of electing for execution by the Department of Agriculture; up to the present all the municipalities in which the Act has been proclaimed have elected for Departmental execution.

The following tables give particulars of dairy farms and dairies, their acreage, the acreage under cultivation, and the number of cows at the end of the year 1910:—

VICTORIA.—PARTICULARS OF DAIRY FARMS AND DAIRIES, 1910.

Particulars.	Dairy Farms.	Dairies.	Acreage.		Number of Cows.	Total License Fees received in 1910.
			Cultivated.	Total.		
			Acres.	Acres.		
Number ...	9,163	2,418	275,994	10,480,432	97,623	£ 4,804

5. **Queensland.**—The control and supervision of the milk supply and of dairies and the manufacture, sale, and export of dairy produce in Queensland are provided for by the Dairy Produce Acts 1904 and 1905, administered by the Department of Agriculture and Stock. These Acts and the regulations made thereunder apply only to prescribed districts, which comprise the whole of the coastal district from Rockhampton down to the New South Wales border and the Darling Downs, Maranoa, and Cairns districts.

6. **South Australia.**—The licensing and registration of dairies, milk stores, and milk shops, and the licensing of milk vendors are now provided for by the Food and Drugs Act 1908, which came into force on the 1st June, 1909. Regulations for registration under this Act were in course of preparation in April, 1910, and it is understood that in many cases the local authorities have held over registration pending the issue of such regulations. Reference has already been made (see § 3, 5 hereof) to the constitution of the Metropolitan County Board.

7. **Western Australia.**—In this State the inspection of dairy herds is under the control of the Department of Agriculture, while the supervision of dairy premises and of subsequent stages in the milk supply is carried out by the Health authorities. At the commencement of the year 1908 a campaign was instituted towards the elimination from dairy herds of tubercular cattle. This campaign took the form of the application to all the animals in each herd of the tuberculin tests and the isolation and slaughter of all re-acting animals.

8. **Tasmania.**—Under the Public Health Act 1903 it is the duty of local authorities to regulate the hygienic conditions of milk production and milk supply, and regulations dealing with milk, cream, and butter standards have been prescribed. Comprehensive by-laws for the registration and regulation of dairymen's premises exist in many districts, but outside the cities and a few towns it would appear that these are seldom enforced.

§ 5. Prevention of Infectious and Contagious Diseases.

1. **General.**—The provisions of the various Acts as to precautions against the spread and the compulsory notification of infectious diseases may be conveniently dealt with under the headings—(a) Quarantine; (b) Notifiable Diseases; and (c) Vaccination.

2. **Quarantine.**¹—Under the Commonwealth Quarantine Act 1908, the systems of State quarantine formerly in operation were abolished, and a branch of the Department of Trade and Customs, under the immediate control of a Director of Quarantine, was created on 1st July, 1909. As far as is at present practicable uniformity of procedure has been established throughout the Commonwealth in respect of all vessels, persons, and goods arriving from overseas ports or proceeding from one State to another,

1. From information furnished by W. P. Norris, Esq., M.D., D.P.H., Federal Director of Quarantine.

and in respect of all animals and plants brought from any place outside Australia. In regard to interstate 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 interstate quarantine of animals and plants is left in the hands of the States.

(i.) *Transfer of Quarantine Stations.* The transfer from the States to the Commonwealth of the quarantine stations, for the purposes of human quarantine, at the following places has been effected:—(a) *New South Wales.* North Head (near Sydney). (b) *Victoria.* Point Nepean (near Melbourne). (c) *Queensland.* Magnetic Island (near Townsville), and Thursday Island. (d) *South Australia.* Torrens Island (near Adelaide). (e) *Western Australia.* Woodman's Point (near Fremantle), Albany, and Broome. Animal quarantine stations in each of the States have also been transferred, and steps are being taken for the taking over by the Commonwealth of other stations. New buildings and improvements are in course of construction at several of the transferred stations.

(ii.) *Co-operation of Federal and State Authorities.* In order to secure co-operation between the Commonwealth and State authorities, and with the further object of economical administration, arrangements were, in 1909, made under which the chief medical officer of each State Health Department acts as the Chief Quarantine Officer in his State, and officers hitherto performing quarantine duties under the State Acts became Federal quarantine officers, payment for their services being made through the State Governments. Arrangements were also made for the administration of the Act and regulations relating to oversea animal and plant inspection and quarantine, to be carried out by officers of the States Agricultural Departments. Power to take action for the prevention of the spread of disease within a State still remains in the hands of the State, and as the functions of the Commonwealth and States may be exercised at the same time, the advantage of co-operation is apparent.

(iii.) *Chief Provisions of Act.* The Act provides for the inspection of all 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 are defined as small-pox, plague, cholera, yellow fever, typhus fever, or leprosy, or any other disease declared by the Governor-General, by proclamation, to be quarantinable. "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" is defined as meaning "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 as 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; and fix the quarantine lines in certain ports of Australia.

(v.) *Regulations.* Regulations have been made prescribing the quarantine signal; the hours of clearance of vessels; forms of notices, orders, reports, and bonds to be used by masters, medical officers, quarantine officers, and importers; the period of detention of vaccinated and unvaccinated persons in quarantine; the conditions of removal of

goods and mails; the method of disinfection of persons, animals, and infected or suspected articles; the conditions under which certain animals not prohibited may be imported; the sustenance charges for quarantine animals; the conditions of importation of hides, skins, wool, hair, bones, and animal manure; the method of carrying out the quarantining, disinfection, fumigation, and treatment of plants and packages, Regulations have also been made with the object of preventing the ingress to and the egress from vessels of rats and mice, and for the destruction of rats, mice, and other vermin.

(vi.) *General.* The procedure has already been greatly simplified. Instead of all oversea vessels being examined in every State, as was formerly the case, those arriving from the south 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. It is expected that the restrictions placed upon oversea vessels will be further 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.**—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 fact must be notified to the medical officer of health of the district. 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.

(i.) *Notifiable Diseases Prescribed in each State.* In the following statement those diseases which are notifiable in each State are indicated by a cross:—

DISEASES NOTIFIABLE UNDER THE HEALTH ACTS IN EACH STATE, 1911.

Particulars.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.
Anthrax	+
Ankylostomiasis	+
Beri-beri	+	...
Bubonic plague ...	+	+	+	+	+	+
Cerebro-spinal meningitis	+	+
Cholera	+	+	+	+	+
Continued fever	+	...	+	...
Diphtheria ...	+	+	+	+	+	+
Enteric fever	+	+	+	+	+
Erysipelas	+	+	+	...
Leprosy ...	+	+	+	+	+	+
Malarial fever	+
Measles	+
Membranous croup	+	+	+	...
Poliomyelitis anterior acuta	+
Puerperal fever	+	+	+	+
Pulmonary tuberculosis(phthisis)	+	+	+	+	+
Relapsing fever	+	+	+	...
Scarlet fever ...	+	+	+	+	+	+
Scarlatina	+	+
Small-pox ...	+	+	+	+	+	+
Trichinosis	+
Typhoid ...	+	+	+	+	+	+
Whooping cough	+
Yellow fever...	...	+	...	+	+	+

* Under the Leprosy Act 1892.

(ii.) *Duties of Authorities.* 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.

(iii.) *New South Wales.* The proclamation and notification of infectious diseases is dealt with in Part III. of the Public Health Act 1902. Special provision is made by that Act for the notification of small-pox and leprosy, and for the custody and treatment of lepers. Many improvements have been effected by the Sydney Harbour Trust (see Section XXVI. hereof; page 997) with a view to generally improving the hygienic condition of the area under its control, and especially with the object of preventing the introduction of bubonic plague. Special reports dealing with the ætiology of outbreaks of plague have been published.

(iv.) *Victoria.* Under Part VIII. of the Public Health Act 1890, the notification of small-pox, cholera, plague, yellow fever, and other prescribed malignant, infectious, or contagious diseases is compulsory. An amending Act, passed in 1907, requires medical practitioners and registrars to report all cases of notifiable diseases coming under their notice in any proclaimed district, and not merely those cases which occur in the district in which the practitioner or registrar is resident.

(v.) *Queensland.* Under Part VII. of the Health Act 1900, all cases of infectious diseases must be notified; special provision is made for notification of cases of phthisis and small-pox. A report on plague in Queensland for a period covering eight successive years—1900 to 1907—has been published by the Commissioner of Public Health. Apart from the statistical data collected and collated, the report deals exhaustively with the medical, preventive, administrative, and epidemiological aspects of the plague, as observed in Queensland. Plague hospitals are provided at Maryborough, Bundaberg, Gladstone, Mackay, Townsville, and Cairns. Provision is also made for the diagnosis of leprosy, and lepers are sent to Peel Island, Moreton Bay.

(vi.) *South Australia.* In this State cases of infectious diseases must be reported to the local Board, under the provisions of Part VIII. of the Health Act 1898. The onus of notification is placed primarily on the head of the family, and, failing him, the nearest relative, the person in charge, or the occupier of the house; in any case, notification must be given by the medical practitioner attending.

(vii.) *Western Australia.* Regulations made under the Health Act 1898 provide for the compulsory notification to local Boards of infectious diseases. The local Boards must report to the Central Board. The necessity for providing hospital treatment for infectious cases has been recognised by the Boards of Health, and in several instances wards for the treatment of these cases have been erected.

(viii.) *Tasmania.* Provisions regarding the prevention and notification of infectious diseases are contained in the Public Health Act 1903, as amended in 1908.

4. **Vaccination.**—In the State of New South Wales there is no statutory provision for compulsory vaccination, though such exists in all the other States of the Commonwealth. With the exception of Victoria, the Vaccination Acts are, however, not generally enforced. The following table shews, so far as particulars are available, the number of persons vaccinated in each State from 1901 to 1909 inclusive:—

NUMBER OF PERSONS VACCINATED IN EACH STATE, 1901 to 1909.

Year.	N.S.W.*	Victoria.	Q'land.†	S. Aust.	W. Aust.	Tasmania.
1901 ...	2,081	19,243	...	4,350	†	1,405
1902 ...	896	16,117	...	1,906	†	3,296
1903 ...	605	20,935	...	1,857	†	24,857
1904 ...	20	20,548	...	1,476	†	53
1905 ...	32	20,116	...	1,142	†	...
1906 ...	42	20,539	...	980	†	...
1907 ...	39	20,902	...	3,165	†	...
1908 ...	42	20,924	...	1,502	616†	...
1909 ...	11	21,344	...	1,477	†	...

* By Government medical officers only. † Returns not available. ‡ Notifications of vaccinations to district registrars during year 1908-9.

The large increase in Tasmania in 1903 is accounted for by the small-pox epidemic which occurred in Launceston in that year.

(i.) *New South Wales.* Although there is no provision for compulsory vaccination in this State, public vaccinators have been appointed. A fee is paid, and free lymph is provided.

(ii.) *Victoria.* Compulsory vaccination is enforced throughout the State, under Part IX. of the Health Act 1890. From the year 1873 up to the present time it is estimated that 72 per cent. of the children whose births were registered have been vaccinated. Free lymph is provided.

(iii.) *Queensland.* Although compulsory vaccination is provided for in this State, under Part VII. of the Health Act 1900, only one remote district has been proclaimed under the Act.

(iv.) *South Australia.* The Vaccination Act 1882, which applies to South Australia and the Northern Territory, is enforced by the vaccination officer of the State and by the Police Department. Under this Act vaccination was compulsory, but in 1901 an Act to abolish compulsory vaccination was passed. This latter Act was subsequently amended, and the present law is that no parent is liable to any penalty if, within 12 months from the birth of the child, he makes a declaration that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers the declaration to the vaccination officer. It is estimated that about 15 per cent. of the children born are vaccinated.

(v.) *Western Australia.* In this State vaccination is compulsory under the Vaccination Act 1878, which, however, remains almost a dead letter. All district medical officers are public vaccinators, but they receive no fee for vaccinations.

(vi.) *Tasmania.* All infants in Tasmania 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. The Act is not enforced, and practically no vaccination of infants is performed in the State, or has been performed since the small-pox outbreak in Launceston in 1903, when 66 cases occurred with 19 deaths. It is estimated that 45,000 persons, or about one quarter of the present population, have been vaccinated.

§ 6. Filariasis and the Destruction of Mosquitoes.

1. **Introduction.**—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 shewn that the difficulties in the way of tropical colonisation, 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, which science has accomplished, lend an entirely new aspect to the question of white settlement in countries formerly regarded as unsuitable for colonisation by European races. In Australia the most important aspect of this matter is at present in relation to such diseases as filariasis, malaria, and dengue fever, which, although practically unknown in the southern States, are of common occurrence in many of the tropical and sub-tropical parts of the Commonwealth. In Brisbane, for example, it is stated that during 1908 an examination was made of 200 patients who had been admitted consecutively to the general hospital, and it was found that 17 per cent. were suffering from filaria, though only a few of them had been brought in for treatment for that disease. It is also stated that an examination made in 1909 of 1000 patients admitted for all causes at the general hospital at Brisbane shewed that 13 per cent. of them were infected with filaria.

2. Scope of Operations.—In certain parts of Australia considerable benefit has already resulted from the adoption of methods of anti-malarial prophylaxis. The extermination of mosquitoes in their larval stage by drainage, screening and oiling of water supplies, and the isolation of infected persons, are some of the methods pursued with success. It would appear, however, that before any general comfort and freedom from house mosquitoes and from the diseases carried by these insects can result, a much wider crusade for the destruction of the mosquito, involving absolute co-operation and conscientiousness on the part of the community in the elimination of breeding places of mosquitoes, is necessary.* In many countries "Mosquito Brigades" have been organised, whose object is the killing of the mosquito and the removal, as far as possible, of the conditions favourable to the insects. In other countries the churches, medical societies, corporations, business organisations, factories, and schools have all taken part in organising lectures and spreading literature dealing with the mosquito.

3. Queensland.—The existence of filaria in Brisbane was first discovered about thirty years ago. Filariasis is now on the increase, and early in the year 1909 the Commissioner of Public Health for Queensland convened a conference of medical officers of health to the various local authorities to discuss the matter. A plan for combined action in mosquito destruction was the outcome, and it is stated that good results therefrom have already been noticed. Screening of domestic and other water tanks and destruction of larvæ by kerosene have been carried out in a number of places, while particular attention has been devoted to the draining of swamps within the metropolitan area. It may here be mentioned that an Institute of Tropical Medicine was inaugurated in January, 1910, at Townsville, under the control of an expert officer.

4. South Australia.—During the year 1907 malaria assumed such a serious form at the Government Smelting Works at Daly River, in the Northern Territory, that almost every employee was invalidated to Palmerston for treatment. Early in 1908 preventive measures in the way of improved camp hygiene, treatment of swamps by petroleum, and the systematic use of quinine, were adopted, with the result that during that year no case of malaria appeared among the Government employees, although the natives and outsiders suffered as badly as before. The whole experiment cost under £5. Similar precautions have been adopted in other parts of the State.

5. Other States.—In Western Australia it is stated that malaria is not known to exist south of the 20th parallel, while filaria has not been discovered at all. No mosquito-borne diseases are known to exist in Victoria or Tasmania, and it is stated that filariasis is uncommon in New South Wales, the only cases known being imported ones. Kerosene and petroleum have been successfully used to destroy mosquitoes at various places in these States both by municipalities and private individuals.

* See Report of the Commissioner of Public Health, Queensland, 1908-9, Appendix C., p. 17.

§ 7. Supervision of Infant Life.

1. **Introduction.**—It has been frequently stated in recent years that when the social, climatic, and industrial conditions are taken into consideration the infantile mortality of Australia, particularly in the large towns, is much higher than it should be. It is now generally recognised, however, that infant mortality is largely attributable to parental ignorance and neglect, and that, in particular, improper feeding is accountable for perhaps the majority of infant deaths. In all the States of the Commonwealth, Acts have been passed with the object of generally supervising the conditions of infant life and of reducing the rate of infantile mortality, and in many of the large towns measures have been adopted by private individuals to spread among the mothers a knowledge of the best methods of feeding and caring for their infants. Milk Institutes have also been established after the manner of the *Gouttes de Lait*¹ in Europe, with the object of reducing the number of deaths of infants from milk poisoning in the summer months. Reference has been made in a previous part of this book (see page 189) to the number of infantile deaths and the rates of infantile mortality in each State, and it will be convenient to here shew corresponding particulars for the year 1910, classified according to metropolitan and other districts in each State:—

INFANTILE DEATHS AND RATES OF INFANTILE MORTALITY FOR METROPOLITAN AND OTHER DISTRICTS, 1910.

Districts.	N.S.W.	Victoria.	Queensland.	S.A.	W.A.	Tasmania.	C'wealth.
NUMBER OF INFANTILE DEATHS.							
Metropolitan	1,384	1,236	325	376	234	136	3,691
Other ...	2,011	1,181	692	372	359	432	5,047
RATES OF INFANTILE MORTALITY.*							
Metropolitan	83.74	92.61	84.22	78.33	78.87	118.56	86.54
Other ...	69.54	65.28	56.21	64.36	77.74	97.42	68.06

* *i.e.*, the number of deaths of infants under one year of age per thousand births.

It may be seen that in each State the rates of mortality are higher in the metropolitan than in other districts. The causes of "preventable" deaths may generally be attributed to milk poisoning, want of knowledge on the part of mothers, inability to nurse, and lack of the necessary medical facilities.

The figures in the above table do not, however, completely represent the hygienic aspect of the question. For every infant death recorded there are probably three or four survivors who have sustained more or less serious permanent physical damage, quite apart from injuries at birth or congenital causes. It is stated that the far-reaching influence of the first year or two of life upon the whole subsequent physical welfare of the individual cannot be recognised too clearly, and it has been alleged that many serious defects and diseases occurring in later life may be credited to results ensuing from infantile disease. This is particularly the case in respect of digestive diseases.²

The conditions regulating the employment of boys and girls in shops and factories are referred to in the section of this book dealing with *Industrial Unionism and Indus-*

1. Organised action in this direction commenced in 1894 in Belgium. The original Belgian Society is known as the "*Société des Gouttes de Lait*." The movement has become an international one, and branches of the Society have been founded all over Europe. Similar philanthropic work was commenced in the United States of America before 1894.

2. See Report of Department of Public Health of Tasmania for 1906-7, by J. S. C. Elkington, Esq., M.D., D.P.H., Chief Health Officer.

trial Legislation (Section XXVII.). Certain particulars have also been given in Section XXIV. (see pages 944-6) of this book regarding Orphanages, and Industrial and Reformatory Schools in Australia. Though perhaps not directly connected with the subject of Public Hygiene, it will be convenient to refer briefly in this sub-section to the principal Acts which have been passed in each State dealing with the subject of child-life, and to the principal functions of the States' Children's Departments.

2. **New South Wales.**—In this State there is a State Children's Relief Board under the direct control of an Honorary Board of nine members and under the administration of the Minister of Public Instruction.

(i.) *Scope of Operations.* The scope of the Department's operations comprises matters under the following Acts:—

(a) *The Infants' Protection Act 1904.* This Act deals with the control of children up to the age of seven years in licensed homes, and with the supervision of such homes. These latter fall into two classes.—(1) The private homes of individual women householders, licensed for two or three children, and (2) institutions maintained by public subscription, licensed for any number of children up to 100. The Act also deals with paternity proceedings in connection with the enforcement of maintenance for illegitimate children.

(b) *The State Children's Relief Act 1901.* This Act deals with the boarding-out of destitute children, and includes the extension of monetary aid for children under twelve years of age who are allowed to remain with their own mothers when the latter are widows or deserted wives in destitute circumstances.

(c) *The Children's Protection Act 1902* deals with the supervision of lying-in homes, in so far as the children born therein are concerned. It also provides for the registration of children up to three years old boarded out privately apart from their mothers.

(d) *The Neglected Children's and Juvenile Offenders Act 1905* has provided for the establishment of Children's Courts throughout the State. The Act deals with the disposal of neglected and uncontrollable children and juvenile delinquents who come before the Courts. It contains provisions for the supervision of truant children, and for the introduction of machinery necessary to carry out the purposes of the Act.

(e) *The Public Instruction Act 1880.* The supervision of all children of school age is carried out by officers of the State Children's Relief Department, and action in regard to truancy and prosecutions for breaches of the compulsory clauses of the Public Instruction Act are undertaken.

(ii.) *General Supervision of Conditions of Infant Life.* The principal functions of the State Children's Relief Department are as follows:—(a) Provision for sickly infants with, or without, their mothers at the homes at Paddington and Thirlmere. About twenty children are treated in each home. (b) The compulsory attendance of guardians of infants, boarded out independently by their mothers under the Children's Protection Act, at the Metropolitan Hospital fortnightly, in order that the children in their charge may be systematically supervised by the doctors, and the development of ailments checked. (c) A home for healthy babies, twenty in number, at Croydon, with their mothers, the object being to free the latter from the more or less contaminating influences of large institutions, and at the same time to protect the children from dangers of infection. (d) The establishment of separate cottage homes for invalid children, according to their ailments, including special cottages for the scientific treatment of epileptic and feeble-minded children. (e) The supervision of all children dealt with at the Children's Courts, with the exception of those sent to the training-ship *Sobraon*, the Carpenterian Reformatory, and the Industrial School for Girls. A special aspect of the Board's work under this heading is the supervision of children released on probation, and of children committed to the Farm Home, Mittagong.

3. **Victoria.**—The conditions of infant life in Victoria are, to some extent, supervised by the Department for Neglected Children and Reformatory Schools under the Neglected Children's Act 1890, the Crimes Act 1890, and the Infant Life Protection Act 1907. In Melbourne the Lady Talbot Milk Institute was established in 1908 in order to provide a supply of pure milk for infants. In the first annual report of the Institute, it is stated that out of about 300 infants supplied with milk by the Institute during 1908-9, only eight died. Crèches have been established in many of the suburbs of Melbourne.

(i.) *The Neglected Children's Act 1890.* This Act provided for the establishment of receiving houses and probationary schools, and for the committal of neglected children to the care of the department already referred to, or to approved private persons or institutions. Assistance is afforded to the department by ladies' committees in finding suitable homes for boarded-out children, and in supervising these homes. A receiving dépôt has been established, and special schools are provided for boys who are backward in their education. A certain number of boys, who bear the best of characters, are sent to learn farming at the Rutherglen Viticultural College.

(ii.) *The Crimes Act 1890* provided, *inter alia*, for the establishment of reformatory schools for convicted children. During the year 1908 there were fifty-two court committals and ten transfers from gaol to reformatory schools.

(iii.) *The Infant Life Protection Act 1907.* This Act came into force on the 31st December, 1907, and all infants then in registered homes were transferred to the care of the department. Provision is made for the inspection of registered homes, which are divided into districts, allotted to four inspectors. The Act does not provide for the registration or supervision of maternity homes.

(iv.) *The Children's Court Act 1906.* This Act provides for the establishment of Children's Courts in every place in the State where a Court of Petty Sessions is appointed to be held. Any boy or girl under the age of seventeen years may be released by the Court on probation under the supervision of a Probation Officer, who may at any time bring before the Court any child under his supervision who has broken any of the terms of his probation. The Courts have power to commit children to the Neglected Children's Department or to reformatory schools.

4. **Queensland.**—The Infant Life Protection Act 1905 is administered by the Commissioner of Police. This Act provides, that, with certain exceptions, no person may receive, in consideration of any payment, into his house any infant under the age of three years for the purpose of nursing such infant apart from its parents for a longer period than forty-eight hours, or of adopting such infant, unless the person is registered as the occupier of the house and the house is registered as a nursing home. Registration of adopted infants is compulsory, and notice of the birth or death of illegitimate infants must be given within three days. Police investigation occurs in the case of every illegitimate child born, whether the child be finally sent to a nursing home, adopted, or taken charge of by parents or relatives.

The Lady Chelmsford Pure Milk Institute was opened in 1909 for the supply of a clean pure milk in Brisbane for infant feeding. The delivery of the milk began on the 1st July, 1909.

5. **South Australia.**—The State Children's Act 1895 provides for the constitution of a council to have the control of all State children and the supervision of all institutions for their reception, education, or training. The Act provides for the establishment and inspection of institutions, for the commitment, release, and apprenticing or placing out of children, and for the licensing and supervision of lying-in homes and foster-mothers. Illegitimate children are also received into the institutions under the care of the council,

and are placed out in various homes. It is stated that the result, so far as illegitimate children are concerned, is that the death-rate of infants supervised by the council is under 7 per cent., while the death-rate of those not under such supervision is 45 per cent.

6. Western Australia.—In Western Australia the State Children's Act 1907 provides for the control of boarded-out infants, the registration of foster parents, and the general supervision of the conditions of infant life and of neglected or destitute boys and girls under the age of eighteen years. The Act is administered by the State Children's Department. The registration of maternity homes is obligatory, and persons acting as paid foster-mothers to any child under the age of three years must be licensed. Neglected or destitute children may be committed to orphanages, and convicted children to industrial schools. There is one Government institution under the Act, and it is used as a receiving depôt for the temporary detention of all classes of children. The Act also provides for the establishment of Children's Courts, which must not be held in any police or other court-house.

With regard to the prevention of infantile mortality, the educational aspect has been met by the free distribution of pamphlets giving directions to mothers respecting the care and feeding of infants.

7. Tasmania.—The Infant Life Protection Act 1907, which is administered by the Commissioner of Police, provides for the protection of illegitimate and privately boarded-out infants, and for the compulsory registration of nursing homes and occupiers. Notice of the death of an infant in a registered home must be given within twenty-four hours, and the adoption of illegitimate infants under five years of age must be registered. Notice of the birth or death under the age of five years of an illegitimate infant is also compulsory. The Act also deals with paternity proceedings, in connection with the payment of preliminary or maintenance expenses for illegitimate children.

8. Medical Inspection of State School Children.

1. Introduction.—For many years medical officers of health and many others concerned in education generally have, from time to time, suggested the desirability of a medical inspection of school children. The State, which enforces school attendance under penalties, is also under the obligation of securing a satisfactory hygiene for the child during such attendance. Moreover, efficiency in education demands several things, viz., that the conditions under which the studies are made shall be physically and hygienically satisfactory; that there shall be no undue concentration of nervous effort on school work, and that the child shall be reasonably safeguarded against infection, etc. Only by an adequate scheme of medical supervision can these results be attained.

2. Co-ordination of Effort.—It may be seen in the succeeding parts of this subsection that, while the medical inspection of school children has been carried out in some of the States of the Commonwealth in a systematic manner, in other States but little has been done in the direction indicated. So far as it has been carried out, the medical inspection of school children goes to shew that in Australia, as in other lands, the hygiene, both of the schools and of the pupils therein, is more defective than is ordinarily recognised, and that, not only preventable physical injury to the rising generation from school conditions can be avoided, but also instruction itself can be made more efficient by a proper regard to the demands of a good school hygiene. With a view to securing uniformity of procedure in the several States, and to coming to an agreement as to how

far the scheme to be adopted should lean to the purely hygienic or the purely anthropometric side of the work, it has been proposed to hold an Interstate Conference of the Presidents of the Boards of Health and the Directors of Education. It was also proposed that, on comparable observations of physical characteristics being made by the States on a national basis of a proportion of their State school children, the necessary comparisons and interpretation of results should be undertaken in the Commonwealth Bureau of Census and Statistics. As regards the anthropometrical aspect of the matter, a uniform scheme of comparative physical observations of children would go to shew the ultimate influence of the Australian climate on the British race, and would serve as a guide to the importance of certain forms of physical training. In addition, the importance of gathering information concerning the general trend of physical and mental development of Australian children, the variations induced by environment in different localities and different latitudes, and the extent of preventable influences capable of injuriously affecting mental and physical development, are sufficiently apparent.

3. **New South Wales.**—In this State, arrangements were made in May, 1907, for the medical inspection of school children in Sydney, and later in the year the work was extended to Newcastle. At the inauguration of the scheme, it was considered advisable to restrict the work of the first year to two populous centres in order to determine what procedure would be necessary, and what limits could best be assigned in the further development of the work. Two inspectors were appointed for the first year's work, and the appointment of a third inspector in March, 1909, has enabled the scheme to be extended to the outlying suburbs of Sydney.

The results of the second year's work shew that during that period 98 schools, having an enrolment of 66,000 pupils, were visited by the inspectors. Of the total number of pupils, 14,360, or 21 per cent., were presented by the teachers for medical inspection as suffering from some physical defects. Of that number, 8216, or 57 per cent., were found to be suffering from defects of vision; 7171 children, or 49 per cent., were returned as suffering from post-nasal trouble; 3450, or 24 per cent., from throat trouble; 855, or 6 per cent., from swollen glands; and 615, or 4 per cent., from either defective hearing or ear trouble.

NEW SOUTH WALES.—HEIGHT AND WEIGHT OF SCHOOL CHILDREN, 1908-9.

Age last Birthday.	Boys—26,597 Records.		Girls—23,101 Records.	
	Average Height.	Average Weight	Average Height.	Average Weight
	Inches.	Lbs.	Inches.	Lbs.
3 years	40.66	39.03	40.04	37.91
4 ,,	41.48	39.73	40.47	38.32
5 ,,	42.43	41.63	42.02	40.32
6 ,,	44.28	44.89	44.18	43.90
7 ,,	46.52	49.91	46.13	48.25
8 ,,	48.27	53.54	48.11	53.09
9 ,,	50.44	58.67	49.97	57.46
10 ,,	52.19	63.58	51.94	62.87
11 ,,	53.85	68.86	53.96	69.61
12 ,,	55.55	74.94	56.02	77.29
13 ,,	57.43	82.63	58.31	86.95
14 ,,	60.29	94.62	60.43	96.99
15 ,,	63.00	108.78	61.19	105.40
16 ,,	65.36	122.17	63.20	110.93
17 ,,	66.76	132.02	63.03	114.63
18 ,,	67.56	136.09	63.02	120.60

Since its initiation in 1907, the scheme has embraced 105 schools, having an enrolment of 70,169 pupils, while upwards of 50,000 physical records have been received.

from teachers. During the year 1908-9, the anthropometric survey, comprising height and weight measurements and records of vision, was extended to schools in the outlying suburbs of Sydney, and in the Broken Hill, Kempsey, Grafton, and Lismore districts. The foregoing table shews the results of height and weight measurements recorded during the year 1908-9.

4. **Victoria.**—In Victoria three medical inspectors have been appointed by the Education Department, and a commencement was made towards the end of 1909 by the examination of the pupils attending the Melbourne Continuation School. An Advisory Committee was also appointed to formulate a scheme of medical inspection, which it is proposed to extend to all State schools in Victoria. The chief work of the inspectors has so far been a preliminary investigation of the health of the pupils in various schools in town and country, and it is stated in the Report of the Minister of Public Instruction for the year 1909-10 that the result of this investigation has shewn the presence of an amount of physical defect which, were it not paralleled in other lands would, by its magnitude, seem incredible. Up to the 30th June, 1910, the total number of children examined was 3560, of whom 2519 were in primary schools; of the latter number 1293 were boys, and 1226 girls. The following table gives particulars of defects found in the children examined in primary schools:—

**VICTORIA.—MEDICAL INSPECTION OF CHILDREN IN PRIMARY SCHOOLS—
PARTICULARS OF DEFECTS, 1909-10.**

Particulars.	Boys.		Girls.		Total.	
	Number.	Percentage	Number.	Percentage	Number.	Percentage
<i>Number Examined</i> ...	1,293	...	1,226	...	2,519	...
<i>Defects—</i>						
Vision ...	259	20	179	14.5	438	17
Hearing ...	228	17.5	249	20	477	19
Nose and throat ...	462	35.5	214	17.5	676	27
Heart ...	43	3.5	64	5	107	4
Anæmia ...	76	6	46	3.7	122	4.8
Hair ...	40	3	471	38	511	20
<i>Deformities—</i>						
Chest ...	189	14.5	107	8.7	296	12
Shoulders ...	125	9.5	120	9.7	245	9
Curvature ...	19	1.5	34	2.7	53	2.1
<i>Nutrition—</i>						
Below ...	107	9	72	6	179	7

Although the Health Acts have no relation to buildings owned or controlled by the Crown, as the result of a conference in 1905, between officers of the Education and Public Works Departments, a set of standard primary rules as to the hygienic requirements of State schools was drawn up, and since that time these standards have been utilised in connection with the construction of new State schools, and when practicable, in connection with alterations effected in old school buildings. Lectures have been given to school teachers on questions appertaining to school hygiene.

5. **Queensland.**—In this State, a systematic scheme for the inspection of State school children has recently been proposed. An elaborate undertaking is not to be

carried out at present, but the scheme is to be extended as success is achieved and beneficial results are proved. A course of instruction in hygiene as applied to school life is given at the Central Technical College for the special benefit of teachers, and a series of lectures and demonstrations has been organised between the Education Department, the Department of Public Health, and the Royal Sanitary Institute. Towards the end of 1907 a special examination of the eyes of 1745 school children and of 187 adults disclosed the fact that 385 persons, or 20 per cent., of those examined, suffered from imperfect vision resulting from eye disease, while there were 1740 persons, or 90.1 per cent., with affected eyes or eyelids or both. In 1909 a scheme to cope with ophthalmia was inaugurated by the Department of Public Instruction and has met with a considerable measure of success. Various investigations have also been made from time to time regarding outbreaks of disease among scholars, and all the schools within the Metropolitan area have been inspected by officers of the Department of Public Health, and as a result numerous sanitary defects remedied.

6. South Australia.—In South Australia a commencement was made in the year 1909 towards the establishment of a scheme for the medical inspection of school children, by the examination of 1000 children in different parts of the State. No children under seven years nor over 15 years of age were examined. Investigations were made with regard to personal appearance, cleanliness, height, weight, chest measurements, teeth, eyesight, hearing, nose and throat, etc., and the results were, on the whole, satisfactory.

7. Western Australia.—During the latter part of 1906 and the first half of 1907 an extended examination of about 3300 children was carried out in Western Australia by the Department of State Medicine and Public Health with the co-operation of the Education Department. These children were attending the State schools in Perth, Fremantle, Kalgoorlie, Boulder, Bunbury, and Albany. Only two children were withheld by their parents from examination. The supervision of the health of school children has been extended up to the present, and advantage has been taken of every occasion on which the medical officers of the Department have visited country districts on official business to make a physical examination of the school children. Many physical defects among the children were detected, and the co-operation of the Inspector-General of Schools has resulted in steps being taken, where possible, to provide better hygienic conditions. The system followed during 1909 was that, wherever possible, a visit was made to a school and the teacher was asked to bring up all children who appeared to be suffering from any physical defects or bodily ailments. The exact condition of the child having been determined, a notice was sent to the parents calling attention to the necessity of obtaining treatment for the defect.

8. Tasmania.—The credit of being the first State in the Commonwealth to provide for the medical inspection of schools and school children in a systematic way rests with Tasmania, where, under the direction of the Chief Health Officer and the Director of Education, about 1200 children attending schools in Hobart were inspected in 1906. The general examination was based upon that of the Royal Commission on Physical Training (Scotland) of 1903, but considerable modifications and adaptations were found necessary in order to fit it to immediate requirements. No attempt was made to secure anthropometric observations beyond those of unquestionable medical value, and in only one case (colour of eyes) were any purely anthropological data collected. The sociological data obtained (parental occupation, etc.) were found of much service, and produced some interesting comparative results. Parents were given the option of declining examination for their children. The total number of children excluded on this account was 184, or 13.1 per cent. on the total number examinable.

The administration of the Medical Branch has continued to be carried out for the assistance of the Education Department, and from March, 1907, to June, 1909, the total number of children examined in State schools was 17,998. Of these, 10,095 were examined in country schools, 4681 in Hobart, and 3222 in Launceston. During the year 1908-9, the number of visits to schools made by the three medical inspectors was 641. During the same year twenty-one lectures were given at schools and were attended by about 1250 mothers and guardians. It is stated that these meetings are of great practical value in enabling an important class of parents to be reached by sanitary teaching in a form and manner which would be practically impossible under any other conditions, and that they also gain a great deal of sympathy and support for the medical work in schools, by enabling parents to become acquainted with the methods and objects underlying it. A course of lectures on School Hygiene has also been delivered to teachers at the Training College.