Annual report of the Central Board of Health / South Australia.

SOUTH AUSTRALIA

ANNUAL REPORT

OF

THE CENTRAL BOARD OF HEALTH

FOR THE

YEAR ENDED 31st DECEMBER, 1950

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THE PUBLIC HEALTH

Annual Report of the Central Board of Health to the Minister of Health (Hon. A. Lyell McEwin, M.L.C.)

SIR—We have the honour to submit to you this annual report for the year ended 31st December, 1950.

The report is arranged in these ten sections:—

1. Staff and administration.
2. Legislation.
3. Vital statistics.
4. Infectious diseases.
5. The poliomyelitis epidemic.
6. Tuberculosis.
7. Food and drugs administration.
8. General sanitation.
9. Industrial hygiene.
10. Progress and problems.

1. STAFF AND ADMINISTRATION.

Personnel of the Board.—During the year the constitution of the Board was:—

Chairman—Albert Ray Southwood, M.D.

Members appointed by the Governor—

Edward Angas Johnson, M.D.

John Burton Cleland, M.D.

Member elected by metropolitan local boards—

Arthur Roy Burnell, J.P.

Member elected by all of other local boards—

Frank Charles Lloyd, J.P.

Secretary—Hedley Thomas Hutchins.

Staff.—The board is pleased to record its appreciation of the work carried out during the year by the staff. At times the calls have been met under rather difficult conditions. The expanding activities of the board require extra staff and extra accommodation. Occasionally the extra staff has not been available and extra accommodation is still being sought.

In accordance with the Health and Medical Services Act of 1949, the Chairman of the Central Board is designated the Director-General of Public Health. He is also the Chairman of the newly-constituted Advisory Council on Health and Medical Services.

Dr. G. H. McQueen has been appointed Senior Medical Officer in the Health Department.

Dr. P. S. Woodruff has joined the department as Director of Tuberculosis for this State. He will have control of the work done by the Central Board and the local boards in handling problems of tuberculosis. In that preventive field the X-ray health survey is under Dr. Woodruff's direction. He will also supervise the treatment of tuberculosis in the institutions administered by the Hospitals Department.

Dr. C. M. Deland was appointed as a medical officer on the staff of the Central Board.

Mr. H. N. Jones, who carried out the duties of Chief Clerk after Mr. Hutchins took over the duties of Secretary, was appointed to the position of Chief Clerk during the year.

Office Accommodation.—Alterations to the building occupied by the Central Board have been approved. They provide for a modern lavatory block, minor alterations in some of the staff rooms, re-painting the interior of the staff rooms in light bright colours, and the addition of venetian blinds, stainless steel sinks, and electric hot-water urns. These additions and renovations will add to the efficiency and comfort of the staff, and they will certainly be appreciated.

Health Education.—Teaching the ways and means of good health is one of the most important duties of any health department. For many years the Central Board has issued its quarterly health bulletin, and distributed copies to all local boards and to other bodies. Circulars and pamphlets dealing with health, and with recent developments in the prevention of disease have been sent to local boards, medical officers of health, and others concerned. Since 1949 a medical officers' newsletter has been sent out at approximately monthly intervals to medical officers of health. In these ways the work of the health education has proceeded.

In previous years health education campaigns on various subjects have been organized. There have been many special "drives." When immunization against diphtheria was first introduced a series of diphtheria immunization campaigns were held for the instruction of parents. The results were good, and diphtheria immunization is now an accepted and active procedure. In 1946 conferences for medical officers of health and health inspectors were held in Adelaide. State-wide "clean-up" campaigns were conducted in 1946 and 1948.

National Health Week in South Australia.—In 1950 there was a further development in health education. The New South Wales Health Week Council asked the Central Board of Health to assist in observing a National Health Week throughout Australia, by conducting a simultaneous campaign with the other States. So "National Health Week" was observed in South Australia for the first time from 20th to 27th October, 1950. The campaign was of modest proportions, but nevertheless quite successful; it aroused sufficient interest to ensure larger and more

successful campaigns in the future. Valuable assistance was given South Australia by the New South Wales Health Week Council. There was a liberal supply of posters and health literature, all gratis. The board wishes to thank the New South Wales Council for the assistance given. Help was given by some sections of the press. Several press advertisers linked the advertising of their products with the campaign.

Excellent co-operation was given by the South Australian radio stations, both "A" and "B" class. About 40 half-minute radio scripts were provided to each station and these were used as the opportunity offered at no cost to this department. A special 10-minute session was arranged by our local "A" class station for an address by the Minister of Health (the Hon. A. Lyell McEwin). Special health education programmes were arranged and broadcast to schools.

Most of the stores and the cafes in Adelaide and many in the country areas were asked, by circular, to co-operate in their window-dressing and menus, respectively, with the campaign. This was especially successful in the case of three of the large businesses in Adelaide. One large departmental store devoted six of its spacious windows to Health Week, the *piece de resistance* being a particularly large window dressed to demonstrate our State X-ray health survey.

"Good Health."—The board's quarterly bulletin has completed its nineteenth year. In January the holiday season issue was published. The April bulletin was devoted to a review of activities of the Advisory Committee on Health and Medical Services, whose functions have now become merged into those of the new council. The July issue covered topics ranging from dishwashing to drunkenness, sewage disposal to native superstition, and swimming pool hygiene to Swedish health plans. Dr. Philip S. Woodruff, the newly appointed Director of Tuberculosis, contributed an interesting and useful review of tuberculosis control in this State. The October *Good Health* was a special issue for National Health Week.

Dr. H. F. Hustler was again responsible for editing *Good Health*, and he brought enthusiasm and ability to the task. Articles were contributed by Miss P. M. Sandford (Senior Almoner, Royal Adelaide Hospital), Dr. W. Christie (Principal Medical Officer, Department of Education), Dr. Frank S. Hone, C.M.G., Dr. E. Rietz (Senior Medical Officer of Health for the city of Stockholm), Messrs. A. E. Simpson (Director, National Fitness Council, South Australia), and P. N. Webb, of the Adelaide Local Board of Health.

Special attention has been given to the cover designs of the bulletins recently issued. Thanks are due to Jantzen (Aust.) Ltd., and to officers of the Visual Aid Branch of the Education Department for valuable co-operation in this regard.

The Ceneral Board of Health appreciates very highly the splendid help it has received in producing the regular issues of *Good Health*. The bulletin has proved itself a valuable aid in health education in this State. The many commendatory messages received at the office attest its continued usefulness.

Circulars.—Circulars issued to local boards during the year show the widening of public health interest. The following subjects were dealt with:—Explanatory notes on amendments to the Health Act, the Food and Drugs Act, and the regulations under the Food and Drugs Act; the State Central Tuberculosis Case and Contact Registry; tuberculosis notification, inquiry cards, and contacts; holiday camps and reserves; and National Health Week.

Circulars were sent to pharmacists drawing their attention to amendments to the Food and Drugs Act and regulations, and the illegal sale of prescription-only drugs.

News-letters to medical officers of health are providing a valuable means of spreading information on topical items relating to health and the prevention of disease. Seven letters were issued during the year. They discussed the control of flies and mosquitoes, pneumonoconiosis, developments in whooping cough immunization, sanitary conveniences at buildings in the course of erection, X-ray machines in footwear stores, new organic phosphate insecticides, accidents, international vaccination certificates, reports on infectious diseases, the effect of immunization on patients with poliomyelitis, septic tanks, lead poisoning, and sanitation at holiday camps.

Co-operation in Health Work.—Rarely does the solution of a public health problem rest with one person. Co-operation—team work—is the great essential. The Central Board is pleased to record its appreciation of the ready help it continues to receive from official and voluntary bodies. The local boards and their officers are generally active in their work, though in some cases greater enthusiasm is called for. Other Government departments have been most helpful, especially those of Agriculture, the Architect-in-Chief, Chemistry, Children's Welfare and Public Relief, Education, Engineering and Water Supply, Factories, Highways and Local Government, Hospitals, and the Tourist Bureau. Officers of the Institute of Medical and Veterinary Science have given valuable aid. Of the voluntary bodies, appreciative reference is due to the Adelaide Children's Hospital, the Crippled Children's Association, the Mothers and Babies' Health Association, and the South Australian Division of the Red Cross Society.

2. LEGISLATION.

During the year a number of amendments and additions were made to the legislation administered by the Central Board of Health. These are briefly summarized here.

Notification of Tuberculosis.—A recent amendment to the Health Act is noteworthy. Previously, cases of tuberculosis were notified to the local board of health by the person who made the diagnosis. These notifications were passed on to the Central Board of Health by the local board of health. This procedure occasionally resulted in delay on the report reaching the Central Board of Health. The payment of the recently-introduced Commonwealth tuberculosis allowance to patients is contingent upon certification by the Director of Tuberculosis, and commences from the day that the patient's application is received at the office of the Cenral Board. The Act has been amended to provide for notification direct to the Central Board by the medical practitioner making the diagnosis. The Central Board then notifies the local board concerned. The local authorities are not, through the amendment, deprived of any of their functions and responsibilities for the control and prevention of tuberculosis.

Control of Hydatid Disease.—The Health Act has been further amended to reduce the risk of dogs eating uncooked offal infected with hydatid cysts and in so doing becoming infected with *Taenia echinococcus* (hydatid worm). The eggs of these worms when eaten cause hydatid disease in humans. Dogs at slaughterhouses must be constantly chained during any interval when not being used to assist in the yarding of animals. Further, "any person who sells or has in his possession for sale any offal infected with hydatid cysts shall be guilty of an offence unless such offal has been thoroughly cleansed and cooked" to kill the hydatid cysts.

Altered Time for Taking Action.—When any food or drugs were purchased for analysis, the Food and Drugs Act required that any complaint must be laid within 28 days. This provision rendered virtually useless the provisions of the Act relating to warranty. A defendant could escape liability if he proved to the court, on a charge relating

to food or drugs, that he acquired the food or drugs under warranty from another person. In such circumstances the person giving the warranty could be charged with giving a false warranty, but by the time the court considered this matter the period of 28 days would almost invariably have expired. The time limit of 28 days in which proceedings may be laid of the purchase of any food or drug has now been deleted, and the period of six months automatically comes into operation.

Dangerous Drugs.—A proclamation under the provisions of the Dangerous Drugs Act, 1934, was issued during the year to extend the operation of the Act to some synthetic drugs which have lately been developed as morphine substitutes. These drugs which are now coming into use are alphaprodine, isoamidone, betaprodine, methadol, hydroxypethidine, methadyl acetate, ketobemidone, phenadoxone (heptalgin).

Altered Food Standards.—Amendments to the Food and Drugs Regulations gazetted in January, 1950, provided standards for canned tomatoes, tomato juice, tomato puree, tomato paste, tomato soup, and mould counts for all tomato products. The addition of colouring matter to all tomato products is permitted. A bacterial standard for ice cream was also fixed. Concentrated imitation cordial was defined and its label was prescribed. The addition of preservatives to concentrated imitation cordial, concentrated fruit juices or extracts, and to concentrated summer or temperance drinks was permitted.

Amendments were also made to the Food and Drugs Regulations in August, 1950. The retail sale of a number of antibiotic substances was restricted to the prescription of a medical practitioner, dentist, or veterinary surgeon. The making of false or misleading claims in advertisements relating to drugs or medicines, and the manufacture and sale of fireworks containing any arsenical poisons, were prohibited. Provision was made for the sale by licensed storekeepers of a dog deterrent preparation containing the poison nicotine.

Further amendments published in December, 1950, fixed a limit for the permissible quantity of benzene hexachloride allowed in foodstuffs. A standard and labelling requirements for processed dried peas was inserted. It was required that milk for sale should not contain any penicillin. The use of the word "champagne," unless the carbon dioxide present in the wine is produced by the traditional method of fermentation in the bottle, was prohibited. The standard for quinine tonic wines was deleted. It was also provided that the solution of hydrogen peroxide of the British Pharmacopoeia, 1932, may be sold (as well as the solution standardized in the British Pharmacopoeia, 1948) but it must be labelled "This solution is half the strength of the British Pharmacopoeia 1948 solution." Chloropicrin was included in the list of poisons which are required to be labelled with the description of some effective antidote. Chloropicrin, sex hormones, additional antihistamine drugs, and antabuse were included in the first schedule to the Poisons Regulations and the latter three were also included in the prescription-only class of poisons. The regulations were further amended to provide that chloropicrin may be sold by licensed storekeepers in the form of a fumigant for the destruction of vermin.

Noxious Trades Act.—Battery manufacturing has been considered to be a noxious trade because lead compounds were often distributed over a wide area in the vicinity of the factory. Modern methods of battery manufacture and control have eliminated this danger. The smelting of lead involving the treatment of lead compounds in a reducing furnace, is still a noxious process, unless elaborate means are taken by the use of very costly devices to recover the escaping lead compounds. The installation of such recovery devices, as used at the B.H.P. Smelters at Port Pirie, would be too costly for some smaller firms concerned. It was considered reasonable to exclude the ordinary processes of battery manufacture from the schedule of noxious trades, but not the smelting of lead for the reasons outlined. Accordingly, on the recommendation of the Central Board, *battery manufacture* was removed from the list of noxious trades and *lead smelting*, meaning "the process of recovering metallic lead from lead compounds by heating in a reducing furnace," was inserted in its stead.

3. VITAL STATISTICS.

The information in this section has been supplied by the Government Statist. The Central Board of Health has no vital statistics section, and is therefore dependent on the Government Statist for most of its statistical information. This assistance has always been readily given and is greatly appreciated. Statistical records kept by the Central Board of Health deal almost entirely with the morbidity and mortality due to notifiable infectious diseases.

Population.—The estimated mean population for the State for 1950 was 700,184.

Births.—17,306 births, the greatest number recorded in the State for a year, were registered during 1950, compared with 16,042 during the year 1949. The masculinity of births registered, or the proportion of male births, was 105.39 males per 100 females, compared with 105.64 in 1949. For the year 1950 the birth rate per 1,000 of mean population during the year, measured with regard to births registered during the year, was 24.72, compared with 23.80 in 1949.

Deaths.—6,740 deaths were registered during the year 1950, an increase of 367 on the previous year's number of 6,373. The death rate for the year, or the number of deaths registered per 1,000 of mean population was 9.63 compared with 9.45 for the year 1949.

Infantile Mortality.—Deaths of children under the age of 1 year were 416, a decrease of 29 on the previous year's total of 445. The infantile death rate, or the number of deaths of children under 1 year per 1,000 births during the year of calculation, was 24.04 for the year 1950 compared with 24.74 in 1949. In 1947 that rate was 24.27, the lowest infantile mortality rate previously recorded for South Australia.

Further details of infantile deaths are:—

	Year 1950.	Year 1949.
Death within 1 day of birth	145	112
Death between 1 day and 1 month	158	182
Death between 1 month and 1 year	113	151
Total	416	445

The greatest improvement in infantile mortality has taken place in respect of the deaths of children at ages between one month and one year.

Still Births.—These are not included with births and deaths. The number registered in 1950 was 325 compared with 338 in the year 1949.

Marriages.—6,585 were registered in the State during 1950, an increase of 338 over the previous year's total of 6,247.

Summary Return.—The following return shows the number of births, deaths, and marriages, the rate per 1,000 of mean population, the number of infantile deaths, and the rate per 1,000 births.

Period.	Births Registered.		Marriages Registered.		Deaths Registered.			
					Total.		Infants.	
Mean.	No.	Rate (*a*).	No.	Rate (*a*).	No.	Rate (*a*).	No.	Rate (*b*).
1920-24	11,857	23·43	4,326	8·55	4,901	9·68	693	58·45
1925-29	11,301	20,16	4,225	7·54	5,034	8·98	526	46·54
1930-34	8,989	15·54	3,660	6·33	5,001	8·65	342	38·05
1935-39	9,039	15·32	5,305	8·99	5,430	9·20	297	32·85
1940-44	11,743	19·30	6,843	11·25	6,235	10·25	406	34·57
1945-49	15,613	24·09	6,328	9·77	6,369	9·83	427	27·35
Year.								
1946.....	15,813	24·89	6,700	10·55	6,461	10·17	428	27·07
1947.....	16,317	25·25	6,668	10·32	6,215	9·62	396	24·27
1948.....	15,870	24·11	6,704	10·18	6,748	10·25	472	29·74
1949.....	16,042	23·80	6,247	9·27	6,373	9·45	445	27·74
1950.....	17,306	24·72	6,585	9·41	6,740	9·63	416	24·04

(*a*) Per 1,000 of mean population. (*b*) Per 1,000 births.

4. INFECTIOUS DISEASES.

Statistics.—The total numbers of cases of notifiable infectious diseases reported to the Central Board of Health for the years 1948, 1949, and 1950 are given in the following table. The numbers of deaths from these diseases is also shown.

Disease.	Cases.			Deaths.		
	1948.	1949.	1950.	1948.	1949.	1950.
Anthrax	—	—	—	—	—	—
Cerebro-spinal meningitis	14	16	14	4	—	1
Diphtheria	79	38	35	5	1	1
Dysentery, amoebic	1	2	4	—	1	1
Dysentery, bacillary	2	3	3	1	2	—
Encephalitis lethargica.....	1	—	—	2	—	—
Endemic typhus fever	11	6	7	—	—	—
Erysipelas.....	55	69	35	1	—	—
Influenza	7	4	3	11	3	2
Leprosy.....	—	1	1	—	—	—
Measles	9,441	5,677	7,508	7	6	4
Paratyphoid fever	2	2	2	—	1	—
Poliomyelitis anterior acuta	89	582	972	16	20	17
Psittacosis	—	2	1	—	1	—
Puerperal pyrexia	46	26	26	—	—	—
Scarlet fever.....	254	372	456	—	—	—
Tuberculosis, pulmonary	279	251	343	154	124	117
Tuberculosis, other forms	18	18	19	13	20	15
Typhoid fever	2	7	5	—	1	—
Undulant fever	1	2	2	—	—	—
Whooping cough	1,135	1,548	264	6	20	1

Diphtheria.—There has been a further slight decrease in the incidence of diphtheria. It is not as marked as in previous years. This may indicate that the incidence is approaching an irreducible minimum.

Poliomyelitis.—A detailed account of the continuation of the 1949 epidemic into 1950 is the subject of section 5 of this report.

Typhoid Fever.—During the year five cases of typhoid fever were reported to the Central Board of Health. Three of these were associated with a typhoid carrier. Two were her grand-daughters and one was a bacteriologist who had worked with the cultures of S. typhi grown from the carrier's faeces. The carrier was an old lady who had typhoid in 1894. After the recent cases occurred, she was admitted to the Royal Adelaide Hospital. Her infected gall-bladder was removed. The operation gave the desired result and she was discharged after three negative cultures had been obtained from her faeces. Other members of this family group were investigated; some gave positive agglutination reactions to the typhoid and paratyphoid group of organisms in addition to positive Vi agglutination reactions. However, S. typhi of a phage type E.1 were recovered from the carrier, one of her grand-daughters, and the bacteriologist, but not from any of the other members of the group investigated.

Scarlet Fever.—The use of penicillin in the treatment of scarlet fever has affected the epidemiology of this disease. Scarlet fever patients who are treated with penicillin as a rule promptly get negative throat swabs and can be considered to be non-infectious after a period of three days. The National Health and Medical Research Council has recommended that patients convalescent from scarlet fever be discharged from hospital 10 days after the institution of penicillin therapy, if their throat swabs are negative for group A haemalytic streptococci, and in 14 days where the culture of throat swabs is not possible.

Immunization.—Immunization against diphtheria and whooping cough was continued during the year by local boards of health. Returns indicate that 3,323 children were immunized against diphtheria and 2,066 were immunized against whooping cough. In addition, 1,750 received "refresher" injections of diphtheria prophylactic. These figures do not include those immunized privately by medical practitioners.

International Vaccination Certificates Against Smallpox.—Arrangements have now been made for medical officers of health of local authorities to issue international certificates of vaccination against smallpox. Booklets containing 10 of these certificates have been printed and sent to the secretaries of all local boards of health. Previously these certificates could only be issued by medical officers of the Commonwealth Department of Health. An international certificate of vaccinations against smallpox is of value to anyone intending to travel overseas. The certificate is recognized by the health authorities of all countries accepting the international agreement.

Medical officers of health have been notified that the vaccination should be carried out according to accepted principles, that all the particulars on the certificate should be filled in correctly, and that the certificate should bear the official stamp of the Central Board.

Leprosy.—One case of leprosy was diagnosed and reported during the year, and another case was carried forward from the previous year.

Both have made good progress. The earlier one has for a very long period been non-infective. He has responded well to treatment and now has no signs attributable to his disease. He follows his normal life but remains under observation.

The second case was in an older man. His disease was more advanced and more potentially infective. After a period of treatment at Northfield Infectious Diseases Hospital, he was taken by car under the charge of a medical officer of this department to Brisbane and transferred to the care of the Queensland Department of Health. In Queensland, besides the advances in drug treatment which are a matter of general medical knowledge, great advances have been made in the housing of and assistance to patients in achieving a normal and happy life. Appreciative letters have been received from this patient since his transfer.

The occurrence of two cases of this disease in South Australia aroused public interest and the opportunity was seized to improve public education in and knowledge of the disease. This was done through press, radio, and *Good Health*. Leprosy is a rare disease in South Australia and is not endemic here. It cannot be introduced from overseas if the quarantine and immigration departments work to perfection. The disease occurs in the north of Australia and as travel increases, odd cases are bound to appear again.

Medical men of South Australia must be ready to recognize the disease. The public, too, should gain a rational outlook on it and cast aside the superstition, horror, and ignorance with which it has been surrounded in the past. It is no more a disease of filth, disgrace, or degradation than any other infection, such as measles or chickenpox. It is an infection with a germ. But it is only moderately infectious and under the improved sanitary conditions of modern civilization becomes even less so. It could not run wild in our community. Knowledge of its treatment grows daily; it is no longer incurable and its detection no longer means a sentence of life imprisonment for the patient.

Venereal Diseases.—Broadly speaking venereal disease seems to be on the way out. That applies particularly to gonorrhoea which, here at least, is in the process of becoming a rare disease.

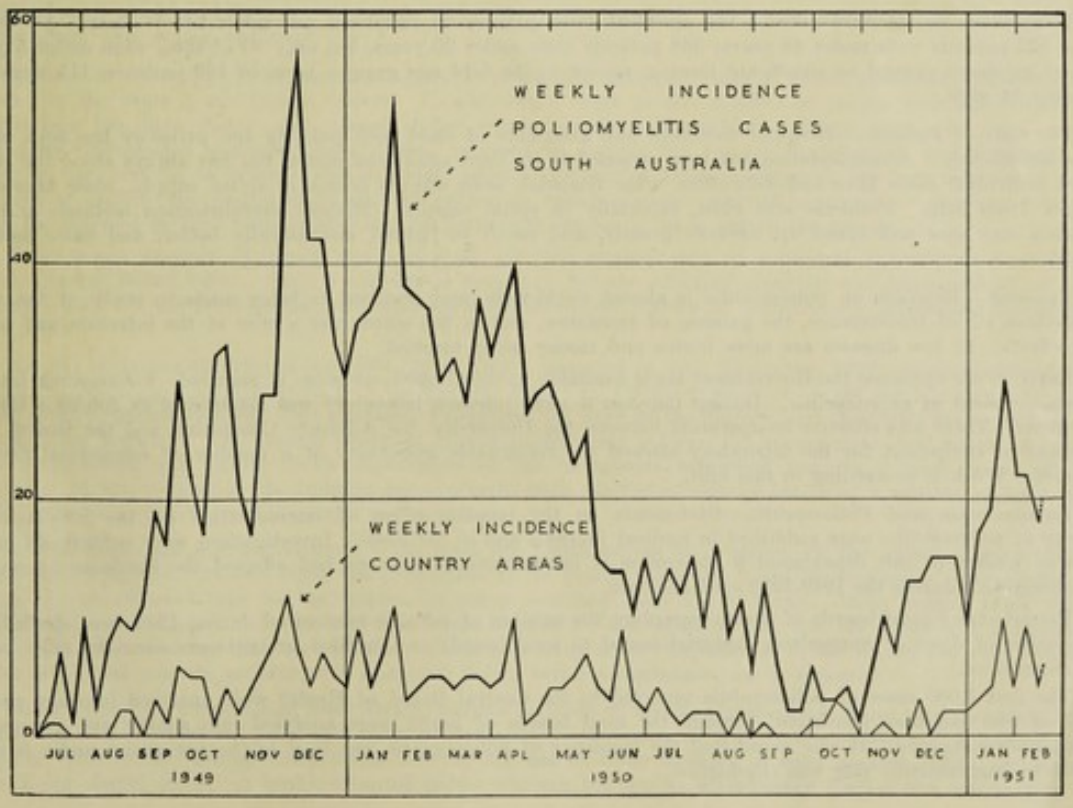
Cases of non-specific urethritis occurring in males are still seen at the Royal Adelaide Hospital. The condition is distinct from gonorrhoea. The infections are sometimes acquired from apparently non-promiscuous partners and it may be difficult for the patients to understand the position. It follows that, as the infection is "non-specific," there is no specific form of treatment. To prevent the female from re-infecting her partner, cauterization of the cervix—a comparatively minor operation—has been found to produce the best results.

Concerning syphilis, in spite of the general decline, there has been over the past year an occasional batch of new infections occurring amongst males. In most cases the sources of infection have been traced to a few professional prostitutes. Appropriate action has been taken and very few new infections are now being seen.

To increase the range of anti-venereal diseases propaganda, pamphlets and posters have been translated into German. A limited number of the publications are available for any public body or individual who may be interested.

5. POLIOMYELITIS.

Second Phase of the Epidemic.—At the time of the last report, the epidemic of poliomyelitis, which began in May of 1949, had reached its peak. It was impossible to forecast what its further progress would be. Five hundred and eighty-two cases had been reported in 1949, and weekly notifications had risen to the fifties on more than one occasion. In 1950 the incidence gradually fell, until at the end of September only one or two cases were being



reported each week. From then to the end of the year, however, the incidence rose again. The disease is still a serious community problem, though the new cases at the peak of this secondary phase are only about one-half those reported at a corresponding time last year.

From the beginning of the epidemic to the 31st December, 1950, there were 1,552 cases in South Australia; 1,306 were in the metropolitan area, and 246 in the country. There were 37 deaths.

From available records it appears certain that this is the most extensive outbreak of the disease that has occurred in a civilized country. It should be realized, of course, that in few countries in the world is skilled medical aid so readily available as it is here. Mild and early cases are commonly recognized and reported here, but in many parts of the world these cases would probably escape medical observation. It is a characteristic of the disease that the vast majority of the infections are extremely mild and only a small proportion can be recognized, even by skilled observers. This extensive, widespread, and long-lasting epidemic is giving medical practitioners in the State an unusual opportunity to acquire greater knowledge of this extraordinary infection.

Administration.—Investigations by this department have proceeded during the year. Inquiries have revealed nothing to suggest that the infection is transmitted in any other way than directly from person to person, but it is recognized that the person transmitting the virus to another may have no sign of illness. It is this feature that makes control of the disease in the community so difficult.

The State Advisory Committee on Poliomyelitis, under the chairmanship of the Chairman of the Central Board, continued to meet at intervals during the year. Information was correlated and advices to the public were issued from time to time. The precautions against infection that were advised previously were continued till July, then withdrawn; they were advised again when the epidemic stirred to its second phase.

Questionnaires regarding history of illness, economic loss, and other matters were sent out on two separate occasions six months apart to a large proportion of the patients. The very interesting mass of information collected is still being analysed. The replies enabled many patients' individual problems to be eased. An outstanding contribution was made by the Red Cross Society in arranging home help for a large number of mothers.

Results of an Inquiry.—The first of the inquiry forms referred to above were sent out in April, and replies indicated that most of the patients had made good recovery. In November, a second questionnaire was sent. The two sets of reports from each of 502 patients provide useful data in assessing the general effects of the epidemic so far.

The classification of severity has been made into five groups and particulars are here set out:—

(*a*) Complete recovery; 243 of the 502 patients stated they had quite recovered their normal health.

(*b*) Recovery, except for slight residual weakness. Almost all in this group are working again in their ordinary occupations. Two or three have changed their occupations, perhaps finding it desirable to do light work. There were 146 patients in this group. Combining groups (*a*) and (*b*), the complete and near-complete recovery of over three-quarters of the patients (389 of 502) is to be noted.

(*c*) Those with definite residual paralysis in static condition. Only four were definitely classified at this stage. There is a relatively small number of patients with a final state of paralysis: the actual number is uncertain. Those in group (*c*), about one-half of group (*d*), and perhaps three-quarters of group (*e*)—a total of 65—may be left with some degree of definite paralysis of muscle groups. Further studies are necessary for accurate assessment here.

(*d*) Those at home. Many are doing light duties; all are under regular treatment. Many of this group are likely to have some persisting paralysis. There were 80 patients of this type.

(*e*) Those still in hospital: 29 patients of the 502 studied. The long stay suggests likelihood of some residual damage.

Many other points were noted. The age-shift from infancy to childhood and adult life is clear. All but 43 of the 502 patients were under 40 years; 308 patients were under 20 years, but only 80 of them were under 5 years. The sex incidence showed no significant leaning, except in the 5-14 age group: here, of 169 patients, 115 were boys and only 64 girls.

The Care of Patients.—Hospital treatment and after-care of cases both publicly and privately has been on the whole satisfactory. Accommodation has been strained to its limit again and again, but has always stood the strain. A few individual cases have had difficulties, some financial, some due to delays in splint supply, some because of distance from help. Problems still exist, especially in splint supply. Modern prefabrication methods and new materials may ease and speed up methods greatly, and result in lighter, mechanically better, and more aesthetic splints.

Research.—Research on poliomyelitis is almost world-wide, and progress is being made in study of the virus, the methods of its transference, the gaining of resistance, and in the search for a cure of the infection and of the after-effects. In few diseases are more brains and money being applied.

Early in the epidemic the Government made available up to £10,000—or more if required—for research into the various problems of poliomyelitis. During the year a virus research laboratory was established in Adelaide through that grant. There was effective co-operation between the University, the Advisory Committee, and the Board. The provision of equipment for the laboratory showed the remarkable generosity of a number of commercial firms in Adelaide. Work is proceeding in this unit.

Immunization and Poliomyelitis.—Statements on the possible effect of immunization on the incidence and severity of poliomyelitis were published in medical journals and in the press. Investigations were carried out in this State by officers of this department to determine if immunization injections had affected the incidence or severity of poliomyelitis during the 1949-1950 epidemic here.

Reports from local boards of health regarding the number of persons immunized during 1949 were studied, and the number of doses of immunizing material issued to local boards and medical practitioners over the same period was ascertained.

The first 1,000 cases of poliomyelitis reported to the Central Board of Health were analysed into age groups. Children who had been immunized through the local boards of health were analysed into similar age groups and the analyses compared. It was found that the incidence of poliomyelitis was least in the age group under 5 years, where the immunization rate was the highest.

According to the records of the first 1,000 patients treated for poliomyelitis at the Northfield Infectious Diseases Wards during the epidemic, 30 per cent in the under 10 years of age group were immunized against whooping cough and 28 per cent were immunized against diphtheria. The investigation indicated that the overall immunization rates in South Australia for these diseases in this age group are higher than those obtained in the group at Northfield.

These finding appeared to indicate that immunization did not increase the incidence of poliomyelitis in South Australia. Four patients among the group investigated had injections of various kinds just prior to admission to hospital, but in only one was there any association evident between the site of the injection and the subsequent course of the disease.

From a consideration of the available evidence, the Advisory Committee on Poliomyelitis advised against any alteration in the normal arrangements for immunization. It was decided to impress on all medical practitioners the necessity to make certain that the person was not suffering with poliomyelitis in the preparalytic stage before injecting any immunizing material.

There is evidence to show that if a person, suffering with poliomyelitis in the preparalytic stage, is subject to fatigue or injury the subsequent course of the disease may be more severe. Possibly even the minor injury of an injection may have some effect.

6. TUBERCULOSIS.

Statistics.—It will be noted in the table of infectious diseases in Section 4 of this report that the established trend of decreasing tuberculosis mortality continues. The tuberculosis death rate of 18.9 per 100,000 (all forms) and 16.7 per 100,000 (pulmonary) is the lowest on record for the State, and is 11.3 per cent below the figure for 1949. Cases reported, on the other hand, increased from 269 in 1949 to 362 in 1950, an increase of 34.6 per cent. This signifies an improvement in case-finding and in reporting of cases; there is no evidence to suggest an actual increase in incidence of tuberculosis. Of the 343 cases of pulmonary tuberculosis reported, 76 were from the country and 267 from the metropolitan area. The total figure represents an increase in the annual rate of 1.2 per 100,000 of the mean estimated population. Factors responsible for this increase are an increase in the number of early cases discovered by miniature X-ray surveys, and an increase in the amount of pensions payable to persons who are suffering with tuberculosis.

Case Finding.—A successful attack on the tuberculosis problem depends first on an energetic plan of case finding. The contribution of the public health service lies in the discovery of unsuspected cases among the apparently healthy members of the community, by mass survey methods.

The State X-ray Health Survey has operated two transportable X-ray units throughout 1950, one in the metropolitan area and one in the country. The country unit has continued with community surveys in the major centres of the State, and during 1950 it visited Mount Gambier, Penola, Naracoorte, Bordertown, Strathalbyn, Port Elliot, Victor Harbour, Noarlunga, Gawler, Mount Barker, and Lobethal; 18,068 X-ray pictures were taken.

The metropolitan unit spent the greater part of the year in surveys of workers in industry, and operated in the following factories and plants:—Kelvinator Australia Ltd., Chrysler-Dodge-De Soto Distributors Ltd., Pope Products Ltd., British Tube Mills (Aust.) Pty. Ltd., Stewarts and Lloyds (South Australia) Ltd., Actil Cotton Mills, The Electricity Trust of S.A., Osborne Power Station, The Finsbury group of industries, Philips Electrical Industries of Australia Pty. Ltd., A. Simpson & Son Ltd., Postmaster-General's Department, and other Commonwealth Public Service groups.

During the months of September, October, and November a new departure was made by undertaking a community survey in the metropolitan area with the co-operation of the local boards of health. The unit was stationed in the Port Adelaide Town Hall for eight weeks, and the public were urged to attend for free examination. A total of 5,400 persons was X-rayed in Port Adelaide; a somewhat disappointing result, as it was hoped to attract 8,000 people during the time allotted. Seventeen thousand seven hundred and thirty persons were X-rayed on the metropolitan unit during the year.

Up to 31st December, 1950, there have been 35 previously unknown cases of active pulmonary tuberculosis discovered by the State X-ray Health Survey. In addition, a much greater number of people with inactive or healed tuberculosis has been found and placed under regular medical supervision. There have also been cases of previously unsuspected non-tuberculous disease referred to doctors for further investigation and treatment. The policy of the survey is to follow up all suspected cases of tuberculosis until a diagnosis has been established and the question of activity determined and until the sufferer is under adequate medical supervision. The non-tuberculous cases are referred to their own doctor, and no further follow-up is made within the survey.

Tuberculosis Records.—Progress has been made with the establishment of a Central Tuberculosis Case Registry at the Central Board Office. Such a registry is necessary for the effective planning and implementing of control measures, and for the administration of the new Commonwealth scheme of Tuberculosis Allowances introduced in July, 1950.

An Act to amend the Health Act (No. 39 of 1950), assented to 30th November, 1950, requires medical practitioners to notify cases of tuberculosis to the Central Board of Health instead of to the local boards of health in whose area the patient resides. This amendment simplifies the work of the doctors, and facilitates the operation of the Central Case Registry. The Central Board of Health immediately informs the appropriate local board of health of such notifications, and public health supervision of the households concerned remains a local board of health function. In this connection the Director has conferred with medical officers of health of a number of local boards, with a view to improving public health supervision.

Health Education and Tuberculosis.—The need for health education is shown by the attendances to the State X-ray Health Survey. At first sight, the proportion of the public using the X-ray Service seems disappointing, but it must be remembered that the lay public has many confused ideas about X-ray. Many people think that the survey is for children only, and some believe it would be painful; a great many fear that the X-ray will find something wrong with them, whereas ignorance is bliss. These and many other "objections" to the survey are very real in the public mind, and must be satisfactorily answered before better attendances can be expected.

To enlighten the public about mass X-rays, various methods of health education are being used including leaflets, pamphlets, stickers, posters, press and radio advertisements, streamers, letters, screen slides, and a motion picture film. As more people are attracted to the unit by the use of these methods, a more general public acceptance of mass X-ray should ensue. A health-educated public will not tolerate an unnecessary disease like tuberculosis.

7. FOOD AND DRUGS.

Testing of Samples.—Supervision of the food supplied to the public is an important function of any health authority. This was done in the metropolitan area of Adelaide by the Metropolitan County Board; in the rest of the State it is done by the Central Board of Health or local boards.

The work entails supervision of all food in the various stages of its processing and preparation, and the supervision of those foods for which there is a legal standard in the regulations under the Food and Drugs Act.

At intervals samples of food are purchased and submitted for analysis through the Central Board of Health to the Government Analyst. The following table shows the number of samples tested and the numbers not conforming to the required standards:—

Article.	No. Submitted.	Not to Standard or Incorrectly Labelled.
Ale, beer, or stout	8	8
Beef	13	—
Bread	17	5
Cider	2	—
Citric acid	3	1
Cod liver oil emulsion	8	2
Coffee and chicory essence	1	1
Cream	1	—
Cream of tartar	4	—
Diamorphine	1	—
Eucalyptus oil	6	2
Fish	3	—
Flours	15	2
Gelatine	2	1
Ice cream mix	1	—
Icing sugar	2	1
Jelly crystals	2	2
Milk	1,134	52
Olive oil	1	1
Pepper	5	1
Pickles	3	2
Sausage and mincemeat	19	5
Skim milk powder	1	—
Soap and soap powders	27	—
Sugar	1	—
Summer or temperance drinks	31	11
Tartaric acid	3	3
Tomato products	24	3
Wines	9	3
Total	1,347	106

Illegal Sale of Penicillin Preparations.—Retail sales of penicillin preparations are restricted in this State to the prescription orders of doctors, dentists, or veterinary surgeons. Investigations were made by officers of the board into the illegal sale of penicillin preparations, particularly those for external use, by chemists. In a number of cases it was found that sales had been made without a prescription issued by an authorized person. Such sales constitute breaches of Regulation 80 (*a*) of the Consolidation of the Food and Drugs Regulations. The chemists concerned were warned that, although legal proceedings would not be instituted on this occasion, any further flouting of the regulations would not be tolerated.

Formalin as a Preservative in Milk.—Following complaints that formalin was being used in milk as a preservative by producers of milk before delivery to a butter factory, an investigation was made by an officer of the Central Board of Health.

The inquiries showed that formalin was supplied to a number of producers by the factory management, together with a circular explaining that owing to the heavy expenditure incurred in the daily "pick-up" of the milk at the dairies it was proposed to reduce this service to three times weekly. In order that this could be successfully done instructions in the circular set out that a teaspoonful of formalin should be added to each 10gall. churn of milk as soon as it was produced.

This matter was viewed seriously by the local health authorities and the Central Board, as the milk might be used in the diet of infants and invalids. The addition of formalin to milk is prohibited by the Food and Drugs Regulations. The Central Board, after giving consideration to these breaches, decided not to take legal proceedings in this case. The management was warned against further breaches.

A Modern Slaughterhouse.—Many country slaughterhouses are situated in out-of-the-way places, perhaps on the principle that what is out of sight is out of mind. Most of them are of a very poor structural standard. They are often made of materials which are quite unsuitable for the purpose and which are difficult to clean properly.

In 1948, the Health Act Regulations dealing with slaughterhouses were amended to bring the standard required into keeping with modern practice. The Central Board of Health, with the assistance of the General Manager of the Metropolitan and Export Abattoirs Board and officers of the Architect-in-Chief's Department and Master Butchers Limited has produced plans of a model slaughterhouse complying with the new requirements. These plans give local board officers and butchers a general guide to modern slaughterhouse construction.

The new design includes a number of special features which will assist in raising the standard of hygiene at slaughterhouses. A flyproof meat hanging room fitted with adequate rails has been provided under the main roof. If necessary, a refrigerator could be installed.

Lighting and ventilation have received special attention. Even on dusty days slaughtering can be carried on with closed doors, as generous-sized windows allow for adequate lighting.

All corners have been rounded for easy cleaning. The blood-drain is broom-wide. A water boiler is provided to supply hot water for cleaning the slaughterhouse, for pig scalding, and for a shower in the change-room. The boiling down of offal is done in a separate boiling-down shed, away from the slaughterhouse.

Sheep are brought into the killing room by means of a special ramp, and cattle are killed in a knocking pen of special design. All animals are bled over the floor drain in the centre of the slaughterhouse. Offal is sent one way and dressed carcasses the other way, thus preserving a logical sequence in the work.

Copies of the plans are available to butchers and local boards of health on request to the Central Board office.

8. GENERAL SANITATION.

Inspections by Central Board Officers.—During the year health inspectors of the Central Board carried out their usual routine general inspections of the sanitary conditions in districts under the control of local boards of health.

As a rule the inspection involves a representative sampling of the dwellings, food premises, manufacturing premises, slaughterhouses, public buildings, public reserves, and other places of interest from a health point of view. An officer of the local board, usually the local health inspector, accompanies the Central Board's inspector. Action regarding any insanitary conditions found is taken by the local board of health concerned.

It is usually noted that, where a full-time qualified health inspector is employed by the local board or a group of boards, the sanitary condition of the district is much better than in districts having no qualified health inspector. A qualified health inspector in a district can effectively supervise the removal of insanitary conditions.

These inspections are the basis of the inspectorial work done by the Central Board, and during the year 27 such visits were completed. Local board areas in the eastern part of the State have been divided into five groups. Each one of these five groups receives the attention of one Central Board inspector who does all the inspections in that group of areas. In turn, a Central Board medical officer is responsible for advising on health matters in the grouped areas. It is intended that each routine general inspection will be followed in a few weeks by a visit to the district by the Central Board medical officer and health inspector responsible for that district. There were 11 of these "follow-up" inspections during the year.

Help for Country Local Boards.—Increases in staff and better transport arrangements have enabled inspections by the Board's officers to be extended to areas of the State which had seldom been covered before. These included the Far North, Leigh Creek, the Flinders Ranges, and Eyre Peninsula extending to Fowlers Bay. Inspections of sanitation and food supplies were made. It is expected that regular visits will continue to be made in the future.

The need for inspection of these outlying areas was intensified during the year, especially on the West Coast, where the pastoral and agricultural prosperity has stimulated the provision of many improvements. The same applied to the North, but there the development of Leigh Creek and the great increase in mining and tourist activity provided problems of their own.

Alleged Pollution of the North Para River.—During June and July complaints were made to the Minister of Agriculture that winery wastes were polluting the North Para River. It was said that offensive odours were being created and that stock were either refusing to drink the water, or being poisoned if they did, and that fish were being destroyed. The Minister called a conference of representatives of councils, interested departments, members of Parliament, and an officer of this department. A Central Board medical officer of this department inspected the area and made inquiries. As a matter of policy, the Central Board disapproves of the discharge of any waste matter into any watercourse.

The residue from distilleries consist of large amounts of liquid with organic matter in solution and suspension. These liquids decompose only very slowly, and large amounts of evil-smelling slush accumulate. In the past, accumulations have been discharged into the river when in full flow. The non-arrival of an expected flood caused the trouble on this occasion.

Certain of the wineries, having sufficient land, evaporate the waste and use the residue as fertilizers; others who have land are working towards this end. But some of the wineries have insufficient land for this method of disposal. It was proposed by the Board's officers that they use their tanks as settling tanks, save the sediment, and pump the liquid to an absorption ground. There is suitable sandy waste country available.

This was accepted by the conference as a long-range policy. In the meantime discharge to the river will continue, in spite of the Central Board's disapproval. However, an undertaking has been given that an authority from among the winemakers will direct the times for discharge, and will assemble information to ensure that discharge takes place when the river is in good flow.

Domestic Water Supply for Loxton North.—At the request of the Loxton Local Board of Health, the water supply to settlers in the Loxton North Irrigation Area was investigated by a Central Board inspector. His report showed that the area concerned, measured along the water channel, was one of the more remote from the pumping station. There was no water supply piped to the blocks in question, but an irrigation channel had been laid. The water in this channel moves slowly, dependent on draw-off along the channel, until it is practically stationary in the area under discussion, some 2½ miles to 4 miles from the beginning of the channel.

A dark-blue scum was found to form on top of the channel water after about two days. Slime and weed also develop, the accompaniments of stagnation. In addition, the water in the channel is open to contamination by animals such as foxes and rabbits and birds drowning in the channel, weeds blowing in and decaying, and contamination by dogs and even persons swimming. An instruction has been issued prohibiting swimming in the channels.

In many instances, the houses in this area are not completed. Even when catchment from the roofs is available there may not be sufficient rainwater for domestic purposes, owing to the low rainfall in the area. The channel water supply cannot be considered safe for domestic use. Each settler is provided with a conveyance and a 280gall. tank for carting water. The greatest distance any settler would have to cart water would be one to two miles.

Pending provision of a piped water supply, the only satisfactory means available to the settlers is for them to cart water with the equipment available to them.

Temporary Camping Areas.—The problem of sanitation in temporary camping areas associated with developmental projects in country areas was referred to the Central Board. Camping areas at Copley and Pimba were visited and inspected by officers of this department. It was found that a number of men who were doing contract work on

nearby jobs had brought their families with them and established temporary camps. As the men were employed on contract work, their employers were not responsible for the conditions present at the camps. Both camps were also outside the area of local government, and consequently their sanitary supervision became the direct responsibility of the Central Board.

To meet these and similar situations, a number of rulings were drawn up to provide for a minimum standard of sanitation consistent with good health in these areas. These requirements can be enforced by the district sanitary inspector, who is usually the mounted constable for the area. Local sanitary officers have reported that the sanitary conditions at these camps are now satisfactory.

The following are the rulings:—

1. No person shall erect a dwelling or establish a camp or caravan without the permission of the district sanitary inspector (police officer).
2. No house shall be erected or a camp or caravan established within 50ft. of an existing camp, house, or caravan.
3. Every privy shall be sited at lease 20ft. from any tent, caravan, or dwelling.
4. Not less than 40gall. of water shall be placed near each dwelling for use in the event of fire. It is suggested that a small fire cart and foam fire extinguisher could be arranged for by the residents in a camping area. These could be kept at some central point.
5. All refuse shall be disposed of by burning or burial. Where refuse is temporarily kept on the premises the occupier shall provide a metal receptacle with a close-fitting cover.
6. All dwellings, camps, and caravans shall ke kept in a clean condition and the area about the premises kept free from refuse.
7. The chemical type of privy pan is recommended for such areas and its use should be encouraged. It must comply with requirements 8 (*c*) and 8 (*d*), as indicated below.
8. In general, privies shall comply with the following standards:—
   (*a*) Pit privies shall be at least 6ft. in depth.
   (*b*) A flyproof superstructure, preferably of the army envelope type with close-fitting cover, shall be fitted over the pit in such a way that the pit is flyproof.
   (*c*) A supply of covering material such as dry earth, lime, or ashes shall be provided. Old sump oil could also be used to repel flies by pouring it down the pit at intervals. Sump oil can also be used in pans.
   (*d*) In pan privies, a flyproof pan enclosure, preferably the army envelope type with a close-fitting cover shall be fitted over a round-type pan.
   (*e*) The contents of the pan shall be emptied at least once a week and buried at least 30yds. from any building, tent, or caravan.
   (*f*) Privies shall be adequately screened for privacy.
   (*g*) On vacating the site the area shall be left in a condition satisfactory to the sanitary inspector.

9. INDUSTRIAL HYGIENE.

Co-operation with Factories Department.—During the year officers of the Factories and Steam Boilers Department referred to the Central Board a number of matters concerning the health of factory workers.

The Central Board's officers are finding themselves called more and more frequently to advise on health features in factories. With the increasing development of secondary industries in this State, that trend is to be expected.

During his study-tour abroad in 1948, as a Commonwealth Overseas Travelling Fellow, Dr. G. H. McQueen took the opportunity to acquaint himself with methods of procedures of factory hygiene in the countries he visited. His work in that branch of public health has proved of great service to the Board. The development of industrial hygiene in this State is likely to proceed steadily and effectively.

For workers in industry, the Board tries to ensure by its advice and supervisory control, that they may follow their trades without injuring their health. This was the ideal of Ramazzini who—at the end of the 17th century—formulated the principles on which modern industrial medicine is based.

Lead Hazards.—The Board's officers completed their investigation, referred to in last year's Annual Report, into the hazard to health associated with filler used in the manufacture of motor car bodies. This filler contained 80 per cent of lead.

Only one of the 10 workmen examined at intervals during the year showed any evidence of lead absorption. It was concluded that the precautions taken were sufficient, but that workmen using this substance should be medically examined at intervals. This examination would be a check on the precautions taken, and it would detect the occasional person who is susceptible to lead poisoning.

A case of lead poisoning among the employees at a paint factory was brought to the notice of the Central Board. It was found that finely divided lead carbonate powder was being used in the manufacture of paint, without adequate precautions against its inhalation by those working in the factory. Lead carbonate powder was used because other harmless paint pigments were difficult to obtain, and the transport costs of the powder are less than those of lead in oil or other less harmful forms of lead commonly used in the manufacture of paints. The lead carbonate being used was produced by the electrolytic method. This method produces a much finer powder than that produced by the stack method. Being finer, it is a more dangerous hazard to the health of those handling it in the dry state, than is the coarser powder produced by the stack method. Blood examinations of the other employees showed that they had not as yet been affected. The hazard associated with the use of this form of lead was brought to the notice of the Factories and Steam Boilers Department.

Asbestos.—Arrangements were made for workmen handling asbestos in the Port Adelaide area to be X-rayed on large films by the State X-ray Health Survey Unit when it was working in that area. There was a rather poor response on the part of the workmen concerned, and the number X-rayed was not sufficient to form any opinion as to whether any hazard to health existed. One film showed evidence of fibrosis, but it appeared unlikely that asbestos caused the condition.

Conference on Pneumoconiosis.—Dr. G. H. McQueen represented South Australia at the International Labour Organization Conference on Pneumoconiosis. The conference was held in Sydney from 28th February to 10th March, 1950. It was attended by experts from Australia, Canada, Denmark, France, Italy, the United Kingdom, New Zealand, Norway, Sweden, Switzerland, the United States of America, and the Union of South Africa.

At the conference discussions took place on the following:—

1. Recent advances in knowledge of the pathogenesis and pathology of pneumoconiosis in general, silicosis, pneumoconiosis in coal workers, and other pneumoconioses.
2. Recent advances in the clinical aspects, diagnosis and treatment of pneumoconiosis.
3. Medical, social, mechanical, and technical measures to prevent pneumoconiosis.
4. An international compensation standard for disability caused by pneumoconiosis.

The conference made a number of recommendations relating to these matters.

Committee on Industrial Hygiene.—Dr. McQueen attended the four meetings of this committee held during the year in Melbourne and Sydney. The committee is appointed by the National Health and Medical Research Council and its function is to keep the council advised on relevant matters.

Some of the more important subjects dealt with by the committee included the use of X-ray fluoroscopy in footwear stores, and the industrial hazards associated with chloropicrin, carbon-monoxide, benzol, organic phosphates, lead, manganese, mercury, and radioactive isotopes. Necessary legislation to control these hazards was considered and reports were forwarded to the Council.

10. PROGRESS AND PROBLEMS.

The Poliomyelitis Epidemic.—Poliomyelitis tended to overshadow the field of public health in South Australia during 1950. The year commenced with the epidemic apparently subsidizing after reaching a peak during the previous December. During January, 1950, the incidence rose again to reach another peak almost as high as in December. It then slowly subsided until it reached the stage where only one case was reported for the last week in October.

Up to this point, in the epidemic, 1,560 cases had been reported to the Central Board of Health. This represented a rate of 223 per 100,000 of the mean estimated population. Since October, it has gradually increased again, and by the end of the year was occurring at a rate which previous to the 1949-1950 epidemic would have been considered alarming.

Poliomyelitis is one of the virus diseases for which so far no satisfactory means of control has been found. Although the methods adopted during this epidemic may have slowed it down, we are left with the feeling that they did not reduce its incidence. Poliomyelitis still remains one of the unsolved problems of medical science.

An Immunization Problem.—To control the incidence of diphtheria by immunization it is necessary that more than 60 per cent of the population be immunized. If the percentage drops much below this figures, there would be a risk of a severe flare-up of diphtheria, possibly in epidemic form.

The reported effect of diphtheria and whooping cough immunization on the incidence of poliomyelitis may have been responsible for the drop in the numbers who were immunized against these two diseases during the year. Although investigations in this State appeared to show that there was no relation between immunization and poliomyelitis, and ... Advisory Committee on Poliomyelitis recommended that immunization should be continued as previously, it was shown statistically in other parts of the world that immunization during the pre-paralytic stage of poliomyelitis might adversely affect the subsequent course of the disease.

It became then the responsibility of the medical officers to make certain that a person did not have poliomyelitis in the pre-paralytic stage before he received any immunizing injection.

Tuberculosis Control.—During the year, Dr. P. S. Woodruff was appointed Director of Tuberculosis, dealing with both the prevention and treatment of tuberculosis in South Australia. This initiates a new phase of the attack on this disease in this State. Unlike poliomyelitis, most of the problems associated with the prevention and treatment of tuberculosis have been solved. The elimination of tuberculosis, or its reduction to the irreducible minimum, is now only a problem of administration. The death rate from pulmonary tuberculosis for 1950 will probably prove to be among the lowest, if not the lowest, for any country in the world.

New Treatment.—The use of new specific substances to treat many of the infectious diseases is effecting their epidemological features. Penicillin in the treatment of scarlet fever renders a patient non-infectious in days, whereas previously the injection lingered for weeks or possibly months.

Chloramphenicol in the treatment of whooping cough, typhus, and typhoid fever has reduced these diseases to minor illnesses. In the case of typhoid, it may have introduced fresh epidemiological problems; it appears that the resulting immunity is low and that organisms remain in the bowel for as long or longer than previously.

Water Supplies and Refuse Disposal.—The Director-General of the World Health Organization has stated that "probably three-fourths of the world's population drink unsafe water, dispose of human excreta recklessly, prepare milk and food dangerously, are constantly exposed to insect and rodent enemies, and live in unfit buildings."

South Australia is fortunate in that the water supplies for the metropolitan area, and an increasingly greater part of the rural area, are adequately controlled by the Engineering and Water Supply Department.

It is also fortunate in that the greater part of the metropolitan area is sewered, and about half of the sewage is treated by the most up-to-date methods available in the world. However, treatment of the other half is still on out-dated lines; it could become an increasing hazard to the health of the metropolitan population.

The disposal of human excreta in rural areas is for the most part extremely primitive. That state of affairs, and the primitive means of disposing of other refuse, is responsible for the breeding of house flies.

This trio—faeces, flies, and refuse—accounts for most of the outbreaks of gastro-enteritis, diarrhoea, and dysentery that occur in country areas. These outbreaks are commonly and wrongly attributed to change of water, bore water, change of food, and many other causes; the three really responsible factors are often overlooked. With few exceptions, the disposal of refuse has never been adequately dealt with in South Australia and even in the metropolitan area there are large unsightly and insanitary rubbish dumps. On roads and reserves in the vicinity of Adelaide, there are heaps of refuse that have been indiscriminately dumped by irresponsible citizens. All of these dumps provide shelter and food for flies and rodents. They are also responsible for many other minor nuisances, such as smoke, smells, dust, mosquitoes, and cockroaches.

Sanitary Engineering Progress.—Many of the problems in sanitation can only be satisfactorily solved by large sanitary projects, scientifically designed by sanitary engineers. Much of South Australia's good health can be attributed to such projects which they have designed and constructed in the past, but many problems still await attention. Shortages of materials and labour have held up many improvements in sanitation and have made maintenance of existing services difficult. At the present time it appears that these shortages will continue for many years.

The sanitary conditions present in food premises, dairies, and slaughterhouses have improved in isolated cases, but there is still room for improvement particularly in country districts. Plans for a small slaughterhouse that could be easily kept in a sanitary condition have been prepared—an attempt to improve the standard of slaughtering premises throughout the State. In suitable areas the establishment of central abattoirs has been encouraged, to replace many of the small insanitary slaughterhouses now in use.

The sanitary control of dairies and milk supplies in some country districts has been made increasingly difficult by shortages of labour and materials. The high prices that can be obtained for agricultural products other than dairy products are having their influence. So arises the tendency for dairyfarmers to change over to general farming and other work requiring less labour and giving better monetary returns.

Creditable advances have been made in the provision of suitable houses for the people during the year, but it cannot be said that this problem has been solved. There remains particularly the problem of providing accommodation for the aged.

Co-operation is the Key to Success.—A closer liaison has been established during the year between the Central Board and the local boards of health. The Board's officers are now able to spend more time in visiting local areas, so assisting the local boards to develop their health services.

The Central Board again records its appreciation of the help received from many people and organizations. Local boards of health and their officers have given ready co-operation during the year. Officers of the Commonwealth Health Department, Health Departments of the other States, and other departments of our own State have given assistance on many occasions. As in other years, much valuable assistance has been received from friends in health departments overseas.

Entering the second half of the century, we realize that there are still many problems in public health to be solved and that there will be many new problems requiring attention. But many of the diseases that loomed up as obstacles at the beginning of the century have been conquered, and speedy progress in public health is likely to continue. Each local board has the opportunity to lead its residents towards better health. The Central Board will continue to urge all local boards of health to apply themselves assiduously to the tasks before them. The best gains in health status for South Australia can be got by the effective co-operation of health authorities, and a well-informed health-conscious public.

A. R. SOUTHWOOD, Chairman.
J. B. CLELAND,
E. ANGAS JOHNSON,
A. R. BURNELL,
F. C. LLOYD,
} Members.

H. T. HUTCHINS, Secretary.
Adelaide, May, 1951.