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South Australia. Central Board of Health.

Publication/Creation

[1948]

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SOUTH AUSTRALIA

ANNUAL REPORT

OF

THE CENTRAL BOARD OF
HEALTH

FOR THE

YEAR ENDED 31st DECEMBER, 1948

BY AUTHORITY: K. M. STEVENSON, Government Printer, Adelaide.

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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, 1948. For convenience of reference it is arranged in these sections:—

1. Staff and Administration.
2. Health Legislation.
3. Vital Statistics.
4. State X-ray Health Survey.
5. Local Boards.
6. Sanitation.
7. Food and Drugs.
8. Infectious Diseases.
9. Poliomyelitis.
10. Gastro-enteritis.
11. Tuberculosis.
12. Venereal Diseases.
13. Industrial Hygiene.
14. Lines of Progress.

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1. STAFF AND ADMINISTRATION.

Personnel of the Board.—During the year the board was constituted by the following:—

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 other Local Boards—

Frank Charles Lloyd, J.P.

Mr. H. T. Hutchins has been the acting secretary of the board for the year.

Effective Work of the Staff.—The board appreciates the loyal and devoted service of all members of its staff. Mr. Hutchins, who was appointed acting secretary following Mr. Stenning's retirement, has continued to carry out the work in a highly satisfactory manner, and Mr. H. N. Jones has also done well in carrying out the duties of chief clerk.

Retirement of Sister Wilkinson.—Sister K. M. Wilkinson retired from the staff in May, 1948, to be married. She joined the Central Board staff in 1937. In 1945 she went to Germany as a trained nurse with U.N.R.R.A., and returned after two years' duty. The board has appreciated the good work done by Sister Wilkinson and extends good wishes for her happiness.

Appointment of Sister McManus.—Sister M. G. McManus was appointed trained nurse inspector in the place of Sister Wilkinson. Sister McManus received her training in nursing in England. She had extensive experience in nursing practice as applied to industrial problems during the war years. She has settled quickly into the board's work, and her special training is proving of great value here.

Transfers.—Miss P. L. Smith, who had been on the clerical staff of the board since 1941 transferred to the School of Arts, while Miss B. W. Temby, of that branch, replaced Miss Smith on our staff. Mr. Ian M. Thomas was appointed to the clerical staff in January, 1948.

Appointments to the X-ray Service.—The services of Dr. J. Stanley Verco as Advisory Radiologist in connection with the State X-ray Health Survey were continued. Mr. A. H. G. Braden was appointed Radiographer, and Mr. W. G. Bruce X-ray Technician. Misses L. K. Campbell and E. J. Campbell have carried out clerical duties with the unit.

Dr. McQueen's Work Abroad.—Dr. George H. McQueen, medical officer on the staff, left for abroad in February, 1948. At the end of 1947 he was awarded an Overseas Travelling Fellowship by the National Health and Medical Research Council. During most of 1948 he made careful studies into public health work, especially on the administrative side, in England and Scotland, and also in the Scandinavian countries. His work overseas is bound to reflect itself in the sound development of the State's health services.

Health Notes.—The board's quarterly bulletin continues to serve a useful purpose in keeping local boards and their officers acquainted with the general developments in public health, as well as with the special features arising in this State. About 3,000 copies of each issue are printed. All members and officers of local boards throughout the State receive copies. Medical practitioners, pharmacists, school teachers, social workers, and university students are also on the list for distribution.

During the year special articles were contributed to *Health Notes* by Mrs. Wilfred Steele (President of the South Australian Oral Kindergarten), and by Drs. D. R. W. Cowan, F. S. Hone, and E. F. West.



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The Christmas issue of *Health Notes* was devoted especially to the health aspects of holidays. It had a two-colour cover design drawn by Mr. S. J. Simmons, of the Lands Department, and it was illustrated by a series of blocks loaned by the South Australian Government Tourist Bureau. Articles were contributed by the Minister of Health, the Director of the South Australian Government Tourist Bureau, Mr. Justice Abbott, Miss S. Ellen Holder, Drs. W. Christie, S. R. Hecker, L. W. Linn, and T. L. McLarty, and Messrs. H. Bennett, R. H. Bristow-Smith, D. S. C. Clegg, A. H. Lindsay, T. R. N. Lothian, R. F. Poole, K. S. Shapter, and Ken Tregonning.

The issue gave a comprehensive survey of the value of holidays in promoting good health. The production of a special Christmas and New Year issue of *Health Notes* will probably be continued as a regular feature. In December, 1947, a special issue on food topics was very favourably received and the success of this recent production has further encouraged the board.

Health Notes is now in its eighteenth year of issue. It has appeared regularly each quarter. At the outset it was generally an eight-paged leaflet. Recent issues have been of 24 pages. Throughout the years it has received most valued help from a host of contributors. The board is very grateful for this assistance. The board also appreciates the continued co-operation of the Government Printer and his staff in making the bulletin an attractive little journal.

Local boards are encouraged to use the bulletin. Many of the articles are based on inquiries raised by local boards, and articles are contributed by officers and members of local boards.

Publications.—The board realises the value of health education. From time to time leaflets are issued from the office for distribution to the general public, mainly through the agency of local boards. During the year a new booklet was produced, "The Disposal of Sewage Wastes," dealing with special problems arising in country areas. Mr. H. J. N. Hodgson, Engineer for Water and Sewage Treatment, gave valued assistance in preparing articles. The board appreciates the co-operation of the Engineer-in-Chief (Mr. H. M. Angwin) and Mr. Hodgson in the preparation of the new booklet.

Other publications issued by the board during the year dealt with tuberculosis ("On Your Guard" and "The Patient"), diphtheria immunization, "Clean-up" Campaign ("Consult Your Local Board"), dangers from flies ("Flies Don't Care"), domestic hygiene ("It Depends on the Woman"), measles, and whooping cough. Supplies of the new leaflets, and of other publications, are kept on hand for issue as required to local boards and other bodies.

The Work of Advisory Committees.—The Advisory Committee on Health and Medical Services dealt with a wide variety of topics at its meetings in 1948. It tendered advice to the Minister on infantile paralysis problems, the institutional care of subnormal children, the training of deaf children, and the use of B.C.G. vaccine against tuberculosis.

The Advisory Committee constituted under the Food and Drugs Act is referred to in section 7 of this report.

The Advisory Committee on Infantile Paralysis met on several occasions early in 1948 and discussed features of the outbreak then existing.

Lobethal Child Health Scheme.—The committee of management consists of Drs. A. R. Southwood (Chairman), F. S. Hone, W. Christie, and T. D. Campbell. Dr. C. C. Jungfer is the Honorary Medical Director. Under Dr. Jungfer's direction a certain amount of medical supervision of children in the Lobethal district has continued, but staff shortages have hindered the work.

Hospital Accommodation.—Difficulty in providing sufficient accommodation in private hospitals and maternity homes has continued during 1948. The main problem hospital managers have had to meet has been to obtain sufficient nurses and domestic staff. Some of the smaller hospitals have been obliged to close. As long as staff shortages prevail in most businesses and industries it may be expected that hospitals will share in the lack.

2. HEALTH LEGISLATION.

The Wide Scope.—The Central Board of Health administers a wide range of legislation on health matters. The basis of the board's work for many years was the Health Act of 1873. It was under that Act that the board was constituted. Originally, the President and four members were Government appointees. The constitution of the board was altered by the Health Act of 1898, so that, while the chairman and two of the members were appointed by the Governor, the other two members were elected by local boards of health.

The Health Act of 1898 was—in its day—a comprehensive and advanced piece of legislation. Infectious diseases received greater consideration than in previous Acts. Notification and isolation of sufferers from diphtheria, scarlet fever, typhoid fever, and puerperal pyrexia were required.

The passing of the years has added greatly to the department's responsibilities. It now administers the following Acts:—

- The Health Act, 1935-1947.
- The Food and Drugs Act, 1908-1943.
- The Noxious Trades Act, 1943.
- The Bakehouses Registration Act, 1945-1947.
- The Venereal Diseases Act, 1947.
- The Dangerous Drugs Act, 1934.
- The Notification of Births Act, 1926.
- The Vaccination Act, 1936.

Those Acts, and the regulations under them, embody the legislative interpretation of modern public health, knowledge, and outlook. The board is also concerned to some degree with Acts relating to local government, abattoirs, and cremation.

During 1948 several pieces of amending legislation were dealt with, and in this section of the report those items are reviewed.

Health Act Regulations, 1948.—Since 1899 numerous additions and amendments had been made to the regulations originally introduced under the 1898 Act. It was desirable to bring the regulations into line with modern practice and legislation. Some portions of the existing regulations were omitted, since the relevant provisions had been adequately covered by other legislation. The "ragged ends" of these portions have been tidied up. The revision and consolidation were principally the work of the former secretary of the department, Mr. S. C. Stenning. During this review Mr. Stenning had the assistance of the Crown Law Officers, and of the Central Board's staff. The result reflects much credit on Mr. Stenning and his colleagues. The new regulations are likely to be a sound basis for many years to come.

Rest Homes.—Provision for the accommodation and care of the increasing number of elderly people is a social problem everywhere at the present day. General care and help, rather than the expert care of hospital staffs, are a common need. So there have come into being "rest homes" for old folk and others in feeble state. These homes are not hospitals, for the inmates do not receive regular medical attention. Doubt had been raised about the quality of some rest homes, and local boards of health sought means for supervising them to ensure that the inmates were receiving proper care and attention.

In one instance reports and evidence disclosed ill-treatment, including actual violence, persistent under-feeding and neglect of inmates, and general conditions inconsistent with the humane treatment of aged and helpless people.

The Health Act Amendment Act, 1947, enabled the making of regulations governing rest homes. The regulations were gazetted on the 17th June, 1948.

The manager of a rest home may be a registered nurse, or some person specifically approved by the local board. As inmates do not receive regular medical attention, a local board may approve as manager any person they consider physically and mentally capable of caring for aged people.

For each inmate there must be in the bedroom at least 700 cub. ft. of space, and a floor area of 70 sq. ft. The regulations in regard to private hospitals require for each patient 1,000 cub. ft. of space, and a floor area of 100 sq. ft.

A resident registered nurse is required where the number of inmates is in excess of five. The provision of a comfortable rest room, other than a bedroom, for the inmates is another requirement, and suitable bathing facilities are stipulated.

Officers of local boards should find the new regulations most helpful, especially in the supervision of the increasing number of small homes for the elderly.

Bakehouses.—The Bakehouses Registration Act, 1945, provides that a bakehouse shall not be registered unless the local board is satisfied that the premises are fit and proper to be used as a bakehouse, and that they comply with the regulations made under the Act. Regulation 12 of the regulations relates to structural requirements for bakehouses: walls, ceiling, floor, lighting, ventilation, dough mixers, troughs and benches, store room, bread storage, bread loading, change rooms, washing facilities, yard, stables, water closets, water supply, sleeping accommodation, and vermin control.

In 1947 the Act was amended to provide for its administration by a local board within its area, subject to the general control of the Central Board. Regulations can provide for an appeal to the Central Board from any refusal of a local board to register premises as a bakehouse, and appropriate regulations were promulgated on the 3rd June. A further regulation provides that, if a local board is satisfied that any of the provisions of regulation 12 cannot reasonably be complied with owing to any shortage or scarcity of materials or supplies, or for other sufficient reason, the board may, with the approval of the Central Board, dispense with any such provisions for such time and upon such terms as deemed proper.

Noxious Trades.—On the 9th December, 1948, it was proclaimed that the Noxious Trades Act, 1943, should come into force on the 1st January, 1949. Since the Noxious Trades Act, 1943, was assented to in December of that year, the board has given detailed consideration to the areas to be defined as noxious trades areas, the trades to be declared noxious trades and the representations made from time to time by firms and interested authorities in regard thereto. The war years, and their aftermath, caused much delay.

The regulations issued under the Act declare certain defined areas at Wingfield and Dry Creek to be noxious trades areas. The following trades were declared to be noxious trades:—

Battery manufacturing, blood boiling, blood drying, boiling down, bone grinding, fat extracting, fat melting, fellmongering, fishmeal making, glue making, grape acid working, gut scraping, hide and skin drying, knackerings, marine store dealing, soap and candlemaking, tallow rendering, tanning, and wool scouring (except wool scouring of shorn wool).

The regulations also prescribe structural requirements in regard to premises, and the various fees for licences. Certain structural provisions shall not apply, so long as a local board is satisfied that any such provisions cannot reasonably be complied with owing to any shortage or scarcity of materials, or supplies.

The Noxious Trades Act applies to the metropolitan area only at present. Every person carrying on a noxious trade must be licensed by the local board. If premises are situated within a noxious trade area, and the noxious trade is one specified to be carried on in that area, a licence must be granted if the local board is satisfied that the premises comply with the regulations and that the trade will be conducted in accordance with the regulations.

If, at the time the Act came into force, a person was then carrying on a noxious trade at a place not situated in a noxious trade area, the applicant will be entitled to a licence on the same conditions set out in the preceding paragraph. However, in such case the licence can only be granted to the person carrying on the business at the time the Act came into operation, and only in respect of the premises then existing.

On the Noxious Trades Act coming into operation certain provisions of the Health and Local Government Acts relating to offensive trades, trade nuisances, and manufacturing districts were repealed.

Veneral Diseases Regulations.—Regulations under the Veneral Diseases Act, 1947, were promulgated in June, 1948. These regulations prescribe the fees to be paid to medical practitioners for conducting examinations under the Act, and also forms to be used in implementing the various provisions of the Act.

In essence, the Act includes the main provisions of the National Security (Venereal Diseases and Contraceptives) Regulations, made under Commonwealth legislation in the war years. Those regulations were applied to good effect in this State. When the National Security Regulations ceased to apply, the Central Board's officers welcomed the introduction of State laws of similar nature.

Amending Food and Drugs Regulations.—In this State the possession and sale of drugs and poisons are controlled by the Dangerous Drugs Act, 1934, and the Food and Drugs Act, 1908-1943. The latter Act, and the regulations under it, control and provide standards for poisons and for the ordinary drugs used for medicinal purposes.

The *Government Gazette* of the 9th September contained amendments to the regulations under the Food and Drugs Act, 1908-1943. Included among them were requirements regarding labelling of spirituous liquors, and the sale of penicillin, and of rat poison 1080 (sodium fluoroacetate). Further comments on the new legislation are given in section 7 of this report.

The Minister's Comments.—In a recent message to local boards Mr. McEwin referred to the great range of present-day public health work. "I am reminded of the grand words of Disraeli: 'The great question, the great social question, which should engage the attention of statesmen, is the health of the people. That is the question which really almost comprises every object we wish for. It refers to all subjects which, if properly treated, may advance the happiness and comfort of men.' Health work is important work, it does matter a very great deal, it affects almost every aspect of our national life. Your work and my work in the public health administration in this State are really vital things."

"In the conduct of official health work we must have the backing of laws. Certainly we may not often have to take legal action against anybody, but sound and wide-embracing health laws are the basis of good administration. The Health Act, The Food and Drugs Act, and many sections of The Local Government Act are there to help us. The laws confer extensive powers on local boards. Each board is the health authority in its area, where it has the responsibility of administering the State's health laws."

3. VITAL STATISTICS.

Acknowledgments.—Mr. A. W. Bowden, Government Statist, has kindly supplied the information set out in this section. The figures for 1947 are shown in brackets. Very many of the functions of a health authority are based on, or at least assisted by, sound statistical data. Mr. Bowden and his staff have time and again helped the Central Board and its staff, and full acknowledgment and appreciation are now recorded.

Population.—For 1948 the estimated population was 658,000 (646,000).

Births.—There were 15,870 (16,317) new babies. The number of births registered has fallen irregularly from 12,904 in 1914 to 11,492 in 1927, from which year there was an almost continuous fall to 8,270 in 1935. From 1935 there has been an increase each year to 16,317 in 1947.

The total for 1947 showed an increase of 8,047 on 1935 and of 3,413 on 1914, which had the record number for earlier years.

The registrations for 1948 fell by 547 from 16,317 to 15,870. The 1947 rate per 1,000 of mean population was 25.25, and was the highest since 1917. The 1948 rate fell to 24.12.

When it is noted that there were 59,287 births during the five years 1920-24, 43,061 during 1932-36, and 75,344 during 1944-48, it will be realized that problems will arise in future in such circumstances as numbers of children attending school and numbers leaving to commence employment.

Deaths.—There were 6,748 (6,215) deaths registered, an increase of 533 on the previous year. This is the highest number registered in the State for any one year, but the rate of 10.26 has been exceeded in several previous years. Commencing from 1921 there has been a general, though irregular, fall in the death rate until 1933 when the rate of 8.44 was the lowest on record. From that year there has been an irregular rise to the rate of 11.02 in 1942, since when the rates have been 10.57, 9.66, 9.64, 10.17, 9.62, and 10.26 per 1,000 mean population.

Causes of Deaths.—The principal causes of death in the general population of the State are shown in table I. The rates shown are those per 10,000 of mean population.

THE MAIN CAUSES OF DEATH IN SOUTH AUSTRALIA IN RECENT YEARS.

Disease.	Persons.			Rates.		
	1946.	1947.	1948.	1946.	1947.	1948.
Diseases of the heart	1,925	1,847	2,038	30.30	28.58	30.97
Cancer and other malignant tumours	820	827	942	12.91	12.79	14.32
Tuberculosis (all forms)	182	196	186	2.86	3.03	2.83
Cerebral haemorrhage, softening, etc.	751	713	908	11.82	11.03	13.80
Pneumonia, lobar-, broncho-, etc.	288	251	262	4.52	3.88	3.98
Bronchitis (all forms)	51	45	57	0.80	0.70	0.87
Other diseases of respiratory system	113	118	125	1.76	1.83	1.90
Nephritis—Acute and chronic	208	189	190	3.27	2.92	2.93
Diabetes mellitus	150	130	141	2.36	2.01	2.14
Puerperal causes	37	27	22	0.58	0.42	0.33
Congenital debility, malformations, etc.	317	324	314	4.99	5.01	4.77
Senility	261	256	244	4.10	3.96	3.71
Suicides	58	55	43	0.91	0.85	0.65
Violent deaths (except suicides)	318	297	339	5.01	4.60	5.15
Diarrhoea and enteritis	42	27	81	0.66	0.42	1.23
Whooping cough	3	—	8	0.05	—	0.12
Diphtheria and croup	8	5	5	0.13	0.08	0.08
Influenza	8	5	11	0.13	0.08	0.17
Typhoid fever	—	1	—	—	0.02	—
Appendicitis	23	33	18	0.36	0.51	0.27
Hernia, intestinal obstruction	54	34	51	0.85	0.53	0.78
Cirrhosis of liver	25	35	27	0.39	0.54	0.41
Tetanus	9	3	5	0.14	0.05	0.08
All other	810	798	728	12.81	12.33	11.06
Totals	6,461	6,215	6,748	101.71	96.21	102.55

Table II. shows the number of deaths and rates from certain causes, over the years 1915 to 1948.

DEATHS—CERTAIN CAUSES, 1915 TO 1948.

Mean.	All Causes.		Cerebral Haemorrhage Softening, Etc.		Tuberculosis (all kinds).		Cancer.		Diseases of the Heart.		Puerperal Causes.		Diarrhoea and Enteritis.	
	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.	No.	Rate.
1915-19	4,800	106.7	252	5.60	400	8.89	389	8.65	547	12.16	53	1.18	295	6.56
1920-24	4,901	96.8	320	6.32	382	7.55	476	9.41	541	10.69	61	1.21	262	5.18
1925-29	5,034	89.8	359	6.41	364	6.49	555	9.90	590	10.53	58	1.03	105	1.87
1930-34	5,001	86.5	432	7.47	297	5.14	653	11.29	806	13.94	49	0.85	69	1.19
1935-39	5,439	92.0	525	8.89	239	4.05	710	12.03	1,137	19.25	46	0.78	41	0.70
1940-44	6,235	102.5	639	10.50	218	3.58	772	12.69	1,590	26.13	34	0.56	54	0.89
1943	6,482	105.7	642	10.47	214	3.49	806	13.14	1,728	28.17	36	0.59	75	1.22
1944	5,984	96.6	695	11.22	188	3.03	788	12.72	1,634	26.38	32	0.52	33	0.53
1945	6,049	96.4	652	10.40	201	3.20	774	12.34	1,799	28.68	25	0.40	30	0.49
1946	6,461	101.7	751	11.82	182	2.86	820	12.91	1,925	30.30	37	0.58	42	0.66
1947	6,215	96.2	713	11.03	196	3.03	827	12.79	1,847	28.58	27	0.42	27	0.42
1948	6,748	102.6	908	13.80	186	2.83	942	14.32	2,038	30.97	22	0.33	81	1.23

The table is full of interesting features

- (i.) The crude general death-rate in recent years is almost stable at about 100 per 10,000 population. It is unlikely to fall below that figure.
- (ii.) The cardio-vascular diseases, of which the cerebral haemorrhage and heart diseases groups constitute the main sections, have assumed increased prominence as causes of death.
- (iii.) Tuberculosis is on the down grade as a cause of death.
- (iv.) The dangers of child-birth have reduced remarkably in the last 30 years. Better medical and nursing care, and the use of new materials—the sulphonamide drugs and penicillin, for instance—have been the main factors for improvement.
- (v.) Gastro-intestinal infections as a cause of death have been reduced dramatically. They are now at about one-tenth or less of their level 30 years ago.

Infantile Mortality.—As an index of a community's health status, infantile mortality is generally a reliable guide. The deaths of children under one year totalled 471, an increase of 75 on the total of 396 for 1947. This total is nearly as high as the record number of 482 in 1942, but the rate is considerably lower than in that year.

The infantile death rate represents the number of deaths of children under one year per 1,000 births. During the last 70 years there has been a remarkable drop in the infantile death rate—from a rate of 150 per 1,000 births in the period 1870-1880 to a rate of less than 30 in recent years.

Usually New Zealand has the world's lowest infantile death rate with South Australia often second, and twice lowest, namely in 1938 and 1947. The 1947 rate for this State was 24.27, and New Zealand 24.98. The 1948 rate was 29.68. The rates during recent years have been less than half the rates of 25 years previously.

There were 123 (131) deaths of children under one day, 182 (161) of children from one day to one month, and 166 (104) of those from one month but under one year. Although the figures vary from year to year, the greatest improvement compared with earlier years has been in respect to deaths of children from one month to one year old. Many of the 64 (15) infant deaths from diarrhoea were aged one month and over, and contributed to the increased deaths in this age group for 1948. A number of the children whose deaths were classed as diarrhoea also had some form of pneumonia as a contributory cause.

Still Births.—These are not included in either births or deaths, and numbered 387 in 1947; the total for 1948 is not yet available.

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

Table III.

Period.	Population.	Births.		Marriages.		Deaths.			
		No.	Rate (a).	No.	Rate (a).	Total.		Infants.	
Mean.		No.	Rate (a).	No.	Rate (a).	No.	Rate (a).	No.	Rate (b).
1920-24	506,221	11,857	23.43	4,326	8.55	4,901	9.68	693	58.45
1925-29	560,481	11,301	20.16	4,225	7.54	5,034	8.98	526	46.54
1930-34	578,294	8,989	15.54	3,660	6.33	5,001	8.65	342	38.05
1935-39	590,620	9,039	15.32	5,305	8.99	5,439	9.20	297	32.85
1940-44	608,457	11,743	19.16	6,843	11.17	6,235	10.17	406	34.57
1945-48	641,708	15,508	24.17	6,348	9.89	6,368	9.92	422	27.21
Year.									
1944	619,496	13,311	21.40	6,019	9.68	5,984	9.62	387	29.07
1945	627,221	14,033	22.31	5,321	8.46	6,049	9.62	394	28.08
1946	635,260	15,813	24.85	6,700	10.53	6,461	10.15	428	27.07
1947	646,352	16,317	25.25	6,668	10.32	6,215	9.62	396	24.27
1948	658,000	15,870	24.12	6,704	10.19	6,748	10.26	471	29.68

(a) Per 1,000 of mean population.

(b) Per 1,000 births.

4. STATE X-RAY HEALTH SURVEY.

Work Begins in Country Centres.—The portable X-ray unit purchased by the Government for use in country areas has done good work. It takes 35 mm. pictures, the size adopted by the British Ministry of Health for mass radio-

graphy of the civil population. Mass radiography is now an accepted public health procedure. It is of proven value in tuberculosis case-finding.

In the X-ray health survey there are places for the physician, the pathologist, the family doctor, health authorities, and radiologist; the family doctor to initiate the examination, the physician and pathologist to clinch the diagnosis, and the presence of infectivity and to direct treatment in difficult cases, the health authority to aid in following up examinees, and later, cases who do not attend a doctor and also the doctor who does not carry out reasonable examinations, and the radiologist who must see that from the inauguration of the scheme to the issuing of the final reports the best possible service is given.

The handing over of the plant to the Minister of Health (Hon. A. Lyell McEwin, M.L.C.) on behalf of the State Government by the manufacturers, Messrs. Watson Victor, Limited, took place in Adelaide in March. The Minister of Health for New South Wales (Mr. Kelly) was in Adelaide at the time. With Mr. McEwin he inspected the plant and both expressed admiration of its apparent efficiency and compactness.

Plan for Local Organization.—The unit will work in various country areas. Before the arrival of the unit in an area the local boards will undertake a vigorous publicity campaign by the use of notices in the local papers, notices on the local picture screens, and talks to local organizations. It will be generally suitable for the local boards to organize a local committee, including prominent townspeople, medical men, and others. The distribution of leaflets and application forms will be arranged by the local bodies assisted by the red cross, girl guides, boy scouts, school teachers, V.A.D.'s, local clubs, bureaux and churches.

Proposed Survey Centres.—The proposed centres in the early stages of the survey are—Port Pirie, Port Augusta, Whyalla, Peterborough, Wallaroo, Balaklava, Clare, Riverton, Waikerie, Barmera or Renmark, Mount Gambier, Naracoorte, Murray Bridge, Victor Harbour, and Gawler.

A survey of these centres and the area within 25 miles of these centres should cover approximately 160,000 people, and would take from two to three years to complete with one survey unit.

The apparatus will be set up in a public building in the central town of the area.

The examination is voluntary and free. Detailed arrangements will be made clear at the beginning of the work in each centre. The scheme is designed so that persons examined will be put to the minimal bother. The strictest care is being taken to ensure the correct recording of the results.

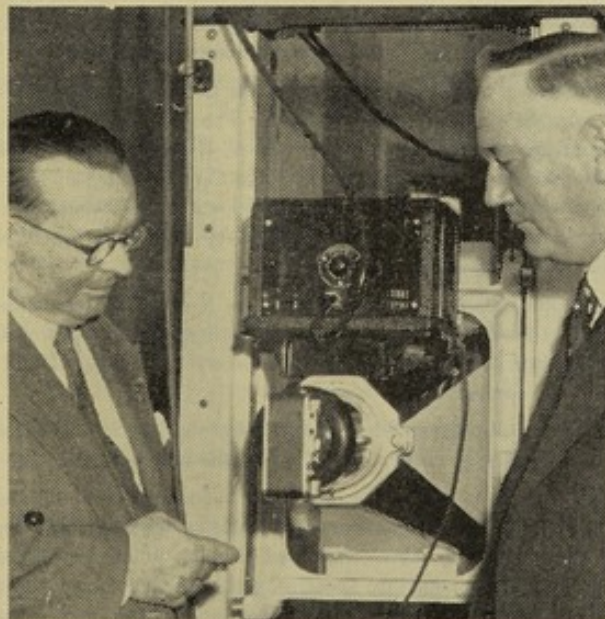
Processing of the Films.—The films are developed at the processing depot established at the office of the Central Board of Health. The films are viewed through an apparatus designed especially for the purpose. The radiologist's report is recorded on the corresponding index card. The films and index cards are filed at the Central Board office.

Arrangements are made for making an examination on a large film in the case of all persons who show abnormal shadows in the initial miniature film. The large films have the same serial number as the corresponding miniature films and are processed and reported on at the Central Board office.

Handling the Results.—Each examinee is informed of the result in his case. Where anything at all abnormal is found, the Central Board's letter to the examinee advises consulting the usual family doctor or attending at a hospital.

The Central Board also organizes a follow-up service to assist people, where necessary, in obtaining a full investigation, and in every way helping the person to regain good health and working capacity. People being examined can be assured absolutely that all personal information obtained as the result of this survey will be regarded as strictly confidential.

The Age for Examination.—Although any person applying will be examined, it is not considered of advantage for children under 15 years of age to be included in the routine survey by miniature film. However, any children who are known contacts, especially if they come from a tuberculous household, should be examined by direct radiograph. Arrangements will also be made for testing such children by the Mantoux skin test and taking a direct radiograph if that test is positive.



Ministerial Inspection.—The Minister of Health for N.S.W. (Mr. Kelly) on the left, and Mr. McEwin (right) inspect the new portable unit for the State X-ray Health Survey.

[Block by courtesy "The Advertiser."]

Official Opening at Port Pirie.—The first town selected for survey was Port Pirie, and the unit was officially "opened" on 8th April.

The Mayor of Port Pirie (Mr. M. B. Middleton), councillors, officer of health (Dr. G. Viner Smith), and representative townspeople attended. The Minister of Health (Hon. A. Lyell McEwin) and the chairman of the Central Board gave short addresses. The Advisory Radiologist (Dr. J. Stanley Verco) and the officers of health for the adjacent local boards also attended.

An official luncheon was provided by the local board for Port Pirie. Appreciation was expressed of the Government's work in establishing the unit.

Results at Port Pirie.—The unit stayed at Port Pirie for three months, and all who desired examination had ample opportunity to get it. Various publicity methods were employed; notices and articles in the local press, stickers, posters, pamphlets, a propaganda film, slides, radio talks, and personal canvassing. The expenses of the publicity work were shared between the local board of health and the Central Board of Health. The unit closed at Port Pirie on 30th July, 1948.

The estimated population of the whole area is 24,749; the number examined was 7,090. Of the number of persons estimated as living in Port Pirie (12,030), and so in easy access of the unit, there was a 43 per cent response. Of the number of persons estimated as living within an approximate radius of 25 miles (12,719) a much smaller proportion (15 per cent) applied for examination. For the whole area of Port Pirie and surrounding districts there was a 28 per cent response.

The total number of persons who had a miniature film taken were 7,090. Of these, 356 were referred for a large film for more accurate information; 87 showed an abnormality suggesting a possible tuberculous condition of the lungs, mostly healed lesions. This is in the region of 1 per cent of all X-rayed. Three cases of active tuberculosis were discovered. The figure corresponds to the findings in other parts of the world.

What of the remaining 17,659 (71.3 per cent) of the estimated population of Port Pirie and district, who were not X-rayed? It is reasonable to assume that there would be a number of persons amongst this group who are suffering from an abnormal chest condition, and the question is why a larger number did not avail themselves of the opportunity of seeking X-ray examination.

"Why Not be Examined."—People have various reasons for avoiding medical examination. Many people when feeling well do not wish to be reminded of illness. Others are apprehensive of what might actually be discovered by X-ray. There is a fear that an abnormal condition might jeopardize them in their employment or otherwise cause some economic hardship to themselves or their dependants.

Some remarkable "reasons" were advanced. Here are a few:—

"I thought it was only for children."

"I've got little enough blood as it is without giving any more."

"I haven't got a great deal longer to live—I don't think I'll worry."

"I have not thought about it."

"I don't like the thought of that thing they put down your neck, and, furthermore, I have heard that you don't wash it after use."

"No! There might be something wrong with me!"

"I wouldn't like the whole town to know I had T.B."

There are, of course, good answers to all such objections.

Fear of "bad news" is not an unnatural reaction. The answer is clear. If an abnormal condition be neglected the ultimate hardship will be much greater. Life cannot be made entirely secure for any of us. However, the total monetary allowances from Commonwealth and State sources for persons suffering from tuberculosis has recently been increased. There is not quite the same economic hardship to be feared as formerly.

Port Augusta.—The unit commenced operations at Port Augusta, the second centre of the itinerary, on 16th August, 1948. It seemed at first that very little public interest existed. The primary impetus was given by the Mayor (Mr. L. G. Riches, M.P.) who arranged for the medical officer (Dr. H. F. Hustler) to address the members of the railways workshops by loudspeaker. At the same time an inspector of the Central Board of Health made a personal canvass of the business people, requesting them to display posters and stickers in shop windows. The presidents of the local branches of the Country Women's Association and Red Cross Society were interviewed with a view to obtaining the assistance of their organizations in a publicity drive.

Of the Port Augusta townspeople, 2,000—or 45 per cent—were X-rayed. There were 34 "doubtful" films, and those cases were referred to doctors for further investigation. Fortunately, no cases of active tuberculosis were discovered in this group, though a larger percentage would be necessary before there could be an accurate assessment of the amount of tuberculosis in the community.

Whyalla.—The unit commenced operations at Whyalla on 7th October, 1948. To encourage publicity an inspector of the Central Board of Health visited the town two weeks before the unit opened to the public.

Pamphlets were distributed in letter boxes by the local board of health (Whyalla Town Commission). Leaflets were also placed near wrapping paper in the various stores for inclusion with parcels. Small stickers were displayed in nearly all shop windows. Pamphlets were also distributed through union secretaries, Broken Hill Proprietary Company Limited pay envelopes, on seats in picture theatres, and with tickets at a vaudeville show. The Country Women's Association, Housewives' Association, Red Cross Society, and various sports associations assisted. A total of 8,000 pamphlets were distributed. Articles were inserted in the local paper. A film, slides, and radio broadcasts were utilized.

The Broken Hill Proprietary Company, Limited, was very helpful. Through the safety officer, appointments for special sessions for company employees were arranged at the casualty rooms. Excellent co-operation with the 17 trade unions in the town was obtained. Ministers of religion were asked to assist through an approach to the Ministers' Fraternal.

Nearly 5,000 people were examined, about 60 per cent of the total population of Whyalla. There were 60 cases referred to doctors. Four cases of active tuberculosis have been diagnosed in the group examined.

The response at Whyalla has been better than at previous centres, but still falls short of what is actually desired.

Health Education Needed.—Judging from the response to date, one might doubt the actual value of the survey. Public education in health matters is a slow process. Remember diphtheria immunization; when introduced a few years ago it met with indifference, suspicion, and even opposition. Today it is not only accepted, but it is eagerly sought as a matter of course by most parents.

An X-ray survey in country areas is new to South Australia. The authorities are not seriously disappointed with the response; enthusiasm takes time to develop. It seems necessary to intensify the publicity measures, especially just prior to the unit's establishment in an area. The local board has the opportunity to popularize this useful aid to community health. The rule of *early discovery, early treatment, early recovery* is fundamental in the fight against tuberculosis.

5. LOCAL BOARDS.

Value of Local Boards.—The State's health work—its success or its failure—depends mainly on the attention given to it by the local boards. Indeed, the enthusiasm of the local board's medical expert—the officer of health—is probably the key factor. If the local doctor is keen, if he keeps the local board fully informed of the health features of the area and of his board's responsibilities and opportunities, then progress is likely. There are, unfortunately, some instances where a doctor's early enthusiasm has been stifled by the apparent lack of interest of his board.

The Minister's Appreciation.—In his 1949 New Year message, Mr. McEwin thanked local boards for their good work.

"Nobody could be long associated with the administrative life of this State without coming to appreciate the splendid work done through local government. Everywhere there is great interest by mayors, chairmen and councillors in the day-to-day problems of local government—and there are always plenty of problems about. In my ministerial office I have come into close association with local governing bodies, especially in their public health duties. As Minister of Health I have had many opportunities for observing the way in which the local boards of health face up to their responsibilities. . . . In general, our local boards do splendid work. Some, of course, are more eager and willing than others—and some have greater problems than others."

The Health Inspector.—Local boards' officers are occupied with a great variety of duties. In many areas these responsibilities fall on a small staff of one or two men. There are bound to be difficulties in doing all the tasks to the entire satisfaction of all concerned.

One local board recently hit on a good idea.

Last year, during one of the University two-week vacations a local board in the Adelaide hills engaged a medical student as a temporary inspector. It was arranged for him to make a health survey, under the direction of the officer of health.

The report of the work shows its high value. Attention was centred on the township area. In the fortnight over 200 premises were inspected, and details of numerous defects were noted. The plan should commend itself for trial by other local boards.

A Worth-while Conference.—The conference held on the 8th-11th March in Adelaide was sponsored by the Municipal Association and the Local Government Officers' Association. It was well attended and a wide range of subjects was discussed.

The morning of the second day was devoted to health topics. Officers of the Central Board staff presented papers. Dr. H. F. Hustler described the principles in the control of infectious diseases. The difficulties of dealing with the non-co-operative sufferers—fortunately not very common—were reviewed. Messrs. A. C. E. Woodsford and W. H. Nicholas, Central Board inspectors, described some features of their work. Mr. Woodsford outlined the methods of food sampling, especially stressing the correct way to get milk samples for analysis. Mr. Nicholas dealt with some problems of sanitation in country areas.

Health Resorts in Our State.—Our State is well off for pleasant holiday resorts. Local boards can do much to add to the attractiveness of their areas. Appreciative visitors are an asset to any town—a stimulus of trade and a mental stimulus too. Civic pride is worth cultivating everywhere, if only to assure one's town being thought well of.

The South Australian Government Tourist Bureau is actively encouraging the development of our tourist resources. In *Health Notes* for December, 1948, several articles showed the trend. Healthful holidays help in building a virile populace.

Children's Playgrounds.—In most towns some sort of community playgrounds are set up and a new feature—the junk playground—is worth notice.

Children have long recognized the constructive possibilities of junk of all kinds, and greatly relish woodyards, sawpits, quarries, brickyards, and disused and broken down buildings—a fact which those who design asphalted, municipal playgrounds, set orderly with swings, have quite failed to appreciate. The idea of the recognized official and well-equipped junk playground comes from Denmark; an account of one was published in *Picture Post*.

This Danish playground is provided with stone, earth, bricks, wood, iron, clay, water, planks, empty petrol cans, wheelbarrows, and derelict motor cars—an exceedingly popular type of equipment. The children are taught the use of tools, and then build what they fancy. The playground leader examines every finished house, tower, or cave, to make sure it is safer before the children play in it. During the three years the playground has been running there has been no serious accident; the children find out for themselves how far they can go with safety.

Mosquito Control.—South Australia's mosquitoes are not commonly the carriers of disease. Yet they can become a serious nuisance, and local boards in many places have a mosquito problem to tackle.

In *Health Notes* for July, 1947, Mr. D. C. Swan, head of the Entomology Department of the Waite Agricultural Research Institute, contributed a short practical article on mosquito control. Under Mr. Swan's direction, Inspector D. J. Wilson, of the Central Board staff, later made a mosquito survey of a tidal swamp in the metropolitan area.

The object of the survey was to find out the breeding habits and flight range of that particular variety of mosquito which breeds in salt water.

The area surveyed was approximately 8 sq. miles, of which about 1½ sq. miles were low-lying swamp land. It was found that most of the breeding was taking place during the winter months, the heaviest being along the vegetated margins of streams and backwaters where larvae and pupae were protected from larva-eating aquatic life by the samphire weed.

The most effective method of mosquito control is to remove the breeding grounds. This may be done either by drainage or filling. Drainage can only be carried out under engineering supervision based on the levels and falls available. Filling is a more practicable approach to the problem, and one which has been used in Australia and overseas.

Controlled tipping of refuse in low-lying areas with a liberal covering of earth or sand is a means of disposing of refuse, and at the same time it fulfills the useful purpose of reducing the area of swamp.

Another form of control which is effective but requires periodical repetition, is spraying with a D.D.T. larvicide. This method was used on a section of the swamp during the survey with excellent results.

It comes to this—Spraying is the best short-term plan, filling should be the long-range scheme.

Health Education: Local Drives.—Today health workers everywhere realize the importance of health education, so that people may know about their health—and about healthy ways of living.

In the United States of America health experts long ago reached the conclusion that in health affairs—as in other human activities—publicity pays. Other countries are learning the lesson. Health authorities must win the co-operation of the people they seek to help. It is through publicity—aided by good routine work—that we are likely to get the best results.

The Central Board is gradually expanding its activity in the publicity field, and trying to help local boards in bringing well-based and appealing information to the people. The organization of immunization campaign, "Clean-Up" months and other "Drives" require skill and effort. A steadily increasing range of leaflets, posters, and "stickers" is being provided by the Central Board for the use of local boards.

6. SANITATION.

A Constant Job.—Attention to matters affecting sanitation is the constant care of every local board, for good sanitation is the foundation of the health status of an area. During 1948 the usual recurring problems had to be dealt with. In addition, the Central Board promoted a State-wide clean-up drive in September. Some of the items are reviewed in this section of the board's report.

The Spring "Clean-up."—The success of the "Clean-up" campaign of November, 1946, encouraged the Central Board to open a similar project in the Spring of 1948.

The importance of healthful living in healthful surroundings was shown in various ways. Circulars, posters, leaflets, lantern slides in picture shows, "stickers," press advertisements, were brought into vigorous use.

Some of the special clean-up posters are shown in the picture reproduced from *The Advertiser*.



The lantern slides, "Flies Have Dirty Feet" and "Heaps of Rubbish," were shown during September in nearly every town in the State. They are reproduced here.



HEAPS OF RUBBISH

BRING DISEASE
HARBOUR PESTS

WHERE THERE'S DIRT-THERE'S DANGER

1948 SPRING CLEAN-UP

Help your local Board of Health

Authorised by The Minister of Health (Hon. A. Lyell M.C. Ewin, M.L.C.)

Flies have DIRTY feet

THAT CARRY GERMS
AND SPREAD DISEASE

**KEEP HOMES AND
YARDS CLEAN**

1948 SPRING CLEAN-UP

Help your local Board of Health.

• Authorised by The Minister of Health (Hon. A. Lyell, M.C. Ewin, M.L.C.)



"Clean-up" Poster Campaign.—The Junior Red Cross (South Australian Division) conducted, in conjunction with the Central Board, a poster competition during the "Clean-up" drive. Prizes to the total value of £25 were donated by the South Australian Government.

The competition was divided in sections for age groups up to 21 years. Total entries numbered 209. In the section of children of 10-12 years, 143 entries were sent in—a splendid response. Teachers in many of the schools gave valued help in getting the interest of the children in the competition. The Central Board thanks the officers and members of the Junior Red Cross for the good work done.

Country Slaughterhouses.—Health inspectors from the Central Board office, doing their rounds of inspections in country areas, at times find conditions worthy of praise rather than censure. Recently it was found that one slaughterhouse, just completed, was a credit to the butcher concerned. The main building comprises a slaughtering room for large cattle, and another for small cattle. Both of these rooms are well lighted and are fly proof when the doors are closed. An ample water supply is provided inside to troughs and elsewhere where required. The floors are of hard, smooth concrete, and are properly drained.

A refrigerated room is connected to the large cattle slaughter room, and after dressing, the carcasses are placed therein. There is also well appointed change room for the staff with shower and washing facilities. The engine room for the refrigerator also contains a small electric generating plant, and all rooms can be artificially lighted if required. All of the above rooms are under one roof and have been properly constructed and finished in a tradesman-like manner.

About 50 yds. from the slaughterhouse is a skin shed. This is made fly proof, though exceptionally well lighted and ventilated; it has an excellent cement floor. Further away again are the pig sties, built along model lines. They have drained concrete floors, ample straw bedding for the pigs, and feeding troughs so placed that the pigs cannot get into them.

Rat Control.—The only way to keep the rat population down is to continually wage war against them. There must be no slacking in the work of exterminating the vermin.

The question is often asked, "What is the best method of destroying rats?" The answer is—there is no single "best" method. To effectually control rats, every means practicable should be employed. It is the continued all-in attack that gets results.

- (i.) Denial of Food, Water and Shelter.—This line of attack should always be used to the greatest extent possible, and in all anti-rat campaigns—indeed, even when there are no rats. Rats need food and water to exist just as do other animals.
- (ii.) Poisons.—A very powerful weapon is available in the wise use of poison baits. The following are the most commonly used anti-rat poisons:—Arsenic, strychnine, thallium, barium carbonate, red squills powder, "Antu" or "M109," zinc phosphide, phosphorous. A new and powerful rat poison is sodium fluoroacetate (or 1080); further reference is made in section 7 of this report.
- (iii.) Traps.—Rabbit traps set lightly (and out of the way of children and domestic animals), and the usual "break back" traps can be usefully employed, especially as a "clean-up" after a poisoning campaign.
- (iv.) Natural Enemies of Rats.—These include dogs, cats, and ferrets.
- (v.) Fumigation.—Cyanide fumigation is undoubtedly one of the most deadly forms of attack of rats, but its use is limited to highly skilled and licensed operators.
- (vi.) Flooding.—This method can be used where the subsidence of the waterlogged ground will not endanger buildings.
- (vii.) Shooting.—Rat shooting may be satisfactory as a sport, but it is most inefficient in time and money in an anti-rat campaign. Because of this and the attendant dangers, it is not recommended.

The Central Board officers are frequently called on by local boards for advice on rat control. Full information on suitable methods is readily available on application to the board's office.

Cyanide Fumigation.—With the introduction of D.D.T. and other materials for pest control, probably cyanide fumigation is less used than it was years ago. It is, of course, an effective—but a very risky—procedure. Operators must be well trained, and officially licensed in accordance with Health Act Regulations.

Hydatid Disease.—Hydatid disease has long been a troublesome condition in Australia. A better understanding of its cause, and how it is spread, is gradually reducing the menace. In *The Journal of the Department of Agriculture of South Australia*, March, 1948, Mr. Alan H. Robin, B.V.Sc., Deputy Chief Veterinary Officer, contributed a useful summary of preventive measures.

Dogs should never be permitted to feed on raw offal from slaughterhouses. The danger of spreading hydatid disease is a real and serious one.

If offal is required for feeding dogs, it should first be rendered harmless by boiling for 10 minutes—this will render sterile any cysts which may be present in it. Dogs should also never be allowed to run loose in the vicinity of slaughterhouses, except when used for yarding purposes—a very important rule.

Mr. Robin's article was reprinted in *Health Notes* for July, 1948.

7. FOOD AND DRUGS.

Advisory Committee on Food and Drugs.—The following constituted the committee:—Dr. A. R. Southwood (Chairman of the Central Board of Health), Professor M. L. Mitchell (Professor of Bio-Chemistry, University of Adelaide), Mr. S. D. Shield (Government Analyst), Dr. H. K. Fry (Officer of Health for the City of Adelaide), and Messrs. F. M. Standish, E. F. Lipsham, and R. E. A. Dixon, appointed as persons conversant with trade requirements. Mr. H. T. Hutchins continued in the capacity of acting secretary.

The committee's period of appointment terminated during the year and Messrs. F. M. Standish and E. F. Lipsham expressed their desire not to be re-appointed. Messrs. J. A. B. Williams and K. S. Porter were appointed in lieu thereof.

During the year the committee dealt with a number of subjects, including antihistamine substances; permitted use of salicylic acid as a preservative in tomato sauce and chutney, cordials, cool drinks and concentrated fruit juices; colouring matter in tomato products; thickeners in foodstuffs; labelling of fish products; gammexane; sodium fluoroacetate; penicillin for veterinary use; prescription-only drugs; coffee essence and coffee extract; labelling and bottling of kerosene; British Pharmacopoeia, 1948; benzidrene; addition of pepsin to cream; jam, conserve and mixed jam; sterility standard for catgut; poultry dressing; and washing of drinking glasses.

Children Drinking Kerosene.—Kerosene drinking appears to be getting almost a habit among children. Cases are being admitted to the Adelaide Children's Hospital with such frequency as to cause alarm.

More care in the home is the necessary safeguard. So often kerosene—and sometimes other noxious fluids—are kept in lemonade bottles, and suchlike containers. It is only natural that young children, seeing the clear fluid in the attractive bottle, are eager to drink it.

Control by law is not easy. Kerosene is often kept in private homes in a haphazard manner—in lemonade bottles, for instance. When contained in such bottles thirsty "toddlers" do not hesitate to sample it. The results may be serious. The misuse of beverage bottles in this way must be strongly discouraged.

Perhaps the kerosene is procured from the vendor in the offending bottles. Control of the sale does not appear to come within the usual ambit of laws controlling the sale of food or drugs—for kerosene is neither food nor drug. The Food and Drugs Advisory Committee has recommended consideration of special legislation. Certainly shop-keepers should not sell kerosene in discarded drink-bottles.

Wholemeal and Brown Bread.—In 1947 the Food and Drugs Regulations relating to flour, bread, and meals were amended. During the latter part of 1948 samples of wholemeal and meal flours and of wholemeal and brown breads were purchased in the metropolitan area, and in certain country districts for investigation as to compliance with the standards. In respect of the samples of wholemeal bread, the result of the analyses showed that the crude fibre content, which indicates the amount of wholemeal in the loaf, was very unsatisfactory in nearly every case. The samples of

brown bread were, on the whole, more satisfactory in relation to the lower crude fibre content required in bread of that type, but in many of the samples caramel had been added. The regulations do not permit the addition of colouring to brown bread. Wholemeal flour, except in a few graded samples, conformed to standard.

It was evident that some bakers were not fully conversant with the legal definitions of wholemeal bread or brown bread, or with the variation between them as set out in the Food and Drugs Regulations. None of the samples of "meal" purchased from millers conformed with the standard for wholemeal flour, and it would appear that some bakers use this product, with or without the addition of flour, both for wholemeal and brown breads. Where millers supply flour ready mixed for either wholemeal bread or brown bread they should ensure that the bags are suitably labelled.

The Central Board of Health requested local authorities to bring the requirements of the Food and Drugs Regulations under the notice of bakers and millers in their respective districts. The local authorities were urged to keep this matter under their regular observation.

New Requirements for Labelling of Spirits.—Provision is made that spirits shall be labelled with the country of origin and restrictions are placed on the use of words such as "London," "Hollands," "Scotch," "Old," and "Very Old," etc. These amendments were made to prevent misrepresentations as to the place of origin of the product or to the maturity of the spirits. The incorrect use of the words mentioned or in conjunction with the word "type" was viewed unfavourably by the Food and Drugs Advisory Committee. Though the practice is unknown in this State, most of the States have a similar provision and the amendment was requested by trade interests.

Penicillin.—The regulations now permit the sale, without a prescription, of penicillin for veterinary use by retail chemists, certain stock and station agents, and certain storekeepers, provided it is contained in a medicine registered under the Stock Medicines Act, or is a preparation of the Commonwealth Serum Laboratories, or the Council for Scientific and Industrial Research Laboratories.

Benzene Hexachloride ("Gammexane").—A precautionary statement is now required on labels of preparation containing "gammexane." Weaker preparations are exempt from the requirements that it may only be sold by licensed dealers. The requirements, which are similar to those applying to D.D.T., emphasize the need for some care in handling the substance, particularly in regard to the possibility of skin absorption.

In use it has been found that the gamma-isomer of benzene hexachloride possesses strong insecticidal properties which find many applications in horticultural, industrial, veterinary, and domestic fields. It is available on the market as the proprietary line "Gammexane." Further particulars on the use of "Gammexane" were set out in *Health Notes* for October, 1948.

Rat Poison 1080 (Sodium fluoroacetate).—A permit system in regard to the purchase of this poison has been introduced. Because of the very poisonous nature of this substance, the manufacturers believe it is not a type of material which should be used by untrained people, and wish to take the fullest precautions in selling the chemical. It is desired that sale be made only to such persons approved as proper parties to receive, distribute, or use such a potent poison.

This rodent poison is highly effective in the control of rats when properly used. It is, however, highly poisonous to man, dogs, cats, and other animals, and therefore must be used with extreme caution.

The favourable features of this rat poison appear to be its high toxicity to rodents, excellent acceptance, and absence of a significant odour and taste. The major drawback in its use is the extreme susceptibility of dogs and cats, and the hazard of accidental poisoning of humans, which is accentuated by the fact that the poison is a white powder without odour, and only a slight salty taste. The recommendations of the manufacturers of the poison were explained in *Health Notes* for October, 1948.

Third Schedule Poisons.—Of particular interest to medical practitioners and pharmacists are the alterations which have been made to the third schedule poisons. Part II. of this schedule includes certain preparations containing barbituric acid and synthetic anti-histamine substances. These are still required to be sold only on prescription, but there is no restriction regarding the number of repeats for a period of six months from the date of the prescription. Benadryl and similar synthetic anti-histamine substances have been included on the recommendation of the National Health and Medical Research Council. These drugs are stated to be non-narcotic with a wide range of tolerance. Though they are not likely to be used for nefarious purposes, the soporific effect of the drug is extremely variable and the transitory drowsiness, the most frequent side-effect, may require the administration of stimulants to overcome it. Because of this side-effect, these drugs should not be taken before driving a motor car or operating machinery.

Advertisements Controlled.—In addition to the provisions referred to above, other minor matters related to amendments designed to prohibit the use of certain specified claims and reference to specified diseases in advertisements relating to the sale of any drug for medicine. The amendment incorporated the old regulation, which was considered *ultra vires*, together with several new provisions found useful in other States. The codes of advertising adopted by the Australian Newspaper Proprietors' Association and the Australian Federation of Commercial Broadcasting Stations were also found useful in drafting the new regulations.

A further amendment was to make it an offence to obtain poisons by false representations or giving a false name and address to the vendor.

New Dangerous Drugs.—Two new drugs were recently proclaimed to be dangerous drugs under the Dangerous Drugs Act, 1934. They so become subject to the restrictions which apply to the other dangerous drugs, such as morphine, cocaine, and diacetylmorphine.

The new drugs are amidone and methylhydromorphinone (commonly known as Metopon).

Amidone is a synthetic morphine substitute which has similar effects to morphine itself. Exhaustive tests by research workers have demonstrated that this drug exhibits most of the effects of morphine and must be considered to have definite addiction liability. This drug is at present available as the proprietary "Physeptone."

Metopon is a substituted hydrogenated morphine. It has been reported to be qualitatively like morphine, even to the properties of tolerance and addiction liability.

If improperly used, these two drugs are likely to be productive of ill effects, substantially of the same nature as those produced by other dangerous drugs. It is therefore desirable that they should be controlled in the same way, and be subject to the provisions of the Dangerous Drugs Act and its regulations.

Wrapping of Bread.—The 1947 Christmas issue of *Health Notes* set out much of the detail of our South Australian laws relating to the care and purity of foodstuffs. The maintenance of a pure food supply requires the constant vigilance of local authorities. The laws give these bodies power to investigate and correct irregularities. There are regulations dealing with the protection of food from contamination. The care of foodstuffs in their preparation and sale is important, but the care of food in people's homes is also essential.

On many occasions in recent years the question of compulsory wrapping of bread has been brought up. There is no law in this State making the wrapping of bread compulsory. In some places the wrapping of bread before it leaves the bakery has been tried, but there are various technical problems making that difficult. Bread cannot be wrapped satisfactorily until it is cold. Special machinery is necessary to do the wrapping properly. The cost would necessarily affect the consumer.

The Advisory Committee is obtaining further information on the whole matter, and will consider recommendations.

8. INFECTIOUS DISEASES.

General Comment.—During the early part of the year infantile paralysis caused some anxiety. Fortunately the epidemic was not extensive. Compared with the 1937-1938 outbreak the damage was small. This subject is dealt with in detail in section 9 of this report.

Measles and whooping cough became widespread during the latter half of 1948. Scarlet fever, diphtheria and meningitis all gave very little trouble.

Measles commonly comes in epidemic form in alternate years. In 1948 there were 9,441 cases reported, with seven deaths. Like whooping cough, measles can be a very troublesome illness, and very young or sickly children may die from it.

Table IV shows numbers of cases reported and of deaths.

INFECTIOUS DISEASES IN 1946-1948.

Disease.	Cases.			Deaths.		
	1946.	1947.	1948.	1946.	1947.	1948.
Anthrax	—	1	—	—	1	—
Cerebro-spinal meningitis	14	17	14	—	4	4
Diphtheria	161	93	79	9	4	5
Dysentery amoebic	28	2	1	2	1	—
Dysentery, bacillary	14	14	2	1	4	1
Encephalitis lethargica	3	—	1	1	—	2
Endemic typhus fever	6	3	11	—	—	—
Erysipelas	67	68	55	—	1	1
Influenza	—	9	7	5	5	11
Measles	8,986	724	9,441	15	2	7
Paratyphoid fever	—	—	2	—	—	—
Poliomyelitis anterior acuta	66	55	89	4	3	16
Puerperal pyrexia	36	36	46	—	—	—
Scarlet fever	547	428	254	—	1	—
Tuberculosis, pulmonary	233	202	279	168	159	154
Tuberculosis, other forms	8	14	18	15	23	13
Typhoid fever	4	2	2	—	1	—
Undulant fever	—	1	1	—	—	—
Whooping cough	264	17	1,135	3	—	6

Whooping Cough Immunization.—Vaccine for use against whooping cough is now available from the Central Board office. The cost is borne by Commonwealth and State Governments.

Until recently there has been a division of medical opinion on the value of vaccine for the protection of children against whooping cough. It appears that improved methods of vaccine preparation are giving better results. The procedure still lacks the near-certainty of diphtheria immunization.

The general policy of the Central Board has been set out in circulars issued to local boards.

Diphtheria Immunization.—The value of immunization against diphtheria is now well established and parents generally are ready to have their children protected. That there is still a risk of serious trouble in countries where immunization is neglected is shown in some interesting information on the occurrence of diphtheria in Europe during and after the war, published in *Health Notes* of April, 1948.

Diphtheria at Salisbury.—In May, 1948, there was a small and localized outbreak of diphtheria at Salisbury. Seventeen cases were reported; there were no deaths. Most of the patients were children in the lower grades of the Salisbury Extension School, which is in the area of the 300 "cabin homes" built by the Commonwealth Government during the war.

Only one of the patients had received the course of three immunizing injections. Probably more than half of the children in the Commonwealth homes area had not been immunized.

It seems clear that the outbreak would have been far less extensive—it probably would not have occurred at all—if a greater proportion of the children had been immunized. It is unfortunate that this valuable protective measure is not fully availed of in our community. There is a tendency, when there is little diphtheria about, for parents to become complacent and neglectful. Little immediate benefit can be got from beginning immunization after an outbreak occurs. The full benefit of immunization does not develop until three months or so after the course of injections is completed, and there must be an interval of three or four weeks between each of the three injections.

It is important that other local boards should take note of the plight in which Salisbury found itself. The Central Board of Health has for the past 15 years, urged local boards to conduct regular anti-diphtheria campaigns. The Commonwealth and State Governments make available through the Central Board, free issues of the diphtheria prophylactic. The procedure is safe and effective. Every local board of health and every parent in our community should be seized of the important fact that immunization against diphtheria saves lives.

An explanatory article on immunization against various diseases appeared in *Health Notes* for July, 1948.

Infectious Diseases in Schools.—Tables showing the instructions in force in State schools were published in *Health Notes* for October, 1948. The information is useful for the guidance of medical practitioners, and for authorities controlling private schools. The instructions were issued by the Director of Education, and were approved by the chairman of the Central Board of Health.

No school may be closed on account of an epidemic or for any other medical cause without the express sanction of the Director of Education. Close co-operation between the local board of health for the area and the head teacher of the school is essential in cases of any of the notifiable infectious diseases.

A medical certificate of freedom from infection is required before sufferers or resident contacts from any notifiable infectious disease (other than influenza, measles, or whooping cough) may be re-admitted to school. Head teachers are required to report to the Director of Education any case of notifiable infectious disease and any case of the following diseases:—Chicken pox, conjunctivitis (or trachoma), German measles (Rubella), impetigo (scabby sores), mumps (epidemic parotitis), ringworm, scabies.

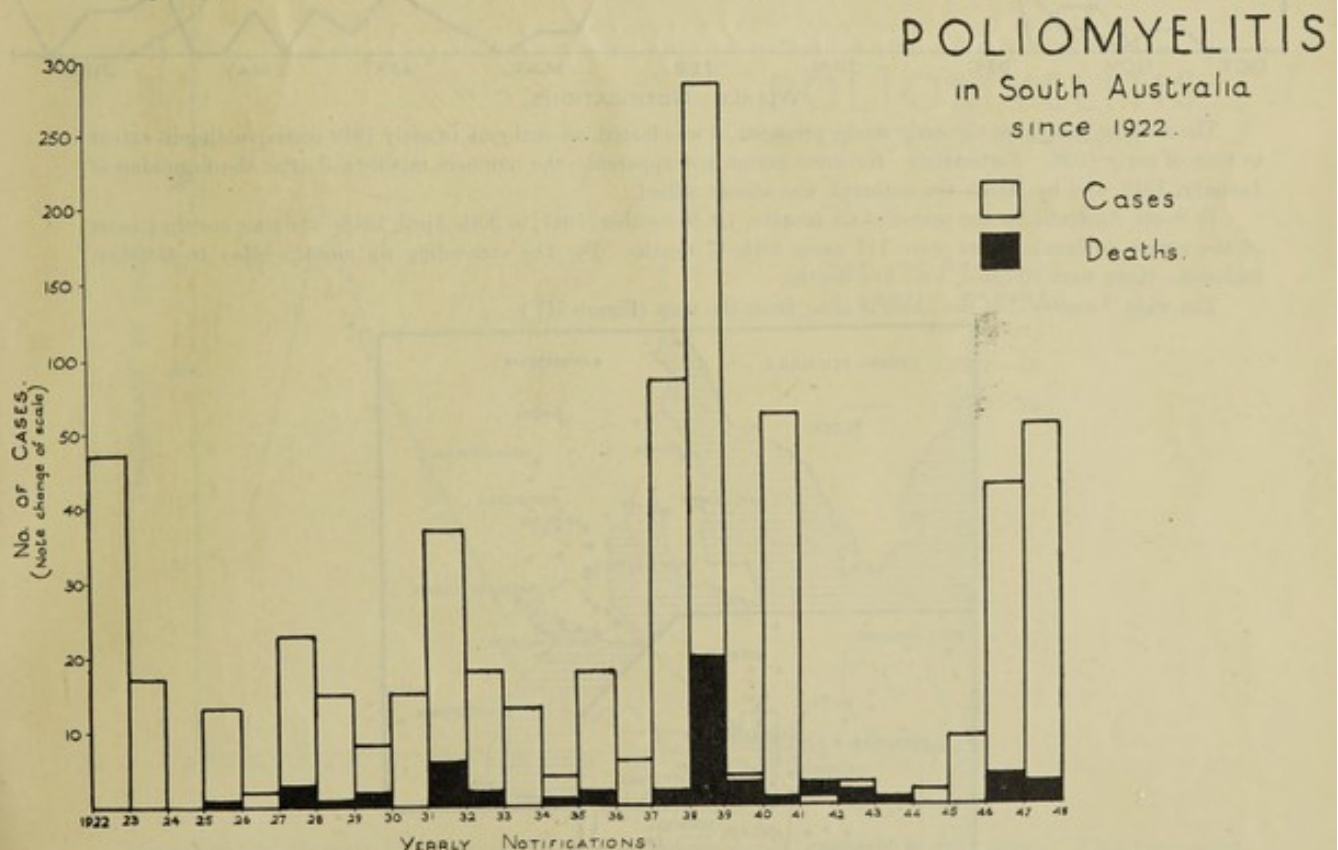
9. POLIOMYELITIS.

A Small Epidemic.—An outbreak of poliomyelitis (infantile paralysis) began in this State towards the end of 1947. Reference to the early stages of the outbreak was made in our report for that year.

Early in December, 1947, the Medical Superintendent of the Adelaide Children's Hospital reported a small series of cases of acute inflammation of the central nervous system—probably of the nature of polio-encephalitis, the "head type" of infantile paralysis. In the light of subsequent developments, they were the heralds of a small epidemic of poliomyelitis. The first patients came from widely scattered Adelaide suburbs, and had not associated as "contacts."

Sporadic cases of poliomyelitis had been reported to the Central Board of Health during September and October. During the month of November three cases were reported. It appeared likely that further cases would occur. Early in December there was a distinct rise in the numbers of reported cases; in the latter half of the month 35 cases were reported. The monthly figures for the half-year, July to December, 1947, were (in sequence) 1, 0, 2, 1, 4, 43.

Figure I. shows cases and deaths from poliomyelitis since 1922 in South Australia.



The largest outbreak in this State occurred in the summer, 1937-1938. During the period, 1st November, 1937, to 30th April, 1938, there were 321 cases, with 18 deaths. It will be noted from the chart that in 1940 and in 1946 there was a decided increase in the case incidence.

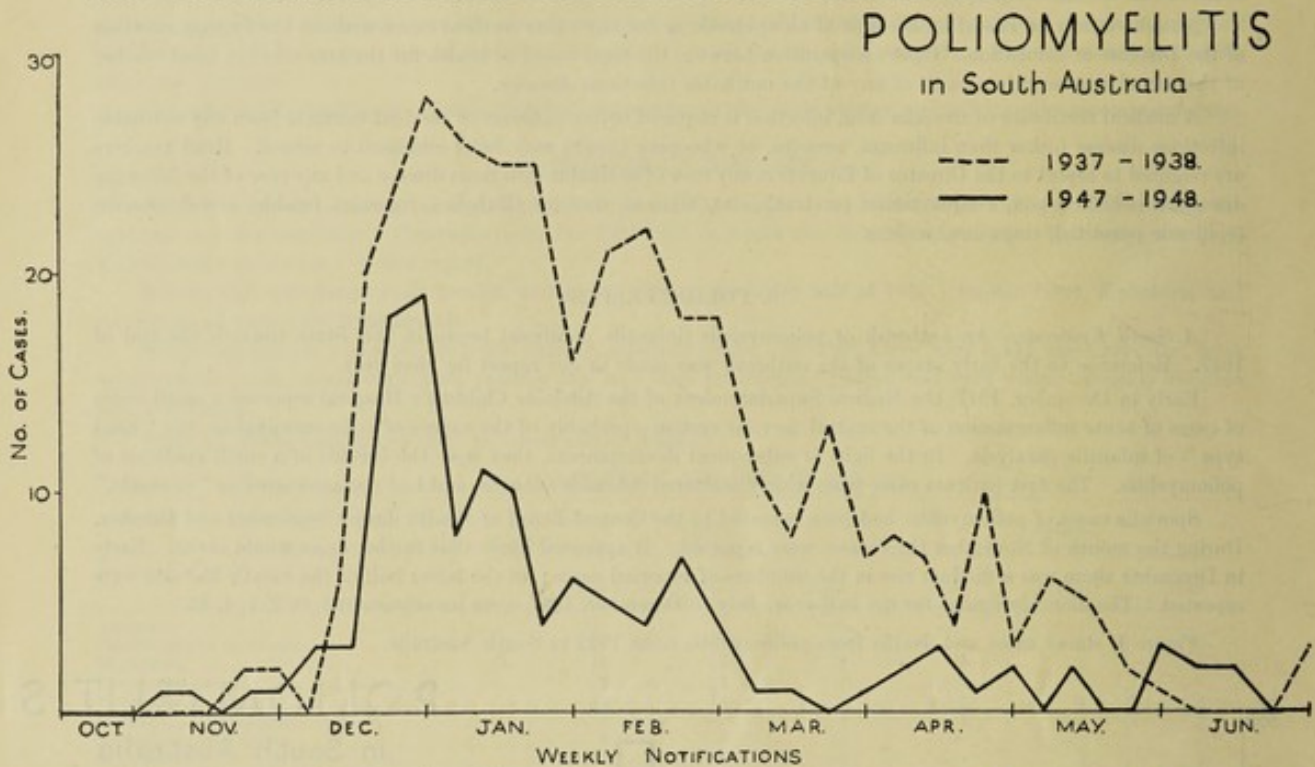
Outbreaks Elsewhere.—In England during the middle of 1947 the largest poliomyelitis epidemic ever recorded in that country was experienced. The epidemic showed similar characteristics to those marking the outbreaks in

Australia in recent years; the early cases were generally most serious and the older persons rather than infants bore the brunt. According to official reports, over 9,000 cases of poliomyelitis were reported in England and Wales in 1947, an attack rate of about 18 per 100,000 population.

In 1947 high incidence rates were also reported in Scotland, in parts of Germany (especially Berlin), the Netherlands, Hungary, and Belgium.

In the United States of America the incidence of poliomyelitis had been moderately high during the years 1943-1948; in 1946 over 25,000 cases were reported (a case incidence of 19 per 100,000 population), but in 1947 the number was 10,734 (7.4 per 100,000).

Scattered Cases.—Figure II. provides an interesting comparison of the weekly reports of cases received during the months October, 1937, to June, 1938, with those received from October, 1947, to June, 1948.



The striking parallel in the early weeks presaged, it was feared, an outbreak in early 1948 corresponding in extent to that of early 1938. Fortunately—for some reason not apparent—the numbers rapidly fell after the beginning of January, 1948, and by March the outbreak was almost stilled.

In South Australia for the period of six months, 1st November, 1947, to 30th April, 1948—the time covering most of the recent outbreak—there were 117 cases with 17 deaths. For the succeeding six months—May to October, inclusive—there were 10 cases, with five deaths.

The wide "scatter" of the cases is clear from the map (Figure III.)



In most of the suburbs in the Adelaide metropolis there were a few cases. It was interesting to note the almost simultaneous occurrence of cases in places as far apart as Lock, on Eyre Peninsula, and Robe, in the South-East—some 400 miles as the crow flies. The detailed "track" of the virus was generally not evident. It is difficult to mark the lines of spread, except on the assumption that for every definite case of illness there must be many sub-clinical infections—links in the chain of spread.

Medical Care, After-treatment, and After-care.—A few of the milder cases in the recent outbreak were treated in their homes, but most of the patients were sent to the Infectious Diseases Hospital at Northfield. Even from the distant country centres many patients were sent to the Northfield Hospital, so that adequate treatment by physiotherapists working under the supervision of orthopaedic surgeons could be conducted. In that way it was hoped to minimize damage from the paralysis.

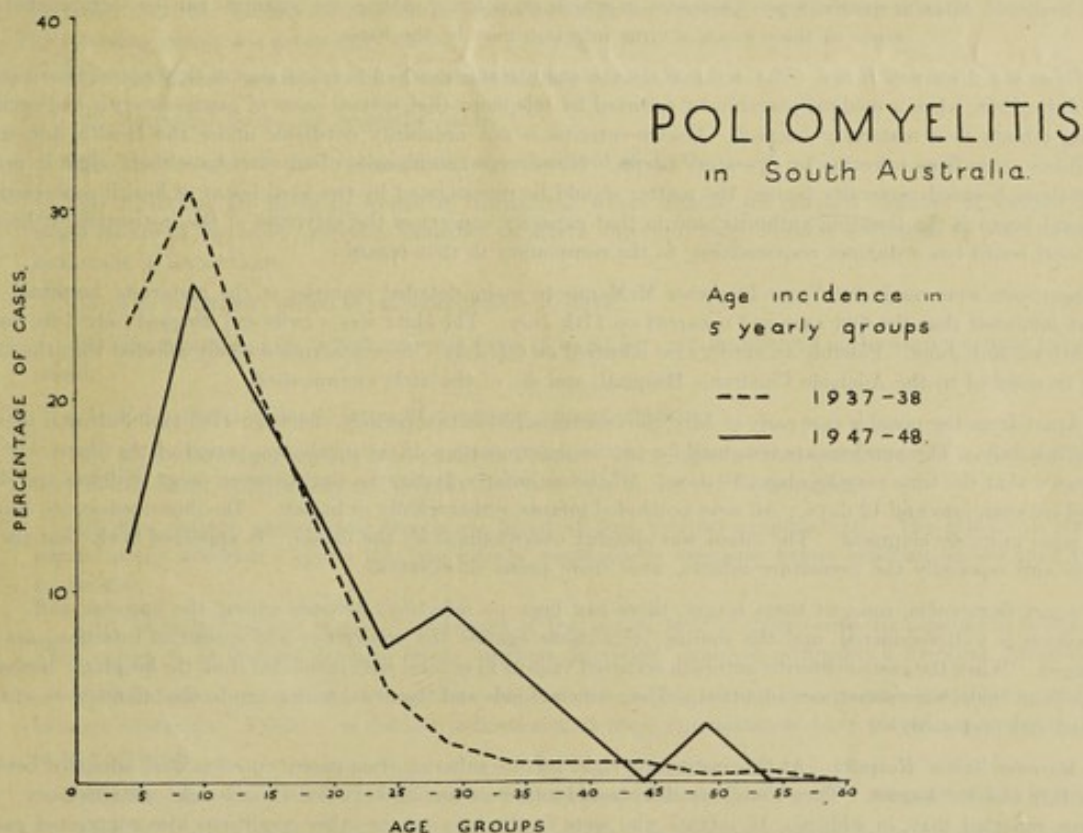
The Northfield Hospital received some of its patients from the Adelaide Children's Hospital; these were generally children whose illness had begun as a vague fever and the attending doctor had sent the patients to the Children's Hospital for observation and diagnosis. When the illness had declared itself and the diagnosis of poliomyelitis been made, the child was transferred to the Infectious Diseases Hospital.

After the period of three weeks at the Infectious Diseases Hospital, patients were generally transferred for after-treatment to the Adelaide Children's Hospital, in the case of patients under the age of 12 years, or to the Royal Adelaide Hospital in the case of adults. Patients affected only slightly, and those with no residual effects at all, were commonly allowed to go home after the period of three weeks at the Infectious Diseases Hospital.

In many cases complete recovery of muscle power is, of course, impossible. The patients are left more or less crippled, and so are handicapped for ordinary living. In this stage after-care becomes necessary. The Crippled Children's Association in this State is a very active body. It conducts the Somerton Home, at Glenelg. Affected children up to the age of 18 years enter the home for after-care and physiotherapy, and for occupational therapy.

Age-groups Affected.—In the recent epidemics of poliomyelitis there appears to be a change in the nature of the disease. There is an increase in the number of cases of the brain-stem type, and older age-groups are becoming affected. In England, at least 20 per cent of all notifications were of patients over 15 years of age. In the recent epidemic in South Australia 42 per cent of the patients were over 15 years; in the 1937-1938 outbreak only 24 per cent were over 15 years.

Figure IV. illustrates the "shift to the right" in the age-incidence in the recent epidemic compared with the 1937-1938 outbreak in this State.



It is imperative, of course, that every outbreak of the disease should be studied in every detail. When cases occur, there are several matters to be attended to—the prompt and satisfactory treatment of the patients, attempts to prevent the spread of infection to others, and inquiries into the manner of spread of the infection. In the outbreak under review all efforts were made in those directions.

The Advisory Committee.—During the epidemic the special committee met on several occasions, and made recommendations on measures designed to limit the spread of infection and on rehabilitation of victims.

The Central Board is grateful for the help given by the committee. The members represented various bodies interested, and included Dr. J. M. Dwyer (Honorary Staff, Royal Adelaide Hospital), Dr. E. Britten Jones (British Medical Association and Adelaide Children's Hospital), Drs. H. H. E. Russell, and G. A. McIntosh (Infectious Diseases Hospital), Dr. E. F. West (Crippled Children's Association), and Drs. Helen Mayo, L. W. Jeffries, and W. Christie (Members of the Advisory Committee on Health and Medical Services); Dr. A. R. Southwood was chairman.

The Advisory Committee was interested in the progress of an epidemiological inquiry instituted under the direction of the Faculty of Medicine in the University of Adelaide. Funds for the inquiry were provided by the Crippled Children's Association and the South Australian Government. Drs. N. D. Crosby and R. V. Southcott were appointed to undertake the work. They made detailed studies into the incidence of most of the cases reported. Their final report is not yet available.

10. GASTRO-ENTERITIS.

Various Types.—In recent years "summer diarrhoea" has been comparatively low in incidence. The great reduction in the numbers of cases has been largely responsible for the striking lowering of the general infantile death rate, especially marked since 1900.

Some 30 or 40 years ago, gastro-enteritis in infants was a common illness in summer time, hence the old name of "summer diarrhoea." However, there are several varieties of gastro-enteritis and in many instances the exact cause is obscure. It is thought likely that some type of virus, an ultra-microscopic form of organism, may be the cause of occasional outbreaks. The form of gastro-enteritis in the recent outbreak has been somewhat unusual, and it is possibly of viral origin.

A simple and commonly used classification of the main types of gastro-enteritis is as under:—

- (1) Non-infective form, from giving unsuitable foods or badly balanced dietary.
- (2) A secondary form of gastro-enteritis, associated with some other infection such as acute *otitis media* (inflammation of the middle ear), or pneumonia.
- (3) Infective forms, which may be—
 - (a) specific in type; that is, due to definite organisms such as dysentery bacilli or the salmonella group of organisms, or
 - (b) non-specific type—the cases in which no definite pathogenic organism can be incriminated. In some of these cases, a virus infection may be the basis.

Cases at a Maternity Home.—The outbreak was brought to the notice of the chairman of the Central Board on the 31st July, 1948, when a medical practitioner reported by telephone that several cases of gastro-enteritis had occurred among infants at a maternity hospital. Gastro-enteritis is not ordinarily notifiable under the Health Act, unless the illness arises from infection by dysentery bacilli. However, when illnesses of any sort have their origin in private hospitals or licensed maternity homes, the matter should be investigated by the local board of health concerned, for the local board is the licensing authority and in that capacity supervises the activities of the institutions it licenses. The local board has a distinct responsibility to the community in that regard.

Arrangements were made for Nurse Inspector McManus to make detailed inquiries at the maternity hospital. Her report indicated that the first case had occurred on 17th July. The child was a twin and weighed only 4 lb. 5oz. at its birth on 30th June. Possibly an earlier case occurred on 6th July. Seven infants severely affected with the illness were transferred to the Adelaide Children's Hospital, and six of the little victims died.

Apart from the possible case early in July, the cases grouped in two periods—between 17th-19th July and between 27th-29th July. The numbers are too small for precise determination of the incubation period of the illness, but it is suggested that the time may be about 10 days. Of the six infants dying, the time between onset of illness and death varied between four and 12 days. All were bottle-fed infants, either wholly or in part. The illness was acute in onset and rapid in its development. The infant was speedily overwhelmed by the illness. It appeared likely that the less robust and especially the premature infants, were more prone to infection.

Apart from colds, some of them severe, there had been no infectious illnesses among the hospital staff. The institution is well conducted, and the routine precautions against the occurrence and spread of infections are well managed. When the gastro-enteritis outbreak occurred visitors in general were precluded from the hospital; husbands, if free from colds, were sometimes admitted. The artificial foods and the cows' milk given to the infants were suitably treated and protected.

Mareeba Babies' Hospital.—At this institution eight infants suffering from gastro-enteritis were admitted between 10th July and 1st August. They were very dehydrated and were having between six and eight motions daily. The matron reported that, in addition, 18 infants who were in the hospital for other conditions also contracted gastro-enteritis, and that four of the 18 succumbed. The time of the 18 cases was 1st July, 1 case; 9th-12th July, 12 cases; 18th-20th July, 2 cases; 27th-30th July, 2 cases; 5th August, 1 case. Again, it would appear, as in the cases at the maternity hospital incubation period is about 8 to 10 days.

Adelaide Children's Hospital.—Over the period, 5th April to 1st August, there were 38 cases treated at the Adelaide Children's Hospital, and 21 of the infants died. The list included patients admitted from various districts, the small group from the maternity hospital, and one patient from the Mareeba Hospital. The other babies apparently contracted the infection while being treated at the Children's Hospital for other conditions.

The Superintendent of the Hospital, Dr. Henry Rischbieth, commented on the acute and severe nature of the illness. He thought the incubation period was sometimes as low as four days. In the patients who recovered, the illness might last three weeks or so. The medical staff at the hospital had not found any useful specific line of treatment for the illness.

Similar Outbreaks in Other Places.—In medical journals over the past 10 years occasional outbreaks of this nature have been recorded. The first full reports came from America in 1936. In England, outbreaks were reported in 1941; in Glasgow, a similar outbreak occurred in 1941.

During the first five months of 1947—the late winter months and the early spring—there occurred in the city of Aberdeen, Scotland, an outbreak of gastro-enteritis, affecting children in the first year of life. The disease was of a severe nature, and was associated with a high mortality rate. The outbreak was described by Drs. Giles and Sangster of the staff of the City Hospital, Aberdeen, in the *Journal of Hygiene* for March, 1948.

The description of the outbreak is strikingly similar to the recent Adelaide outbreak. Over the five months' period, 92 cases of this severe form of gastro-enteritis were treated at the Aberdeen Hospital, and 52 of the patients died. The medical experts found the cases distinct from ordinary "summer diarrhoea." No effective treatment was found, and in the post mortem examinations the pathological lesions were few. Acute necrosis of the liver was noted in several of the fatal cases.

Preventive Measures.—The preventive measures available are limited to those generally adopted in attempting to stay the spread of gastro-intestinal infections in infants. The main points to note in prevention are:—

- (1) Breast feeding in young infants is much preferable and less likely to contribute to infection than bottle feeding.
- (2) Prompt diagnosis of gastro-enteritis is the essential first step in control.
- (3) The strict isolation of sufferers must be insisted on, for the illness is highly infectious. Contact with other babies readily spreads infection.
- (4) Young infants should be kept from contact with adults who have any infections whatever.
- (5) Extreme care should be taken in the bottle feeding of infants.
- (6) Careful attention to the general hygiene of homes reduces the liability to infection-spread.

Summary.—At the request of the Minister the Chairman of the Central Board prepared a special report on the outbreak. He noted that the "salient features in the recent outbreak are strikingly in line with those in Aberdeen last year. The following points are noteworthy:—

- (1) The illness is especially prone to infected new-born babies.
- (2) Bottle-fed babies are especially liable.
- (3) The younger the infant the greater the likelihood of death.
- (4) Infections are liable to spread in institutions where infants are grouped together in wards. The acute nature of the onset—marking probably an active infectious stage—makes it difficult to prevent small outbreaks in institutions.
- (5) The incubation period is probably from 4-10 days.
- (6) The mortality rate is high, varying from 16 to 83 per cent in different outbreaks in various parts of world.
- (7) None of the ordinary forms of treatment appear effective.
- (8) No definite organism has been found as a cause. It is suggested that some virus, so far unidentified, may be the basis. Laboratory confirmation for that view is not yet forthcoming.
- (9) Few definite pathological lesions are noted at post mortem examinations. The rapid and severe nature of the infection suggests that the infants' resistance is overcome before localized lesions have time to develop.
- (10) As in the present instance, outbreaks of this severe type of gastro-enteritis may occur in winter. They appear to be distinct in origin from "summer diarrhoea," which is commonly a fly-borne infection.
- (11) Defective environmental conditions and lowered sanitation have been possible contributing factors in some outbreaks. There is no distinct indication that these circumstances have played a prominent part in this outbreak.
- (12) The association of the infection with outbreaks of influenza-like "colds" amongst adults is noted.
- (13) The general management of the outbreak and the care of the sick infants in the institutions appears to have been satisfactory. In spite of the high standard of ordinary precautionary measures, some infants have contracted the illness while in hospital.
- (14) Preventive measures are limited, but are likely to be of some value. Probably the most important item is to keep young infants away from any sick persons.
- (15) When cases of severe gastro-enteritis are occurring in a community visitors should be excluded from maternity hospitals and from institutions for infants.

11. TUBERCULOSIS.

Improvement.—The fall in the incidence and in the deaths from tuberculosis has steadily continued over the last 50 years. The death-rate from pulmonary tuberculosis is now about one-third of that recorded in the early years of this century. The following table indicates the cases and deaths reported in the last 10 years :—

Table V.

	Cases.	Deaths.
1939	334	202
1940	276	183
1941	307	200
1942	307	214
1943	261	185
	} 1,485	} 984
1944	238	153
1945	226	173
1946	233	168
1947	202	169
1948	279	154
	} 1,178	} 817

Thus the numbers of new cases reported and the death-rate from tuberculosis continue slowly to decrease. It is hoped to hasten this decrease by more efficient methods of "case-finding" by endeavouring to find the source of infection for every case of tuberculosis diagnosed, and by endeavouring to find every person who may have contracted active tuberculosis from every case of diagnosed tuberculosis.

Many of those with tuberculosis in the infectious stage do not know they are infected. That fact presents a serious difficulty. The ultimate aim of any campaign to eliminate tuberculosis from a community is to find all sufferers of infectious tuberculosis and to make them non-infectious. The radiologists consider that if everyone in the community were X-rayed, more than 90 per cent of those with tuberculosis would be found.

Tuberculosis in Cattle.—Milk from cattle suffering from tuberculosis may convey the bovine form of the infection to human beings. To drink milk which has not been scalded or pasteurised is, generally, not without risk. Tuberculosis is only one of the diseases which may be transmitted through milk.

Information supplied by the livestock division of the Department of Agriculture shows the extent to which testing of cattle for tuberculosis has been carried out in this State.

Table VI.

Year.	Number Tested.	Number Reacted.	Percentage.
1936-37	493	36	7.3
1937-38	1,172	52	4.4
1938-39	1,857	156	8.4
1939-40	4,086	56	1.4
1940-41	5,903	243	4.1
1941-42	10,440	733	7.02
1942-43	27,696	805	2.9
1943-44	27,986	424	1.5
1944-45	20,411	567	2.78
1945-46	22,568	345	1.53
1946-47	23,336	182	0.78
1947-48	15,897	148	0.93

The Chief Inspector of Stock (Mr. R. H. F. Macindoe) kindly supplied the figures. They include re-testing of some herds. It will be noted that steady progress is being made in the testing of dairy herds.

Survey in a Country Area.—The Officer of Health for Hallett (Dr. Hubert Davis) made an interesting study of conditions in his area. He reported :—

Occasional Mantoux testing in the course of routine examinations, or in cases of suspected tuberculous infection has, during recent years, given the impression that there are far more negative reactors than is generally believed. This fact appears to indicate that infection with the tubercle bacillus in humans is becoming less common. The writer, therefore, was prompted to determine in a semi-rural area the percentage of positive reactors in the general population. The scheme was purely an experiment in method of mass survey; it has no exact qualitative value—it lacks the refinements of a statistical survey. The scheme was designed as a means of assisting the State X-ray survey in country areas.

The only way of advertising in country towns in the Hallett district council area is by notices on various notice boards and in the local papers. These have limited circulation, and the notice boards are read only by a small proportion of the people. In spite of difficulties, 421 out of an available population of a little over 1,000 came along for skin testing.

The first part of the problem was to find to what extent people would respond to such mild publicity. The result was excellent. It was simply announced that the scheme would be voluntary and free, that it was a skin test not involving risk of any nature, that it indicated past infection with tuberculosis which was now either active or healed, and that it would give valuable information to the people themselves and to the health authorities' efforts to eradicate tuberculosis. Volunteers were to attend only in consulting hours for the two weeks specified.

In the group there were 120 children under 15, and 301 adults. There were 80 (19 per cent) positive reactions; 74 were adults and six were children. In one of the areas (Hallett) the population is almost entirely rural. Of 147 tested in that area, 21 (14 per cent) were positive; none of those were children. The adults tested were 151 females and 150 males; 39 females and 35 males were positive. The number is too small to be of value, but the distribution in this type of population is probably even.

The six positives in children under 15 are interesting and important. Two of them have a father with active tuberculosis; two other siblings of the family are negative reactors. One other child, positive, was a contact of this family. The mother of another positive child had died of pulmonary tuberculosis. The other two reactors had no obvious contact, but live in crowded and unhygienic conditions. Their siblings were negative. The parents in this last case did not attend.

Most of the adults who reacted were investigated further. One case of active tuberculosis with positive sputum was found.

The results of the survey may be summarized. The people are genuinely interested in tuberculosis control. The simplicity of skin testing would probably bring more people for examination than to a mass X-ray survey in a country town. The skin test could be performed in all areas with minimum expense and apparatus. It is probable that for the entire country population of South Australia the incidence of tuberculin sensitivity is not greater than 20 per cent. I consider that the Mantoux skin test should be the first test done in a mass survey. The local medical officers could do such work as a preliminary to a mass X-ray survey, and in conjunction with clinical examinations. Even this simple method I have followed does find active cases.

Dr. Davis is to be commended for his enthusiasm and industry. As a supplement to X-ray studies, tuberculin-testing is most useful. In assessing the tuberculosis status of the relatively fixed populations of country districts, the collated figures of a large series would be of distinct statistical value.

B.C.G. Vaccination.—Dr. D. R. W. Cowan supplied an informative article for *Health Notes* of April, 1948, on the use of B.C.G. vaccine.

Hitherto preventive measures have been directed in the main to limiting the spread of infection by timely treatment, education, and segregation of human sufferers, and by the elimination of tuberculosis from dairy herds. These measures must, of course, be continued, and if necessary they must be reinforced by compulsory segregation of sufferers who neglect precautions necessary to prevent the spread of infection.

Improved standards of living and working conditions have no doubt played a part in lessening risk of infection and in raising the resistance of those infected. Perhaps still further progress may be made in this regard.

Any method then which offers hope of an advance in prevention must be carefully examined and assessed. Of recent years a great deal of work has been done with B.C.G. vaccination which is claimed by competent and experienced observers as offering an effective protection against tuberculosis. It is well that the method, its application and limitations, should be understood.

B.C.G. is an abbreviation of *Bacillus Calmette-Guerin*, the latter words being the names of two French workers who first introduced the method some 40 years ago. Starting with virulent tubercle bacilli of bovine type these workers subcultured the germs on suitable media through some 230 generations until they evolved an organism resembling the original bacillus, but incapable of producing tuberculosis in susceptible animals or in man. It is from this mild non-virulent organism that the vaccine is prepared.

At the Institute of Medical and Veterinary Science in Adelaide for the past two years research in B.C.G. vaccine has been carried out by Miss Erica Page, working under the supervision of Miss Nancy Atkinson. The position has now been reached when vaccination is available to all susceptible persons, but it is recommended that its use shall be confined for the present to groups especially exposed to the risk of infection, such as students, nurses, and children in tuberculous families.

The immunity gained by vaccination is not claimed to be complete. It is estimated by various workers to be from 75 per cent to 90 per cent effective. The duration of immunity is not known, but in the majority of cases it is thought to last at least five years. If immunity lessens, as shown by failure to react to a tuberculin test, re-vaccination is recommended, especially for those unduly exposed to the risk of infection.

B.C.G. vaccination is suitable only for those who are "tuberculin-negative." The "tuberculin-positives" have already been infected with tubercle bacilli and vaccinations would be of no value to them. Experience over the past 10 years in Adelaide has shown that it is amongst the students and nurses who start their training "tuberculin-negative" that trouble from tuberculosis arises.

Both Dr. E. A. North, who went abroad for the specific purpose of studying B.C.G. vaccination for the Commonwealth Government, and I (who went as a representative of the South Australian Government to tuberculosis conferences overseas) formed a favourable opinion of the value of B.C.G. vaccination. Quite independently we have recommended to our respective Governments the use of this vaccine to protect groups who are especially exposed to the risk of tuberculous infection, such as students, nurses, and children in tuberculosis families.

12. VENEREAL DISEASES.

Value of New Drugs.—The venereal diseases came under more effective control when the sulphonamide drugs, and later penicillin, were found effective in curing them.

No doubt many factors influence the rise and fall in the incidence of venereal disease. Reports from overseas are often rather conflicting. As anticipated, the ease with which cures can now usually be effected may act as an incentive for some persons to take greater risks.

In a certain city, not in Australia, such large quantities of penicillin were being used at the free clinics that the health authorities refused to treat any person unless he brought his sex contacts for treatment as well. Contacts were often not known, and the authorities admitted to a number of difficulties. Under the new scheme they claimed that about 30 per cent of persons who otherwise might not have been treated were brought under control.

Improvement Noted.—Dr. H. F. Hustler, medical officer of the Central Board staff is continuing to supervise the administration of the Venereal Diseases Act. He has reported an encouraging fall in the incidence of syphilis and gonorrhoea in the Adelaide and metropolitan area.

Figures for the year show a reduction in suspected sources of infection which were considered reasonable to trace, as compared with previous years. Of 82 such cases reported, 39 were identified and ultimately brought under control. The work was carried out with voluntary co-operation of the people concerned. It was not found necessary to invoke the compulsory provision of the Venereal Diseases Act.

The reduced number of new infections discovered in both sexes appear mostly to be contracted in other parts of the world. Inquiries instituted amongst private doctors indicate that there is not a great deal of venereal disease in the community today.

What is responsible for the improved state of affairs can only be surmised. Active case-finding, more effective methods of treatment, less disinclination on the part of people to seek medical examination, the reduction in emotionally unsettling factors brought about by the war, and the comparatively isolated position of South Australia, probably all play a part.

13. INDUSTRIAL HYGIENE.

Health Hazards.—During the year 1947-1948 the only deaths reported as attributed to industrial causes were two, due to silicosis and other occupational respiratory diseases. There is no precise information regarding the incidence of industrial diseases in South Australia, as they are not compulsorily notifiable, either to the health authority or to the Factories Department.

Many industrial processes in South Australia are associated with the production of injurious substances or involve the handling of injurious substances. Dusts containing silica are associated with foundries, sandblasting, glazing pottery, silica brick manufacture, abrasive soap and scouring material manufacture, mining in silica rocks, quarrying in sandstone and granite, work with grindstones made of sand. Dusts containing asbestos are associated with the manufacture of articles containing asbestos and asbestos cement building material. Dusts containing lead are associated with lead smelting and the manufacture of battery plates, the manufacture and use of lead paints, lead glazes and lead glass.

Most of the potentially harmful substances used in industry are known and the concentration in the air at which they become harmful is also known. The amounts present in the air can usually be controlled (by ventilation and other methods), and workmen can be protected by various means from their effects. Theoretically, therefore, the incidence of industrial diseases should be practically nil.

However, industrial diseases are always likely to occur as the result of (a) accidents and carelessness in the use of known harmful substances, and (b) the use of new substances that have not been thoroughly investigated in regard to their harmful effect.

Officers of the Central Board of Health continued their liaison with the Factories and Steamboilers Department in regard to health hazards associated with various industrial processes.

Progress Abroad.—While in England, Dr. George McQueen attended the International Congress on Industrial Medicine, held in London in September, 1948. Dr. McQueen was one of four representatives from Australia. The Congress included 750 representatives from 43 countries.

The British Minister of Labour and National Service (the Right Honourable G. A. Isaacs, M.P.) informed the Congress that Great Britain was the first country to introduce a medical inspectorate in connection with her industries. Sir Thomas Legge, the first Chief Medical Inspector of Factories, was the first to develop the idea of caring for the health of those working in industry. The only duty required of the Certifying Factory Surgeon in 1833 was to examine children employed in industry, and state that they had reached the development of a child of nine years of age.

Mr. Isaacs said that it was the intention of his Government to introduce an Industrial Medical Service as soon as it was considered that there were sufficient trained medical officers to staff such a service. He then referred to the fact that the subjects to be discussed at the Congress covered a wide field and included the prevention of disease in industry as well as the treatment. Human relations, incentives, group morale, and absenteeism were among the many subjects to be discussed.

Dr. McQueen studied the methods of training of industrial medical officers, and the progress in research into problems of industrial medicine.

Suggestions for Consideration.—From his investigations abroad, Dr. McQueen has formulated ideas for consideration by interested bodies in South Australia. Summarized, his suggestions are:—

- (a) Information regarding the types and incidence of industrial disease in South Australia might be obtained from those responsible for paying compensation for prescribed diseases under the Workmen's Compensation Act. This information would indicate where action was most urgently required.
- (b) The notification of industrial diseases, the investigation of each case, and the prevention of further cases by eliminating the cause (if it could be found) would be helpful.
- (c) Periodical medical examinations are desirable for those engaged in industries associated with processes which may have an injurious effect on the health of the employees. Routine tests of the factory environments for injurious substances or factors, dust-counts, and analyses of fumes and vapours, should be done.

- (d) The most effective means of preventing industrial disease and maintaining the health of those engaged in industry would be the formation of a full-time industrial medical service responsible for the periodical medical examination of all employees and a periodical check on factory environment for any factor that may be injurious to the health of the employees. Such a complete scheme would embrace the items listed in paragraphs (a), (b) and (c) above.
- (e) Any of these methods would involve extra work, staff and equipment, and ultimately the setting up of an industrial hygiene section within the Central Board of Health Department or the Factories and Steamboilers Department. In the past the relationship between the departments has been most cordial. Provided there was a close liaison between the two departments, it would appear advantageous to have an industrial hygiene section attached to the Health Department at the present stage of South Australia's industrial development.

14. LINES OF PROGRESS.

The Board's Aims.—It is the constant endeavour of the Central Board of Health, and of the officers of the State Health Department, to keep alert to the trends of modern public health practice and to apply new methods—where they seem suitable—to the problems in this State. It is hoped that this report, summarizing some of the items in a busy year's work, confirms that claim.

From the population aspect, ours is a small State. The costly nature of medical research work restricts its extensive adoption and development here. Like other small groups, we must often be content to study and apply the results of research conducted in more populous places.

Living in a small centre, however, need not lead us into mental and physical stagnation. We must always be learning all we can from the experiences and researches of the large groups abroad. We must study our problems as they arise, and we must apply our special knowledge to their solution. To do less than that would be to our shame—but it is no shame to us if we lean at times on the help, often based on costly investigations, proffered by other countries.

Here it is appropriate to acknowledge the help frequently given by the British Ministry of Health, through its Chief Medical Officer (Sir Wilson Jameson) and by the London County Council through its medical officer (Sir Allen Daley). In recent years the ready availability of the air mail has encouraged the Central Board's officers to make frequent inquiry about the methods of work and the experiences of those great medical groups. Prompt and gracious replies have been the invariable result. Our State's health services have benefited greatly by this happy association.

World Health.—It was noteworthy that the League of Nations Health Organization, established after World War I, continued to do useful work into the very course of World War II. Health authorities everywhere appreciated the good work of that great international body. It is probably fair to say that, for its health organization, if for nothing else, the League of Nations has earned a worthy place in history.

Now, instead of the League's Health Organization, there has been set up World Health Organization—WHO in the popular "shorthand" of the day. World Health Organization is setting out to continue the good work of the old League's Health Organization. Already World Health Organization is in the fight for better "global" health. In these days, as never before, health is a matter of world importance. The rapidity of modern travel has brought the world's peoples into one house, so to speak. We are all close contacts, and spread of infections has become all too easy.

Against a background of deteriorating health conditions, huge population moves and increasingly fast transportation, a recrudescence of serious epidemics was to be feared at the end of the war. The World Health Organization, then only a preparatory commission, was entrusted with the task of taking necessary safeguards to protect populations from imported diseases. Such measures paid large dividends during the 1947 Egyptian cholera outbreak when, for the first time in history, a full-scale epidemic of this kind was cut short in its full vigour without spreading to other countries.

So World Health Organization's activity in the field of epidemiology is threefold. It includes (1) the Epidemiological Intelligence Service (2) interpretation, administration, and revision of International Sanitary Conventions, as well as preparation of International Health Regulations which are to replace them, and (3) studies and expert consultations in the field of communicable diseases.

Preventing Spread of Infections.—International Sanitary Conventions were drafted as far back as 1892 to prevent transmission of epidemic diseases from country to country. They have been revised periodically, but many remain hopelessly outdated in view of recent developments. World Health Organization has been entrusted with the task of interpreting, administering, and, where necessary, revising these Conventions.

The ultimate aim, however, is to replace them by one single set of modern regulations promulgated by the World Health Assembly and automatically entering into effect for all member nations unless rejected within a certain prescribed period.

The revision is being undertaken by World Health Organization only after consultation with known authorities in the matter.

World Health Organization regulations will probably be needed until the true object of international epidemic control—the eradication of all pestilential diseases—has been achieved. Accurate and rapid notification form the basis for effective measures against the international spread of diseases and for the withdrawal of restrictions on international traffic as soon as danger of infection ceases.

World Health Organization Epidemiology Committee has emphasized that each country should develop its internal resistance to disease, rather than rely on measures taken at its frontiers. For instance, proper sanitation, country-wide immunization, and freedom from insect vectors would effectively prevent many epidemics.

The experts have decided that measures taken at frontiers should be the minimum compatible with existing sanitary conventions. Excessive measures, they point out, not only entail undue interference with traffic and severe economic consequences but, by their very excess, are likely to lead to deliberate evasion of the sanitary control and thereby defeat their object.

The wide outlook on public health—regarding it, for such it surely is, as a matter of world importance—is refreshing and stimulating. Even in our “small corner” we can play a part in a grand world scheme for better health.

The Minister's Leadership.—The Central Board has appreciated your continued interest in its work and your readiness to assist in its undertakings.

Progress in health work in South Australia depends so much on the efforts and enthusiasm of local boards.

Time and again you have stimulated and encouraged the boards in their tasks. That thoughtfulness on your part has been a great help. Your Christmas message in 1948 was particularly to the point :—

The health status of South Australia still ranks high, and to the steady work of local boards I would give much of the credit for that. The work of local governing bodies will always be of paramount importance—no scheme can succeed without enthusiastic local work.

We all have high hopes for our Australian nation, and especially for this State of which we are all so proud. Yet hopes are airy things. Without the substance of hard work, without a willingness to strive and strive, all the hopes in the world are as frail as the morning mist—they melt into nothingness. Success in most things depends on work—more work, more success. This is how I look on our public health tasks. It is for you and me to take pains to understand our powers and our duties, and to work our very hardest in a great and worthy cause.

A. R. SOUTHWOOD, Chairman.

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

H. T. HUTCHINS, Secretary,
Adelaide, 7th June, 1949.