

Annual report of the Department of Public Health and the Central Board of Health / South Australia.

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SOUTH AUSTRALIA

ANNUAL REPORT

OF THE

Department of Public Health

AND THE

Central Board of Health

FOR THE

Year ended 31st December, 1958

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THE PUBLIC HEALTH

Annual Report of the Department of Public Health and the Central Board of Health to the Minister of Health (Hon. Sir Alexander Lyell McEwin, K.B.E., M.L.C.)

SIR—We have the honour to submit the report for the year ended 31st December, 1958. The report is arranged in sections dealing with :—

1. Staff and administration.
2. Public Health Supervision.
3. School Health Services.
4. Poliomyelitis Services.
5. Tuberculosis Services.
6. Summary and comments.

Sections 2, 3, 4 and 5 deal with particular sections of the Department and are based on reports received from the officers in charge, namely, the Principal Medical Officer (Public Health), the Principal Medical Officer for Schools, the Principal Medical Officer (Poliomyelitis), and the Director of Tuberculosis.

1. STAFF AND ADMINISTRATION.

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

Chairman—Albert Ray Southwood, C.M.G., E.D., M.D., M.S., M.R.C.P., F.R.A.C.P., F.R.S.H.

Members appointed by the Governor—

John Burton Cleland, C.B.E., M.D., Ch.M., F.R.A.C.P.

George Hugh McQueen, M.B., B.S., D.P.H., D.T.M., F.R.S.H., F.R.S.T.M. & H.

Member elected by the metropolitan local boards—Arthur Roy Burnell, J.P., F.A.S.A.

Member elected by other local boards—Alfred Bertram Cox, J.P., F.A.S.A., F.C.I.S.

Secretary—

Gordon James Cook, J.P., B.Ec., A.U.A., F.A.S.A., F.C.I.S., to 1st September, 1958, and
Richard Leonard Paech, A.U.A., from 27th November, 1958.

During the absence overseas of the Chairman, Dr. P. S. Woodruff was Acting Chairman and Acting Director-General of Public Health.

Staff of the Department.—In addition to the Director-General of Public Health (Dr. A. R. Southwood) the principal staff of the Department at 31st December, 1958, comprised the Principal Medical Officer (Public Health) (Dr. G. H. McQueen), the Principal Medical Officer for Schools (Dr. Marjorie P. Casley Smith), the Principal Medical Officer (Poliomyelitis) (Dr. R. R. Horton), the Director of Tuberculosis (Dr. P. S. Woodruff), and the Secretary (Mr. R. L. Paech). The officers and employees engaged on full-time duties numbered 114 and there were 18 on part-time duties.

Staff Changes.—The following were appointed during the year as medical officers :—Drs. Norma Davies from 24th February to 30th October, J. A. Earl from 14th July to 18th December, L. Potts, Margaret B. Rugless, S. J. Rumbold and B. W. Wibberley. Messrs. S. B. Choo, F. H. Shearing and D. Fraser were appointed as dentists. Following the transfer of Mr. G. J. Cook to the office of Secretary, Children's Welfare and Public Relief Department, Mr. R. L. Paech was appointed Secretary of the Department, the Central Board of Health, the Radiological Advisory Committee and the Advisory Council on Health and Medical Services. Sister Gwenith Byrne was appointed to the position of Nurse Inspector. Sister Pearl Crawford retired and resignations were received from Drs. R. H. M. Connell, Bernadette D. Gillam, and A. S. Johnson, and Messrs. K. A. Brown and M. L. Kranz.

"Good Health".—Publication of the Department's quarterly bulletin *Good Health* was continued during the year.

The April issue dealt mainly with food, dietetics, venomous land animals and waste disposal.

The June issue featured artificial swimming pools and tree planting in country districts.

The September issue contained a number of articles on problems of the aged and the December issue dealt entirely with regulations to control poisons and dangerous drugs in South Australia.

The National Health and Medical Research Council and Committees.—In May, the Director-General of Public Health (Dr. A. R. Southwood) attended the Forty-fifth Session of the National Health and Medical Research Council and a meeting of the Council's Public Health Committee.

In November, the Principal Medical Officer (Public Health) (Dr. G. H. McQueen) attended the Forty-sixth Session of the Council and a meeting of its Public Health Committee as the South Australian representative in place of the Director-General of Public Health who was overseas at the time. Dr. McQueen also attended two meetings of the Council's Industrial Hygiene Committee.

The Pharmaceutical Inspector (Mr. R. C. McCarthy) attended two meetings of the Food Standards Committee and two meetings of the Poisons Schedules Committee held during the year. Both Committees are sub-committees of the Council's Public Health Committee.

2. PUBLIC HEALTH SUPERVISION.

(a) STAFF

The professional and sub-professional staff of the Public Health Supervision Section of the Department of Public Health at the end of 1958 consisted of :—

- 1 Principal Medical Officer,
- 3 District Medical Officers,
- 3 Part-time District Medical Officers,
- 1 Chief Inspector,
- 7 Inspectors,
- 1 Nurse Inspector,
- 16 Part-time Inspectors,
- 1 Pharmaceutical Inspector,
- 1 Biophysicist.

During the year, Sister Pearl Crawford retired from the position of Nurse Inspector. She had filled that position in a temporary capacity for nearly nine years and those with whom she had worked were very sorry when the time came for her to retire.

Sister Gwenith Byrne was then appointed to the position of Nurse Inspector. In addition to routine inspections, Sister Byrne will supervise, from a health point of view, conditions in creches and child-minding establishments of a similar nature, rest homes and private hospitals. Sister Byrne will also supervise and assist nurse inspectors employed by local boards to do similar work within their local board areas.

Provision was made on the 1958-59 Estimates for a medical officer, two scientific officers and two inspectors to give special attention to the health of industrial workers and environmental conditions in industry. Mr. A. S. Wilson was temporarily transferred from the position of biophysicist in the Mines Department to a position as one of these scientific officers for a special project in connection with industrial health. He was given the task of surveying and reporting on the environmental conditions associated with the use of irradiating apparatus and radioactive substances in Government departments, in shops and in industry generally.

Provision was also made on the 1958-1959 Estimates for two additional inspectors to be appointed under the Health Act and Food and Drugs Act. Applications were called and received for these two positions but appointments had not been made by the end of the year.

Mr. R. C. McCarthy, the Pharmaceutical Inspector, was appointed a member of the Pharmacy Board of South Australia.

(b) VITAL STATISTICS

The following preliminary particulars for 1958 have been supplied by the Government Statist. They are subject to slight revision. Details for 1957 are shown in parentheses.

Population.—The estimated mean population for the State in 1958 was 895,267 (874,159).

Births Registered.—The number of births registered was 20,047 (19,536). The last nine years have been successive records in numbers, increasing from 16,042 in 1949. The highest birth rate per 1,000 of population in recent years was 25.23 in 1947. It has now fallen to 22.35 (22.34).

Sexes of Births.—The number of boys compared with 100 girls born was the lowest recorded since 1936, when the masculinity rate was 102.43. It was 103.19 in 1958.

Deaths Registered.—Seven thousand seven hundred and forty-three (7,576) deaths were registered during 1958, the rate being 8.63 (8.67). The previous highest number was 7,593 in 1956. The numbers dying from the various causes are not yet available for 1958 and hence comparisons cannot be made.

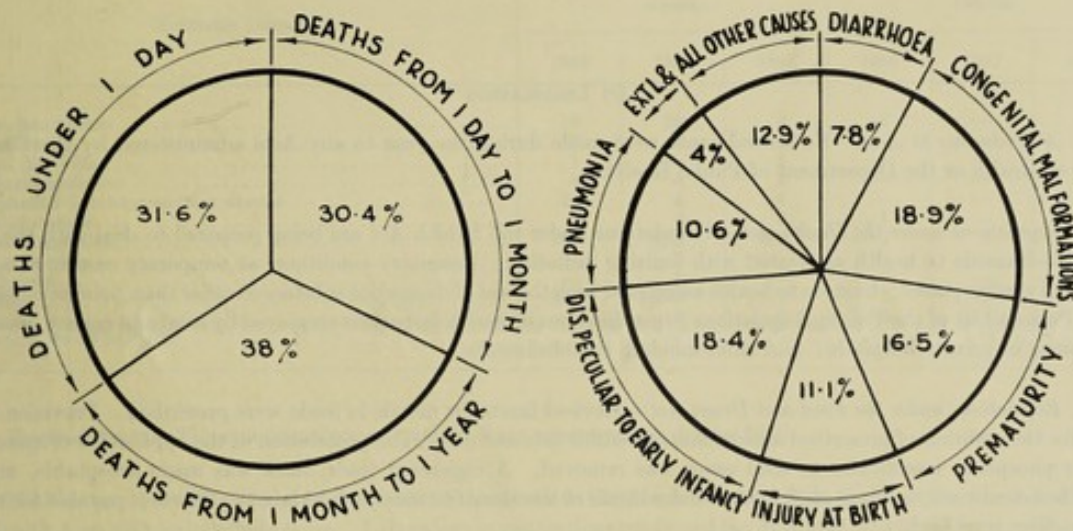
Infantile Mortality.—Deaths of children under one year were 449 (403). The infantile death rate, or the number of deaths of children under one year per 1,000 births during the year of calculation was 22.39 (20.63). The 1956 rate of 19.88 was the lowest recorded for this State and is one of the lowest in the world. Since then it has increased. Eighty years ago it was 150, 60 years ago it was 110 and 35 years ago it was 60.

There were 142 (121) deaths of children under one day, 137 (147) of children from one day to one month, and 170 (135) of those over one month but under one year. Compared with earlier years there has been a distinct decrease in the death rate of children under one month but a far greater decrease in respect to children from one month and under one year, although there was a slight increase in the latter group for 1957 and again during 1958.

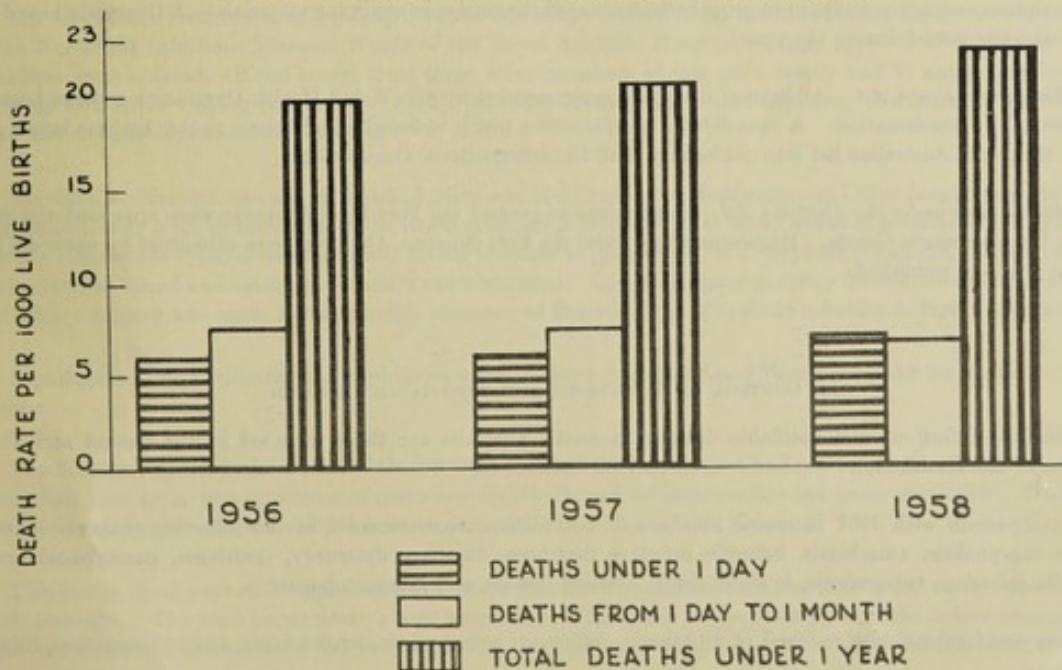
Deaths of infants under one year during 1958 (1957) have been due to:—Diarrhoea, 35 (15); congenital malformations, 85 (92); prematurity, 74 (76); injury at birth, 50 (51); other diseases peculiar to early infancy, 83 (82), cerebro-spinal meningitis, 0 (1); meningitis, 5 (8); whooping cough, 1 (0); pneumonia, 48 (38); hernia and intestinal obstruction, 3 (4); external causes, 18 (9); and all other causes, 47 (27).

The causes of infantile mortality for 1958 and a comparison of infantile mortality for 1956, 1957 and 1958 are shown graphically below.

INFANTILE MORTALITY 1958



COMPARISON OF INFANTILE MORTALITY



Still Births.—These numbered 240 (297). They are not included in either births or deaths.

Marriages.—The number of marriages celebrated was 6,505 (6,581) and the rate per 1,000 of population was 7.25 (7.53). The highest number of marriages recorded was 8,129 with a rate of 8.48 in 1945.

Summary.—The following table shows the number of births, deaths and marriages, the rate per 1,000 of mean population, the number of infantile deaths and the rate per 1,000 births from 1954 to 1958.

TABLE 1

Period	Births Registered		Marriages		Deaths Registered			
					Total		Infants	
Year—	No.	Rate (a)	No.	Rate (a)	No.	Rate (a)	No.	Rate (b)
1954.....	18,227	22.89	6,190	7.77	7,179	9.01	388	21.29
1955.....	18,494	22.55	6,226	7.59	7,536	9.19	431	23.30
1956.....	18,964	22.35	6,277	7.39	7,593	8.95	377	19.88
1957.....	19,536	22.35	6,581	7.53	7,576	8.67	403	20.63
1958.....	20,047	22.35	6,505	7.25	7,743	8.63	449	22.39

(a) Per 1,000 of Mean Population.

(b) Per 1,000 Live Births.

(c) LEGISLATION

1. *Amendments to Acts.*—No amendments were made during the year to any Acts administered by the Central Board of Health or the Department of Public Health.

2. *Regulations under the Health Act.*—Regulations under the Health Act are being prepared to deal with the following:—Hazards to health associated with ionizing radiation; insanitary conditions at temporary camps, caravan parks and similar places; hazards to health associated with the use of dangerous substances other than poisons included in the Poisons List of the Poison Regulations; qualifications of health inspectors employed by local and county boards; mortuaries in private hospitals; and child-minding establishments.

3. *Regulations under the Food and Drugs Act.*—Revised limits for metals in foods were prescribed. Provision was made for the addition of prescribed antioxidants to edible fats and oils. The prohibition of the application of systemic organic phosphate insecticides to food crops was removed. A registered trade mark was made acceptable, under prescribed conditions, in place of the name and address of the manufacturer on food labels. The fees payable for milk licences were increased.

Special provision was made for the Central Board of Health to issue permits to allow reconstituted milk to be labelled "Pasteurised Milk" and sold as such. The Poison Regulations were amended to bring the tranquillizers under the prescription restriction and also to provide for the use of fungicides in wrapping materials. A Consolidation of the Regulations was issued during the year.

4. *Dangerous Drugs Act.*—Additional drugs, as recommended by the World Health Organization, were brought under control by proclamation. A consolidated proclamation which included all additions to the Act was issued; it brought the South Australian list into conformity with the International Conventions.

5. *Regulations under the Abattoirs Act.*—Regulations to control the Port Pirie Abattoirs were approved and published in the *Government Gazette*. Regulations to control the Port Augusta Abattoirs were submitted for approval but have not yet been published.

(d) CONTROL OF INFECTIOUS AND NOTIFIABLE DISEASES

Statistics.—Infectious and notifiable diseases in South Australia are those included in the Second and Third Schedules of the Health Act.

In comparison with 1957 increased numbers of notifications were received of the following diseases:—Acute infective encephalitis, amoebiasis, infantile infective diarrhoea, bacillary dysentery, ornithosis, paratyphoid fever, salmonella infection, tuberculosis, typhoid fever, hydatid disease and infective hepatitis.

Fewer notifications were received of diphtheria, influenza, poliomyelitis, scarlet fever, acute rheumatism, rubella and tetanus.

Diseases notified to local boards of health and the Central Board of Health during 1958 are shown below. Notifications for 1956 and 1957 are also shown for comparison.

TABLE 2

Infectious Diseases	Cases			Deaths		
	1956	1957	1958	1956	1957	1958
Acute infective encephalitis	17	2	7	2	4	2
Amoebiasis	1	1	2	—	—	—
Diphtheria	7	4	2	2	1	—
Diarrhoea, infantile infective	—	—	13	—	—	—
Dysentery, bacillary	37	50	57	2	2	2
Influenza in epidemic form	19	1,199	4	6	35	2
Leprosy	—	1	—	—	—	—
Meningococcal infection	12	5	5	4	2	—
Ornithosis	—	1	6	—	—	—
Paratyphoid fever	—	1	3	—	—	—
Plague	—	—	—	—	—	—
Polio-myelitis	122	16	10	3	1	1
Puerperal pyrexia	3	5	3	—	—	—
Salmonella infection	26	19	59	—	—	4
Scarlet Fever	249	268	133	—	—	—
Tuberculosis, pulmonary	319	239	269	39	33	57
Tuberculosis, other forms	30	26	33	5	6	4
Typhoid fever	—	2	3	—	—	—

Notifiable Diseases	Cases			Deaths		
	1956	1957	1958	1956	1957	1958
Acute rheumatism	15	29	8	1	—	—
Brucellosis	3	2	1	—	—	—
Chorea (St. Vitii)	1	—	1	—	—	—
Erythema nodosum	4	4	1	—	—	—
Encephalitis following another disease	23	4	4	—	—	—
Hydatid disease	1	2	4	1	—	—
Infective hepatitis	791	258	307	7	3	5
Lead poisoning	—	3	—	—	—	—
Ophthalmia	—	4	—	—	—	—
Rubella	800	1,284	271	1	—	1
Tetanus	5	15	6	4	4	6
Typhus fever—Flea borne	2	—	—	—	—	—

Typhoid Fever.—Three notifications of typhoid fever were received during 1958.

The first was a child aged 4 years admitted to the Adelaide Children's Hospital from the West Torrens Local Board of Health Area with an indefinite fever. Laboratory investigations confirmed the diagnosis of typhoid fever. The phage type of organisms isolated was "T". No source of infection and no "carriers" associated with the patient were discovered. No secondary cases occurred.

The second notification was of a girl aged 14 years from the Enfield Local Board of Health Area, who was admitted to the Northfield Infectious Diseases Wards of the Royal Adelaide Hospital. Phage type "C 1" strains of typhoid organisms were isolated. Blood serum from three other members of this girl's family had Vi antigen agglutination reactions with titres varying from 1/20 to 1/40. All other investigations were negative. No source of infection was found and no secondary cases were notified.

The third notification was of a girl aged 13 years who had lived in the Noarlunga and Unley Local Boards of Health Areas immediately prior to admission to the Royal Adelaide Hospital. After many weeks in hospital with an indefinite fever the diagnosis of typhoid was confirmed by the isolation of phage type "C 1" typhoid organisms. Again no source of infection was found and again no secondary cases occurred. In a subsequent monthly Newsletter to Medical Officers of Health, reference was made to the possible existence of three sources of typhoid infection in South Australia.

Diphtheria.—Two notifications of diphtheria were received from the Local Board of Health for the City of Mount Gambier.

The Secretary of the Local Board of Health reported that the first patient had not been immunized. The second patient had been given two injections of combined diphtheria and tetanus toxoids two years previously. No carriers were found among contacts and no further cases were notified.

This is the third year since diphtheria was made a notifiable infectious disease that it has caused no deaths in South Australia. The need to maintain a high percentage of immunes in the State by artificial active immunization to prevent the spread of diphtheria was stressed during the year in monthly Newsletters to Medical Officers of Health.

Dysentery, Infantile Diarrhoea, and Salmonella Infection.—A marked increase occurred in the reported incidence of these three diseases. This appeared to be associated with a wide-spread epidemic of gastro-enteritis that affected all age groups. Infants and old people were more severely affected than others and a number of infants died from complications.

Outbreaks of gastro-enteritis were reported from Ernabella, Barmera, Berri, Wallaroo and verbal reports were received of gastroenteritis occurring in other parts of the State including the Woodside Migrant Centre.

Patients from Ernabella investigated at Alice Springs were found to have dysentery caused by *S. ambigua*. Contaminated water was the suspected cause of the outbreak at Berri. No cause was found at Wallaroo. A number of patients admitted to the Adelaide Children's Hospital with a provisional diagnosis of gastro-enteritis were investigated bacteriologically. A small percentage was found to have pathogenic salmonella organisms in their faeces, another small percentage had dysentery bacilli in their faeces (usually *S. sonnei*) and another small percentage had *E. coli*, type 055, B5. No pathogenic organisms were recovered from the majority of the remainder.

The home conditions of a group of sufferers were investigated by officers of the Section, for some common epidemiological features.

It was found that the standard of sanitation in many of the homes was below average and the incidence of the disease was highest at the time when flies were at a minimum. The last finding suggested that the disease was not flyborne.

The investigation indicated that the condition may have been caused by a virus that was spread mainly by droplet infection. Gastro-intestinal symptoms appeared to be the main feature of the illness. In young children the gastro-intestinal condition sometimes led to complications which occasionally resulted in death. These complications appeared to occur more often in children from areas where the living standard was below average. The infantile infective diarrhoea reported from Wallaroo appeared, clinically, to be similar to the condition referred to above.

Infective Hepatitis.—The incidence of infective hepatitis appeared to increase considerably toward the end of 1958, even more than indicated by the notifications received by local boards of health.

Notifications were received from all parts of the State but the disease appeared to spread in epidemic form in some country districts.

Notifications during 1955, 1956, 1957 and 1958 are shown in the following table.

TABLE 3

Year	Quarters				Totals
	1st	2nd	3rd	4th	
1955	72	103	151	176	502
1956	310	162	158	161	791
1957	93	48	73	44	258
1958	50	38	40	179	307
Totals	525	351	422	560	1,858

Though obviously incomplete these notifications suggest an increased incidence during summer months when transmission from faecal sources is easiest. Many major faults in sanitation could always be found in areas where the disease occurred in epidemic form.

Acute Infective Encephalitis.—Acute encephalitis unrelated to other diseases occurred throughout the year. No infective agent was found in those investigated bacteriologically, no apparent sources of infection were found, and no secondary cases were reported.

During the past 12 months all complement fixation and neutralization tests for Murray Valley encephalitis at the Institute of Medical and Veterinary Science were negative. The indications are that there was no spread during the year of Murray Valley encephalitis to populated areas of South Australia.

Influenza.—There were no serious outbreaks of diseases like influenza during the year. Influenza becomes a reportable disease in a local board area when the local board concerned considers that it is occurring in epidemic form.

All deaths from influenza are recorded irrespective of whether the disease is being reported at the time as an infectious disease or not.

Vaccination against virus influenza with polyvalent influenza virus vaccine prepared at the Commonwealth Serum Laboratories was made available to members of the Department of Public Health during the year and the majority were vaccinated.

Poliomyelitis.—The incidence of poliomyelitis has decreased dramatically over the past four years, from 182 notifications in 1955 to 10 in 1958. Details of the Department's control of this disease are given in the report of the section dealing with poliomyelitis.

Tuberculosis.—During 1958 there was an increase in the incidence of tuberculosis and an increased number of deaths from this disease. However, when the population increase that occurred during 1958 was taken into account the increases in rates per 100,000 were very slight. The incidence rate increased from 30.3 in 1957 to 33.7 and the death rate increased from 4.4 in 1957 to 6.7—all rates are per 100,000 population. Increases also occurred in some of the other Australian States.

More details of the work of the Department in controlling tuberculosis is given in the report of the section dealing with tuberculosis.

Ornithosis.—Each notification of ornithosis reported was investigated and each case was found to be related to birds in some way. Complement fixation and neutralization tests were carried out on 162 sera submitted to the Institute of Medical and Veterinary Science for evidence of ornithosis infection and six positive results were obtained. Two strains of the ornithosis virus were also isolated at the Institute of Medical and Veterinary Science.

The following account of an investigation into an illness at Berri is of epidemiological interest.

A report was received from a Local Medical Officer of Health that he had seen eight cases of a respiratory infection which presented clinically as fever, malaise, rigors at onset and a non-productive cough. X-ray examination of the chest in each case showed patchy irregular opacities consistent with a diagnosis of "virus pneumonia". Treatment with chloromycetin produced slow improvement.

A "follow up" survey was due to be made in the area and one particular item for investigation was a complaint relating to the keeping of birds. The complainant stated that neighbours (husband and wife) who kept the birds had been admitted to hospital.

They proved to be two of the eight referred to above. With the co-operation of the Local Medical Officer of Health blood samples from both patients were taken and a history obtained. They had both been "off colour" for 6-8 weeks prior to admission. Tiredness, some night sweats, inability to sustain physical effort and poor appetite were noted and progressively increased up to the time of admission to hospital. Chest X-rays showed characteristic evidence of "virus pneumonia". Blood specimens gave positive complement fixation tests with ornithosis Group antigen at serum dilutions of 1 in 80 in the case of the husband and of 1 in 160 in the case of the wife.

One of the patients (the husband) reported that some rosellas in his aviaries had become sick about the time he first noted the symptoms reported above. During the 6-8 weeks since then several birds had died.

Three weeks after the first samples were taken further blood samples again gave positive titres at serum dilutions of 1:80 and 1:160. The aviaries were again inspected and a sick rosella noted. It was sitting on the floor of the cage; it did not make any attempt to fly; its feathers were very bedraggled; and it had a slight nasal discharge. This bird was delivered to the Institute of Medical and Veterinary Science with the blood samples and an ornithosis virus was recovered from its carcase.

Finally, of the remaining six "pneumonia" cases who were not investigated, five were found to be friends of the above couple and had been visitors to the premises where the birds were kept.

Tetanus.—Six cases of tetanus were reported and six deaths from this disease occurred. Four of the six deaths that occurred were reported as tetanus prior to death. Of those that died four had not been actively immunized against tetanus and there was no evidence to indicate whether the other two had been immunized or not. As all kinds of material for active immunization against tetanus are available the Department now encourages active artificial immunization against this disease.

As indicated the number of tetanus cases reported each year is low but the proportion of deaths to cases is high. Because tetanus does not spread in epidemic form its control is of more importance to the individual than to the community.

(e) CONTROL OF VENEREAL DISEASES

Control of these diseases was made more effective when the sulphonamide drugs and antibiotics were found to be curative. In recent years the incidence of these diseases has been reduced but control is still required. During 1958, £2,147 was spent by the Department in investigating patients and treating them for venereal disease.

This amount represents mainly the cost of approximately 4,000 bacteriological and serological tests.

A venereal diseases investigation clinic for female patients at the Royal Adelaide Hospital is staffed by officers of the Section and during the year 65 patients were investigated. Infected patients were further investigated to find their source of infection and any they may have infected.

(f) SUPERVISION OF ENVIRONMENTAL SANITATION

Officers of the Public Health Supervision Section of the Department are responsible to the Central Board of Health for ensuring that those provisions of the Health Act designed to keep the State healthy are carried out. They are also responsible to the Central Board of Health for enforcing the requirements of the Food and Drugs Act throughout the State.

In areas where there are local health authorities these duties are the responsibility of the local authorities concerned and their officers. In those areas the Central Board and officers of the Section have a supervisory and advisory function.

Each health inspector of the Section has a number of local board areas to inspect and each district medical officer of the Section has an area of the State that is his responsibility. Routine inspections of each local board area are done by the inspector concerned who usually spends a week in the area inspecting as many places of public health interest as possible in the time available. He is usually accompanied by either the medical officer of health or the health inspector for the local board concerned. Each routine inspection is then followed later by a health survey by a district medical officer and inspector of the Section.

It is the aim of the Department to do a routine inspection in each local board area once a year. There are 141 local board areas and during 1958 it was possible to inspect 105 of them. This is the greatest number yet inspected in any one year. This increase has been made possible by recent additions to the staff of the Section. In the majority of areas, increased inspections have resulted in improved sanitation and more healthy conditions. Where breaches of the Health Act or Food and Drugs Act are found, the person responsible is informed. An explanation of why the condition is injurious to the health of the district and the dangers that may be associated with the condition if allowed to persist are usually given to the person responsible. The local board is notified in the inspector's report and a local board notice to amend the condition is served on the person responsible.

If at a subsequent inspection the condition is found to be still present, the Central Board may recommend that the person responsible be prosecuted under the Act concerned by the local board or it may institute proceedings itself.

Parts of the State where local government does not exist are visited by district medical officers and inspectors of the Section. Routine health surveys are done and immunization and urgent medical, surgical and dental treatment may be given by the medical officer in places where local medical or dental practitioners are not available. Included among other Acts administered by the Department of Public Health are the Bread Act and Bakehouses Registration Act. Officers of the Section during routine inspections also inspect bakehouses and bakers' shops to ensure that the provisions of these Acts are put into operation.

(g) REPORT OF THE DISTRICT MEDICAL OFFICER FOR THE NORTH-EASTERN AND UPPER MURRAY DISTRICTS

Inspections and Surveys.—During the year routine "follow-up" health surveys in conjunction with the health inspectors concerned were made in the areas of 17 local boards of health. These have served a useful purpose in checking the action of local boards following a general inspection and in achieving some measure of uniformity amongst the different local boards. An overall improvement in these areas can be reported.

General Sanitation.—Meat and milk supplies and food premises are, except for a few isolated cases, generally satisfactory.

Several Local Government Association Conferences were attended and one gratifying result was the full-time employment on health duties of the qualified health inspector shared by several of the local boards of the Upper Murray District.

Immunization in most areas was kept well up-to-date by local boards and local medical practitioners. A campaign was conducted by officers of the Section at the Gerard Native Mission where some 92 individuals received appropriate injections for whooping cough, diphtheria or tetanus. During an investigation into a dysentery outbreak at Gerard Mission, the causative organisms of numerous skin infections there were identified but no intestinal pathogens were isolated. As a result of action by the Central Board of Health the sanitation and housing of the natives is receiving attention at the present time. The Aborigines Department is assisting the Mission to carry out the required work.

Following an outbreak of gastro-enteritis at Barmera the town water supplies at Berri and Barmera were investigated. Both were found to be unsatisfactory. The Engineering and Water Supply Department has followed this up and the Berri supply is now chlorinated. Another interesting episode which occurred at Barmera was a small outbreak of ornithosis. Further details are given under the heading of Control of Infectious Diseases.

At the request of the various local boards in the Upper Murray area and with the help of local health inspectors Food Handlers' Seminars were held at Waikerie, Loxton, Barmera and Renmark. Talks by Inspector Woollacott, Chief Inspector Wilson and Dr. Fuller were followed by films and discussions. All concerned felt that the Seminars were a successful venture in a new field and it is hoped to develop this form of health education still further.

(h) REPORT OF THE DISTRICT MEDICAL OFFICER FOR THE NORTHERN AND WESTERN DISTRICT.

Inspections and Surveys.—During the year inspections were made by Central Board of Health Inspectors of practically all local board areas, with, in many cases, "follow-up" surveys with the medical officer to check on activities recommended following the previous inspection.

Inspections, often in association with immunization campaigns, were also made of areas outside Local Government control. Most of the problems found during inspections were of a routine nature but a few are worthy of special mention.

Flies.—In the Autumn of 1958 a sudden plague of house flies (*Musca domestica*) became evident in many places and was particularly severe in the Virginias area. As a result of examinations made it was realized that the breeding of this insect is the most important public health problem of the present time. Causes were multiple but manure storage under poor conditions was the main cause.

A leaflet detailing in simple terms the life cycle of the fly and the basis of prevention was widely distributed, and active inspections were carried on to control the menace.

Water Supplies for Small Towns.—As a result of inspection concern has been felt on this matter. The widespread provision of reticulated water supplies has caused pride in South Australia's progress. With the extension of travel a number of small towns have now had difficulty in maintaining an adequate water supply and action has been initiated to improve this. Such towns are Marree, Coober Pedy, Andamooka and the towns on the road to Broken Hill from Peterborough.

Dust Nuisance in Country Towns.—Some years ago the dust nuisance in towns on main highways was a problem and it was felt that this had a bearing on health especially in children. The sealing of the roads through towns has now become policy and it is pleasing to note that this enterprise is nearing completion.

"Smog" at Port Augusta.—The method of burning Leigh Creek coal at the Port Augusta power-house of the Electricity Trust results in the emission from the stacks of large amounts of fine ash. Because of prevailing winds this often falls in quantity in the town. Chemical analyses of the ash indicates that it is unlikely that it will become a health menace, but it is an undoubted severe nuisance. Plans are in hand to deal with this problem.

Sanitation on Aboriginal Mission Stations.—This has been a matter of concern for some years. Primitive aboriginal sanitation was highly adapted to a nomadic way of life. The congregation of natives on mission stations has made an alteration necessary. Some missions have been deficient in both knowledge and resources. Others have endeavoured not to interfere with native customs. Action has been taken to help the former and in the latter case it has been explained that alteration in living ways must necessarily involve an over-riding of custom. Many countries have a large substandard native population which acts as a reservoir of endemic disease. Efforts are being made to prevent our small native communities from becoming such a reservoir.

Sanitation in Country Towns.—The extension of sewerage to some of the larger towns will remove many deficiencies. The extensive use of septic tank sewage disposal systems has resulted in the modernization of amenities in many homes. Effluent disposal however is not always simple, but most difficulties can be solved by the experience of the Section's inspectors. There are still, however, some progressive country towns where sanitation has not kept up with the other advances made.

(j) REPORT OF THE DISTRICT MEDICAL OFFICER FOR THE SOUTH AND SOUTH-EASTERN DISTRICT

Inspections and Surveys.—During the year routine surveys were made by health inspectors of the Section in 33 local board areas and six "follow-up" surveys were made by the district medical officer with the health inspector concerned in 24 of the 33 areas previously inspected.

General Sanitation.—The area under consideration tends to differ from other parts of the State in that the rainfall is higher and community water supplies are obtained from subterranean sources. These two factors give rise to difficulties in disposing of liquid wastes. A higher annual rainfall combined with a type of soil that does not readily absorb water creates many public health problems. For many years disposal of liquid wastes into pervious subterranean layers through deep bores has solved the liquid wastes problem in many places.

This method has never received the whole hearted approval of health authorities because of the danger of polluting underground water supplies.

It is only recently, however, that bacteriological surveys have shown that pollution of the underground water supplies is actually taking place at Naracoorte and Nangwarry. The problem has been considered by the Advisory Committee on Country Sewerage and during 1958 work was commenced by the Engineering and Water Supply Department on a scheme to provide sewerage for the town of Naracoorte. The installation of sewerage in other towns in the area will probably follow.

Dairy Industry.—Many small industries associated with an extensive dairy industry are established in the South-Eastern District and these require supervision to ensure that, where food is produced for human consumption, a high standard of sanitation is maintained.

Immunization.—The population in this area is increasing with the establishment of new industries. This means that new sources of infectious diseases may be introduced. Local Boards of Health have been urged to endeavour to maintain a high degree of immunity against these diseases by means of artificial active immunization.

(k) SUPERVISION OF FOOD AND DRUGS SOLD IN SOUTH AUSTRALIA

Routine Supervision Surveys.—The Food and Drugs Act requires the Central Board of Health and local and county boards of health to ensure that food and drugs are sold in a "pure and genuine condition". For this purpose officers of the Public Health Supervision Section of the Department of Public Health and local and county boards are appointed inspectors under the Food and Drugs Act.

During routine inspections and health surveys by these officers, places where food and drugs are manufactured, produced or prepared for sale are inspected. Places where they are sold are inspected and, when considered necessary, samples are taken and submitted to the Government Analyst for analysis. Table 4 on page 12 shows the results of analyses carried out during 1958.

During the year routine surveys of food and drugs for sale were carried out by officers of the Section in 105 local authority areas and these were followed by "follow-up" surveys in the majority of cases.

Inspections by the Pharmaceutical Inspector of places where drugs are manufactured and sold are not included above.

TABLE 4—RESULTS OF ANALYSES OF FOOD AND DRUGS FOR 1958

Article	Number Submitted	Not up to Standard or Incorrectly Labelled
Aerated drinks.....	5	1
Bread	4	—
Butter	1	—
Cheese	1	1
Cream	1	—
Custard powder	1	—
Fish, tinned	2	1
Fish, smoked	2	—
Fruit juices, tinned	4	—
Gelatine	1	—
Gin	1	1
Ice cream	3	—
Ices, flavoured	6	—
Jelly crystals	14	—
Lard	1	—
Milk	1,173	47
Milk, malted	4	4
Minced meat	19	3
Sausage	43	10
Spaghetti	1	1
Steak, packaged	1	—
Steak, tinned	9	—
Straws, flavoured	1	—
Vegetable oils	6	—
Water	3	1
Whisky	1	1

Reconstituted Milk.—Regulation 45, sub-paragraph 24 of the Food and Drugs Regulations deals with reconstituted milk. Under an amendment made in 1958 to this Regulation the Central Board of Health may now issue to manufacturers of reconstituted milk permits to label reconstituted milk "Pasteurized Milk" and sell it as such for any four consecutive months in any year.

The amendment also provides for the Central Board of Health to specify what ingredients will be used.

In accordance with the amendment the Central Board of Health granted permits to two companies to manufacture reconstituted milk from milk, milk products and water and to label it "Pasteurized Milk" and sell it as such.

According to returns received from these two companies they sold 232,745 gall. of reconstituted milk as pasteurized milk between 16th March, 1958 and 15th June, 1958 and used 51,730 gall. of water as an ingredient in its manufacture.

Four other companies were also given permits by the Central Board of Health during 1958 to manufacture reconstituted milk from milk and milk products and to sell the product as pasteurized milk.

Returns received indicated that 112,740 gall. of reconstituted milk were sold by these four companies as pasteurized milk during 1958.

This makes a total of 345,485 gall. of reconstituted milk which was sold in South Australia during 1958 as pasteurized milk under permits issued by the Central Board of Health.

Before permits were granted, the manufacturers' premises and the apparatus to be used in the reconstitution were inspected and considered to be suitable by officers of the Public Health Supervision Section.

Saccharin in Summer or Temperance Drinks.—The permitted use of saccharin in these drinks is being investigated to determine whether or not such use should be disallowed.

Preservatives in Imported Foods.—The use of sodium benzoate in imported tinned fish and pickles was investigated; it was decided not to permit its use.

Uniform Standards.—A considerable number of draft uniform standards for foods were examined and commented on for the information of the Food Standards Committee of the National Health and Medical Research Council.

Milk in Cartons.—The sale of milk in cartons was examined and recommendations made for legislative control.

Poisonous Residues on Foodstuffs.—Permissible limits for the contamination of fruit and vegetables with spray residues were investigated and recommended.

(i) SUPERVISION OF SEPTIC TANK SEWAGE DISPOSAL SYSTEMS

Plans and specifications of septic tank sewage disposal systems are required by the Health Act to be submitted to and approved by the Central Board of Health before installations are commenced. Approvals are given on the recommendations of officers of the Public Health Supervision Section. All systems are inspected by officers of the Section before permits to use the systems are issued. During 1958, 3,451 systems were approved and approximately the same number of permits were issued.

This work has increased greatly and will increase more rapidly in the future as more of the smaller towns become areas where the installation of septic tank sewage disposal systems is compulsory under the Local Government Act.

Two problems associated with these systems are provision of sufficient water in areas where water supplies are inadequate and disposal of effluent in areas where there is a high rainfall combined with a soil that does not readily absorb fluid. The Department is always searching for ways and means of reducing the amount of water required without reducing the efficiency of the system.

During the year approval was given for the use of a pedestal pan which can be satisfactorily flushed with six pints of water instead of the usual 2½ gall. A special cistern is used which can be adjusted to deliver six pints of water each time the pan is flushed and provided the septic tank is within approximately 10ft. of the pan the system has been found to work efficiently. The resulting effluent is approximately a third of that from a standard installation. A pamphlet giving details of the system was prepared and issued to local boards and others. The Engineering and Water Supply Department has agreed to accept a six pint flushing pan as an "existing fixture" if, at a later date, sewers become available.

(m) SUPERVISION OF INDUSTRIAL HEALTH

Administration.—Industrial health problems referred to the Department by other Departments, local boards and industrial organizations were investigated and reports and recommendations were made by officers of the Public Health Supervision Section.

Technical officers of the Department of Mines, the Department of Chemistry and the Institute of Medical and Veterinary Science have assisted with these investigations. Their help has been valuable and is appreciated.

The industrial health work of the Section is at present almost entirely confined to locating and eliminating conditions that are dangerous to the health of industrial workers, after some damage has been done.

It should be possible with an adequately staffed Section to detect and correct these conditions before damage has been caused. Prevention is always better than cure but until more staff is provided it will not be possible to do extensive industrial health surveys. Some additional assistance was provided when, towards the end of the year, a biophysicist was temporarily transferred from the Department of Mines to investigate the existence of hazards to health associated with the use of ionizing radiation.

Vanadium.—The increased use of oil-fired boilers in South Australia brought up the possibility of vanadium poisoning occurring in men employed in cleaning these boilers. It was also reported to the Department that one person employed on this work developed an illness that was diagnosed as vanadium poisoning. The diagnosis was however not confirmed subsequently by chemical investigation.

Investigations of the amount of vanadium in oil used in South Australia, the amount of vanadium in soot from a number of boilers and the amount of vanadium in the air during cleaning operations indicated that, under the existing conditions, there was no significant hazard from vanadium in South Australia.

Phostox and Dust in Bulk Wheat Silos.—Phostox is a substance which gives off phosphine when exposed to moisture.

Phosphine is a very poisonous gas now used extensively in South Australia as a grain fumigant. Bulk handling of wheat usually results in the production of large amounts of dust. Whether phostox and grain dust are injurious to the health of workers employed at bulk wheat silos was one of the problems referred to the Department of Public Health by a local board medical officer of health and South Australian Co-operative Bulk Handling Limited.

Investigations indicated that there was no residual phostox in the dust examined. There was also no significant amounts of other toxic dusts in the dust to which employees were exposed at the time of the investigations. It was, however, recommended that air-line respirators should be provided for use if the dust ever became more concentrated than it was during the investigations.

Noise Survey.—Noise in industry is receiving more attention from industrial hygienists.

A survey was completed of noise levels in a foundry in the metropolitan area. The survey indicated that at times the noise produced was above the level regarded as injurious to the human hearing apparatus and if subjected to such noise for a sufficiently long period deafness would result in a proportion of exposed persons. Where such noise exists, periodic audiograms should be done to find those who are being affected. Anyone affected should then be protected from further exposure. This pilot survey indicates the need for more extensive investigation of noise levels.

Department of Mines Uranium Project.—Pre-employment and annual periodic medical examinations of persons employed on the uranium project of the Department of Mines were continued. During the year 622 medical examinations were completed. Clinical examinations have been done by medical officers of the Public Health Supervision Section. Periodic X-ray examinations were done at Radium Hill, Port Pirie and Adelaide by the X-ray units of the Department of Public Health; blood examinations at Adelaide were done at the Institute of Medical and Veterinary Science; and at Port Pirie and Radium Hill blood examinations were done by the mobile unit of the Institute of Medical and Veterinary Science.

Medical examinations, required by the Silicosis Committee, of employees of the Department of Mines working in places where there is a silicosis hazard, were also done.

Medical Examination for Employment.—Medical examinations of applicants for permanent appointments in the Public Service are done by medical officers of the Public Health Section. In addition, medical examinations of persons, except teachers and railway employees, desiring to subscribe to the South Australian Superannuation Fund or in receipt of invalid pensions from the Fund are done by medical officers of the Section. A total of 400 of the above examinations were completed during 1958. These include medical examinations of applicants for positions in the State Bank and the South Australian School of Mines and for permits to visit reserves for aboriginals.

(n) HEALTH EDUCATION

A large part of the health education work of the Department is done by officers of the Public Health Supervision Section of the Department.

"Good Health" and Newsletters.—During 1958, Dr. Hustler, one of the Section's District Medical Officers, was Assistant Editor of the Department's Quarterly Magazine *Good Health* and many of the articles for that magazine were written by officers of the section.

Each month a "Newsletter for Medical Officers of Health" was written by Dr. McQueen, the Principal Medical Officer, and sent to medical officers of health and secretaries of local boards. A list of diseases reported to the Central Board and local boards during the previous month is given in each letter. This is included to keep all officers of health informed of the incidence of these diseases in all parts of the State. Other items of topical interest included the following:—The use of gamma globulin in disease prevention, details of a modified six pint flush septic tank sewage disposal system, an amendment to the regulation dealing with reconstituted milk, details of prophylactic preparations for tetanus, information regarding the incidence of typhoid in South Australia, National Health Week, 1958, notification of eclampsia, influenza immunization, diphtheria immunization, and infective hepatitis.

Royal Society of Health.—Examinations for diplomas and certificates of the Royal Society of Health are conducted by the Society's Board of Examiners for South Australia. Theoretical training of candidates in the metropolitan area is provided by the South Australian School of Mines. Correspondence courses are also arranged by the Technical Correspondence School of the Education Department. The material for the correspondence courses and the correcting of assignments are done by the Chief Inspector of the Section. The two weeks practical work required by the Society is arranged by officers of this Section of the Department. At the last examinations held in December, 25 candidates sat for the Diploma of the Royal Society and two sat for the Meat and Other Foods Certificate. Twelve candidates obtained the Diploma and two the Certificate.

Lectures on First Aid.—During 1958, three series of lectures were given by medical officers of the Section to persons attending Explosives Courses arranged by the Department of Mines.

Lectures to Student Nurses.—Lectures on public health organization in South Australia were given by medical officers of the Section to groups of student nurses during the year.

National Health Week, 1958.—Throughout Australia National Health Week was from 19th October to 25th October. The theme chosen for 1958 was "Safety for Health". The Department arranged for the issue of pamphlets, streamers, and posters to local boards of health. A revised edition of the Department's National Health Booklet was also circulated to local boards.

As National Health Week provides an opportunity for increased activity in health education, local boards were advised to arrange special efforts to inform people in their areas of some routine activity carried on by them to improve or maintain the health of their areas. It was also suggested that medical officers of health investigate the causes of accidents treated by them with the idea of being in a position to advise local boards regarding action that could be taken locally to prevent the occurrence of accidents peculiar to their own areas.

Circulars.—Six circulars were sent to local boards by the direction of the Central Board. These included a list of rulings prepared by officers of the Section on the structure and conduct of mortuaries, directions as to the distribution of a pamphlet on the prevention of hydatid disease, a circular referring to the licensing of milk vendors and registration of dairies, circulars on National Health Week, directions as to the distribution of leaflets dealing with the fly nuisance and a circular requesting information on swimming pools required for a survey being undertaken by the Section.

Publications.—In addition to "Good Health" three booklets and five leaflets were issued by the Department of Public Health during 1958. All contributed towards the education of South Australians in health matters. The booklet "Healthful Living" was prepared by the Director-General of Public Health; the others were prepared by officers of the Public Health Supervision Section. "Information for the Officer of Health" deals with public health problems that frequently confront the officer of health. "Your Part in National Health" outlines the basic principles of hygiene in South Australia.

Leaflets were prepared by officers of the Section on immunization, modified septic tank sewage disposal systems, hydatid disease, and flies and disease. These provided information of topical public health interest for local boards and the public generally. One of the immunization leaflets was in six different languages for the benefit of New Australians.

States' Health Education Co-ordination Committee.—Dr. H. Hustler attended the annual meeting of this Committee in Perth as a representative from South Australia.

Special Health Education Projects.—During the year officers of the Section took part in many special health education projects that were arranged either by the Department, by local boards or by other organizations.

These included Food Handlers' Seminars at Waikerie, Barmera, Renmark and Loxton, a talk to the Agricultural Bureau at Aldgate, addresses to Rotary Clubs at Renmark and Loxton, talks at Local Government Conferences, lectures to members of the Institute of Caterers, a course on public health for local government officers on Eyre Peninsula at Port Lincoln, talks and discussions at meetings in country towns on septic tank sewage disposal systems and a lecture on the hazards associated with methylchloride to the Institute of Refrigeration Engineers.

3. SCHOOL HEALTH SERVICES

Staff.—During the year the professional staff of the School Health Services consisted of the Principal Medical Officer for Schools, six full-time and two part-time medical officers, six dental officers, nine nurses, six dental assistants, one part-time audiologist and one audiometrist. Several changes of staff occurred during the year, requiring replacements.

Medical Services.—The number of children examined in State schools increased from 26,482 in 1954 to 58,808 in 1958. This figure includes 57,237 children seen in schools by medical officers of the School Health Services, and 1,571 school children seen by local doctors on Eyre Peninsula acting for the Department. The school enrolment in 1958 was 153,887. Medical officers of the Department visited 242 schools during the year and Eyre Peninsula doctors saw the children of 18 schools.

Table 5 shows the number of schools visited, children examined and defects noticed by medical officers of the School Health Services :—

TABLE 5

	Metropolitan	Country	Total
Schools visited	101	141	242
Children examined	41,498	15,739	57,237
Defects found—			
Vision (excluding spectacles)	2,637	1,098	3,735
Wearing spectacles	2,488	527	3,015
Hearing	840	383	1,223
Nose and throat	577	376	953
Teeth	9,500	4,491	13,991
Heart	233	116	349
Skin	389	213	602
Lungs	84	34	118
Allergies	1,234	603	1,837
Epilepsy	32	28	60
Deformities, postural	249	59	308
Deformities, foot	1,107	552	1,659
Other conditions (not classified)	3,236	1,858	5,094
Total defects recorded	22,606	10,338	32,944

To enable comparisons to be made with other years Table 6 shows, for the last five years, the rates per 10,000 children examined of certain defects formally notified to parents.

TABLE 6—DEFECTS NOTICED PER 10,000 CHILDREN EXAMINED

Year	Vision	Hearing	Nose and Throat	Teeth	Heart	Allergies	Epilepsy
1954	646	272	355	3,769	43	*	*
1955	691	252	256	3,136	38	*	*
1956	738	244	303	2,599	52	*	*
1957	622	180	231	3,009	48	315	5
1958	665	213	166	2,444	61	321	10

* Not recorded

Notices were sent to the parents of 13,991 children needing dental attention. Children already under private dental supervision and children who were examined by departmental dentists are not included in these statistics.

Medical officers of the Department examined 41,498 children in 101 of the 109 metropolitan schools and 15,739 children in 141 country schools during 1958. A larger staff will be necessary if all children are to receive their regular examinations in future. Since 1954 the number of children in State schools has increased by 34,000 without any increase of staff.

Eyre Peninsula Scheme.—Doctors residing at six centres on Eyre Peninsula and at Port Augusta assisted the School Health Services by examining the children attending schools in their areas. One thousand five hundred and seventy-one children attending 18 schools were seen by them. The Department appreciates the work of these doctors and it is hoped that the scheme may be enlarged during 1959.

Audiometric Testing.—Audiometric testing was conducted in 105 State schools and in 28 kindergartens of the Kindergarten Union of S.A. Inc. A total of 11,799 children had pure-tone audiometer tests. These tests were carried out by medical officers, the audiometrist and the school nurses. Of the children tested, 665 (5.6 per cent) were found to have some hearing loss at the time of testing. Their parents were notified accordingly and arrangements were made, where possible, for further tests in the sound-proof room of the Department, where frequently more satisfactory results were obtained. A total of 1,497 audiometric tests were done on children and students in the sound-proof room.

Infections in School Children.—The numbers of communicable diseases reported to teachers in State schools are shown in Table 7.

TABLE 7

Year	Diphtheria	Scarlet Fever	Measles	Rubella	Whooping Cough	Chicken Pox	Mumps	Polio-myelitis	Infective Hepatitis	Other Conditions
COMMUNICABLE DISEASES										
1954.....	2	125	3,933	268	162	1,744	1,952	36	*	85
1955.....	11	215	1,114	452	264	1,696	2,207	43	93	205
1956.....	—	179	5,027	1,178	227	1,856	2,607	30	117	143
1957.....	1	184	499	1,496	97	2,195	1,556	3	26	83
1958.....	—	131	3,469	232	163	2,078	987	2	53	116
COMMUNICABLE DISEASES PER 10,000 CHILDREN ENROLLED										
1954.....	0.2	10.2	322.4	22.0	13.3	143.2	160.2	3.0	*	7.1
1955.....	0.8	16.9	87.8	35.6	20.8	133.7	173.5	3.3	7.3	15.9
1956.....	—	13.2	371.6	87.1	16.7	137.2	192.7	2.2	8.6	10.4
1957.....	0.1	12.6	34.3	102.7	6.7	150.7	106.8	0.2	1.8	5.7
1958.....	—	8.5	225.4	15.0	10.6	135.0	64.1	0.1	3.4	7.5

*Not recorded

The total number of these communicable diseases reported was 7,231. This is 1,091 more than in 1957, mainly due to an outbreak of measles and chicken pox in the third term. There were only two cases of poliomyelitis. Included in other conditions were five cases of meningitis, three of tuberculosis, three of encephalitis and three of bacillary dysentery and 14 of conjunctivitis.

Other Medical Examinations.—A total of 851 female and 512 male students entering or leaving the Teachers Colleges or attending State Schools as leaving teaching scholars were medically examined in 1958. In addition, 432 female and 281 male teaching scholars selected for entrance to the Teachers College in 1959 were medically examined before the January vacation. Teachers referred by the Education Department were seen before returning to duty from sick leave. All applications from teachers for invalidity pensions were considered, and, where necessary, the applicants were examined. There were 370 teachers applying for permanent appointments, superannuation or temporary positions seen during the year. Children travelling interstate with sports teams were given medical examinations.

Health Lectures.—Four lectures a week in hygiene were given to groups of students attending the two Teachers Colleges and two lectures a week to two groups of temporary teachers. The lectures were given by medical officers and also by physical education instructors of the Education Department. Seventeen requests were received for speakers at Mothers' Clubs. This educational work makes a link between the mother and the medical officer which is most desirable.

Seminar.—During the school holidays in May, a seminar was conducted by Dr. F. W. Clements of the Institute of Child Health, Sydney. The subject dealt with was "Parent Interviewing" and it was attended by the staff and other visitors. The Department is grateful to the Commonwealth Government for permitting Dr. Clements to be present and to Dr. Clements himself and his assistant for the sessions held.

Follow-up Work was continued by the school nurses and 77 metropolitan schools were visited once. Forty-five of these schools had second checks made, when outstanding cases were further investigated and the parents were either visited or telephoned. Fifty-eight homes were visited, help and advice being given by the nurse. In this way 61 per cent of non co-operative parents were persuaded to follow the advice of the medical officer. Final assessment showed that in 45 schools where this was done 94.4 per cent of defect notices, excluding dental notices, had finally received attention. This work has shown the benefit derived from follow-up work and it is hoped to delegate a nurse to it in the coming year.

Defect Notices Returned.—Under an arrangement approved by the British Medical Association, 2,169 forms were returned by doctors and specialists to whom children were taken following the discovery of defects.

DEAFNESS GUIDANCE CLINIC

Attendances have steadily increased since the clinic was established in March, 1956. The total for the year 1957 was 713, for the year 1958 it was 996, of which 487 were initial attendances and 509 were attendances for retesting after treatment.

Referrals to the Clinic.—The great majority of the children who attended the Clinic were referred by the School Health Services or by the audiometrist from schools or kindergartens but of 128 who came from elsewhere, 40 were brought directly by their parents; 51 were referred by medical practitioners; 35 were referred by officers of the Education Department; 1 was referred by the Commonwealth Acoustic Laboratory and 1 was referred by Townsend House School for the Deaf.

Of those requiring further assessment or treatment, 531 were referred to their family doctors, 57 to otologists, 38 to the Adelaide Children's Hospital, and 22 to the Royal Adelaide Hospital.

DENTAL SERVICES

The staff consists of six dental officers and six dental attendants. No senior dentist has been appointed since Mr. Kranz resigned in March. A third caravan is now in use in the far north and tenders have been called for two more caravans. Working conditions and efficiency have been improved by these units.

Most dental officers are visiting schools in their areas for a second time and are now including all children in their programmes. They are finding more satisfaction in their work in specific areas and the state of the children's teeth in these places is much improved. At present six areas receiving attention are Eastern Eyre Peninsula, Far North, Mid North-East, Mid North-West, Murray Flats and South-West. Eighty-five schools were visited.

Treatment was completed for 3,151 children and in addition 9,543 were examined. Defect notices were issued in 6,878 cases. The following work was completed:—

Extractions—3,381—An average of 1.1 per child.

Fillings—11,732—An average of 3.7 per child.

Other operations—2,830 (including root treatments, dressings, temporary fillings, cleanings, gum treatments and minor operations).

Dental health education is an important aspect of the work of dental officers and strip and motion films were shown to both parents and children in centres visited.

Under the training scheme designed to assist students as well as to provide future dentists for the Department, a further six studentships were offered at the beginning of 1958. Four were filled, raising the number current to 12. In the next four years these studentships should produce nine dentists, one in 1959, two in 1960, five in 1961 and one in 1962. The studentships are necessary to maintain the full establishment of dental officers and so ensure continuity of treatment for the children in the schools visited. It is hoped that they will enable the School Health Services to include eventually all school children to whom a dental service is not readily available. There are at present eight areas unvisited by dentists. Each area holds approximately 2,000 school children in towns where there is no resident dentist.

Conclusion.—It is the aim of the School Health Services to provide for at least three routine medical examinations of each child at intervals while attending primary schools and to ensure that a dental health service is available for every child in the State. With the increase in school enrolments from 127,000 in 1955 to an estimated 163,000 in 1959 additional officers are needed with increasing urgency to maintain the present health service for school children. The provision of adequate accommodation at schools would also make medical and dental examinations more efficient.

4. POLIOMYELITIS

Incidence.—During the year under review 10 cases including two deaths were reported as due to poliomyelitis. The yearly figures since the last epidemic starting in May, 1949, appear in Table 8.

TABLE 8.

Year.	Cases.			Deaths.		
	Metropolitan Area.	Other Districts.	Total.	Metropolitan Area.	Other Districts.	Total.
1949.....	490	90	580	15	5	20
1950.....	816	157	973	7	10	17
1951.....	1,012	479	1,491	39	23	62
1952.....	435	274	709	7	5	12
1953.....	287	111	398	11	10	21
1954.....	123	53	176	2	3	5
1955.....	110	72	182	5	1	6
1956.....	58	64	122	2	1	3
1957.....	5	11	16	1	—	1
1958.....	5	5	10	1	1	2

One fatal case in 1958 was an unvaccinated girl of 3½ months who was reported as suffering from poliomyelitis. However, the post mortem findings were "Not poliomyelitis—suggestion of polyneuritis". The other fatal case was an unvaccinated woman of 29 years. The final diagnosis was "Not poliomyelitis".

Particulars of the 10 cases reported during 1958 are summarized in Table 9.

TABLE 9

Number of Cases	Age Group	Final Diagnosis	Vaccinated	Non-vaccinated
2.....	0-14 years	Not poliomyelitis	1	1
3.....	Over 15 years	Not poliomyelitis	—	3
1.....	0-14 years	Poliomyelitis	—	1
4.....	Over 15 years	Poliomyelitis	—	4

Since vaccination against poliomyelitis began on 28th June, 1956, all reports of suspected cases have been investigated as far as possible by the Principal Medical Officer (Poliomyelitis) and details have been sent to the Commonwealth Surveillance Committee which meets in Melbourne. The members of this Committee are specialists, not otherwise concerned with the vaccination programme, who make the final decision on whether a case should be accepted statistically as poliomyelitis or not for the purpose of evaluation of the vaccine prepared at the Commonwealth Serum Laboratories for immunization against poliomyelitis. Up to 31st December, 1957, the Committee accepted five South

Australian cases as poliomyelitis occurring in vaccinated children, all within the age group 0-14 years. Particulars of the five cases were as follows :—

Cases 1, 2 and 3 developed poliomyelitis within a week of their first immunization injection and had been sick prior to the injection. It was clear from the investigations that these three children were infected with poliomyelitis before the injection was given. It could not be expected that the vaccine would prevent development of the disease in the circumstances. These three cases might reasonably be regarded as unvaccinated subjects.

Case 4 had received one injection only. As specimens for laboratory investigation were not available, it was not possible to confirm the diagnosis of poliomyelitis. However, it was decided to accept the case for statistical purposes.

Case 5 was a child of six years who had received two injections. Again no specimens could be obtained and the diagnosis of poliomyelitis, while not proven, was accepted.

In all five vaccinated children, therefore, the evidence of failure of the vaccine to give protection against poliomyelitis was somewhat indefinite.

From 1st July, 1956 to 31st December, 1958, the Committee accepted thirty (30) unvaccinated children in the age group 0-14 years and thirty-four (34) unvaccinated persons over 15 years of age as cases of poliomyelitis. This means that in South Australia since 1st July, 1956, there have been sixty-four (64) accepted cases of poliomyelitis in unvaccinated persons compared with only five cases in vaccinated persons, even if the diagnosis in the vaccinated children were accepted without reservation.

There were no cases of poliomyelitis in vaccinated persons during the year ended 31st December, 1958 and only five in unvaccinated persons—a record low.

Injections of Poliomyelitis Vaccine (Salk).—The number of injections of vaccine given from the start of the programme on the 28th June, 1956 to the 31st December, 1956, was 223,979. In 1957 a further 401,683 injections were given. The number of injections given for the year ending 31st December, 1958 was 266,164.

There are two main reasons why the number of injections given during 1958 was lower than in the previous year.

Firstly in early 1958, there was a major breakdown in supplies of vaccine from the Commonwealth Serum Laboratories and all injection work had to be suspended for weeks. During this time the Poliomyelitis Services staff was employed on other duties, some being lent to other sections and to other departments.

Secondly, there was the changeover from the immunization of children at schools to the immunization of adults up to 45 years of age. Previously large numbers of children were readily available and could be assembled easily in school hours and the numbers requiring injections were known in advance. This permitted a vast number of injections to be given in the shortest possible time. At the adult centres the response was very satisfactory; it was not possible, however, to know in advance what number of people would attend or to ensure that large groups were present at a particular centre at a particular time. Another factor was that early in the adult programme the response although very satisfactory was lower than at the end of the year when the facilities available became better known to the public.

The total number of injections from 28th June, 1956 to 31st December, 1958 was 891,826; details appear in Table 10.

TABLE 10

	0-14 years	Over 15 years	Total
First injections	244,881	97,736	342,617
Second injections	239,093	81,488	320,581
Third injections	213,701	14,927	228,628
	697,675	194,151	891,826

Evaluation of Poliomyelitis Vaccination.—The marked fall in the incidence of poliomyelitis since the introduction of the vaccination programme and the response from the public have been most encouraging. Some of the factors which are thought to have influenced favourably the response from adults are the central organization with the excellent co-operation of the local board of health officers, the nature of the facilities provided for the public, a good "Press" and the activity and enthusiasm of departmental officers concerned, no matter how junior.

The central organization has permitted vaccination to progress in an orderly way from one local board of health area to another so that persons missing injections in one area could subsequently attend nearby. The central advertising has meant that all programmes can be advertised in the same position on the same day each week and the public can readily ascertain where to go. With a continuous programme there is a centre in the metropolitan area available to the public every week day.

The facilities provided would not have been available without the able and willing help of local board of health officers who co-operated in arranging suitably located halls. This permitted the vaccine to be taken to the people rather than there being long distances for them to travel. No waiting is involved at the units and no prior appointments are necessary. The lack of delays at the unit has resulted in many applicants encouraging others to attend.

The South Australian programme has received considerable support from the Press and broadcasting stations. The help received in this way has been a factor in the successful response.

Smooth running of the programme would have been impossible without the enthusiastic help received from all officers of the Poliomyelitis Services. On numerous occasions, staff members (not otherwise employed on mobile units) have left their homes at night to prevent any waiting by the public in unexpected periods of heavy demand for injections.

In any evaluation attention should be drawn to the assistance provided by voluntary organizations who have lent their premises as centres or have rendered help in other ways. The organizations who have co-operated are too numerous to detail here but the efforts of the Red Cross Society in providing voluntary aids to help the public continuously at the mobile units must be individually mentioned.

Conferences and Interstate Visits.—In November, 1958, the Principal Medical Officer (Poliomyelitis) attended the Pan-Pacific Rehabilitation Conference in Sydney arranged by the International Society for the Welfare of Cripples.

In September, 1958, a medical officer (Dr. L. Potts) spent two weeks in Victoria studying methods of treatment of poliomyelitis patients.

Post-care Work.—An important part of the duties of the Principal Medical Officer (Poliomyelitis) is to follow up post-poliomyelitis sufferers to ensure that they are aware of the community facilities available by way of orthopaedic and physiotherapy care, rehabilitation, social services benefits and help from voluntary agencies. Before vaccination started visits were made to country towns to assist patients and to confer with country practitioners. Most of the country visiting by the Principal Medical Officer (Poliomyelitis) in the last three years has been restricted necessarily to the investigation of suspected acute cases.

At the end of 1958 it was still not possible (because of the pressure of the vaccination programme) to extend the work with patients left crippled by poliomyelitis in past epidemics. Many of these patients are no longer under medical care and much could be done to make some of them more physically independent and to prevent others from developing further deformity. It is hoped to extend this work in the coming year.

5. TUBERCULOSIS SERVICES

Notifications.—The number of new notifications of tuberculosis increased to 302 this year, from a total of 265 in 1957. Pulmonary disease made up 90 per cent of the new cases, and again almost two-thirds of the patients were males. Last year's total was quite unexpectedly low, and the present figure is in line with the trend of recent years, to a slow decline in numbers of new notifications of tuberculosis despite a steadily rising population.

The localities from which new patients were reported in the metropolitan area, again followed closely the districts in which X-ray surveys took place. Surveys following electoral boundaries, covered almost the whole of Unley, Enfield, Burnside and a small part of West Torrens.

Table 11 shows the origins of new notifications of tuberculosis in 1958 :—

TABLE 11

METROPOLITAN AREA		COUNTRY	
Local Board of Health—	Notifications	Local Board of Health—	Notifications
Unley	37	Gawler	6
Enfield	34	Mount Gambier Town	5
Adelaide	21	Naracoorte Town	4
Woodville	20	Whyalla Town Commission	4
Port Adelaide	16	Port Augusta	3
Burnside	12	Salisbury	3
St. Peters	11	Balaklava, Kadina Town, Kadina District, Mallala, Meadows, Meningie, Mount Gambier District, Port Elliot, Tumby Bay, Yorketown, each	2
Marion	10	Barossa, Berri, Burra Town, Bute, Clare Town, Cleve, Eudunda, Freeling, Georgetown, Gumeracha, Lameroo, Leigh Creek, Maitland, Millicent, Minlaton, Moonta, Munno Para East, Murat Bay, Noarlunga, Paringa, Penola, Peterborough Town, Port Broughton, Port Lincoln, Port Pirie, Renmark Town, Tanunda, Tatiara, Victor Harbour, Wallaroo, Willunga, Yankalilla, Yorke Peninsula, each	1
Glenelg	9		
Prospect	8		
Mitcham	7		
Thebarton	6		
West Torrens	6		
Brighton	5		
Kensington and Norwood	5		
Campbelltown	4		
Hindmarsh	3		
Payneham	3		
Walkerville	2		
Colonel Light Gardens	2		
Henley and Grange	1		

Migrants.—There were 26 notifications of tuberculosis in migrants who have been in Australia less than five years. Nine of these were from the United Kingdom, four from Italy, four from Yugoslavia, three from Austria, two from Holland, two from Greece, and one from Hungary.

Mortality.—For the first time for many years there was a distinct increase both in the number of deaths and the death rate from tuberculosis in 1958. There were 57 deaths from pulmonary tuberculosis and three from tuberculosis of other forms, the death rates being 6.7 per 100,000 for all forms of tuberculosis and 6.3 per 100,000 for pulmonary tuberculosis.

The age and sex distribution of those dying of tuberculosis is shown in Table 12.

TABLE 12

Age at Death	Numbers of Deaths		Total
	Males	Females	
Pulmonary Tuberculosis—			
25-34 years	1	2	3
35-44 years	2	5	7
45-54 years	11	3	14
55-64 years	15	2	17
65-74 years	7	3	10
75 + years	5	1	6
Non-pulmonary Tuberculosis—			
55-64 years	1	1	2
75 + years	—	1	1
Total	42	18	60

Tuberculosis continues to have its main lethal effect in males beyond middle life.

Tuberculosis Allowances.—There was a further slight decrease in the numbers receiving tuberculosis allowance. Three hundred and fifty persons were receiving these benefits at 31st December, 1958, compared with 363 at the end of the previous year.

X-ray Surveys.—During 1958 the first compulsory X-ray Survey of the State entered its final stages. One hundred and eleven thousand, three hundred and eighteen persons were examined during the year, 82,685 in the metropolitan area and 28,633 in the country.

Ninety-four new notifications of tuberculosis during 1958 resulted directly from survey examinations. Seventy of these came from the metropolitan area and 24 from the country. The ratio of new notifications to persons examined has therefore remained remarkably constant at 1 in 1,181 in the metropolitan area and 1 in 1,193 in the country.

Tuberculin Testing and BCG Vaccination.—There was little change during the year in the programme of tuberculin testing and BCG vaccination in schools and other institutions, and in 16th National Service Training Battalion.

Table 13 shows the results of tuberculin testing and the numbers vaccinated in 1958. There was a distinct decrease in infection rates in country children and a slight increase in children in the metropolitan area, so that the total figures show practically no change from the previous year.

Tuberculin testing continues to be a very valuable weapon in the epidemiological assessment of tuberculosis as an individual, family, and community problem.

It is closely integrated with X-ray surveys and with the BCG programme, so that it plays an important part in case-finding and in prevention.

TABLE 13.—MANTOUX TESTING AND B.C.G. VACCINATION, 1958—SOUTH AUSTRALIA

Group	Number Tested	Naturally Positive	Percentage Naturally Positive	Positive from Previous B.C.G. Vaccination	Negative	Vaccinated
Country school children, all grades—						
Australian born	8,151	243	3.0	50	7,858	—
Migrants	894	53	6.0	21	820	—
Sub-total	9,045	296	3.3	71	8,678	2,073
Metropolitan, 7th Grade school children—						
Australian born	5,624	269	4.8	72	5,283	—
Migrants	984	179	18.2	63	742	—
Sub-total	6,608	448	6.8	135	6,025	6,004
National Service Trainees	871	125	14.4	162	584	584
Institutions	243	41	16.9	53	149	—
Others	51	10	19.8	5	36	28
Total	16,818	920	5.5	426	15,472	8,689

N.B.—The testing and vaccination of clinical suspects and contacts is a function of the Chest Clinic and is not reported here.

6. SUMMARY AND COMMENTS.

The year has been one of increased activity for the Central Board of Health and each Section of the Department of Public Health. Some local boards have shown more interest in health and have been more active in removing conditions that could adversely affect the health of people living in their areas.

Health Statistics.—A steady increase in the population of the State is noted. A slight increase in the infant mortality rate is mainly accounted for by more deaths from diarrhoea and pneumonia than in the previous years. Many of these were associated with an epidemic of gastro-enteritis during the winter months.

Legislation Administered by the Central Board and the Department of Public Health.—The most notable alteration to legislation during the year made provision for the Central Board of Health to permit reconstituted milk to be labelled "Pasteurized Milk" and to be sold to consumers as such.

Public Health Supervision.—The report of the Public Health Supervision Section shows the increasing scope and amount of the Department's work during 1958. Though both have increased considerably from previous years there still appears to be much more that should be done and could be done if more staff were available. This applies particularly to the prevention of hazards to health in industry, to the supervision of food and drugs and to the installation of septic tank sewage disposal systems.

Communicable Disease.—The dramatic decrease in the incidence of poliomyelitis since 1951 continued during 1958. It is hoped that artificial active immunization carried out by the Poliomyelitis Section of the Department will help to maintain a low incidence.

Infective hepatitis and gastro-enteritis occurred in many parts of the State in epidemic form. At present the control of these diseases depends mainly on improved standards of sanitation.

The six deaths from tetanus could most likely have been prevented by artificial active immunization.

The presence of other communicable diseases, even though in small numbers, indicates that control cannot be relaxed in any way. Though many local boards and medical practitioners maintain a high degree of immunity among people in their areas by artificial active immunization it is considered that in other areas people have not sufficient immunity to prevent the spread of many communicable diseases in epidemic form. In such areas the need for action on the part of the Central Authority to supplement that of local authorities is evident.

Industrial Health.—Valuable work has been done in the field of industrial health. The extent of this work has however been limited because of inadequate staff.

School Health Services.—Details of routine and special work to improve the health of children are given in the report of the School Health Services of the Department. Increases in the number of children examined and decreases in the percentage of children examined who have physical defects are noted. The Deafness Guidance Clinic and the Dental Services were able to provide much needed attention to an increased number of children.

Poliomyelitis Vaccination.—By the end of the year the Poliomyelitis Section had given 891,826 injections of poliomyelitis vaccine. Vaccination was extended during the year to all persons up to the age of 45 years.

Tuberculosis.—The routine work of the Tuberculosis Section to control the incidence of tuberculosis in this State continued in the form of mass X-ray surveys, tuberculin testing, and B.C.G. vaccination. Although there were slight increases in the incidence and death rates for this disease, South Australia is still among those countries and States that have the world's lowest rates for tuberculosis.

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A. R. SOUTHWOOD, Chairman.	
J. B. CLELAND	} Members.
G. H. McQUEEN	
A. R. BURNELL	
A. BERTRAM COX	

R. L. PAECH, Secretary.

Adelaide, July, 1959.

