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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, 1969

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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. Albert James Shard, M.L.C.)

Sir—We have the honour to submit the report for the Department of Public Health and the Central Board of Health for the year ended 31st December, 1969.

The report is divided into the following sections:

1. Staff and administration
2. General
3. Environmental Health and Food and Drugs
4. Occupational Health and Air Pollution
5. School Health
6. Epidemiology
7. Tuberculosis
8. Summary and comments

Sections 2 to 7 deal with the activities of branches of the Department and have been prepared by the respective officers in charge.

1. STAFF AND ADMINISTRATION

Personnel of the Board—During the year the members of the Board were:

Chairman—Philip Scott Woodruff, M.D., B.S., D.T.M. & H., F.R.A.C.P.

Members appointed by the Governor—

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

Henry Joseph Nichol Hodgson, M.C.E., F.I.C.E., F.I.E.(Aust.), M.Inst. W.P.C.(Eng.), F.R.S.H. (as from 1/1/69 *vice* Sir John Cleland, resigned)

Member elected by the metropolitan local boards—

Clement Colman, J.P., F.R.E.I. (re-elected March, 1969 in terms of Section 16 of the Health Act)

Member elected by other local boards—

Alfred Bertram Cox, J.P., F.A.S.A., F.C.I.S. (re-elected March, 1969 in terms of Section 16 of the Health Act)

Secretary—

Robert William Laver, A.U.A.

Staff of the Department—As at 31st December, 1969, the principal staff consisted of the Director General of Public Health (Dr. P. S. Woodruff), the Assistant Director General of Public Health (Dr. G. H. McQueen), the Director of Tuberculosis (Dr. C. P. V. Evans), the Principal Medical Officer (School Health) (Dr. C. O. Fuller), the Principal Medical Officer (Occupational Health) (Dr. K. J. Wilson), the Principal Medical Officer (Epidemiology) (Dr. Z. Seglenieks), the Geriatrician (Dr. R. Greenlees) and the Secretary (Mr. R. W. Laver).

Dr. Evans was appointed as Director of Tuberculosis to replace Dr. Paxon who transferred to the Commonwealth Government service at the beginning of the year. Dr. Seglenieks was appointed as Principal Medical Officer (Epidemiology) following the transfer of Dr. Jeanes to the position of Medical Director of the Mothers and Babies' Health Association. Dr. R. Greenlees joined the staff of the Department as Geriatrician in April, 1969.

The number of employees of the Department at the 31st December, 1969, was 269.

During 1969, Dr. Seglenieks visited several European countries and the United Kingdom as the holder of a Public Health Travelling Fellowship awarded by the National Health and Medical Research Council. Dr. Evans attended the 20th National Tuberculosis Conference in New York in September, 1969, and visited tuberculosis institutions in the United States of America, Canada, the United Kingdom and Europe.

The National Health and Medical Research Council and Committees—The 68th Session at Brisbane in May, 1969, and the 69th Session at Canberra in November, 1969, were both attended by Dr. P. S. Woodruff as State representative on the Council and the Public Health Advisory Committee. Dr. Woodruff is also a member of the Medical Research Advisory Committee, the Standing Grants Committee A, and the Medical Research in Aborigines (Reference) Sub-Committee.

The following officers of the Department are members of various Committees as indicated:—Dr. G. H. McQueen (Occupational Health Standing Committee), Dr. K. J. Wilson (Radiation Health Standing Committee), Dr. C. O. Fuller (Health Education Standing Sub-Committee), Mr. R. C. McCarthy (Poison Schedules Standing Sub-Committee and Health Advertisements Standing Sub-Committee), and Mr. G. L. Robinson (Food Standards Standing Committee).

Clean Air Committee—During the year, the Committee finalized the regulations to control dark smoke and submitted them for consideration by the Government. These were gazetted in November. Two sub-committees were formed to consider the making of further regulations to control particulate emissions and pollution from motor vehicles.

Mr. J. E. Shannon was appointed to the Committee as the nominee of the United Trades and Labour Council of South Australia, *vice* W. A. Brown, deceased.

Drainage Co-ordinating Committee—This committee continued to meet during the year and has investigated a number of specific problems relating to drainage in country areas. Various recommendations have been made to the Director and Engineer in Chief and the Director General of Public Health with a view to establishing appropriate drainage systems throughout the State to ensure the maintenance of sanitary conditions and the protection of water supplies.

Good Health—Three issues of *Good Health* were published and distributed to all local boards of health, officers of health and other interested persons. The following articles were included:—

Issue No. 132—

"I can't hear you for those bells", a paper given by Professor W. A. Cramond, O.B.E., M.D., D.P.M., at the Symposium on Noise in Industry in 1968.

"The History of Hospital Cross-Infection", by Kevin Anderson, M.D., M.R.A.C.P., M.C.P.A., M.C.Path.

"Portraits in Public Health", featuring Dita Hartwig, B.Sc., S.C.M., R.N.

"Public Health Nurse in Canada", by Dita Hartwig.

"Tottenham 1957—Adelaide 19 ", by B. H. Jeanes, M.B., B.S., D.P.H.

"Smallpox Vaccination Guide".

Issue No. 133 was entitled "Noise and the Ear" and included a foreword by the Minister of Health (Hon. R. C. DeGaris, M.L.C.), and covered the following subjects—

"Effects of Noise on Hearing"

"Hearing Conservation Programmes"

"Noise Measurement and Evaluation of Noise Exposure Hazard"

"Engineering Noise Control"

Appendices dealt with—

"Results of Audiometry"

"Typical Noise Survey Results"

"A weighted sound level as a single number rating for noise"

Issue No. 134 was devoted to the subject of "Senior Citizens" and included the following articles—

"Family Doctors and Senior Citizens", Dr. R. T. Steele.

"Keeping Old People Well", Dr. Rollo Greenlees.

"Programme for Ageing", Sir C. Stanton Hicks.

"On the Rehabilitation of Hemiplegic Patients." Dr. H. C. Robjohns.

"Geriatrics in the Modern World." Dr. Sidney Sax.

"The Ageing Skin." Dr. Trevor Turner.

"Hearing Handicaps in the Elderly." Dr. R. N. Reilly.

"Preparation for Retirement." G. N. Hunter and C. R. Lawton.

Inservice Conference—During October, 1969, a three-day residential conference for the staff of the Department was held at the Raywood Inservice Centre at Arbury Park, Bridgewater. The theme of the conference was "Appreciation of the future role of the Department in community health", and the programme was as follows:—

Introduction to the Conference—Dr. P. S. Woodruff.

Opening Address—Hon. C. M. Hill, Minister of Local Government.

Introduction to Raywood—Mr. R. O'Hare.

Keynote Address—Dr. Earle Hackett,

"Total Man in his Total Environment"—an appreciation of the future with emphasis on social needs.

Seminar "Appreciation of the Future Trends in Community Health"—

Government—Mr. W. F. Isbell, Under Secretary.

People—Mr. K. C. Taeuber, Public Service Board Member.

Money—Mr. G. H. P. Jeffery, Auditor General.

Demography—Mr. D. A. Speechley, Deputy Director of Planning.

"Community Health of the Future—the area of Public Health concern". Dr. P. S. Woodruff.

"The Department—Past and Present." Dr. G. H. McQueen.

Discussion Topics—

"Future role in control of cummunicable diseases."

"Future role in prevention of non-communicable diseases."

"Future developments in environmental health."

"Meeting the needs of specific social groups."

Thirty-four officers of the Department resided at Raywood for the period of the conference and other members of the Department and guests from other Departments and organizations attended individual sessions. The conference was highly successful and resulted in an improved understanding by officers of the objectives and aims of the Department and its probable future role.

Public Health Conferences—Following a successful Regional Public Health Conference arranged by the Department of Public Health for officers and members of local boards of health on Eyre Peninsula late in 1968, a similar conference was held at Mount Gambier in March, 1969. It is hoped to hold other regional conferences in the Upper Murray and Mid North regions at a later stage to supplement the major Public Health Conference held in Adelaide every two years.

The biennial Public Health Conference was held in Adelaide from 24th to 26th September, 1969, on the theme of the future role of preventive medicine. The programme covered the following topics:—

"The Modern Major Epidemics—coronary disease and lung cancer."

"Problems associated with various age groups—based on Shakespeare's seven ages of man."

"Accident and injury on the road."

"The role of Local Government in Public Health."

The conference was well attended by officers and members of local boards and representatives of other organizations concerned with public health.

Anaesthetics Mortality Committee—This Committee was set up with the approval of the Honourable the Minister in 1965 to investigate anaesthetic deaths, and following its first meeting recommended an amendment to the Health Act to preserve the confidential nature of information supplied. The Act was accordingly amended in 1966 by the addition of a new part IXc.

Three meetings of the Committee were held during 1969 and 12 cases were considered.

Maternal Mortality Committee—This Committee met once during the year and considered three maternal deaths.

2. GENERAL

(*a*) LEGISLATION

Health Act—In 1968, an amendment to the Health Act was passed relating to control of vermin infestations, the declaration of tuberculosis institutions and providing for fees for licensing of private hospitals to be fixed by regulation. This amendment was proclaimed to come into operation on 15th May, 1969, with the exception of the provisions relating to the fixation of fees for licensing of private hospitals as due to certain legal difficulties the preparation of regulations had been delayed.

Regulations under the Health Act—Existing regulations were consolidated and published in the *Government Gazette* of 13th March, 1969.

Amendments to regulations relating to infectious diseases were also promulgated during the year. These amendments incorporated recommendations of the National Health and Medical Research Council and related mainly to provisions concerning contacts of persons suffering from infectious diseases and periods of exclusion of sufferers and contacts from schools. The necessary alterations were also incorporated in the Education Department Circular dealing with this matter.

Following recommendations of the Clean Air Committee, regulations under the Health Act were also published in November relating to Clean Air. These regulations provide for control of dark smoke from all sources other than vehicles, domestic incinerators, open fires on domestic premises or minor plant. Amongst other provisions, the regulations prohibit open fires for the incineration of industrial or commercial waste without the approval of the local board of health. These regulations will come into force on 1st January, 1972.

Regulations under the Food and Drugs Act—A minor amendment was published during the year correcting the numbering of an earlier amendment.

Regulations under the Dangerous Drugs Act—The existing regulations were revised to bring them into line with the International Single Convention on Narcotic Drugs. The opportunity was also taken to revise the regulations in accordance with present day practice in the prescribing and the use of dangerous drugs.

In connection with the new regulations it was necessary to proclaim several new drugs and the opportunity was taken to consolidate the previous proclamations.

(*b*) VITAL STATISTICS

The following information, supplied by the Deputy Commonwealth Statistician, is included in this report to show changes in the composition of the State's population in relation to the public health and the incidence of diseases reported during the year. Some figures are subject to minor revision. Details for 1968 are shown in parenthesis.

Population—The mean population for the State was 1,145,100 (1,126,200), showing an increase of 1.68 per cent (1.32 per cent) over the previous year.

Births—The number of births registered during 1969 was 21,977 (21,207) and comprised 11,262 (10,949) males and 10,715 (10,258) females. During 1969, 770 more births were registered than in 1968, and the birthrate was 19.19 (18.65) per thousand of the mean population. The number of male births for every 100 female births was 105.12 (106.74).

Still Births—Two hundred and eight (217) still births were registered.

Deaths Registered—There were 9,337 (9,916) deaths registered in 1969. The death rate was 8.15 (8.81) per 1,000 of the mean population.

Infant Mortality—A total of 347 (345) infant deaths were recorded. The infant mortality rate was 15.78 (16.27) per 1,000 live births, or 0.49 less than the previous record low number for 1968 (16.27). There were 248 (256) deaths of children under one month, and 99 (89) deaths of children aged from one month to one year. The main causes of infant deaths in 1969 are shown in Appendix 1.

Marriages—The number of marriages registered in 1969 was 10,599 (9,652). The estimated rate per 1,000 of the mean population was 9.26 (8.57). The average age at marriage of bachelors was 24.3 years (24.5) and of spinsters 21.7 years (21.8).

The above statistics are summarized in Appendix 2.

(*c*) GERIATRICS

Following his appointment as Geriatrician in April, Dr. Rollo Greenlees, M.B., B.S., F.R.A.C.G.P., visited various departments, institutions and organizations concerned in the care of ageing in South Australia and interstate.

In July a meeting of all organizations and persons concerned with the care of the aged was convened by the Honourable the Minister of Health to discuss recent Commonwealth legislation relating to State Grants for nursing homes, home care and para-medical services. From this meeting, an Advisory Committee on Home Care and Community Services to the Aged was formed, with Dr. Greenlees as the executive member.

This Committee indicated in a report to the Honourable the Minister of Health in November that the community lacked a central accessible point for information, advice and co-ordination of these services. The Committee concerned itself with co-ordination elimination of overlap, what gaps existed in the services and how they could be rectified, and what new types of home help services unavailable in this State could be added.

It was suggested that pilot schemes should be started in one distant country town, a country town close to Adelaide, and in two parts of the metropolitan area. It was felt that, within the country towns, the hospital was best suited as a base from which these services could be organized and co-ordinated. In the metropolitan area, two schemes differing slightly in the method of administration should be tried; one based on The Queen Elizabeth Hospital and expanding from there into the community, and the second plan based on a metropolitan council, probably developing from a Senior Citizens Centre.

Home visits have been made by the Geriatrician at the behest of doctors, patients, and relatives of patients, and their problems were, in the main, solved. However the continuing lack of hospital facilities for assessment of such problems diminishes the effectiveness of any geriatric service.

The Geriatrician is most grateful to the Geriatric Department of Mental Health Services for their advice and co-operation, and particularly to the Acting Director of the Social Welfare Department for allotting three beds for geriatric assessment purposes in the Magill Home.

(*d*) LIBRARY

In July, 1969, the library attached to the Department and staffed by an officer from the State Library became a combined library for the use of officers of both the Department of Public Health and the Hospitals Department.

Loans from the library (including books and periodicals) amount to approximately 700 per annum and there are now 82 periodical titles currently being circulated to approximately 40 departmental officers. Apart from a number of new books, pamphlets and periodicals which have been added to the library, books are borrowed from other libraries.

In order to keep officers abreast of current acquisitions, the Library Accessions List is now being issued quarterly, and also includes current articles of interest, indexed in the library catalogue from periodicals received. Accession lists of other libraries are also being circulated.

(*e*) ROYAL SOCIETY OF HEALTH

At the examination conducted by the Society's South Australian Board of Examiners, 28 candidates sat for the Diploma of Health Inspection and 19 passed both written and practical examinations. Eleven candidates sat for the examination in Meat Inspection and eight passed. For the examinations in Food Inspection, 15 sat and 14 passed the written examinations, whilst two failed in the practical examination. Of the candidates who sat for the Diploma of Meat and Other Foods Inspection, five successfully passed all examinations necessary for the Diploma.

(*f*) REPORT OF MEDICAL OFFICERS AT GAOLS AND PRISONS

Officers of the Department of Public Health provide a full-time service of medical examinations and treatment of prisoners at the Adelaide Gaol, Womens Rehabilitation Centre and Yatala Labour Prison. The following statistics indicate the work performed:

	Male	Female	Total
Adelaide Gaol—			
Number of prisoners examined	6,478	1,013	7,491
Of which the new admissions were	3,895	338	4,233

Womens Rehabilitation Centre (from December, 1969)—

Seventy-six prisoners were examined, of which 24 were new admissions.

From these institutions 86 persons were referred to outpatients departments of public hospitals whilst 22 were admitted to public hospitals.

Yatala Labour Prison—	
Number of prisoners given complete medical examination	343
Number of prisoners attending sick parades	1,918
Number of prisoners admitted to public hospitals	35
Number of prisoners given minor surgery	34
General anaesthetics given	1
X-rays	124
Deaths	1

3. ENVIRONMENTAL HEALTH AND FOOD AND DRUGS INSPECTION

General Inspections—General Inspections were carried out in 25 country local board of health areas. Follow-up inspections to previous General Inspections were carried out in 27 country local board of health areas.

Salmonella Outbreak—Following an outbreak of salmonella infection in one area in the Adelaide Hills. 14 samples of septic tank effluent were bacteriologically examined. Salmonella organisms were found in four.

Quarterly Meeting of Health Inspectors—Meetings of Inspectors of local boards of health were held in March, June, September and December. Those who attended received handout material on matters relating to public health. Field visits and talks on various subjects were organized.

Private Hospitals, Rest Homes and Child Minding Centres—The Public Health Nurses visited 249 Private Hospitals, 15 Rest Homes and 52 Child Minding Centres in local board areas throughout the State. Reports of inspections were forwarded to the various local boards concerned. Improvements are being effected in these premises.

Colombo Plan Students—Lectures were given to a group of Colombo Plan Students in Australia on a Group Course in Public Health Engineering and they were conducted on several supporting field visits. Subjects covered included control of airborne infection, insect-borne diseases and control, food and health, milk sanitation and air pollution control.

Survey of Mosquito Breeding—During January and February, 1969, a survey was completed of mosquito breeding areas in the coastal swamps extending from Outer Harbour to St. Kilda.

The objectives of the survey were to establish—

- the species of mosquito causing the nuisance,
- the location of their breeding grounds, and
- the effects of weather and tides on mosquito breeding.

These factors were generally established and as a result short term action in the form of aerial and ground spraying, using organic phosphate insecticides, was carried out during the following summer. Inspections and the supervision of the treatments was carried out by an officer from the Department of Public Health. Finance for short term control treatment was made available by the local boards of health, government departments and organizations with interests in the area.

Ultra Low Volume Malathion was the insecticide used for general application from the air and on the ground. The ground treatment of infested areas was commenced in November and the first aerial spraying over 400 acres was done in December. Additional treatment was carried out by hand using insecticide granules and liquid insecticides applied by a departmental portable misting machine.

Occupational Health and Air Pollution—The public generally, local boards, trade unions, and other Government Departments are increasingly seeking advice and assistance from departmental officers in regard to occupational health and air pollution problems.

Hearing conservation programmes were continued at 11 premises, both in the metropolitan area and the country, with sound pressure levels being recorded at six other premises, which in one instance led up to a hearing conservation programme being extended.

Complaints of excessive noise, both industrial and environmental were investigated at 17 different premises. These complaints, covered a wide field ranging from aircraft, combing hammers, automatic car washers, refrigerators, air conditioners and compressors, engineering shops and ships' engines.

Inspections were continued of all X-ray units and radioactive isotopes used for industrial purposes to determine their compliance with the recommendations of the International Commission on Radiological Protection.

Investigations were conducted following 13 complaints dealing with fumes and 10 concerning dusts. Many of these necessitated air sampling by scientific means to reach a satisfactory conclusion.

Complaints concerning smoke, atmospheric fall out and air pollution were also investigated.

During the year deposit gauges for collecting atmospheric fall out and sulphur dioxide monitors were regularly maintained. Several Hirst spore traps were installed in the metropolitan area for the Asthma Weather Spora Project. One of these units is being maintained daily by this section in conjunction with the sulphur dioxide monitors maintenance.

Further information on occupational health and air pollution is given in section 4 of this report.

District Inspectors—In addition to District Inspectors residing at Whyalla, Port Pirie, Loxton and Mount Gambier, three additional appointments were made in September for Port Augusta, Oodnadatta and Ceduna. Officers have taken up residence in Port Augusta and Oodnadatta, and the officer appointed to Ceduna will reside in that town when housing is available. Financial assistance from the Commonwealth Government enabled the appointment of these three Inspectors who are primarily engaged on work associated with Aboriginal health. The appointment of these additional Inspectors has enabled a better coverage of the State to be achieved, especially in areas outside of local government where the Central Board of Health and the Department is solely responsible for all matters concerning health and the environment.

The Resident District Inspectors in other areas continue to provide a valuable service in advising and assisting local authorities in the administration of health legislation and a high level of co-operation has been achieved. In addition, these officers are increasingly engaged in matters which are the sole province of the Department, particularly in regard to the supervision of septic tank and common effluent drain installations.

Septic Tanks—Three thousand four hundred and ninety-five plans of septic tank systems were examined and approved. Approximately 54 per cent of septic tanks installed were in the outskirts of the metropolitan area where regular daily inspections are made. Resident country and Adelaide-based District Inspectors have carried out regular septic tank inspections in other areas.

Departmental officers have continued to act in an advisory capacity, supplying technical information to inquirers with regard to plumbing in connection with septic tank systems, and effluent disposal.

Specialized design and technical assistance has been supplied to provide for the construction of satisfactory septic tank effluent and liquid waste disposal systems for hospitals, industrial projects, caravan parks, holiday camps, and South Australian Housing Trust and other buildings erected by the Public Buildings Department.

Subdivisions—The State Planning Office submitted plans of 42 subdivisions to this Department during the year. The subdivisions were inspected to determine the suitability of the building allotment areas for satisfactory disposal of domestic septic tank effluent and waste water within the confines of each allotment. These subdivisions varied from a half acre to 87 acres in area. They were located in and near the metropolitan area, and in the following towns:—Encounter Bay, Clayton, Goolwa, Hindmarsh Island, Murray Bridge, Port Pirie, Port Augusta West, Quorn, Kimba, Port Lincoln and Ceduna.

Common Effluent Collection Drains—Since 1960, Local Government Authorities in South Australia have made applications to the Central Board of Health for assistance in providing designs for 71 townships.

At the beginning of the year, nine townships in country areas had been provided with common effluent drainage systems with 78.3 miles of gravitational drains, installed at a cost of $907,924 and approximately 57 miles of gravitational drains had been installed in the metropolitan area. In the area of the City of Tea Tree Gully, common effluent drainage areas are being interconnected with Engineering and Water Supply Department trunk sewers.

During 1969 further common effluent drainage systems were completed at Bordertown, Cleve, Kapunda and Port Elliot, with extensions to existing systems at Barmera, Renmark and Tea Tree Gully. These installations of 53.9 miles of gravitational drains cost $461,947.

New enlarged oxidation lagoons have been constructed at Barmera and Berri. Officers of the Public Health Department have carried out constant supervision and recording of all installed work.

Construction of common effluent drains was commenced in Lock and portion of the town of Streaky Bay.

Final designs have been completed, plans and specifications prepared and supplied to Local Government Authorities for the Townships of Mount Barker, Mount Pleasant and Meningie and for extensions at Pinnaroo and Barmera.

Final designs of common effluent collecting systems were in course of preparation at the end of the year for the Townships of Riverton, Paringa, Parndana, Cummins and Port Augusta, together with extensions at Waikerie and Barmera.

A review was also in progress of an effluent collecting system designed by a private consultant for the township of Clare with a view to amendment of the design to reduce cost of construction.

Preliminary surveys and tentative designs have been prepared for the townships of Tanunda, Lameroo and Paringa.

In a public relations programme Central Board of Health officers attended meetings of country local boards of health, councils, ratepayers, and drainage committees for the purposes of explanation of common effluent drainage systems. This has proved most successful as it has assisted councils in assessing drainage problems, and making decisions relating to construction as well as creating a greater awareness of aesthetics and healthful environmental conditions.

Microbiological Specimens—During the year, 1,066 specimens were submitted by the Inspection Section as part of its own work and on behalf of local boards of health to the Institute of Medical and Veterinary Science. Specimens submitted were mainly faeces and food.

Eggs—Samples of eggs known as 18-day incubator clears were bacteriologically examined and found to be free of pathogens.

Samples Submitted through the Central Board of Health to the Department of Chemistry for 1969:—

Article	No.	Result of Analysis	Action Taken
Milk	626	Fifty failed to conform	Twenty-five prosecuted; 11 warned; 10 investigated; four no action
Bread	121	Thirty-three failed to conform	Eight prosecuted; 16 warned; three no action; six investigated
Sausage and sausage meat	87	Forty-nine failed to conform	Eighteen prosecuted; 21 warned; 10 investigated
Butter	5	Three failed to conform	Two warned; one investigated
Cake	1	Failed to conform	Investigated
Manufactured meat	3	One failed to conform	Warned
Cream	5	Passed	—
Cheese	8	Five failed to conform	Prosecuted
Wheatgerm	1	Passed	—
Meat	9	Passed	—
Raw chops (pork)	1	Passed	—
Cooked dried apricots	1	Passed	—
Apricot pie	1	Failed to conform	No action
Cooked oats	1	Passed	—
Imported fish	4	Passed	—
Orange drink	3	Two failed to conform	Warned
Icecream	1	Passed	—
Oenocyanine	1	Passed	—
Stewing steak	1	Passed	—
Sugar	1	Failed to conform	Investigated
Meat pies	6	Five failed to conform	Two warned, three investigated
Mince pies	11	Three failed to confrom	Investigated
Flavoured drink base	1	Passed	—
Gelatine	1	Passed	—
Hippy Sippies	1	Passed	—
Pure fruit juice	3	Passed	—
Instant coffee	1	Passed	—

Poultry Processing Premises—During 1969 a further 33 poultry processing premises were inspected, making a total of 53 since the survey began in August, 1968.

Many of the premises were of poor construction and the processing occurred in unsatisfactory conditions.

As a result of the inspections, nine processors have completed renovations to their premises, 27 processors have closed their premises, and 17 premises are being renewed or renovated.

Twenty-two samples of water used in poultry processing were bacteriologically examined; *E. Coli* was found to be present in 17 of these samples.

Wine and Spirits—During the year 243 licensed premises, including hotels, wine saloons, motels, booths and restaurants, were visited in the metropolitan and country areas. Tests were made of 6,448 opened bottles of wines and spirits for sale at these premises, and of these 24 samples were obtained for official analysis.

The Central Board of Health subsequently authorized legal proceedings under the Food and Drugs Act against six licensees of hotel premises concerned. Of these, successful legal proceedings have been conducted in five cases against persons for adulteration and misrepresentation of wines and spirits, with one case pending.

Reconstituted Milk—One hundred and eighty-one thousand five hundred and thirty-four gallons of milk were reconstituted and sold as pasteurized milk, using 5,004 lb. of skim milk powder.

Food and Drugs Advisory Committee—The Advisory Committee under the Food and Drugs Act discussed the return of unsold bread from shops. As it was clear that there was no unanimity in the industry on the matter, the Committee decided to await further representations from those concerned before making any recommendations.

Recommendations for the amendment of the Regulations in relation to the cyclamates were made on the lines of the recommendations of the National Health and Medical Research Council. The proposals require foods containing cyclamates to be labelled with the statement "Take on Medical Advice Only".

Recommendations were made for the inclusion of the cyclamates and aminopyridine in the Poisons Schedules.

Dangerous Drugs—The Dangerous Drugs Regulations were redrafted and gazetted; major changes in relation to the control of the Codeine group of drugs were made in accordance with the Single Convention on Narcotic Drugs.

Six addicts were added to the list, but 12 were deleted following cure or disappearance. The total number of addicts listed for the year was 29. The number of persons receiving long term treatment with dangerous drugs, not including addicts, was 167.

Drugs of Dependence—Following a conference of Commonwealth and State Ministers, the National Standing Control Committee on Drugs of Dependence was set up with Commonwealth and State representatives. The Director General of Public Health, Dr. P. S. Woodruff, and Superintendent E. L. Calder of the Police Department are the South Australian members. The Committee is dealing with matters relating to legislation, penalties for trafficking and education programmes.

Interstate Meetings—The Senior Pharmaceutical Inspector, Mr. R. C. McCarthy, attended meetings of the Poisons Schedules Sub-Committee of the National Health and Medical Research Council, the working parties of Commonwealth and State officers dealing with psychotropic drugs and therapeutic substances, and the Health Working Party of the National Standing Control Committee on Drugs of Dependence.

4. OCCUPATIONAL HEALTH AND AIR POLLUTION

General Activities—The specialized services and facilities of the Occupational Health and Air Pollution Branch for assessment and control of occupational hazards continued to be increasingly recognized, especially by industrial management and other Government Departments. This is reflected by the frequency of requests for investigations into existing or potential hazards in the occupational environment and for advice or information on physical or chemical substances or processes.

A total of 246 investigations requiring technical assessment by Branch officers were made during 1969 following requests from industrial management, labour organizations, Government Departments and local boards of health.

A change in the work pattern of the Branch has resulted from the increase of investigations of individual industrial problems. Less time is available for Branch officers to initiate and conduct surveys of known hazardous processes or industrial environments. Thus, although the survey of lead processes continued, only two other small surveys of toxic chemical processes were undertaken. No noise surveys were initiated by the Branch; however, 38 assessments of noise exposures were made in response to industrial requests.

This trend is pleasing, indicating an increasing awareness by industry of the need for closer attention to industrial hygiene. On the other hand, it does reduce the time available to the present staff for overall surveillance of industry and for applied research into potential occupational hazards.

Arrangements were made during the year for the nurse engaged on work associated with medical examinations to be available part-time for undertaking duties as an occupational health nurse. It is well recognized that some aspects of occupational health services and surveillance are most effectively carried out by a trained nurse. These include audiometric testing and hearing protection advice in hearing conservation programmes, occupational health education, and liaison with and support for industrial nurses employed by individual enterprises. An initial contact was made with the nursing staff of metropolitan industrial enterprises and detailed inspections of medical facilities were carried out at three firms. Assistance was also given in some of the routine audiometric tests of the hearing conservation programmes conducted by the Branch. Industrial nurses have expressed appreciation of this extension of the Branch activities. It is hoped that more can be done in the future.

Occupational Health Education—Following the success of the lecture course on "Occupational Hazards in Industry", held in 1968, the Joint Organizing Committee (consisting of representatives of this Department, the Safety Engineering Society of Australia (South Australian Branch), the National Safety Council of Australia (South Australian Division) and the Department of Labour and Industry) felt that further courses dealing with specific industries or specific hazards would be beneficial.

A seminar on "Occupational Health Aspects of Foundry Practice" was organized and presented in July, sponsored by the Institute of South Australian Foundrymen and held by courtesy of Chrysler Australia Limited at the Lonsdale Foundry. The programme included lectures on common industrial hazards occurring in foundries and also on general safety practices and the organization of safety programmes, a tour of the modern foundry installations, and a panel discussion.

Lectures or addresses were given to several organizations by officers of the Branch during the year on various aspects of occupational health.

A publication entitled "Noise and the Ear" was prepared by members of the Advisory Committee on Noise and published as a complete edition of Good Health. This booklet has been distributed to all South Australian industries, Government Departments and local authorities. It has evoked widespread interest, which resulted in many local and interstate requests for copies.

"A case of dry gripes"—a report of lead poisoning from home-made wine, was prepared by Dr. E. F. Harben and Dr. D. P. Reid and published in the Medical Journal of Australia, 1969, 2: 193 (July 26th).

Conferences and Committees—Under the sponsorship of several South Australian industrial organizations and the Department, Mr. R. G. Stafford attended the 16th International Congress on Occupational Health. This was convened in Tokyo, Japan, from 21st September through to the 27th September, under the sponsorship of the Permanent Commission and International Association on Occupational Health.

Following the Congress, Mr. Stafford visited several industries in Tokyo, Osaka and Nagoya, to study practices in the control of heat, dust, noise and radiation.

The annual meeting of Scientific Officers engaged in the field of Occupational Health was attended by Mr. G. F. Sweetapple in Melbourne in October. State Health Departments possessing an Occupational Health Branch, three other State Government Departments, two Commonwealth Departments and three private industries were represented. Subjects discussed included detector tube performance, gas fatalities, mercury

poisoning, aluminosis, hazards associated with application of dieldrin, petrol vapour concentrations, lead, Xanthate decomposition, spray painting, dust sampling, problems associated with industrial waste, personal protective devices. Papers were presented by Mr. Sweetapple on—

1. A more rapid method of estimation of ammonia in air.
2. Experiences with boron trifluoride ethylamine.
3. Naphthalene in air sampling.

Dr. E. F. Harben attended the 6th Annual Conference of the Ergonomics Society of Australia and New Zealand, held in Canberra in August. Eleven papers were presented and discussed. Some of the topics were "Safety in Australia and Overseas", "Ergonomics and Safety—is there a conflict?", "Human Stress as an Accident Factor", "An Analysis of Automobile Drivers' Control Movements" and "Requirements for Tool Handle Design".

The Occupational Health Committee of the National Health and Medical Research Council held two meetings during the year, one of which took place in Adelaide. Dr. G. H. McQueen attended as a member, and officers of the Branch were invited to one session of the Adelaide meeting.

The Radiation Health (Standing) Committee of the National Health and Medical Research Council held two meetings in Melbourne, one of each being attended by Dr. K. J. Wilson and Mr. R. G. Stafford. The Sub-Committee, of which Dr. Wilson was Chairman and Convenor, completed its work on a Code of Practice for the Safe Use of X-ray Analysis Units.

The Department was again represented by either Dr. K. J. Wilson or Mr. R. G. Stafford at meetings held in Melbourne and Adelaide of the Standards Association of Australia—Sub-Committee AK/3/1: Hearing Conservation, and Sub-Committee AK/3/2: Community Noise.

Officers of the Branch participated in the 41st Congress of the Australian and New Zealand Association for the Advancement of Science held in Adelaide in August.

New Equipment—The following major items of equipment were purchased during the year:

1. Mettler Direct Reading Laboratory Balance. This balance was acquired for weighing of chemical substances for preparation of test solutions and test papers for air sampling apparatus.

2. Unican SP600 Spectrophotometer. The instrument has enabled reference colours which are employed in direct reading field sampling apparatus to be standardized effectively. The instrument has been particularly useful for coproporphyrin standards.

3. Mine Safety Appliances Monitaire Personal Sampling Pump. A second pump of this type was purchased to facilitate the monitoring of the air breathed by an individual workman during a whole work shift. Formerly only one person could be under observation at one time.

4. Bruel and Kjaer Sound Level Meter Type 2205. This instrument has been found to be particularly useful for preliminary noise surveys of industrial plants.

5. Philips Radiation Monitor Type PW 4014. This monitor has been used extensively during the annual survey of irradiating apparatus.

Medical Examinations—Examinations of applicants for acceptance for the South Australian Superannuation Fund and for other specific purposes associated with the Public Service were conducted during the year. Due to a policy change of the Public Service Board, very few examinations were for fitness for permanent appointment.

Permanent Appointment and/or Superannuation Fund—

Public Service Board	5
South Australian Superannuation Fund	549
State Bank	4
Australian Mineral Development Laboratories	12
South Australian Institute of Technology	40
Medical Examinations carried out elsewhere (checked by Department)	114

Special Examinations—

Housing Loans Redemption Fund	8
South Australian Harbors Board (Pilots)	11
Entry to Aboriginal Reserves (Mines and Lands Departments)	19
Miscellaneous (Invalidity, job suitability, etc.)	15
	777

Industrial Dermatitis—Sixty-nine cases of industrial dermatitis causing loss of time were reported by the Department of Labour and Industry (up to the week ending 12th December). Inquiries were made into 16 of these reports. One causative agent was a solvent containing toluol, xylol and butanol contaminated with formaldehyde. Other causative agents were detergents, resins, kerosene, rubber additives, cement, "Dx[4]", and sulphuric acid. A number of cases of dermatitis followed abrasions or minor cuts to the hands.

Asbestos—Reported cases of cancer of the lung and pneumoconioses are being followed for an occupational history of exposure to asbestos. General practitioners were asked to co-operate in the study of lung cancer follow-up, but as no adequate occupational history could be given, this necessitated personal interview of the patient or relatives by Branch officers.

One hundred and seventy-three cases of lung cancer were reported during the year. Of 60 cases followed up, four were not willing to enter the study and eight had left the home addresses shown in the hospital records. While results to date are insufficient for full analysis, some interesting observations have been made. In two cases, identical twins died of lung cancer; eight cases gave a family history of cancer (mother, sister or brother); 51 men were smokers (20 or more a day), no non-smokers being found; amongst the women there were seven non-smokers and one smoker. Occupation varied—teacher, cane cutter, bricklayer, cabinet maker, farm worker, printer, fitter-turner, spray painter, hairdresser, quarryman and office worker. Two histories were obtained of possible exposure to asbestos—an odd job man in a shipyard, and another involved with asbestos packing and wearing asbestos gloves as a boilermaker.

Radioactive Substances—A register is being maintained of film badge results of all employees handling radioactive substances in industry or engaged in industrial radiography. Excessive single doses or cumulative doses have been checked and employees warned of any apparent lapses in good practices.

One radiation accident occurred during the year, causing excessive doses to three operators engaged in industrial radiography. The rewind gear of a gamma camera failed so that the source could not be returned to its container. Exposure of the operators occurred during emergency action to safeguard children due to leave a nearby school. The operators were transferred for three months to other duties not involving radioactive sources.

Lead—Lead estimations (blood and urine) were made on lead workers. A register for all lead workers (battery manufacturing) is being maintained and laboratory estimations of urinary coproporphyrins are being carried out. A correlation between these and urinary ALA and blood lead values is to be studied over the next year in an endeavour to establish a simple reliable screening test for lead exposure.

Inspections of scrap metal dealers were made to determine to what extent battery breakers are exposed to lead. It is planned to carry out sampling and coproporphyrin screening tests on the urine of these workers. Following an overseas report of a case of lead poisoning due to a lead glaze in a drinking vessel, the use of such material by potters was investigated. Inspections were made at pottery clubs and at various schools. It was found that in only very few instances were lead compounds used, and in these instances the quantity and frequency of use was small. Some commercially available glazing compounds were analysed for lead, but further work remains to be done.

Air sampling was again carried out at three firms in which lead acid batteries were manufactured. In only one firm was there sufficient repetition of the process to permit a reasonable assessment of occupational exposure. In this instance and others many of the operations involved in battery manufacture were responsible for Threshold Limit Values of lead-in-air being exceeded. Corrective measures were advised. The non-repetitive nature of work in other factories probably prevented operators from absorbing too much lead.

At the request of the South Australian Railways, occupational exposure during the manufacture of alloys containing lead was assessed. The results of air sampling indicated that under normal conditions operators were unlikely to be excessively exposed to the metal.

During the year a screening test was introduced for the determination of urinary coproporphyrin of lead workers. The aim was to assess its value as a reliable indication of excessive lead absorption. The test is simple, quick and cheap, and can be carried out with Branch facilities.

Although to date only 44 employees have been tested, the screening test has been effective in indicating persons who have excessive occupational lead absorption. Further work is necessary before a correlation can be established between this and other measurements, such as haemoglobin, blood lead and ALA.

Surveys of other toxic substances—Two minor Departmental surveys were carried out as the result of requests namely, assessment of carbon monoxide generation from town gas fires, and exposure to trichlorethylene in coin-operated dry cleaning machines. In the first survey the possibility was examined that partial modification of gas appliances during the conversion for use of natural gas might cause excessive carbon monoxide emissions. Apart from two instances in which gas appliances were faulty, no hazard from carbon monoxide was demonstrated. However, it is considered that the safety of operation of gas appliances in small spaces in present day dwellings should be investigated and, if necessary, a code of space requirement and ventilation established.

Following an overseas report of a death due to exposure to perchchlorethylene from a freshly dry cleaned sleeping bag, a survey was undertaken to determine whether there was any danger to customers or laundry attendants associated with the use of coin operated dry cleaning machines. Inquiries revealed only one machine at present operating in South Australia, and that under ordinary circumstances hazards were not likely to occur.

The illness of an operator using carbon tetrachloride in a mixed fumigant for wheat was investigated. Inquiries revealed that fumigation by carbon tetrachloride is popular with farmers. Although the illness was considered not to be due to carbon tetrachloride it is planned to carry out further work in conjunction with the Department of Agriculture to determine a safe substitute or alternatively improvements for safer application.

Artificial Fertilizers—Air sampling was carried out at a country fertilizer factory to determine occupational exposure to fluoride fumes during superphosphate manufacture. Fluoride-in-air concentrations were not excessive at the situations sampled. It is planned to carry out further air sampling at two more country factories.

Foundry Fumes—Following a request from management, air sampling was carried out at a country foundry during the addition of certain substances to give special properties to ferrous castings. Exposure to iron oxide fume was found to be excessive and recommendations for improvements were made.

During an investigation of an industrial disability in a brass foundry worker due to a furane resin, the concentration of zinc fumes was also measured. The results indicated that there was little occupational hazard.

Welding—Air contamination by fumes during use of a new type of electrode and a new paint material for a large construction company was investigated. It was found that provided reasonable ventilation was applied during welding on the painted materials normally used, operators were not excessively exposed to toxic fumes.

Air sampling was carried out to determine the possible occupational effects during the process of flash butt welding of rails. Apart from iron dust generated during an adjacent process of rust removal, conditions were satisfactory.

Other investigations have been made of occupational exposure to fumes from welding on zinc-plated material and of exposure to vanadium by welding in a semiconfined space. No hazard was found in either situation.

Solvents—Occupational exposure to trichlorethylene was investigated at three factories as the result of request of management or of the Department of Labour and Industry. At one factory air sampling substantiated opinions that operators were excessively exposed to solvent vapours. At the second factory conditions were satisfactory, while at the third, where a large automated process was in operation, safety procedures for entering the unit were recommended to management.

A solvent used for printing ink was found to be dimethyl formamide. The substances caused intense skin lesions, and advice was given to ensure protection of employees.

Exposure during use of tetrahydrofuran for treatment of plastic material was assessed by measuring concentrations of the solvent in air. Occupational exposure was not excessive.

Service to the Australian Stevedoring Industry Authority—Assistance was requested on eight occasions by the Waterside Workers' Federation through the Australian Stevedoring Industry Authority. These requests involved assessments of hazards from escape of small amounts of chloropicrin vapour, handling of asbestos and sodium sulphide and the presence of an obnoxious smell. Testing was carried out in two ships' holds after methyl bromide fumigation. Where required, appropriate recommendations for personal protection were made.

Toxic Gases—Occupational exposure to ammonia in two factories was assessed by air sampling. In one factory excessive concentrations of the gas were found and appropriate recommendations for improvement of the conditions were made. The Company concerned agreed to make major modifications to the ventilation system provided.

Cyanide fumes were assessed in two situations, and conditions found satisfactory. The fumigation of a shipping container with methyl bromide was observed, and air samples taken from the interior of the container after a fixed period of time. Good practices were observed during the fumigation with little resultant danger to personnel.

Assistance was given to a local board of health in a localized air pollution problem. Chloropicrin used in fumigation of glasshouses was identified as being the cause of complaint by nearby residents.

At the request of a Union, air sampling was carried out for arsine at a large refinery, but concentrations found were well below the threshold limit.

Other Toxic Substances—Scientific investigation of occupational environmental contamination by the following substances was made: boron trifluoride ethylamine, a commercial amine additive for boiler water, dieldrin, zinc fumes, rockwool, hexachlorethane, "insulfibre", naphthalene, sulphuric acid mist, and iron dust.

Boron trifluoride ethylamine was employed as a catalyst for an epoxy resin used as an insulating material. Occupational exposure was well below acceptable limits. This was the first instance that this substance had been encountered occupationally in South Australia. The handling of the amine boiler water additive involved a severe case of cellulitis. Dieldrin-in-air was estimated during a moth-proofing process at a woollen mill, but was found in very small concentrations.

Recommendations were made for minimizing dermatitis resulting from the use of hexachlorethane. Samples were taken at a Government Department in which large amounts of naphthalene were used as an insect repellent, but apart from high concentrations within small confined spaces, occupational exposure was considered not excessive.

Sulphuric acid mist was determined at a large electrolytic metal refinery, and found to be within reasonable limits. Advice was given relating to the composition and use of an epoxy resin dust which was applied to metal by spraying.

Miscellaneous—As the result of inquiries from a wide variety of sources, information on toxicity, recommendations on safe handling and use, and general information was supplied on the following: arsenic compounds, Dinozeb, "Terric N5", unknown chemicals during demolition of a building, Thermoflex A, chemical additives to an air-conditioning plant, "glowglobs", and effectiveness and toxicity of sprays for the eradication of cockroaches.

The deposition of an oily material within a motor car was investigated. It was found that the deposit was the result of volatilization of a plasticizer in the upholstery and considered unlikely to be a health hazard.

A case of suspected arsenic poisoning was investigated, but arsenic was not considered to be the cause of the illness.

Survey of Irradiating Apparatus—During the year 629 units of irradiating apparatus were inspected by the Branch for compliance with the Radioactive Substances and Irradiating Apparatus Regulations and with recommended radiation protection standards issued by the International Commission on Radiological Protection.

The classifications and numbers of units of irradiating apparatus for which radiation protection details have now been collected by the Branch and coded on to punch cards for rapid retrieval by automatic data processing are shown below:

DISTRIBUTION OF IRRADIATING APPARATUS

	1967	1968	1969
Dentists	171	191	221
Hospitals	153	175	179
Medical Practitioners	98	113	135
Chiropractors	12	17	18
Veterinary Surgeons	5	10	12
Industrial	—	26	24
Research	—	37	40
Totals	439	569	629

As an aid to planning inspections of these units a series of punch cards has been prepared showing the name and address of the owner of each registered irradiating apparatus. The coding system and programme are compatible with the CDC 3200 Computer operated by the Automatic Data Processing Centre.

A print-out of this information has been made available to the Chairman, Radiation Health (Standing) Committee, National Health and Medical Research Council as a planning aid for the proposed "Survey of genetic and mean bone marrow doses to the Australian population arising from the medical, dental and chiropractic use of irradiating apparatus".

Survey of Radioisotope Limit Indicators—A total of 97 radioisotope limit indicators were inspected in industrial plants throughout South Australia, being an increase of five such indicators since the 31st December, 1968.

Each installation inspected was found to comply with the Radioactive Substances and Irradiating Apparatus Regulations in regard to:—

(*a*) level of radiation leakage from the source housing;

(*b*) adequate shutters and control of primary radiation beam; and

(*c*) appropriate labelling of the radioisotope container.

No such limit indicator showed signs of deterioration or an increased value of leakage radiation.

The radiation protection details for all limit indicators are now available, together with the name and address of the owner, on a computer print-out.

Radiation Protection Design—Radiation protection specifications for a medical clinic at Renmark were completed and forwarded to the architect in charge. Similar specifications were completed for two industrial radiography installations. On completion, each of these three projects was inspected to ensure compliance with the specifications issued.

Industrial Radiography—Radiation monitoring was conducted on site for several industrial radiography projects including the natural gas pipeline between Adelaide and Gidgealpa. The activity of radioisotopes used was found to vary considerably depending upon the work task; however, some quite large sources up to 25 Ci of Iridium 192 were in use.

The procedures adopted by employees working with unsealed sources indicated their awareness of the potential hazards with which they were involved in the course of their employment.

Safe Use of Medical X-ray Equipment—During May, 1969, the Branch issued to all users of medical X-ray equipment a copy of a Code of Practice entitled the "Safe Use of Medical X-ray Equipment—other than Therapeutic". The Code was well received and Section E, which deals with radiation protection for new X-ray installations, has been found most helpful.

Transport of Radioactive Substances—Several inquiries were received concerning requirements for the transportation of radioactive substances under the Radioactive Substances and Irradiating Apparatus Regulations. These included movement by rail of thorium hydroxide passed from Port Pirie to Port Adelaide, and road transport of iridium 192 and cobalt 60 between Adelaide and the Australian Atomic Energy Commission established at Lucas Heights in New South Wales.

Laser and Microwave Radiation—An investigation into the possible health hazards associated with the use of 1 milliwatt Helium—Neon Lasers in secondary schools was conducted, and recommendations forwarded to the Department of Education.

A further Code of Practice dealing with the safe use of lasers in industry was prepared for the Department of Labour and Industry.

Possible health hazards arising from the biological effects of microwave radiation from commercially available microwave ovens and microwave generators used in association with atomic emission spectroscopy have been investigated.

Advisory Committee on Noise—The Committee met on six occasions during the year.

Preparation was completed of the articles on hearing conservation in industry for a complete issue of "Good Health" under the title of "Noise and the Ear".

The Committee considered that the following areas relating to community noise other than noise in the occupational environment should be studied in the future:—

(*a*) industrial noise affecting mixed residential and industrial areas;

(*b*) motor vehicle noise;

(*c*) noise on building sites;

(*d*) noise in educational facilities;

(*e*) noise from entertainment sites;

(*f*) noise in offices and multi-family dwellings;

(*g*) transport noise (railways and aircraft); and

(*h*) noise in hospitals and similar institutions.

It was felt that consideration of the control of noise at the planning stage of new land subdivisions and building projects, and in the application of zoning by-laws was of prime importance. At the Committee's invitation, Mr. Stuart Hart, Chairman of the State Planning Authority addressed a meeting and explained the functions of the Authority and the aspects in which the Committee could be of assistance. It was agreed that the Committee would prepare recommendations which would allow local authorities to determine and adopt permissible noise levels relative to the Zones defined in the Model Planning Regulations of the Authority. Detailed consideration has been given to this proposal, in parallel with a Code of Practice for Noise Assessment with respect to Annoyance.

Hearing Conservation Programmes—The Branch continued to provide comprehensive supervision of hearing conservation programmes to interested organizations in private industry and some Government Departments. Two new programmes, including one Government Department, were commenced, bringing the total number of organizations to which this service is provided to 14. Audiometric tests on employees were made every six months and noise exposure assessments carried out as required.

Due to the turnover of employees, language barriers and individual employee problems, educational sessions in the form of lectures with films and slides must be conducted frequently to ensure continued acceptance of hearing protection. Similar sessions were held with management and employees of other enterprises to promote the need for an acceptance of programmes.

In several organizations, including some Government Departments, there appeared to be a lack of communication from top executives to lower levels of management, and little concern by middle management and supervisors for the need for hearing conservation. Consequently, although hearing protectors were made available to those at risk, in some cases little effort was made to encourage or require employees to wear them.

Some of the difficulties encountered were due to non-acceptance of the ear muff due to discomfort. A new, lighter muff was tested and seemed to be more acceptable; however, promises of supply by the agent were not fulfilled.

Details of this aspect of the work of the Branch are shown in Appendix 3.

Noise Surveys—Thirty-eight noise surveys were completed during the year, covering employees engaged in such occupations as electrolytic refinery of zinc, manufacture of iron ore pellets, manufacture of artificial limbs, production of pre-stressed concrete structures, and manufacture of agricultural equipment.

Some typical overall noise levels and associated octave band analyses recorded during the above investigations are shown in Appendix 4.

Hearing Damage Risk Criteria—During the year there was a marked increase in interest in hearing damage risk criteria, with the Branch receiving many inquiries from local industry together with requests from the Toowoomba City Council, Queensland, and the Australian Consumers Association, based in New South Wales, for publications dealing with noise exposure and noise exposure limits.

Such interest reflects an increasing awareness within industry of the hazards associated with excessive noise exposure, and it is felt that a large part of this increased awareness has resulted directly from the educational activities of this Branch.

As hearing damage resulting from occupational exposure to excessive noise levels is the most prevalent occupational disease within South Australia, it is imperative that accurate hearing damage risk criteria be made available to as many interested persons as possible. The practical application of the hearing damage risk criteria by industry will enable them to join with us in our efforts to stem this common and unnecessary form of hearing damage.

Air Ovens—During the year air ovens were installed in the kitchens of several hospitals and cafeterias. Following these installations a number of complaints were received of excessive noise and speech interference within the kitchens containing air ovens to which fans were directly attached. No such complaints were received from installations where the fans had been mounted at some point distant from the ovens with an air duct being placed in such a manner as to deliver the warm air to the oven.

It has been necessary to change the design of the fan, where the fan is attached directly to the oven, in order to obtain speech interference levels which are acceptable to employees in the working area.

Dust Exposure during Grinding of Mild Steel Bars—The dust produced during the above process may be regarded as inert or nuisance dust, to which is applied a maximum permissable concentration in air of 5 mgm/M^3 for the respirable fraction. The measured dust concentrations were found to vary between 0.5 and 2.8 mgm/M^3 and did not indicate the presence of a health hazard.

At the time of the survey it was noticed that operators were exposed to air-borne metallic particles arising from their own work operation and that of adjacent workers. Subsequent microscopic examinations showed these particles to resemble glass fibres, except that they were more irregular in shape. Such particles could well lead to skin irritation if trapped between clothing and skin. Such irritation would be predominant during the summer months. It was recommended that all employees engaged on grinding of mild steel bars be encouraged to shower thoroughly at the end of each shift.

Free Silica content of Cement Working Compounds—Cement workers are exposed to various sources of free silica. Measurements of free silica content of several of the compounds to which they are commonly exposed have been:—

Compound	Percentage Free Silica
Environmental dust on site	2.0
Salt of Sorrell	less than 0.05
White Cement	0.10
Black Oxide	0.15
Marble Chips	3.6
Gray Cement	0.75

The relative abundance of free silica in marble chips and environmental dust indicates the need for good housekeeping on building sites if employees are not to be exposed to a risk of silicosis.

Air Pollution—As the position of Engineer-Air Pollution became vacant in June, the degree of technical advice or assistance which could be given in matters of air pollution control was limited in the latter half of the year.

The "Clean Air Regulations, 1969" for control of dark smoke emissions were proclaimed in November, and will come into force on 1st January, 1972. These regulations have caused much interest in industry and many inquiries regarding interpretation have been received from industrial organizations and local boards of health.

During the year, 20 sources of alleged air pollution of various types were investigated frollowing complaints lodged with the Department or requests from local boards of health. Pollutants investigated included smoke, acid fumes, zinc fumes, pesticides, cement dust, wheat dust and other particulate matter. In one instance, a substance contaminating motor vehicles and allegedly originating from an industry was found to be an insect exudate.

Some of the complaints investigated were found to be justified, but corrective measures were not always simple or economic. Continued negotiation with the management of the firms concerned has resulted in progressive improvement.

Sulphur Dioxide and Smoke Monitoring—Measurements of atmospheric sulphur dioxide concentration and of smoke density were made at eight Adelaide metropolitan sites and at Port Pirie throughout the year. A second Port Pirie monitoring station, located within the Police Station property at Ellen Street, commenced operation on 1st July, 1969. The 1969 monthly average values and the corresponding highest daily readings for smoke density, expressed as Coefficient of Haze units, and of sulphur dioxide, expressed as parts per hundred million, for the metropolitan and country stations are given in Appendices 5 and 6. Details of analysis of particulate matter collected in deposit gauges at various metropolitan and country locations are shown in Appendix 6A.

5. SCHOOL HEALTH

The programme of medical examinations for the year was completed in most areas. The appointment of medical officers in June, October and November enabled this to be done despite several resignations during 1969 and the full complement of 10 medical officers not being maintained throughout the year.

Private schools were included in the programme for the first time in 1969, and the following changes were made:—

Prior to 1969—

(*a*) Annual visit programme for schools within a 60 mile radius of Adelaide and six country centres (Mount Gambier, Upper Murray, Port Pirie, Port Augusta, Whyalla and Port Lincoln) containing 88 per cent of the total school population—

Full medical examination (Doctor/Sister team).

Primary—Grades I, IV, VII. Secondary—2nd and 4th years.

(*b*) Three yearly visit programme for remaining schools, containing 12 per cent of the total school population—

Full medical examination (Doctor/Sister team).

Primary—all grades. Secondary—all grades.

1969—

(*a*) Annual visit programme for schools within a 60 mile radius of Adelaide and six country centres (Mount Gambier, Upper Murray, Port Pirie, Port Augusta, Whyalla and Port Lincoln) containing 88 per cent of the total school population—

(i) Full medical examination (Doctor/Sister team).

Primary—Grades I, VII. Secondary—3rd year.

(ii) Screening of vision and hearing (Screening Sister).

Primary—Grade IV. Secondary—5th year.

Also check absentees, recalls and follow-ups from previous year.

(*b*) Three yearly visit programme for remaining schools, containing 12 per cent of the total school population—

Full medical examination (Doctor/Sister team).

Primary—all grades. Secondary—all grades.

The statistics are now divided into full medical examinations on children from all schools (Appendix 7) and screening examinations (Appendix 8).

To enable private schools to be brought up to date as quickly as possible, tests were made of vision and hearing of all primary and secondary school children in private schools, in addition to the full medical examination of Grades I and VII and 3rd year Secondary.

The total Education Department enrolment for 1969, which includes the Northern Territory, was 234,652 and the enrolment for South Australia only was 226,091.

The total private school enrolment for 1969 was 36,100.

(*a*) MEDICAL SECTION

Total Examinations Carried Out in all Schools—The number of children examined or screened in the 675 schools visited during 1969 was 123,066. Details are shown in Appendices 7, 8 and 9.

The parents of 39 children requested that their children be exempted from medical examinations.

Details of communicable diseases notified in Education Department schools are shown in Appendix 10.

Examinations Carried Out by School Health Branch Staff at 158 Rundle Street, Adelaide—

(1) *Medical Examinations of School Children Seen Previously at Schools*—Children may be asked to attend head office for further assessment of a particular defect before being referred to their family doctor, hospital or eye specialist.

Teachers and parents occasionally bring children to head office for advice and assessment of a particular problem. During 1969, 237 children were seen for additional assessment.

(2) *Medical Examinations Apart from School Children*—One thousand six hundred and seventy-five students entering or leaving the Teachers Colleges, or applying for Teaching Scholarships, Junior Teaching positions and Laboratory Assistantships were medically examined in 1969.

Teachers referred by the Education Department were seen before returning to duty from sick leave. Applications from teachers for invalidity pensions referred by the Education Department were considered and where necessary the applicants were examined. A total of 990 teachers were seen during 1969.

The total number of examinations carried out by the School Health Branch at head office was 2,902.

Pre-School Medical Examinations—The Pre-School Medical Examination Scheme was instituted in 1966 and by the end of 1969 approximately 28,000 children had been examined. The number examined in 1969 was 19,938—a significant increase over previous years.

Health Education Lectures—Dr. C. O. Fuller continued to lecture to each Teachers College, viz.—

1st Term—Western Teachers College—3 lectures a week for two weeks.

2nd Term—Adelaide Teachers College—6 lectures a week for three weeks.

3rd Term—Wattle Park Teachers College—5 lectures a week for two weeks.

As in previous years Dr. Fuller again lectured to Nurses at the Adelaide Children's Hospital.

Paediatric Refresher Week—Medical officers attended the refresher week at the Adelaide Children's Hospital.

Mothers Clubs—The demand for speakers continued and 24 metropolitan and country Mothers Clubs, School Committees or Parent groups were addressed by Branch officers.

Defect Notices—Under an arrangement approved by the Australian Medical Association, 3,112 forms S.H.B.5 (advice to parents of a defect) were returned by doctors and specialists to whom children were taken by parents. Their co-operation is gratefully acknowledged as it enables departmental records to be completed and the progress of these children followed.

S.H.B.5 Forms returned—

Metropolitan	2,316
Country	796
	3,112

(*b*) DEAFNESS GUIDANCE CLINIC

The Deafness Guidance Clinic completed its 11th year with a total of 3,710 attendances.

New cases were referred from the following sources:—

	Per Cent
Officers of the School Health Branch	85.4
Family Doctors	6.3
Parents	4.3
Others (Kindergarten Union, Teachers, Psychology Branch)	4.0

The liaison with the Education Department through the Advisory Panel for Deaf and Hard of Hearing Children has been maintained.

The monthly lists of all children discovered to have a significant loss have been continued and 276 were made the subject of specific letters. Of these 152 were discovered at the initial test.

In addition to children, tests were carried out on student teachers, scholarship applicants and public servants.

Screen Testing in the Field—Audiometric testing was conducted in Education Department and private schools and pre-school kindergartens associated with the Kindergarten Union of South Australia Incorporated.

A total of 7,534 children had pure tone audiometer tests. Of these 274 were found to have some hearing loss at the time of testing. Parents were notified accordingly and, where possible, further testing was carried out in the Deafness Guidance Clinic.

Audiometers supplied and maintained by the Commonwealth Acoustic Laboratory were used for all field work.

Appointments at Deafness Guidance Clinic—To avoid patients overlooking appointments, reminder notices are sent and this is responsible for maintaining a high attendance rate.

The figures for New Cases, Retests and Disposal are given in Appendices 11 and 12.

(*c*) DENTAL SECTION

The year was marked by three important achievements:

- The graduation of 14 dental therapists.
- The opening of six School Dental Clinics.
- The completion of the base line studies on dental disease in Adelaide prior to the fluoridation of water supplies.

(1) *Education Division*—

Sister Murphy, who was seconded from the New Zealand Division of Dental Health to assist in the training of therapists during the early stages of the training scheme, returned to New Zealand during the year, after completing 2½ years of most valuable service.

Dentists on the Field Staff attended the School for Dental Therapists for familiarization with the role of Dental Therapists in the service.

The third course of 16 students commenced in February. Due to delays in completing the structural alterations in the training school and installing the necessary equipment, the course of training was extended for the first group of trainees who commenced in 1967. The final examinations were held for these students in May, 1969, with the undermentioned results:—

Three passes with distinction,

Seven passes with credit,

Four passes.

On completion of training one girl transferred to New Zealand with her parents. The remainder commenced work in clinics built on sites at various country primary schools in June. Each girl was presented with a certificate and medallion at a graduation ceremony in May.

The results of the examinations held for second year students in December were:—

Four passes with credit,

Ten passes.

(Two students were granted supplementary examinations to be held in March 1970).

Results of examinations held for first year students were:—

Primary Examination in June—

Two passes with distinction,

Three passes with credit,

Eleven passes.

Intermediate examination in December—

Two passes with credit,

Eleven passes.

Three students were required to attend the school for additional practical work during the Christmas vacation.

The modification of lecture notes to bring them up to date continued and the two new courses (Human Relations and Gymnasium) introduced at the beginning of the year proved both interesting and beneficial to the students.

Lectures on Dental Health Education were given by the Senior Dental Officer to students at Adelaide, Wattle Park and Western Teachers Colleges as in the past.

To assist in the clinical training of the School Dental Therapist, children attending the following schools were offered treatment:—

East Adelaide Primary and Infant School.

Norwood Primary and Infant School.

Rose Park Primary and Infant School.

Marryatville Primary and Infant School.

Thebarton Primary School.

Details of the treatment provided in the Training School Clinic are:—

Children offered treatment	2,767
Children who accepted treatment	2,159
Children who attended the clinic	2,045
Number of restorations completed	9,431
Number of extractions	442

(2) *Field Service Division*—

The year began with nine dentists working in mobile clinics with chairside assistants. The Field Staff was reduced by five resignations and one transfer to the tutorial staff of the Dental Therapists Training School. Four graduates from the studentship scheme joined the service during the year.

Thirteen dental therapists who graduated in June began working in static clinics. Two of these later resigned on marriage.

Eight studentships for study for the degree of Bachelor of Dental Surgery at the University of Adelaide were granted.

The construction of the first eight static clinics on sites at primary schools in country areas fell behind schedule. The following clinics were fully functional by the beginning of the third school term:—

Nicolson Avenue Primary School—Whyalla
Scott Street Primary School—Whyalla
Willsden Primary School—Port Augusta
Solomontown Primary School—Port Pirie
Pirie West Primary School—Port Pirie
Peterborough Primary School—Peterborough

The clinics at Renmark and Murray Bridge were not completed by the end of the year.

Construction of six additional clinics at the following towns was commenced:—

Hincks Avenue Primary School—Whyalla
Carlton Primary School—Port Augusta
Airdale Primary School—Port Pirie
Loxton Primary School—Loxton
Millicent Primary School—Millicent
Kingscote Primary School—Kingscote

Plans were finalized for the construction of houses for Regional Dental Officers in nine country centres.

Dental Therapists have been provided with accommodation in Housing Trust homes at three country centres.

Children from the undermentioned areas were treated in mobile clinics during the year:—

Kangaroo Island (Penneshaw, Kingscote).
Murray Mallee (Pinnaroo, Lameroo).
Eyre Peninsula (Iron Knob, Iron Baron, Elliston, Mount Wedge, Port Kenny, Warramboo, Darke Peak, Koongawa, Wirrulla, Haslam, Poochera, Kimba, Streaky Bay, Minnipa).
Karoonda Area (Karoonda, Purnong Landing, Swan Reach).
Northern Area (Wilmington, Hawker, Quorn, Orroroo).
Far North (Blinman, Parachilna, Leigh Creek).
Peterborough Area (Terowie).

Summary of work carried out in country schools during 1969:—

Children examined	5,951
Children offered treatment	5,352
Children who accepted treatment	5,000
Fillings	21,479
Extractions	2,513
Other treatments	23,509
Number of schools visited by mobile clinics	29
Number of static clinics	6

Children in primary grades were offered comprehensive treatment and an emergency service was again offered to pre-school children, secondary school children and adults, as in the past.

The number of children whose parents consented to their being treated was 93.5 per cent, an increase on the previous year of 0.5 per cent.

Average treatments per child required overall was as follows:—

Fillings	4.5
Extractions	0.6
Other treatments	1.8

A service was also offered to institutions under the control of the Department of Social Welfare. Institutions visited during the school holidays were:—

Glandore Boys' Home
McNally Training Centre
Lochiel Park Boys' Training Centre
Seaforth Children's Home
Vaughan House
Brookway Park

Summary of work carried out in Social Welfare institutions:—

Examinations	317
Fillings	837
Extractions	100
Other treatments	261

(3) *Research Projects*—

The following projects have been continued:

Dental Health Education

(*a*) Lectures in preventive dentistry and dental public health were presented to first year dental therapists. A greater number of class discussions and student projects were included than in the previous year. Experimentation with chairside teaching techniques was undertaken.

(*b*) Parents of children who attended the schools surveyed in the canteen project received reports on the dental health at the schools, and a comparison of dental health in children with good and bad dental habits.

(*c*) Parents of all children examined in the canteen and fluoridation projects were notified of all dental care needed, and received bite-wing radiographs to take to a dentist.

(*d*) Approximately 40 lectures were given to parents' associations, and at the Dental School and Teachers College.

School Canteens

A comprehensive study was commenced to explore the association between decay-causing confectionery and dental health and profit.

Comparisons of profit before and after the removal of sweets from sale will be made.

Some canteens already report that after one year without selling sweets, profit is comparable with previous years when sweets were sold.

Assistance was provided to improve canteen menus in a number of metropolitan schools.

Education advocating improved canteen menus was provided.

Fluoridation of Adelaide's Water Supply

Over 2,000 children attending nine primary and six secondary schools widely scattered in Adelaide were examined. Processing of data will be completed by about August, 1970.

6. EPIDEMIOLOGY

The former Principal Medical Officer of the Branch, Dr. B. H. Jeanes, resigned in mid-year to take up the position of Medical Director of the Mothers and Babies' Health Association. Dr. Z. Seglenieks was appointed to the position of Principal Medical Officer on his return from an overseas visit to a number of European countries on a National Health and Medical Research Council Public Health Travelling Fellowship.

In mid November a Medical Officer was appointed to take charge of the work concerned with the control of venereal diseases.

Control of Communicable Diseases—Infectious and notifiable diseases in the Second and Third Schedules of the Health Act, except gonorrhoea and syphilis, are notifiable to local boards of health. Tuberculosis, gonorrhoea and syphilis are notifiable directly to the Central Board of Health. Details are shown in Appendix 13.

Tetanus—No official notifications were received during the year. However, on checking hospital records, it was found that four patients with tetanus had been treated at the Royal Adelaide Hospital. Three of them were men aged 40, 54 and 63 respectively and the other was a 47 year old woman.

In three cases, the disease was preceded by a penetrating injury or a laceration, and in the fourth case it was thought that the tetanus germ gained entry through infected eczema of the feet.

Bacteriological confirmation was obtained in one case only.

All four patients recovered. None gave a history of active immunization against tetanus.

Neonatal tetanus was diagnosed in an eight days old infant who was referred for treatment to the Adelaide Children's Hospital from the Northern Territory, but died before admission. The diagnosis was made on the basis of clinical signs and symptoms and evidence of umbilical infection.

Diphtheria—In September, a nine year old boy residing at the Salvation Army Boys' Home at Kent Town was admitted to the Adelaide Children's Hospital where he was diagnosed as suffering from diphtheria.

All children and staff at this Institution were subsequently investigated, and throat and nasal swabs were taken from all. Five children were found to be healthy "carriers" of the diphtheria organism. They were all admitted to the Northfield Wards of the Royal Adelaide Hospital.

One of the "carriers" had been attending the primary school in the neighbourhood. His classmates were investigated but no one was found to be harbouring the germ.

To determine the immunity status against diphtheria, Schick testing was carried out at both the Salvation Army Boys' Home and the class attended by the carrier mentioned above. Ten out of 43 boys at the Home were found to be susceptible to diphtheria, that is, almost 25 per cent of the boys were non-immune. In the class investigated, 14 susceptibles were found among 24 children. Ten of the non-immune children were born outside Australia.

All non-immune children were subsequently immunized against diphtheria.

Typhoid Fever—During the year three cases of typhoid fever were diagnosed. One, a woman aged 75, was found to have an abscess caused by the typhoid germ at the site of her broken hip. Two other cases of typhoid fever occurred in women aged 82 and 85, both patients at the same private hospital. The likely source of the infection was found to be another woman patient aged 70 at the same hospital. She was an ex-nurse with extensive history of overseas visits. The phage type of the organism in both patients and the "carrier" was the same (M1).

Hepatitis—The number of hepatitis cases occurring during the year was 615, showing a slight rise from the previous year (558). There were no deaths recorded due to the disease.

Hydatid Disease—Although no notifications of hydatid disease were received during the year, records of the three major hospitals in Adelaide show that 10 patients were investigated and/or treated for hydatid disease in 1969.

At the Adelaide Children's Hospital, two children, both girls, aged respectively 5 and 7, were treated for hydatid disease. One had hydatid cysts in lung and liver and the other had hydatid cysts in the lung. Both children were operated on and recovered satisfactorily. Both came from the south-east of the State.

At the Royal Adelaide Hospital, two patients were admitted with hydatid disease; they were males aged 50 and 82 respectively. The younger of the two had hydatid disease of lung, treated by operation. He came from the south-east of the State. The other patient had a calcified cyst in the liver which did not require any treatment.

At the Queen Elizabeth Hospital, six patients were admitted with hydatid disease. Five of them were males aged 27, 46, 59, 63 and 76 respectively, and the other one was a female aged 78. The sites of the hydatid cysts were lung (2), heart, kidney, liver and leg.

Four patients were successfully operated on and the cysts removed. In one case operation was deemed unnecessary and in the remaining case operation was refused. Three of the patients came from country areas giving a history of close contact with dogs. One of them came from the south-east of the State. The other three patients were immigrants, two coming from Greece and one from Italy.

Immunization—The clinics at Norwood and the Adelaide Children's Hospital continued to function throughout the year, and visits were made to various outside institutions for the purposes of immunization.

Poliomyelitis—There were no notifications of poliomyelitis. This disease was last reported in 1963.

Vaccine was distributed to the local boards of health in the same manner as previously. The summary of the work done by the Department's vaccine distribution centre is given in appendices 14 and 15.

Some vaccine was distributed to private medical practitioners who could satisfy the conditions for satisfactory storage and who could arrange for the vaccination of a number of children so as to avoid unnecessary wastage of the vaccine.

Considerable amount of vaccine was wasted during the year. Of a total of 139,280 doses of vaccine distributed, 93,512 doses were administered, resulting in the wastage of 45,768 doses. The main cause for wastage was that generally only 100 dose containers of the vaccine were made available to this Department.

It is expected that in 1970 when 10 dose containers will be available more Sabin vaccine will be distributed to private medical practitioners.

Measles Vaccine—Early in the year preparations were made for the introduction of measles vaccination and circulars were sent to all local boards advising that measles vaccine would soon become available for their immunization campaigns.

Reports from the United Kingdom of encephalitis in children who had been vaccinated with a live virus measles vaccine, led to the cancellation of orders for that vaccine until the reported cases of encephalitis had been thoroughly investigated and any connection with the vaccine used could be ruled out.

Towards the end of the year, the Commonwealth Health Department advised that it had been decided to import the Schwarz strain of measles vaccine from the United States of America in 1970. The Schwarz strain is a further attenuated measles vaccine and had been used very extensively in the United States for about five years. More than 35 million doses had been given and there had been very few adverse reactions reported following the administration of this vaccine.

Gonorrhoea and Syphilis—During 1969 there were 703 cases of gonorrhoea and 38 cases of syphilis notified to the Central Board of Health. The figures for 1968 were 497 and 51 respectively. The increase in the notification of gonorrhoea is due mainly to the increased number of doctors notifying their cases. Details of notification are shown in the appendices.

Appendix 16 shows the age and sex incidence of the notified cases and, as elsewhere throughout the world, shows that the incidence of gonorrhoea is greatest among the adolescents and young adults.

Appendix 17 shows where the patients contracted their disease and, as could be expected, the vast majority were the result of casual contacts.

Appendix 18 shows the number of contacts noted and the numbers found after search. Approximately one-third of the gonorrhoea contacts noted were located and investigated. There was insufficient information concerning the remaining two-thirds to enable further investigation.

Appendix 19 shows where the patients received treatment.

It will be seen that only one female case of gonorrhoea is discovered and treated to every 3.8 male cases. This reflects the as yet inadequate search and finding of female sufferers. There is undoubtedly a large number of females with gonorrhoea who go untreated and remain as a reservoir of infection in the community. As the work of case finding improves, so the proportion of female to male cases will be likely to rise.

Of the 147 female cases of gonorrhoea notified, 59 were diagnosed in the Department of Public Health's Investigation Unit as a result of its contact tracing work. In all some 238 persons were interviewed by the Unit, many of them being examined. Among these were eight male cases of gonorrhoea who were diagnosed by the Investigation Unit.

The syphilis cases included 14 primary infections, five secondary infections, 13 latent infections and in six the stage of the disease was not ascertained.

The 703 patients notified as having gonorrhoea included 43 who had one attack of gonorrhoea previously, nine who had two attacks, one who had four attacks and six who had syphilis preceding their notified infection.

7. TUBERCULOSIS

The campaign against tuberculosis in South Australia has been pursued with vigour throughout 1969. Most aspects of the campaign remain unaltered, namely—compulsory mass X-ray surveys; epidemiological skin testing services at schools; contact examination and B.C.G. vaccinations when necessary; completion of the case register of all notified cases and thorough investigation and treatment of patients of pulmonary abnormalities. Patients with proved pulmonary tuberculosis are usually admitted for the initial part of their treatment to the Royal Adelaide Hospital, or to Kalyra Sanatorium (or to the Adelaide Children's Hospital in the case of children) and after the initial period of treatment in hospital, their supervision and chemotherapy is arranged through the Chest Clinic.

Dr. R. Ganguly and the Director of Tuberculosis were delegates to the Third Australian National Tuberculosis Conference held in Brisbane in April, 1969.

Dr. C. Evans officially represented the Department of Public Health at meetings of the Australian Thoracic Society held in conjunction with the meeting of the Royal Australasian College of Physicians in Brisbane in May, 1969. Dr. Evans presented a paper at that conference concerning the treatment of atypical mycobacterial infections, and the paper was published in the Medical Journal on 11th October, 1969 under the title: "A Clinical Trial of Ethambutol plus Capreomycin In The Treatment of Atypical Tuberculosis". In that same issue of the Medical Journal of Australia, another paper, of which the Director of Tuberculosis was the co-author, was published under the title: "Resection in Patients with Atypical Pulmonary Tuberculosis".

The National Tuberculosis Advisory Council meeting was held in Canberra in June, 1969, and the Director of Tuberculosis attended in his capacity as a member of that Council.

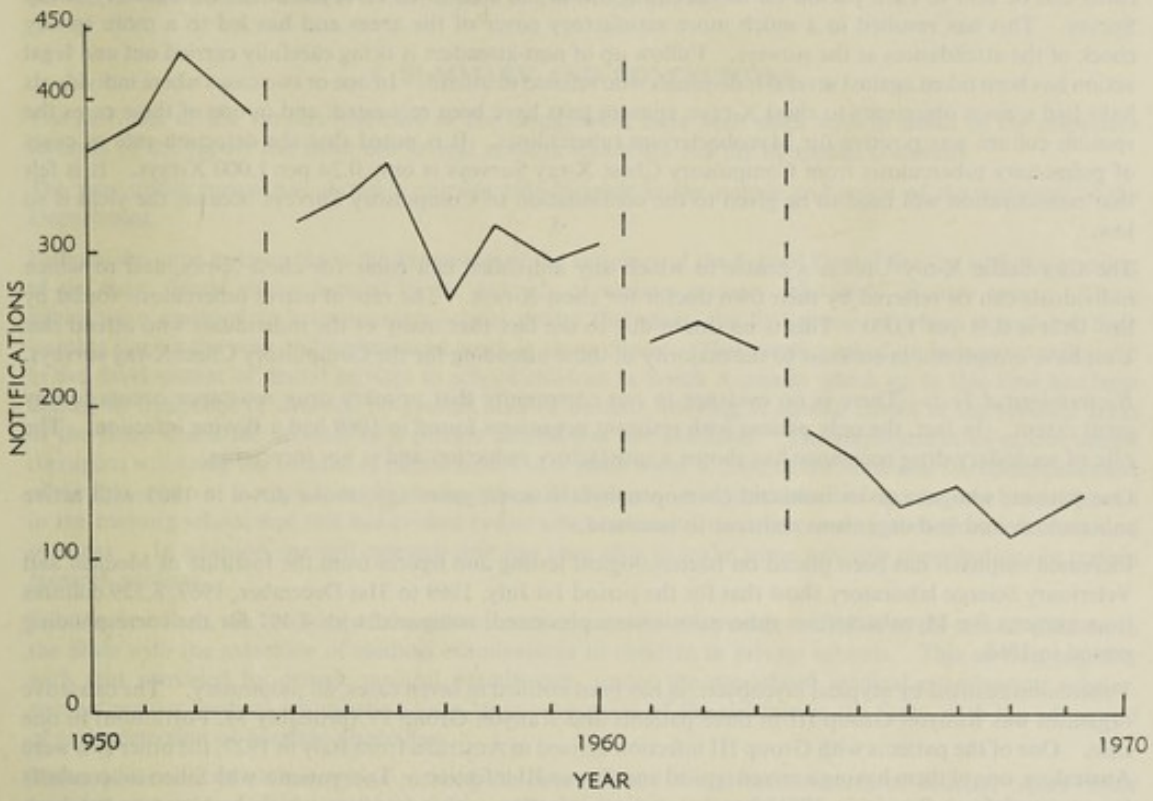
In addition, at the invitation of the Commonwealth and to represent the Commonwealth Tuberculosis Services, the Public Health Department of South Australia and the Australian Tuberculosis and Chest Association Incorporated, Dr. C. Evans attended the 20th National Tuberculosis Conference in New York in September, 1969, and visited Tuberculosis Institutions in the United States of America, Canada, Great Britain and Europe.

New Notifications of Tuberculosis—Appendix 20 lists the new notifications according to age, sex, site and extent of the disease at the time of diagnosis. Total new notifications in 1969 were 134 (Pulmonary 98, Pleural effusion 2, Primary 3, Non-Pulmonary 31) compared with 110 in 1968, 141 in 1967, 131 in 1966, 156 in 1965 and 177 in 1964.

In addition there were five notified as "transfers-in" (Pulmonary 4, Non-Pulmonary 1) from other places. Furthermore, there were seven notifications of re-activated cases (Pulmonary 5, Non-Pulmonary 2), compared with 13 in 1968, 14 in 1967, 14 in 1966, six in 1965 and six in 1964 (see Appendix 21).

The source of notifications is shown in Appendices 22 and 23.

The increase in new notifications is disquieting. However, analysis of the South Australian statistics since 1950 suggests that there have been fluctuations of this nature for several years prior to a distinct fall, then similar variations for a few years before the next distinct drop in the new notifications. To illustrate this, the years 1950-1953 compare with 1954-1960 and with 1961-1963, then with the period from 1964 to the present time.



The estimated population in South Australia as at 31st December, 1969, was 1,150,460. Thus there is a new case rate for all forms of tuberculosis in 1969 of 11.6 per 100,000 and for pulmonary disease of 8.1 per 100,000.

Age and Sex Variations—Pulmonary tuberculosis remains mainly a disease of those over 40 years of age and this is noted for 1969 in both male and female notifications. Sixty out of the 73 male pulmonary (including Primary and Effusion) patients and 22 out of the 30 female pulmonary patients were over that age. The preponderance of male cases is noted, being 73 to 30 female in-patients over 40 years of age. In the younger adult age groups aged 20 to 34 years, the numbers of female and male new pulmonary cases are the same.

Non-Pulmonary Tuberculosis—The new notifications for non-pulmonary tuberculosis have increased to 31 compared with 20 in 1968. An increased awareness of the problems of renal tract tuberculosis by general practitioners has been noted and close co-operation with the Urologists has been a feature in the management of these cases.

The types of non-pulmonary disease amongst these new notifications are:

Genito Urinary	19
Bone and Joint	2
Glands	8
Other	2

Of the non-pulmonary cases, 12 out of the 19 Genito urinary cases were in migrants. By contrast, 11 out of the 12 other cases of non-pulmonary tuberculosis were in the Australian born.

Migrants—Appendix 24. Migrants comprised 42.5 per cent of all new cases (excluding transfers-in and re-notifications) in 1969. There were 58 migrants notified out of the 134 total new notifications. Among the 31 cases of non-pulmonary disease, there were 13 migrants. A somewhat higher rate of tuberculosis was found in Assisted migrants 34 (58.6 per cent) as compared with 24 (41.4 per cent) in non-assisted migrants. A substantial number (34 out of 58) have been in Australia over 10 years. Individuals not born in Australia are estimated to make up only 25 per cent of the population of the State, yet 42.5 per cent of the new notifications are from this section of the population.

Re-notifications—Appendix 21. In the final report for 1968, concern was expressed about the number of re-notified cases. It is gratifying to note that re-activation of the disease leading to re-notification occurred in only seven cases in 1969 (pulmonary 5, non-pulmonary 2). It is hoped that this low rate of re-notification will continue.

Mass Radiography—Appendices 25, 26, 27 and 28. Compulsory Chest X-ray Surveys have been carried out in 1969 in the Electoral Subdivision areas of Semaphore, Port Adelaide, Woodville, West Croydon, Hindmarsh, Henley Beach, Lockleys, Brompton and Croydon Park.

Arrangements have been made with the South Australian Automatic Data Processing Authority and the Electoral Office for lists of individuals on the electoral roll to be sent to this Department, so that X-ray cards can be sent to each person on the electoral roll in the area to be surveyed in the Compulsory X-ray Survey. This has resulted in a much more satisfactory cover of the areas and has led to a more speedy check of the attendances at the surveys. Follow up of non-attenders is being carefully carried out and legal action has been taken against several individuals who refused to attend. In one or two cases where individuals have had serious objections to chest X-rays, sputum tests have been requested, and in one of these cases the sputum culture was positive for Mycobacterium tuberculosis. It is noted that the detection rate of cases of pulmonary tuberculosis from Compulsory Chest X-ray Surveys is only 0.24 per 1,000 X-rays. It is felt that consideration will need to be given to the continuation of Compulsory Surveys because the yield is so low.

The City Static X-ray Unit is a centre to which any individual can come for chest X-ray, and to which individuals can be referred by their own doctor for chest X-rays. The rate of active tuberculosis found by this Unit is 0.51 per 1,000. This is no doubt due to the fact that many of the individuals who attend this Unit have symptoms, in contrast to the majority of those attending for the Compulsory Chest X-ray surveys.

Bacteriological Tests—There is no evidence in our community that primary drug resistance occurs to any great extent. In fact, the only patient with resistant organisms found in 1969 had a Bovine infection. The rate of secondary drug resistance has shown a satisfactory reduction and is not increasing.

One patient, who was given isoniazid chemoprophylaxis some years ago, broke down in 1969 with active tuberculosis and had organisms resistant to isoniazid.

Increased emphasis has been placed on bacteriological testing and figures from the Institute of Medical and Veterinary Science laboratory show that for the period 1st July, 1969 to 31st December, 1969, 8,539 cultures from persons for Mycobacterium tuberculosis were processed, compared with 4,407 for the corresponding period in 1968.

Tuberculosis caused by atypical mycobacteria has been notified in seven cases, all pulmonary. The causative organism was Runyon Group III in three patients and Runyon Group IV (probably M. Fortuitum) in one case. One of the patients with Group III infection arrived in Australia from Italy in 1927, the other two were Australian, one of them having a mixed typical and Group III infection. Two patients with Silico tuberculosis (one arrived from Russia in 1961) has an atypical infection with organisms which have not as yet been classified. One other patient has atypical organisms classified (after sending a specimen to the United States of America) as *M. Xenopei* but our own Institute of Medical and Veterinary Science laboratory is doubtful as to the classification. If this is *M. Xenopei* it will be the second found in South Australia. Three Bovine cases have been found—one pulmonary in an Indonesian seaman, one bony disease in an Australian and one renal infection in a migrant (in 1965) from the United Kingdom.

Contact Examination, Skin Testing and B.C.G. Vaccination—Appendices 29, 30 and 31. In the age groups 5-9 and 10-14 less than 1 per cent of Adelaide school children are skin test positive to 1/1,000 Old Tuberculin. Definite plans are being made to transfer the skin testing programme to the second or third year at secondary school instead of the final year at primary school, and to eliminate the routine skin testing of first grade primary school children. One case of pulmonary tuberculosis was discovered as a result of the school skin testing programme during the year in a parent of a child with a positive skin test.

B.C.G. vaccination has been offered to negative reactors in the final year at primary school.

Routine examination of contacts has continued. There has been no evidence that re-examination of contacts whose initial tests are normal has helped find new cases of tuberculosis. However in 1969 the initial examination of contacts has brought to light six new cases. B.C.G. vaccination has been offered to negative reactors among contacts.

Deaths from Tuberculosis—Appendix 32. Deaths from tuberculosis in 1969 totalled 17 (15 male and two female). Several of these persons had far advanced active disease and the majority died from other causes while they still had active tuberculosis. Two cases were notified to this Department for the first time as a result of autopsy or Death Certificate.

Appendix 33 shows comparative figures of notifications, morbidity rates, deaths and death rates since 1949.

Conclusions—The low incidence of positive skin test results in first grade school children and in Grade 7 school children makes possible a re-orientation of our school skin testing programme. It is anticipated that during 1970, Grade 7 school children only will be skin tested, and that during 1971 the skin testing programme will be undertaken in the second year of high school, so that B.C.G. vaccinations, if necessary, can be offered to children near to their school leaving age.

The low "pick-up" of active cases from Compulsory Mass X-ray Surveys must lead to the re-assessment of the need for Compulsory Surveys. The time interval between Compulsory Surveys is now approximately five years. Any extension of this time interval would probably counteract the principles of Compulsory Surveys. Because of this and the low "pick-up" rate it is doubtful if the expense of such campaigns can be justified for much longer.

Patients are being kept a shorter time in hospital and this must result in a re-organization of Chest Clinic staff and administration to cope with the larger number of patients receiving domiciliary treatment.

The results of the campaign against tuberculosis as outlined in the figures in the accompanying statistical tables show that the situation in South Australia is very satisfactory at the present time, even though the number of new notified cases is a little higher in 1969 than in 1968.

8. SUMMARY AND CONCLUSIONS

The activities of the various branches of the Department have been dealt with in detail in the respective sections of the report but there are several matters which are worthy of special comment.

The year under review has shown a considerable increase in the nature and scope of the activities of the Department.

Perhaps the most noteworthy is the expansion of the activities of the School Dental Service with the opening of six static dental clinics located in the grounds of various primary schools in country towns. These clinics were designed to accommodate school dental therapists, the first group of whom completed their training during the year and commenced work in these clinics. This event marked an important milestone in the development of dental services to school children in South Australia which up to this time has been limited to treatment of children by a small staff of dentists working in mobile clinics in the remoter areas of the State where the services of a private dentist was not available. The employment of school dental therapists will bring the benefits of dental health to a much wider section of the State and the commencement of the first group of therapists marks the beginning of this era. A high standard of training has been achieved in the training school and this has evoked favourable comment from numerous visitors from interstate and overseas. In addition, a small research unit has been able to make some valuable contributions in certain research projects.

For the first time, the facilities of the school medical services were made available to all school children in the State with the extension of medical examinations to children in private schools. This service, together with that provided by private medical practitioners under the pre-school medical examination scheme, ensures regular medical examination for a large proportion of the children in the State, with the advantage of early detection of possible disabilities.

The appointment of a Geriatrician marked the development of another new area of activity. This officer is performing valuable work in association with other related departments and organizations concerned with the welfare of the aged.

With the continuing change in the scope of the activities of the Department and the emphasis placed on newer activities, there is a tendancy to overlook the traditional and less spectacular aspects of public health work. The Department continues to provide valuable services in the fields of infectious diseases control, protection of food and environmental sanitation.

There is a continuing need to keep the public aware of the importance of immunization. This activity is all the more important in the climate of complacency engendered by absence of major epidemics.

The number of cases of gonorrhoea and syphilis notified continues to increase but this does not necessarily indicate an increase in the incidence of these diseases as they were proclaimed as notifiable diseases at the end of 1965 only.

The number of gastroenteric diseases notified still points to the need for vigilance in the maintenance of proper hygiene. An example of the Department's activities in this direction is the State-wide survey of poultry processing premises, which has resulted in considerable improvements being achieved in both premises and processing.

Officers of the Department continue to provide valuable assistance and advice to officers of local boards, industry, and the public generally, on matters affecting the environment, especially in the design and supervision of the installation of common effluent drains.

The work of the Department in country areas has been further decentralized with the appointment of additional District Inspectors residing in their respective areas. These officers have done much to maintain and improve relations with the public and local authorities in their districts.

With financial assistance from the Commonwealth, the Department has appointed additional District Inspectors in outback areas for the specific object of the improvement of Aboriginal health.

Officers of the Department continue to engage in practical health education wherever possible through the more formal media of publications, meetings, conferences and seminars, and through advice and assistance on an individual basis.

The Central Board of Health expresses its appreciation to all local boards of health, its own officers and the staff of the Department of Public Health for their efforts and continued co-operation. The assistance of other Government Departments and the Institute of Medical and Veterinary Science is also acknowledged.

To you, Sir, we offer thanks for your continued interest and support.

P. S. WOODRUFF, Chairman

G. H. McQUEEN
H. J. N. HODGSON } Members
C. COLMAN
A. BERTRAM COX

R. W. LAVER, Secretary
Adelaide, 16th March, 1971.

APPENDIX 1—INFANT DEATHS (UNDER 1 YEAR OF AGE), SOUTH AUSTRALIA 1969

Principal Causes	Number
Congenital anomalies	82
Maternal diseases or conditions	11
Difficult labour	10
Condition of placenta cord	22
Haemolytic disease	8
Anoxic and hypoxic conditions (n.e.c.)	52
Immaturity, prematurity (unqualified)	17
Other perinatal causes	56
Diarrhoeal disease	10
Pneumonia	20
Sudden death (unknown cause)	19
Other	40
Total	347

APPENDIX 2—BIRTHS, MARRIAGES AND DEATHS: NUMBERS REGISTERED AND RATES 1965 TO 1969

Period	Births Registered		Marriages		Deaths Registered			
					Total		Infants	
Year	No.	Rate (*a*)	No.	Rate (*a*)	No.	Rate (*a*)	No.	Rate (*b*)
1965	20,891	19.63	8,680	8.16	8,788	8.26	385	18.43
1966	20,319	18.62	9,051	8.29	9,323	8.54	356	17.52
1967	20,386	18.34	9,434	8.49	9,071	8.16	346	16.97
1968	21,207	18.65	9,652	8.57	9,916	8.81	345	16.27
1969	21,977	19.19	10,599	9.26	9,337	8.16	347	15.78

(*a*) Per 1,000 of Mean Population.
(*b*) Per 1,000 live births registered.

APPENDIX 3—HEARING CONSERVATION PROGRAMMES, 1969

	Foundries	Timber Joinery	Concrete Products	Timber Mills	Printing	Light Engineering	Government Department (mills, workshops, depots)	Total
At 1st January, 1969	—	—	1	2	2	—	7	12
Commenced in and supervised through 1969	—	—	—	—	—	1	1	2
Total programmes at 31st December, 1969	—	—	1	2	2	1	8	14
Under consideration by management	1	1	—	—	—	—	—	2

Total Number of Visits 36
Total Number of Employees Examined 844

APPENDIX 4—TYPICAL OVERALL NOISE LEVELS AND ASSOCIATED OCTAVE BAND ANALYSES RECORDED DURING INVESTIGATIONS

Noise Source	Overall S.P.L.	Midfrequency of Octave Band (cps).								N.R.N.
		62.5	125	250	500	1,000	2,000	4,000	8,000	
Compressor	109	106	104	97	90	89	85	78	72	88
Bi-rotational blower	97	77	80	80	93	94	81	76	68	94
Meat Saw	93	80	80	82	84	87	87	89	88	89
Belt Sander	85	67	70	81	81	78	76	75	64	79
Air Oven	87	78	84	80	74	75	78	71	67	80
Scrabbling Machine	112	92	102	102	105	105	106	107	104	108
Ultrasonic Cleaner	91	54	59	50	51	49	54	64	81	56
Power house	102	88	87	86	91	100	91	82	70	100
Front-end Loader	105	100	102	91	95	92	87	80	70	92

APPENDIX 5—SMOKE DENSITY, 1969

Site		Coefficient of Haze Units											
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Adelaide Metropolitan Area—													
Thebarton	Av.	0.1	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1
	Hd.	0.2	0.2	0.3	0.4	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.3
Fort Largs	Av.	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.1	0.1	0.1
	Hd.	0.1	0.2	0.4	0.4	0.5	0.3	0.5	0.4	0.3	0.3	0.2	0.2
Woodville North	Av.	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
	Hd.	0.2	0.2	0.3	0.3	0.6	0.4	0.4	0.5	0.3	0.2	0.2	0.2
Richmond	Av.	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.1
	Hd.	0.3	0.5	0.3	0.5	0.5	0.5	0.5	0.5	0.4	0.3	0.4	0.2
Birkenhead	Av.	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1
	Hd.	0.2	0.3	0.3	0.5	0.4	0.3	0.4	0.4	0.3	0.2	0.3	0.2
Rosewater	Av.	0.1	0.1	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1
	Hd.	0.2	0.2	0.4	0.5	0.4	0.4	0.5	0.5	0.4	0.3	0.2	0.3
West Terrace	Av.	0.2	0.2	0.2	0.3	0 3	0.3	0.3	0.3	0.2	0.2	0.2	0.1
	Hd.	0.3	0.3	0.3	0.6	0.5	0.5	0.5	0.4	0.3	0.3	0.3	0.3
Hindmarsh	Av.	0.1	0.2	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.2	0.2	0.2
	Hd.	0.3	0.2	0.4	0.5	0.5	0.4	0.5	0.4	0.3	0.3	0.3	0.4
Country Area—													
Port Pirie (Oliver Street)	Av.	0.1	*0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	*0.1	*0.1
	Hd.	0.2	0.1	0.2	0.2	0.2	0.3	0.4	0.3	0.3	0.2	0.2	0.1
Port Pirie (Police Station)	Av.	—	—	—	—	—	—	0.3	0.3	0.4	0.3	0.3	0.3
	Hd.	—	—	—	—	—	—	0.6	0.5	0.7	0.7	0.7	0.8

Av. = Average Hd. = Highest Day * = less than

APPENDIX 6—SULPHUR DIOXIDE, 1969

Site		Parts per Hundred Million											
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Adelaide Metropolitan Area—													
Thebarton	Av.	0.4	0.5	0.4	0.2	0.3	0.1	*0.1	0.3	*0.1	0.3	0.5	0.2
	Hd.	1.4	3.4	1.6	2.2	1.6	1.9	0.2	1.5	0.7	1.4	2.3	0.9
Fort Largs	Av.	1.4	1.4	0.4	0.1	1.0	0.2	*0.1	0.1	*0.1	*0.1	*0.1	*0.1
	Hd.	5.3	5.4	1.8	0.7	4.3	1.1	*0.1	0.8	*0.1	*0.1	*0.1	*0.1
Woodville North	Av.	0.4	0.5	0.2	0.2	0.1	*0.1	*0.1	0.2	*0.1	0.1	0.2	0.2
	Hd.	1.3	1.9	1.5	1.3	1.1	0.3	0.2	0.7	0.2	0.8	1.4	1.1
Richmond	Av.	0.8	0.6	0.7	*0.1	0.3	1.1	1.3	1.1	1.1	0.8	0.5	1.4
	Hd.	1.8	3.3	5.6	0.4	1.5	3.7	5.5	2.9	3.4	2.1	1.7	6.4
Birkenhead	Av.	0.1	0.1	0.1	0.1	*0.1	*0.1	*0.1	0.1	*0.1	*0.1	*0.1	*0.1
	Hd.	0.6	0.6	0.7	0.9	0.6	1.1	*0.1	0.5	0.7	0.4	*0.1	*0.1
Rosewater	Av.	0.7	0.5	0.4	0.1	0.1	0.1	0.1	0.2	*0.1	*0.1	*0.1	*0.1
	Hd.	2.3	2.9	3.0	0.7	0.6	0.5	0.5	1.8	*0.1	0.7	*0.1	0.5
West Terrace	Av.	1.0	0.8	0.9	0.5	0.6	0.6	0.8	0.7	0.2	0.6	0.5	0.6
	Hd.	5.0	2.1	5.5	1.8	2.2	1.3	3.5	2.1	1.5	2.1	2.5	1.7
Hindmarsh	Av.	0.3	0.5	0.6	0.8	0.1	0.2	0.1	0.3	0.1	0.2	0.2	0.2
	Hd.	0.8	2.6	4.5	6.4	0.6	1.0	1.5	2.0	0.8	1.5	1.0	1.2
Country Area—													
Port Pirie (Oliver Street)	Av.	0.8	0.4	0.2	1.7	0.5	1.5	1.8	1.9	0.1	0.6	0.2	0.3
	Hd.	5.3	3.8	2.1	10.3	3.3†	7.5	17.0	11.4	1.2‡	2.6	1.3‡	1.8
Port Pirie (Police Station)	Av.	—	—	—	—	—	—	5.3	3.7	0.9	2.5	2.7	1.2
	Hd.	—	—	—	—	—	—	40.2	17.2	15.4	12.1	30.1	16.3

‡ = 48 hour sample † = 72 hour sample Av. = Average Hd. = Highest Day * = less than

APPENDIX 6A—AIR POLLUTION: DEPOSIT GAUGE RESULTS JANUARY TO DECEMBER 1969

Location of Gauge		Tons per Square Mile Average Rate Per Month			
		Insoluble Matter	Combustible Matter	Ash	Soluble Matter
Adelaide Metropolitan Area—					
Adelaide	AI/9	7.1	2.7	4.3	3.6
Beverley	CI/4	12.8	4.8	7.8	4.4
Beverley	CI/5	9.9	3.4	6.3	4.2
Birkenhead	BI/1	9.4	3.5	5.7	6.5
Birkenhead	BI/2	19.8	6.4	13.1	6.5
Birkenhead	BI/3	8.7	2.7	5.8	5.1
Birkenhead	BI/5	7.7	2.1	5.4	5.3
Black Forest	WT/5	10.0	5.7	3.9	5.7
Black Forest	WT/6	9.0	2.9	6.0	3.8
Black Forest	WT/7	8.9	4.3	4.4	4.5
Black Forest	WT/8	8.0	2.6	5.2	4.8
Black Forest	WT/9	9.9	5.5	4.2	4.1
Black Forest	WT/11	6.5	2.2	4.2	3.5
Black Forest	WT/12	8.7	4.6	3.9	3.7
Clarence Gardens	WT/10	6.6	2.2	4.2	3.3
Clarence Park	AI/11	10.0	3.7	6.1	13.7
Colonel Light Gardens	AI/12	5.7	1.9	3.7	3.4
Findon	CI/3	7.3	2.3	4.6	3.8
Flinders Park	CI/2	8.7	3.1	5.4	3.9
Hammersmith	WT/1	5.4	2.0	3.3	2.8
Hammersmith	WT/2	9.3	2.9	6.2	6.3
Hammersmith	WT/3	8.5	4.1	4.2	6.9
Hammersmith	WT/4	16.4	10.2	5.8	11.2
Islington	AI/3	9.8	3.6	6.2	3.9
Kent Town	AI/6	8.2	2.9	5.0	3.4
Largs Bay	BI/4	10.9	3.7	7.0	11.2
Linden Park	AI/7	4.4	1.5	2.8	2.4
Mansfield Park	AI/2	6.3	2.1	4.1	6.7
North Adelaide (Lower)	AI/5	8.4	4.0	4.2	3.7
North Adelaide	AI/8	19.3	3.3	15.9	4.1
Port Adelaide	AI/1	8.2	3.5	4.5	3.9
Prospect	AI/4	5.6	1.7	3.8	3.1
Wayville	AI/10	11.0	3.3	7.5	3.8
Woodville South	CI/1	12.6	4.0	8.5	4.6
Port Stanvac Area—					
Christies Beach	PS/4	10.1	3.3	6.6	4.6
Christies Beach	PS/12	7.6	2.0	5.4	3.6
Hallett Cove	PS/8	4.2	1.7	2.3	3.0
Morphett Vale	PS/5	4.1	1.4	2.6	2.6
Morphett Vale	PS/9	8.2	4.7	3.2	5.1
Morphett Vale	PS/10	5.0	1.8	3.0	3.3
O'Halloran Hill	PS/11	8.6	4.6	3.8	6.4
O'Sullivans Beach	PS/1	9.1	3.6	5.1	5.8
Reynella	PS/2	9.6	4.4	5.0	4.3
Reynella	PS/3	6.5	2.8	3.5	4.1
Reynella	PS/6	4.8	1.8	2.9	3.0
Salisbury Area—					
Parafield	SA/4	16.2	3.6	12.4	2.8
Salisbury	SA/1	31.4	19.5	11.6	12.2
Salisbury	SA/2	13.0	6.7	6.1	3.3
Salisbury	SA/3	8.5	3.7	4.5	2.3
Angaston Area—					
Angaston	AN/1	32.4	8.7	23.4	4.3
Angaston	AN/2	18.8	6.0	12.4	4.0
Angaston	AN/3	18.2	5.8	12.3	5.5
Angaston	AN/4	28.6	9.2	19.1	8.1
Angaston	AN/5	15.0	6.1	8.7	3.4
Mount Gambier Area—					
Mount Gambier	MG/1	8.7	4.2	4.3	4.5
Mount Gambier	MG/2	11.6	4.8	6.6	7.0
Mount Gambier	MG/3	14.1	10.6	3.3	6.8
Mount Gambier	MG/4	20.0	8.1	11.5	17.6
Mount Gambier	MG/5	16.7	8.3	8.0	8.2

NOTE—

1. Combustible matter, ash and tar fraction (the latter is not shown) constitute the Insoluble Matter.
2. Insoluble matter and soluble matter constitute Total Solids.

APPENDIX 7—CHILDREN MEDICALLY EXAMINED IN ALL SCHOOLS

	1967	1968	1969		
			Metropolitan	Country	Total
Schools visited	282	450	303	242	545
Children examined	40,312	97,880	68,753	25,430	94,183
Defects found—					
Vision (excluding spectacles)	4,813	5,720	4,120	1,142	5,262
Wearing Spectacles	4,895	6,257	4,215	1,224	5,439
Hearing	2,689	3,419	2,178	753	2,931
Nose and throat	755	1,103	351	197	548
Heart	574	607	369	142	511
Skin	1,023	3,513	478	246	724
Lungs	188	154	108	56	164
Epilepsy	98	99	48	23	71
Allergies	3,883	5,178	2,526	1,390	3,916
Others, including postural defects, colour blindness, enuresis	8,548	11,712	7,042	3,231	10,273
Teeth—seen by medical officers only and excluding children under dental treatment	9,988	10,347	4,172	3,045	7,217
Total defects	37,454	48,109	25,607	11,449	37,056

APPENDIX 8—CHILDREN TESTED IN ALL SCHOOLS FOR VISION AND HEARING ONLY

	Metropolitan	Country	Total
Schools visited	67	63	130
Children examined	18,868	10,015	28,883
Defects found—			
Vision	1,142	649	1,791
Wearing spectacles	1,689	580	2,269
Hearing	694	596	1,290
Total defects	3,525	1,825	5,350

APPENDIX 9—DEFECTS PER 10,000 CHILDREN EXAMINED

Year	Vision	Hearing	Nose and Throat	Heart	Epilepsy	Allergies	Teeth*
1963	730	306	140	47	13	537	1,500
1964	817	308	121	68	15	496	1,093
1965	723	284	129	73	11	423	1,637
1966	757	320	123	105	10	395	1,738
†1967	1,194	667	187	142	24	963	2,478
1968	584	349	113	62	10	529	1,056
‡1969	573	343	59	54	8	417	768

*This figure does not represent the total decay rate. These were children examined by medical officers and found to have sufficient decay present to warrant the issuing of a dental notice. Children already under private dental supervision and children examined by departmental dental officers are not included.

†These abnormal rates are explained in the 1967 Annual Report.

‡The rates per 10,000 for vision and hearing now include children examined by Screening Sisters.

APPENDIX 10—INFECTIONS IN SCHOOL CHILDREN—NUMBERS OF COMMUNICABLE DISEASES REPORTED TO TEACHERS IN STATE SCHOOLS

Year	Diphtheria	Scarlet Fever	Measles	Rubella	Whooping Cough	Chicken Pox	Mumps	Polio-myelitis	Infective Hepatitis	Other Conditions
					Communicable Diseases					
1965	2	122	1,283	639	27	1,737	892	—	126	118
1966	—	113	1,391	360	108	1,566	1,495	—	361	88
1967	—	53	2,162	1,398	39	1,619	2,537	—	448	115
1968	—	35	987	808	39	1,356	1,076	—	172	63
1969	1	65	1,536	701	11	1,363	887	—	213	75
					Communicable Diseases Per 10,000 Children Enrolled					
1965	—	5.8	61.0	30.4	1.3	82.7	42.5	—	6.0	5.6
1966	—	5.1	63.2	16.4	4.9	71.2	67.0	—	16.4	4.0
1967	—	2.4	99.6	64.4	1.8	75.0	117.0	—	20.5	5.3
1968	—	1.6	45.9	36.7	1.8	61.7	48.9	—	7.8	2.9
1969	—	2.8	68.0	31.0	0.5	60.3	39.2	—	9.4	3.3

The total number of these communicable diseases reported was 4,852.

APPENDIX 11—ATTENDANCES AT THE DEAFNESS GUIDANCE CLINIC—1969

	New Cases			Retests		
	Male	Female	Total	Male	Female	Total
Pre-school—						
Metropolitan	39	20	59	17	7	24
Country	7	8	15	5	—	5
Primary School—						
Metropolitan	756	475	1,231	657	490	1,147
Country	202	137	339	102	91	193
Secondary School—						
Metropolitan	194	54	248	230	94	324
Country	38	21	59	29	24	53
Government Departments and others	5	—	5	7	1	8
Total	1,241	715	1,956	1,047	707	1,754

APPENDIX 12—DISPOSAL AFTER ATTENDANCE AT THE DEAFNESS GUIDANCE CLINIC—1969

	New Cases	Retests
Referred to family doctor	759	472
Referred to specialists or hospitals	61	83
Returning for further testing	939	1,002
Discharged	197	197

APPENDIX 13—INFECTIOUS AND NOTIFIABLE DISEASES, NOTIFIED TO THE CENTRAL BOARD OF HEALTH

	Cases			Deaths		
	1967	1968	1969	1967	1968	1969
INFECTIOUS DISEASES						
Acute infective encephalitis	7	1	21	—	—	—
Amoebiasis	—	2	—	—	—	1
Diarrhoea, infantile infective	12	10	6	—	—	—
Dysentery bacillary	92	204	157	—	—	—
Leprosy	—	2	—	—	—	—
Leptospirosis	1	—	—	—	—	—
Malaria	1	4	6	—	—	—
Meningococcal infection	5	11	9	—	—	1
Puerperal pyrexia	1	—	1	—	—	—
Salmonella infection	110	240	166	1	—	—
Scarlet fever	70	44	67	—	—	—
Typhoid fever	1	13	3	—	—	—
Tuberculosis pulmonary	120	91	108	16	12	17
Tuberculosis other forms	23	18	33			
NOTIFIABLE DISEASES						
Acute rheumatism	—	1	—	—	—	—
Brucellosis	3	—	—	—	—	—
Chorea	1	—	—	—	—	—
Eclampsia	—	1	1	—	—	—
Erythema nodosum	8	3	1	—	—	—
Encephalitis following another disease	13	4	7	—	—	—
Gonorrhoea	399	497	703	—	—	—
Homologous serum jaundice	—	1	—	—	—	—
Hydatid disease	—	1	—	—	—	—
Infective hepatitis	1,299	558	615	3	—	—
Lead poisoning	1	2	—	—	—	—
Ophthalmia	13	—	—	—	—	—
Rubella	969	442	354	—	—	—
Syphilis	21	51	38	—	—	—
Syphilis and Gonorrhoea	—	1	—	—	—	—
Tetanus	1	—	—	2	—	—

APPENDIX 14—NUMBER OF DOSES OF POLIOMYELITIS VACCINE GIVEN IN 1969 BY LOCAL BOARDS OF HEALTH

	Doses Given
Metropolitan—	
Adelaide	349
Brighton	812
Colonel Light Gardens	139
East Torrens County Board	8,131
Enfield	3,174
Glenelg	580
Henley and Grange	573
Hindmarsh	1,377
Marion	3,812
Mitcham	1,289
Port Adelaide	1,805
Prospect	603
Thebarton	674
Unley	1,219
Walkerville	177
West Torrens	1,964
Woodville	6,274
Metropolitan Total	32,952
Country—	
Angaston	473
Balaklava	212
Barmera	253
Barossa	84
Berri	397
Blyth	95
Burra	203
Clare	90
Cleve	314
Coonalpyn Downs	185
Crystal Brook	89
East Torrens	32
Elliston	178
Eudunda	143
Franklin Harbour	95
Freeling	96
Gawler	234
Georgetown	384
Gladstone	108
Gumeracha	92
Hallett	59
Hawker	67
Jamestown Town and District	177
Kadina	295
Kapunda	117
Karoonda	126
Kimba	127
Kingscote	163
Lacepede	310
Lameroo	166
Laura	60
Le Hunte	748
Lincoln	319
Loxton	447
Lucindale	450
Mallala	125
Mannum	187
Marne	52
Meadows	241
Meningie	408
Millicent	792
Minlaton	193
Moonta	93
Morgan	27
Mount Barker	238
Mount Gambier	1,893
Mount Pleasant	74
Munno Para	1,730
Murat Bay	312
Murray Bridge	651
Naracoorte	986
Noarlunga	2,066
Orroroo	332
Onkaparinga	71
Owen	91
Penola	441
Peterborough	337
Pinnaroo	161
Port Augusta	944
Port Broughton	53
Port Elliot	89
Port Germein	80
Port Lincoln	929
Port McDonnell	57
Port Pirie	1,233
Quorn	73
Redhill	40
Renmark	549
Riverton	111
Robe	58
Robertstown	58
Saddleworth	58
Salisbury	7,634
Sedan	110
Snowtown	72
Spalding	102
Stirling	377
Strathalbyn	257
Streaky Bay	177
Tanunda	258
Tatiara	571
Tea Tree Gully	2,534
Tumby Bay	590
Upper Wakefield	38
Victor Harbour	316
Waikerie	391
Wallaroo	107
Warooka	56
Whyalla	1,365
Willunga	275
Wilmington	9
Yankalilla	147
Yorke Peninsula	482
Yorketown	69
Country Total	39,158
Metropolitan Total	32,952
Country Total	39,158
Grand Total	72,110

APPENDIX 15—USAGE AND WASTAGE OF POLIOMYELITIS VACCINE IN SOUTH AUSTRALIA IN 1969 BY VARIOUS AGENCIES

Agency	Department of Public Health		Local Boards of Health		Special Groups		Medical Practitioners				Total	
							Metropolitan		Country			
Vaccine	Salk	Sabin	Salk	Sabin	Salk	Sabin	Salk	Sabin	Salk	Sabin	Salk	Sabin
Number of doses issued	17	20,740	—	106,240	—	7,120	6,008	2,140	1,613	3,040	7,638	139,280
Number of doses used	12	14,343	—	72,110	—	3,629	4,731	1,284	1,423	2,146	6,166	93,512
Number of doses wasted or unaccounted	5	6,397	—	34,130	—	3,491	1,277	856	190	894	1,472	45,768

APPENDIX 16—NOTIFICATIONS OF GONORRHOEA AND SYPHILIS (BY AGE AND SEX)

Age Incidence	Gonorrhoea			Syphilis		
	Male	Female	Total	Male	Female	Total
0-9	1*	—	1	—	—	—
10-14	—	1	1	—	—	—
15-19	66	49	115	4	1	5
20-24	220	44	264	2	1	3
25-29	101	22	123	5	—	5
30-34	62	11	73	4	2	6
35-39	35	10	45	3	—	3
40-49	39	5	44	4	3	7
50-59	14	1	15	3	—	3
60 and over	1	—	1	3	—	3
Unspecified	17	4	21	2	1	3
Total	556	147	703	30	8	38

*Ophthalmia in baby.

APPENDIX 17—SOURCE OF INFECTION WITH GONORRHOEA AND SYPHILIS

Source	Gonorrhoea			Syphilis		
	Male	Female	Total	Male	Female	Total
Spouse or other regular partner	36	52	88	3	2	5
Pick up	390	64	454	13	2	15
Prostitute	45	—	45	3	—	3
Homosexual	8	—	8	—	—	—
Mother	1*	—	—	—	—	—
Unknown	76	31	109	11	4	15
Total	556	147	703	30	8	38

*Baby with ophthalmia neonatorium.

APPENDIX 18—CONTACTS NOTED

	Gonorrhoea			Syphilis		
	Male Contacts of Female Cases Notified	Female Contacts of Male Cases Notified	Total	Male Contacts of Female Cases Notified	Female Contacts of Male Cases Notified	Total
Total contacts noted	200	650	850	12	27	39
Contacts found after search	89	196	285	5	6	11

ANALYSIS OF CASES NOTIFIED SHOWING NUMBER OF CONTACTS NOTED PER CASE

Number of Contacts Noted per Case Notified	Gonorrhoea			Syphilis		
	Cases Notified			Cases Notified		
	Male	Female	Total	Male	Female	Total
1 per case	391	71	462	11	5	16
2 per case	79	18	97	1	—	1
3 per case	11	8	19	1	1	2
4 or more per case	12	17	29	3	1	4
Not known	63	33	96	14	1	15
Total	556	157	703	30	8	38

APPENDIX 19—TREATMENT OF PATIENTS NOTIFIED

Place of Treatment	Gonorrhoea			Syphilis		
	Male	Female	Total	Male	Female	Total
Royal Adelaide Hospital—						
Male Clinic	112	—	112	—	—	—
Female Clinic	—	46	46	—	—	—
Royal Adelaide Wards	8	9	17	1	1	2
Queen Elizabeth Hospital	7	5	12	2	1	3
Queen Victoria Hospital	1*	—	1	—	—	—
Port Adelaide Special Clinic	52	—	52	7	—	7
Private Doctors	321	74	395	12	5	17
Australian Inland Mission	14	3	17	1	—	1
Gaols	14	—	14	1	—	1
Armed forces	15	—	15	2	—	2
Other institutions	—	8	8	—	—	—
Others	1	2	3	2	1	3
Uncertain	11	—	11	2	—	2
Total	556	147	703	30	8	38

*Baby

APPENDIX 20—NOTIFICATIONS OF TUBERCULOSIS FOR YEAR ENDED 31ST DECEMBER, 1969

NEW ACTIVE AND PROBABLY ACTIVE CASES SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	Males						Females						Persons							
			Pulmonary						Pulmonary						Pulmonary					
	Primary	Pleurisy with Effusion	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Primary	Pleurisy with Effusion	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Primary	Pleurisy with Effusion	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Total Persons	Per Cent of each Age Group
0-4	2	—	—	—	—	1	—	—	—	—	—	1	2	—	—	—	—	2	4	2.99
5-9	1	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	1	2	1.49
10-14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15-19	—	—	1	—	—	1	—	—	1	—	—	2	—	—	1	—	—	3	4	2.99
20-24	—	—	1	—	—	—	—	1	—	1	1	4	—	1	2	—	—	—	2	1.49
25-29	—	—	3	1	—	1	—	1	2	—	—	1	—	1	3	2	1	5	12	8.95
30-34	—	—	1	—	—	—	—	—	—	1	—	—	—	—	3	—	—	1	5	3.73
35-39	—	—	2	1	—	2	—	—	1	2	—	2	—	—	2	2	—	—	4	2.99
40-44	—	—	1	3	2	2	—	—	1	2	—	—	—	—	2	5	2	4	13	9.70
45-49	—	—	6	6(1)	1	—	—	—	2	2	—	1	—	—	7	8(1)	1	2	18	13.43
50-54	—	—	5(1)	2	—	1	—	—	—	2	—	—	—	—	7(1)	4	—	—	11	8.21
55-59	—	—	2	1	1	—	—	—	1	2	—	1	—	—	2	3	1	2	8	5.97
60-64	—	—	2	9(1)	*1(1)	2	—	—	1	2	—	1	—	—	3	11(1)	1(1)	3	18	13.43
65-69	—	—	2	6	2(1)	—	—	—	1	1	—	3	—	—	3	7	2(1)	3	15	11.20
70-74	—	—	1(1)	1	1	—	—	—	—	3	—	—	—	—	1(1)	4	1	—	6	4.48
75 and over	—	—	1	2	2(1)	3	—	—	—	2	—	2	—	—	1	4	2(1)	5	12	8.95
Not stated	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3	—	28(2)	32(2)	10(3)	13	—	2	9	18	1	18	3	2	37(2)	50(2)	11(3)	31	134	100.00

* This person had a mixed infection of typical and atypical organisms. Atypical cases shown in brackets.

APPENDIX 21—RE-ACTIVATED CASES OF TUBERCULOSIS FOR YEAR ENDED 31ST DECEMBER, 1969

SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group (Years)	Males				Females				Persons				
	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Total Persons
0- 4	—	—	—	—	—	—	—	—	—	—	—	—	—
5- 9	—	—	—	—	—	—	—	—	—	—	—	—	—
10-14	—	—	—	—	—	—	—	—	—	—	—	—	—
15-19	—	—	—	—	—	—	—	1	—	—	—	1	1
20-24	—	—	—	—	—	—	—	—	—	—	—	—	—
25-29	—	—	—	—	—	—	—	—	—	—	—	—	—
30-34	—	—	—	—	—	—	—	—	—	—	—	—	—
35-39	—	—	—	—	—	—	—	—	—	—	—	—	—
40-44	—	—	—	—	—	—	—	—	—	—	—	—	—
45-49	—	1	—	—	—	—	—	—	—	1	—	—	1
50-54	—	1	—	—	—	—	—	—	—	—	1	1	2
55-59	—	—	1	1	—	—	—	—	1	1	—	—	2
60-64	1	1	—	—	—	—	—	—	—	—	—	—	—
65-69	—	—	—	—	—	—	—	—	—	—	—	—	—
70-74	—	—	—	—	—	1	—	—	—	1	—	—	1
75 and over	—	—	—	—	—	—	—	—	—	—	—	—	—
Not stated	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1	2	1	1	—	1	—	1	1	3	1	2	7

APPENDIX 22—SOURCE OF NOTIFICATIONS (INCLUDING ATYPICALS), 1969

Source	Pulmonary Cases		Non-Pulmonary Cases		Total Cases
	Number	Per Cent	Number	Per Cent	
Mass Community Surveys	19	17.6	—	—	19
Private Medical Practitioners—					
(*a*) direct	8	7.5	11	33.3	19
(*b*) via Chest Clinic	13	12.1	2	6.1	15
(*c*) via City Unit	4	3.7	—	—	4
General Hospitals	21	19.2	16	48.4	37
Chest Clinic	24	22.2	2	6.1	26
Repatriation Clinics and Hospitals	7	6.5	—	—	7
Death Certificates	—	—	2	6.1	2
Special Groups—Via City Unit—					
(*a*) volunteers	1	0.9	—	—	1
(*b*) contacts	6	5.6	—	—	6
(*c*) scar re-exam	5	4.7	—	—	5
Total Notifications—Pulmonary, Non-Pulmonary, Reactivated	108		33		141
Transfer in—Not included	4		1		5

APPENDIX 23—SOUTH AUSTRALIA LOCAL BOARD OF HEALTH ORIGIN FOR THE YEAR ENDING 31ST DECEMBER, 1969

PULMONARY TUBERCULOSIS

METROPOLITAN		COUNTRY	
LOCAL BOARD AREA	Notifications	LOCAL BOARD AREA	Notifications
Adelaide	7	Bute	1
Brighton	1	Coober Pedy	1
East Torrens	9	Eudunda	1
Elizabeth	4	Loxton	1
Enfield	6	Mannum	2
Henley and Grange	2	Minlaton	1
Hindmarsh	6	Mt. Gambier	1
Marion	3	Murray Bridge	2
Mitcham	4	Pt. Augusta	1
Noarlunga	1	Pt. Lincoln	1
Port Adelaide	10	Port Pirie	1
Prospect	1	Renmark	2
Salisbury	5	Woomera	2
Stirling	1		
Tea Tree Gully	1		
Thebarton	2		
Unley	5		
Walkerville	1		
West Torrens	3		
Woodville	17		
	89		17

(Not included in figures—Mildura, 1; Broken Hill, 1).

APPENDIX 23—SOUTH AUSTRALIA LOCAL BOARD OF HEALTH ORIGIN FOR THE YEAR ENDING 31st DECEMBER, 1969—*continued*

NON-PULMONARY TUBERCULOSIS

Local Board Area	Notifications	Local Board Area	Notifications
East Torrens	2	Burra	1
Elizabeth	3	Kapunda	1
Enfield	3	Millicent	1
Glenelg	1	Port Augusta	1
Hindmarsh	2	Port Lincoln	2
Mitcham	4	Strathalbyn	1
Noarlunga	1	Whyalla	1
Prospect	1		
Salisbury	1		
Stirling	1		
St. Peters	1		
Tea Tree Gully	1		
Unley	1		
West Torrens	2		
Woodville	1		
	25		8

APPENDIX 24—NOTIFICATION OF TUBERCULOSIS IN MIGRANTS

COMPARATIVE PERCENTAGE BETWEEN BRITISH AND NON-BRITISH

Period of Residence in Australia	1965	1966	1967	1968	1969
	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
British—					
Under 1 year	4.5	6.6	6.8	2.2	3.4
From 1-5 years	4.5	13.4	20.5	11.1	5.3
From 5-10 years	—	3.3	—	13.3	5.3
Over 10 years	14.0	20.0	18.2	11.1	22.4
Non-British—					
Under 1 year	9	—	13.6	6.7	3.4
From 1-5 years	11	10	9.1	4.4	13.8
From 5-10 years	18	16	6.8	15.6	10.3
Over 10 years	39	30	25.0	35.5	36.1

COMPARATIVE FIGURES FOR ASSISTED AND NON ASSISTED MIGRANTS

Year	Assisted		Non Assisted		Percentage of Total Notifications
	Number	Per Cent	Number	Per Cent	Per Cent
1965	29	66	15	34	28
1966	26	87	4	13	23
1967	26	59	18	41	31
1968	31	68.8	14	31.2	40.9
1969	34	58.6	24	41.4	42.5

APPENDIX 25—MASS X-RAY SURVEYS

YEAR ENDED 31st DECEMBER, 1969

Age	Number X-rayed	Active and Probably Active Cases		Inactive Cases		Other Significant Conditions Requiring Investigation
		Number	Rate per 1,000	Number	Rate per 1,000	
	METROPOLITAN AREAS					
15-19	2,552	—	—	3	1.17	1
20-24	7,404	—	—	4	0.54	11
25-29	6,566	1	0.15	5	0.76	27
30-34	5,851	—	—	4	0.68	35
35-39	6,318	1	0.15	7	1.10	53
40-44	8,432	2	0.11	13	1.54	112
45-49	8,975	3	0.33	19	2.11	143
50-54	7,585	1	0.13	20	2.63	124
55-59	7,659	2	0.26	27	3.52	146
60-64	5,900	1	0.17	31	5.25	161
65-69	4,316	5	1.15	13	3.01	119
70-74	3,207	2	0.62	10	3.11	106
75 and over	4,051	1	0.24	25	6.17	154
Totals	78,816	19	0.24	181	2.29	1,192

APPENDIX 26—MASS X-RAY SURVEYS

YEAR ENDED 31ST DECEMBER, 1969

Age	Number X-rayed	Active and Probably Active Cases		Inactive Cases		Other Significant Conditions Requiring Investigation
		Number	Rate per 1,000	Number	Rate per 1,000	
	COUNTRY AREAS					
15-19	79	—	—	1	12.65	1
20-24	279	—	—	1	3.58	—
25-29	78	—	—	—	—	1
30-34	32	—	—	1	31.25	1
35-39	22	—	—	—	—	—
40-44	11	—	—	—	—	—
45-49	4	—	—	—	—	—
50-54	—	—	—	—	—	—
55-59	1	—	—	—	—	—
60-64	—	—	—	—	—	—
65-69	—	—	—	—	—	—
70-74	—	—	—	—	—	—
75 and over	1	—	—	—	—	—
Totals	507	—	—	3	5.91	3

APPENDIX 27—MASS X-RAY SURVEYS

YEAR ENDED 31ST DECEMBER, 1969

Age	Number X-rayed	Active and Probably Active Cases		Inactive Cases		Other Significant Conditions Requiring Investigation
		Number	Rate per 1,000	Number	Rate per 1,000	
	CITY UNIT METROPOLITAN AREAS					
15-19	6,675	3	0.44	23	3.44	39
20-24	4,915	—	—	17	3.45	29
25-29	3,492	1	0.28	19	5.44	40
30-34	3,082	2	0.64	16	5.19	64
35-39	2,823	—	—	23	8.14	98
40-44	2,458	—	—	32	13.01	131
45-49	2,073	2	0.96	22	10.61	137
50-54	1,497	3	2.00	26	17.36	125
55-59	1,244	1	0.80	23	18.48	137
60-64	983	—	—	35	35.60	124
65-69	813	2	2.46	40	49.20	116
70-74	452	—	—	17	37.61	77
75 and over	651	2	3.07	29	44.54	69
Totals	31,158	16	0.51	322	10.33	986

APPENDIX 28—CITY X-RAY UNIT EXAMINATIONS, 1969

Categories	Number Examined	New Active T.B. X-rayed Current Year	Active Rate per 1,000 Examined
Contacts	1,800	6	3.3
Probationer nurses, police recruits, etc.	2,509	—	—
New arrivals	6,977	—	—
Private doctor referrals	4,645	4	0.8
Commonwealth Government employees	2,380	—	—
State Government employees	479	—	—
Industrial groups	560	—	—
Pensioners	23	—	—
Volunteers	6,964	1	0.14
Teachers training college	1,952	—	—
University students	1,336	—	—
Positive Mantoux children contacts	397	—	—
Re-examined scars	1,136	5	4.4
	31,158	16	0.51

Including three Atypicals.

APPENDIX 29—EPIDEMIOLOGICAL TUBERCULIN TESTS

CONTACTS

Year ended 31st December, 1969

Age (Years)	Number Tested	Type of Test		Positive				Negative	
		Mantoux 10Tu	of OT Heaf OT	Not Previously Vaccinated with B.C.G.		Previously Vaccinated with B.C.G.			
				Number	Per Cent	Number	Per Cent	Number	Per Cent
0- 4	453	453	—	3	0.93	130	28.70	320	99.07
5- 9	467	467	—	9	2.59	119	25.48	339	97.41
10-14	280	280	—	7	3.95	103	36.79	170	96.05
15-19	185	185	—	6	6.12	87	47.03	92	93.88
20-24	152	152	—	9	11.11	71	46.71	72	88.89
25-29	153	153	—	27	29.67	62	40.52	64	70.33
30-34	158	158	—	28	27.72	57	36.08	73	72.28
35-39	126	126	—	26	31.71	44	34.92	56	68.29
40-44	110	110	—	32	37.21	24	21.82	54	62.79
45-49	90	90	—	29	39.73	17	18.89	44	60.27
50 and over	313	313	—	97	36.33	46	14.70	170	63.67
Totals ..	2,487	2,487	—	273	15.81	760	30.56	1,454	84.19

APPENDIX 30—EPIDEMIOLOGICAL TUBERCULIN TESTS

SCHOOL CHILDREN, NURSES, POLICE RECRUITS ETC. (EXCLUDING CONTACTS)

Year ended 31st December, 1969

Age (Years)	Number Tested	Type of Test		Positive				Negative	
		Mantoux 10Tu	of OT Heaf OT	Not Previously Vaccinated with B.C.G.		Previously Vaccinated with B.G.C.			
				No.	Per Cent	No.	Per Cent	No.	Per Cent
0- 4	186	186	—	2	1.47	50	26.88	134	98.53
5- 9	11,936	11,936	—	33	0.28	151	1.26	11,752	99.81
10-14	13,361	13,361	—	106	0.81	331	2.47	12,924	99.18
15-19	1,997	1,997	—	48	4.63	961	48.12	988	95.36
20-24	572	572	—	45	16.01	291	50.87	236	83.98
25-29	280	280	—	58	31.86	98	35.00	124	68.13
30-34	212	212	—	65	40.94	53	25.00	94	59.12
35-39	213	213	—	75	44.11	43	20.18	95	55.88
40-44	178	178	—	80	53.33	28	16.29	70	46.66
45-49	140	140	—	68	53.97	14	10.00	58	46.03
50 and over	372	372	—	176	48.48	9	2.42	187	51.52
Totals ...	29,447	29,447	—	756	2.75	2,029	6.89	26,662	97.24

APPENDIX 31—RE-TESTING OF B.C.G. VACCINATION

YEAR ENDING 31ST DECEMBER, 1969

	Re-tested	Post B.C.G. Positive	Per Cent Positive	Post B.C.G. Negative	Per Cent Negative
3 months after B.C.G.	1,073	835	77.82	238	22.18
12 months after B.C.G.	563	436	77.44	127	22.56
2 years after B.C.G.	117	90	76.92	27	23.08
3 years after B.C.G.	78	63	80.77	15	19.23
4 years after B.C.G.	180	136	75.56	44	24.44
5 years after B.C.G.	270	220	81.48	50	18.52
6 years after B.C.G.	152	129	84.87	23	15.13
7 years after B.C.G.	82	67	81.71	15	18.29
8 years after B.C.G.	441	356	80.73	85	19.27
Total	2,956	2,332	78.89	624	21.11

APPENDIX 32—DEATHS FROM TUBERCULOSIS (ALL FORMS)

FOR YEAR ENDING 31ST DECEMBER, 1969

Age at Death	Male	Female	Total
30-34	—	1	1
35-39	—	—	—
40-44	1	1	2
45-49	1	—	1
50-54	1	—	1
55-59	2	—	2
60-64	1	—	1
65-69	3	—	3
70-74	1	—	1
75-79	3	—	3
80 and over	2	—	2
	15	2	17

APPENDIX 33—YEARLY RECORD OF POPULATION, NOTIFICATIONS, MORBIDITY AND MORTALITY RATES

Year	Population	Notifications			Morbidity Rate			Deaths			Mortality Rate		
	1,000's	Pulmonary	Non-Pulmonary	Total	Pulmonary	Non-Pulmonary	Total	Pulmonary	Non-Pulmonary	Total	Pulmonary	Non-Pulmonary	Total
1949	673	251	18	269	37.3	2.7	40.0	124	20	144	18.5	3.0	21.5
1950	700	343	19	362	49.0	2.7	51.7	117	15	132	16.7	2.1	18.8
1951	720	352	24	376	48.9	3.3	52.2	105	15	120	14.6	2.1	16.7
1952	739	386	30	416	52.2	4.1	56.3	88	9	97	11.9	1.2	13.1
1953	757	362	28	390	47.8	3.7	51.5	44	5	49	5.8	0.7	6.5
1954	797	287	21	308	36.0	2.6	38.6	61	7	68	7.7	0.9	8.6
1955	820	297	29	326	36.2	3.5	39.7	46	4	50	5.6	0.5	6.1
1956	848	319	30	349	37.7	3.5	41.2	39	5	44	4.6	0.6	5.2
1957	874	239	26	265	27.3	3.0	30.3	33	6	39	3.8	0.7	4.5
1958	895	269	33	302	30.0	3.7	33.7	57	4	61	6.4	0.4	6.8
1959	921	240	43	283	26.0	4.7	30.7	42	3	45	4.6	0.3	4.9
1960	945	255	33	288	26.9	3.5	30.4	36	3	39	3.8	0.3	4.1
1961	969	177	37	214	18.3	3.8	22.1	46	3	49	4.7	0.3	5.0
1962	989	210	32	242	21.2	3.2	24.4	35	1	36	3.5	0.1	3.6
1963	1,000	205	31	236	20.5	3.1	23.6	—	—	27	—	—	2.7
1964	1,045	147	30	177	14.1	2.8	16.9	—	—	13	—	—	1.3
1965	1,060	127	29	156	12.0	2.7	14.7	—	—	7	—	—	0.7
1966	1,080	106	25	131	9.8	2.3	12.1	—	—	13	—	—	1.2
1967	1,090	120	21	141	11.0	1.9	12.9	—	—	16	—	—	1.4
1968	1,136	90	20	110	7.9	1.8	9.7	—	—	12	—	—	1.1
1969	1,150	103	31	134	8.1	3.5	11.6	—	—	17	—	—	1.5