

Report of the Director-General of Public Health, New South Wales.

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REPORT

OF THE

**DIRECTOR-GENERAL
OF PUBLIC HEALTH**

FOR 1965

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PARLIAMENT OF NEW SOUTH WALES



REPORT
OF THE
Director-General of Public Health
For 1965

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Office of the Director-General of Public Health
52 Bridge Street, Sydney

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DIVISIONS AND BRANCHES

The following Divisions and Branches are controlled by the Director-General of Public Health: Maternal and Child Health; Tuberculosis; Dental Services; Epidemiology; Occupational Health; Forensic Medicine; Government Analyst; Medical Officers of Health for the Metropolitan, Newcastle, South Coast, Western, North Western, North Coast, Riverina and Broken Hill Districts; Institute of Clinical Pathology and Medical Research; Health Education; Pure Food, Health Inspection; Private Hospitals.

DEPARTMENT OF PUBLIC HEALTH NEW SOUTH WALES

Office of the Director-General of Health
11 Macquarie Street

MEMORANDUM FOR THE DIRECTOR-GENERAL OF HEALTH

Dr. J. H. Macdonald, M.D.

Subject: Proposed amendments to the Health Act, 1908, and the Health Regulations, 1910, relating to the control of infectious diseases.

1. PROPOSED AMENDMENTS TO THE HEALTH ACT, 1908.

(a) Section 10.

The proposed amendments to the Health Act, 1908, are as follows:—

(b) Section 11.

(c) Section 12.

(d) Section 13.

(e) Section 14.

(f) Section 15.

(g) Section 16.

(h) Section 17.

(i) Section 18.

(j) Section 19.

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Report of the Director-General of Public Health

TO

The Honourable The Minister for Health

(The Hon. A. H. JAGO, M.L.A.)

Sir,

I have the honor to present my Annual Report for the year ended December 31st, 1965. Further reorganization has taken place in the administration of public health, the three main changes being the amalgamation of the Divisions of Maternal and Baby Welfare and School Medical Service, the transfer of State Hospitals and the Director of Geriatrics from my administration to the Division of Establishments, and the definition by the Public Service Board of the status within the administration of the Director of State Health Services, who is to be regarded in all respects as my Deputy. Previously his responsibility was limited to certain areas, mainly in the public health services, environmental sanitation and certain committees by delegation from myself.

Of particular significance was the formation of the Bureau of Maternal and Child Health by the amalgamation of the Division of Maternal and Baby Welfare and the School Medical Service. The objectives of this amalgamation and the reorganization of its function are set out briefly further in this letter, and in detail in the Report of the Bureau.

The state of the health of New South Wales was quite satisfactory and stable during 1965, and for your benefit is summarized later under individual Sections and Divisions of my administration. This is a reflection not only of the quantum of service but more pertinently of its quality. The latter is more difficult to assess by any direct measure, and is gauged by acknowledgement of the calibre of the officers and staff by external authorities. Some indication of the extent of this acceptance can be assessed by the number of publications, invitations to seminars and conferences, recognition of research projects, reference areas and teaching potential, and attachments for training purposes by other States and countries.

The units of my administration have satisfied these criteria. From two Divisions only, viz. the Division of Occupational Health and the Institute of Clinical Pathology and Medical Research some seventy-five articles were published or accepted for publication and the total from the whole of my administration would exceed 100. Teaching appointments and requests for lectures or participation in seminars were numerous and extended throughout all sections and Divisions, and are itemised individually in the Sectional and Divisional Report. Of more significance are the requests from overseas for this purpose, indicating an international recognition of the contribution by the Department to the store of scientific knowledge. Certain officers have been accredited as World Health Organization Consultants, and Dr Alan Bell has accepted a short term appointment to one of the senior positions in the World Health Organization.

During the year a very successful conference on Clean Air was conducted at the University of New South Wales, which was attended by representatives from all States, New Zealand, Great Britain and the United States of America. The Division of Occupational Health participated in both the organization and sessions of the Conference, which was opened by yourself and supported financially by the Government towards the expenses of overseas participants. As a result of the Conference I am quite satisfied with the legislation and technical controls over air pollution in this State, which received favourable recognition by the experts attending the Conference.

I regret to state that the Health Advisory Council received permission to disband at its own request during the year,—it having in large measure achieved the objectives for which it was established. Two Reports were completed by it in 1965, and are now receiving your attention, viz. on Forensic Medicine and on Pathology Services of the Department of Public Health. The former points to the deficiencies in the present City Morgue, and in anticipation of correction of these deficiencies a building has been purchased in Parramatta Road as the site for a new Morgue and Coroner's Court. The latter Report advises not only on the role of the Department's Pathology Services, but surveys the total needs against present facilities for this discipline of medicine in the State.

Draft legislation has now been completed on drugs and therapeutic substances and also on poisons. It is anticipated that the latter will be presented to Parliament in 1966, thus enabling New South Wales to control poisons uniformly with other States. The statutory control of drugs and therapeutic substances is still under consideration, and is confused by the need to supplement the Commonwealth's responsibility in this field under the Pharmaceutical Benefits Section of the National Health Act.

Permission has been granted for statutory control of water pollution and negotiations are proceeding between the various Authorities involved as to the mechanism and degree of control and co-ordination necessary to surmount this problem.

The Riverina Health District was established during this year, and the organization for decentralization is now complete with Health Districts covering the whole of the State, except for certain areas in the far west. The next stage will be a division of the Metropolitan Health District into smaller Districts, the first of which will encompass Parramatta and surrounding areas. As soon as accommodation is available in Parramatta this change will be effected.

VITAL STATISTICS

The estimated population of New South Wales at the end of 1965 was 4,237,514. During the year the increase in population by excess of births over deaths was 39,120, by net migration 39,468 making a total increase of 78,588. In 1964 the corresponding figures were 41,031 and 31,602, making a total increase of 72,633. The total number of live births in 1965 was 78,069. The crude birth rate has declined every year over the last five years, from 22.07 per 1,000 mean population in 1961 to 18.61 in 1965. The number of stillbirths registered was 947 or 1.2 per cent of all births (live and still). There were 38,949 deaths, including 1,492 infant deaths for the year. This corresponds to a crude death rate of 9.28 per 1,000 mean population and to an infantile mortality rate of 19.11 per 1,000 live births. Compared with 1964 the death rate from neoplasms, mostly malignant, showed a fall from 1,425 to 1,369 per million mean population. Deaths from malignant neoplasms of the lung have in recent years shown a rapid rise in both number of cases and rate in both sexes; and in 1965 in males the disease accounted for 25.79 per cent of the total deaths due to malignant diseases.

THE HEALTH DISTRICTS

Metropolitan Health District

The proposed establishment of a new Health District in the western metropolitan area has not yet been implemented so the Metropolitan Health District covers the same area and comprises the same Local Authorities as in 1964.

The population of the District at 30th June, 1965 was 2,488,680, an increase of 54,340 over the figures for 1964. Live births numbered 44,604 and deaths numbered 23,763 giving respective rates of 17.91 and 9.54 per 1,000 mean population. There were 9 maternal deaths and 814 deaths under one year of age giving respective rates of 0.18 and 18.25 per 1,000 live births.

Communicable diseases notifiable under the Public Health Act totalled 3,802 with 128 deaths. Of these, infective hepatitis accounted for 1,771 cases and 11 deaths. There were 3 cases of typhoid fever and 2 of poliomyelitis. There were 7 cases of diphtheria with one death in an elderly patient and immunization programmes were intensified in the areas where these occurred.

In environmental sanitation, particular attention was given during the year to the problems of disposal of garbage and of water pollution of rivers and ocean beaches. Public, semi-public and private swimming pools received increased supervision.

The Rural Health Districts

The Riverina Health District with headquarters at Cootamundra came into effect on 2nd August, 1965. With the exception of the sparsely populated Wentworth and Central Darling Shires, the whole of the State is now divided into Health Districts.

Details of vital statistics and activities of these Health Districts are given by the Medical Officers of Health in their reports. In general, observations are made on the problems associated with the drought which most of the districts have experienced and the continued expansion of activities in environmental sanitation, pure food administration, tuberculosis control, maternal and child welfare. Notification of venereal diseases has improved now that notifications of cases in these districts are sent to the Medical Officer of Health.

HEALTH INSPECTION

The Health Inspection Branch at Central Administration is responsible to the Metropolitan Medical Officer of Health for the work carried out in the Metropolitan area. The establishment of the Riverina Health District together with the Kosciuszko State Park reverting to supervision from the South Coast Health District has resulted in the activities of the Branch in country areas becoming more limited. Sanitary surveys were carried out during the year in the Municipalities of Junee, Young and Murrumburrah and the Shires of Murray, Demondrille and Hay. The work of the Survey Section on unhealthy building land was limited by the staff being under establishment. Conferences arranged at Head Office for all departmental Senior Health Inspectors continue to prove to be very useful in keeping officers stationed in the country centres informed of new developments.

PURE FOOD

The Chief Food Inspector reports that food premises are generally satisfactory and that from a wide range of food samples submitted for analysis more were found to be in accordance with the standards than in 1964. The total number of prosecutions and the amount of fines and costs imposed were substantially the same as last year. During the year a "Handbook of Pure Food Legislation", in loose leaf form for subsequent amendments, was issued from the Branch and was widely welcomed by manufacturers and others who must keep abreast of the legal situation in food matters in this State.

COMMUNICABLE DISEASES

A table showing the totals of the diseases notified under the Public Health Act will be found on page 20. Diseases with the more largely increased totals compared with those of 1964, were infectious hepatitis, infantile diarrhoea, scarlet fever and staphylococcal diseases in infants under four weeks of age. There were 11 cases of diphtheria notified with one death. Deaths from notifiable diseases in 1965 numbered 256. The notifiable disease with the highest mortality was staphylococcal pneumonia, 37 patients were notified of whom 34 died giving a mortality rate of 92 per cent.

Venereal Diseases

3,929 cases of gonorrhoea were notified, 8 less than in 1964. Syphilis cases totalled 601 which was 202 more than in 1964, an increase of 50.6 per cent. This rise was mainly due to more late cases in a non-infectious stage being recorded. The proportion of cases in an infectious stage dropped to 62.2 per cent in 1965 compared with 70.2 per cent in 1964. 168 persons were notified as the probable source of infection and as a result of action by Departmental Officers 141 (90 per cent) of these were traced and medically examined.

Leprosy

No cases of leprosy were notified during 1965 and at the end of the year 6 patients remained in isolation at the Prince Henry Hospital. Another patient is in the Repatriation General Hospital. There were no deaths from this disease in 1965.

Poliomyelitis

The efficacy of immunization by Salk Vaccine was again reflected this year insofar as only 3 confirmed cases occurred. There was a considerable drop in the number of doses of vaccine used in 1965 compared with 1964. There has been no death from poliomyelitis in New South Wales since July, 1962.

DIVISION OF TUBERCULOSIS

There was a decrease in the number of notifications received in 1965 (1,124) compared with 1964 (1,416). There was also a further drop in the death rate. The majority of deaths were in persons over 50 years of age who were mainly clinical cases of long standing. The incidence of new active cases is also highest in the same age group. 92.8 per cent of the cases discovered during the year were found by mass miniature radiography in surveys conducted by the Division and by the Anti-Tuberculosis Association of New South Wales. Migrants contributed to 22.6 per cent of the new patients notified in 1965. The policy of conducting compulsory surveys in selected areas was continued during the year and the follow-up of non-attendances in the survey in the electoral district of Fairfield resulted in eight prosecutions.

During the year the Director of the Division attended the Eighteenth International Tuberculosis Conference held in Munich.

THE GOVERNMENT ANALYST

The number of milk samples examined during the year was 18,141, an increase of 13 per cent. The proportion of adulterated samples showed a marked increase; those showing a deficiency in milk fat were from country areas and may have been due to the drought. Samples showing added water increased by 75 per cent over the number in 1964 and these were mainly from the metropolitan area. The details of these and other examinations carried out during the year are set out fully in the report by the Government Analyst. Action is being taken to control the sale of low-calorie and so-called dietetic foods, of which the advertising is often grossly misleading.

In the Water Laboratory staffing problems imposed restrictions on the submission of samples and the numbers of analyses and examinations were considerably less than last year.

With the co-operation of manufacturers of drug tablets and capsules the laboratory now has a comprehensive library of these allowing the rapid identification of almost any single tablet or capsule which has been found associated with death or coma due to overdose or accident.

PRIVATE HOSPITALS

At the end of 1965 in New South Wales there were 175 Private Hospitals with 4,433 beds and 273 cots while Rest Homes totalled 335 with 9,358 beds and 71 cots. Over the last five years there has been an increase of 302 beds in Private Hospitals and 3,678 beds in Rest Homes. Inspections of premises had to be curtailed during the year owing to lack of staff but those inspected showed considerable improvement in general standards.

DIVISION OF FORENSIC MEDICINE

The number of autopsies performed in 1965 was 2,446 showing the same gradual increase that is experienced annually. Examinations of criminal assault cases totalled 140, 12 more than in 1964. The number of specimens submitted for histopathological examination was 5,000, an increase of 551 over that in 1964. This increase overburdened the Medico-legal Laboratory with the consequence that at the end of the year approximately 200 cases remained to be completed.

During the year three aircraft accidents were investigated in conjunction with the Department of Civil Aviation. The medical investigation of aircraft accidents has been extended to R.A.A.F. fatalities within the State.

A block of land has been acquired in Camperdown opposite the University of Sydney and planning has begun for a new building to house the Division and certain Coroners' Courts.

HEALTH EDUCATION AND PUBLICITY

The year was marked by an increased interest in health education activities by the Health Districts and the Specialist Divisions and Branches as well as by various non-departmental organizations. The staff of the section has been increased and the Education Department approved of a syllabus of health education to be introduced into the secondary curriculum. Many teaching activities, the preparation of new publications and the revision of others were carried out by the Health Educationist during the year.

The quarterly journal of the Department *Health in N.S.W.* continued to be popular and the circulation was increased to 16,500. The circulation of the Department's "Newsletter" to medical practitioners also rose during the year. The total distribution figures of posters, pamphlets and books was 1,099,100.

The Department took active part in organizing and exhibiting at various exhibitions during the year including Health Week, the Royal Easter Show, the Waratah Festival and others conducted by voluntary organizations.

NUTRITION

The Nutrition Section is responsible to the Health Educationist for the interpretation of the findings of recent nutrition research to the lay public and for the dissemination of information on nutritional requirements, food values and costs, cooking methods and the organization of food services. The planning and field work for a survey of food eaten at school by approximately 4,000 fourth, fifth and sixth grades children in 20 metropolitan schools was conducted.

BUREAU OF MATERNAL AND CHILD HEALTH

This Bureau commenced to function in April. It was formed to amalgamate the services of the School Medical Service and the Division of Maternal and Baby Welfare with the intention of extending these services to provide a preventive health service to prospective mothers, mothers and children of all ages until they leave school. The Bureau is administered by the Director and consists of a Section of Maternal and Infant Care, a Section of Child Health and a Section of Special Services, each under the administration of an Assistant Director. The functions and work of these Sections are given in detail in the respective reports. Some progress has been made during the last nine months in carrying out the objects of the Bureau and it is anticipated that when all the Sections of the Bureau are housed under one roof this progress will be accelerated.

Section of Maternal and Infant Care

This Section provides preventive health services to prospective mothers, mothers and children up to 2 years of age and during the year continued to maintain the activities of the former Division of Maternal and Baby Welfare with little alteration.

Decentralization of activities to the Health Districts has resulted in country areas obtaining a far better coverage of the nursing staff in Baby Health Centres. Although the low maternal and perinatal mortality statistics continue to reflect a high standard of care of mother and infant compared to other countries, there are still areas in which improvement can be made. Antenatal care, particularly in the country falls below the required standard and prematurity is still the major cause of death in the perinatal period. Following the perinatal mortality survey conducted in 1962 a continuous study has been carried out and with these consecutive years of results available, it is hoped to produce findings of interest in 1966.

Ten new Baby Health Centres were established in 1965 and there are now 424 operating in New South Wales, 153 in the metropolitan area and 271 in the rest of the State.

Details of other activities with full statistics of maternal and infant mortality are given in the Section's report.

Section of Child Health

This Section provides preventive health services to children from 2 years old to school leaving age. It thus took over the work of the School Medical Service with the addition of similar supervision of the health of the pre-school child over two years of age. The work and facilities of the School Medical Service for the diagnosis and evaluation of atypical children were transferred to the Section of Special Services. There are now seven Child Health Centres in Sydney, three new ones having been opened during the year.

In 1965 medical officers examined 199,166 children, of whom 106,783 were fully examined and 92,383 were reviewed. School nurses are now fully responsible for the screening review examinations at second and fourth form levels and conducted 57,148 during the year in the metropolitan area.

Section of Special Services

The function of the Section is to provide diagnostic, advisory and supportive services to atypical children from birth to school-leaving age. On the staff of the Section are specialists from whom advice about children with emotional, developmental and education problems can be obtained. The services of the Section are available to the other Sections of the Bureau, private medical practitioners, Education Department, Department of Child Welfare and Social Welfare and to voluntary bodies concerned with the care of children.

Details are given in the Section's report in connection with its work in speech therapy, hearing defects, in-service training for public health nurses, in special schools for intellectually handicapped children and at Child Guidance Clinics.

MEDICAL EXAMINATION CENTRE

This Centre conducts medical examinations to determine fitness for employment in all State Government Departments except the Police Force and the Department of Government Transport. The Centre arranges examinations in country areas when necessary and it is responsible for assessment of students' fitness to enter and to continue teacher training courses. Medical examinations are carried out for many other bodies such as the Universities, Statutory Boards and Commissions etc. Other services and statistics are shown in the Centre's report.

DENTAL SERVICES

As a result of the new dental legislation of last year six School Dental Nurses, trained in New Zealand, were employed in 1965 and have shown high standards of competence in their work. In the general work of the School Dental Service, 80,189 children of infant and primary school age from 511 schools were examined; of these 66.8 per cent required dental attention. 15,823 children aged 6 to 9 years were also examined and 72.9 per cent required treatment, the parents of the great majority of these accepting the free treatment offered by the Service's clinics. The dental service to Government institutions was continued without interruption—the institutions comprise psychiatric hospitals, State hospitals, penal establishments and those of the Child Welfare Department.

OCCUPATIONAL HEALTH

The Division of Occupational Health, in addition to its medical activities, now consists of three Branches—these are Radiation, Air Pollution Control and Industrial Hygiene. During the year considerable progress was made towards cleaner air. Managements are mostly anxious to accept their community and statutory responsibilities and control equipment valued at approximately £30,000,000 has recently been installed or ordered.

In general the activities of the Radiation branch paralleled those of previous years. The number of licences issued increased by 10 per cent; much of this occurred in country districts which are now being visited regularly.

The year also saw a considerable extension in the Division's activities connected with the evaluation of items of personal protective equipment and Industry is appreciative of the technical assistance given.

A monitoring programme of the amount of air pollution caused by motor vehicles on the road has been carried out for the past four years. It has been concluded that a significant motor pollution problem does not exist as yet in Sydney but the situation is being watched closely.

INSTITUTE OF CLINICAL PATHOLOGY AND MEDICAL RESEARCH

The Institute is divided into seven separate departments as follows:

Pathological Anatomy and Histology: By comparison with 1964 there was a 7.6 per cent increase in the number of specimens received and a 20 per cent increase in the number of sections examined.

Haematology: The complexity of some of the investigations require them to be carried out by Senior Staff and this has imposed a heavy burden on the department. The total number of specimens received was 6,569 on which 23,625 investigations were carried out, an increase of 7.1 per cent over the figures for 1964.

Bacteriology: This department also experienced an increase in the amount of work done and the present staff will not be able to handle much more work as the available laboratory facilities are almost fully extended.

Virology: The department by developing a highly effective system of propagating the rubella virus and determining antibody levels made some important discoveries during the year. During the year, 4,120 specimens were received and 8,613 investigations were carried out being an increase respectively of 18.2 per cent and 24.3 per cent of the previous years figures.

Venereal Disease Serology: During the year 138,808 serological tests were carried out, an increase of 34.8 per cent over the corresponding figure for 1964. This department is the Syphilis Reference Laboratory for the whole of Australia.

Clinical Biochemistry: The work load of this department has doubled every three years, a rate of about 25 per cent compound per year. This trend has been consistent and will lead to difficulties in the future if it continues.

Exfoliative cytology: During the year the work of this department expanded rapidly with some 1,500 doctors all over the State submitting specimens.

Teaching and research activities of the Institute are discussed in the Director's report.

Yours faithfully,

C. J. CUMMINS,

Director General of Public Health.

VITAL STATISTICS

Vital Statistics of New South Wales for the Year 1965

POPULATION

The estimated population at the end of 1965 was 4,237,514 comprising 2,127,906 males and 2,109,608 females. During the year the increase in population by excess of births over deaths was 39,120, by net migration 39,468, making a total increase of 78,588. In 1964 the corresponding figures were 41,031 and 31,602, making a total increase of 72,633.

The estimated mean population for 1965 was males 2,107,784, females 2,088,149, persons 4,195,933.

LIVE BIRTHS

The total number of live births in 1965 was 78,069 comprising 40,219 males and 37,850 females, being 106.3 males to 100 females.

The crude birth rate has declined considerably over the last five years.

TABLE I—CRUDE BIRTH RATE, 1960-1965

Year				Live births per 1,000 mean population
1960	..	..	..	21.38
1961	..	..	..	22.07
1962	..	..	..	21.46
1963	..	..	..	20.75
1964	..	..	..	19.54
1965	..	..	..	18.61

STILLBIRTHS

The number of stillbirths registered was 947 comprising 509 males and 438 females, or 1.20 per cent of all births, live and still. The corresponding proportion was 1.23 per cent in 1964 and 1.37 per cent in 1963.

DEATHS

There were 38,949 deaths, including 1,492 infant deaths for the year. This corresponded to a crude death rate of 9.28 per 1,000 mean population, and to an infantile mortality rate of 19.11 per 1,000 live births.

TABLE II—DEATHS, 1965

					Metropolis	Remainder of State	N.S.W.
Deaths (all ages)	{	Males	..	..	12,149	9,404	21,553
		Females	..	..	10,719	6,677	17,396
		Persons	..	..	22,868	16,081	38,949
Infant Deaths	{	Males	..	..	452	430	882
		Females	..	..	302	308	610
		Persons	..	..	754	738	1,492

Deaths by Cause

Deaths are here classified according to the seventh revision of the International Statistical Classification of Diseases, Injuries, and Causes of Death (I.S.C.).

Lists of number of deaths with the corresponding rates are given in Table XI for all deaths, and in Table XII for infant deaths. The amount of detail given varies, in particular infectious diseases are given special prominence. All major subtotals are given, however. For certain important diseases and groups of diseases tables are also given to show the trend over the last five years.

Neoplasms have shown a rise of rate over the last two years. Most of these are malignant neoplasms. When malignant neoplasms of the lung are shown separately it is seen that in recent years there has been a rapid rise in both number of cases and rate in both sexes. In males in which the disease is much commoner it accounted for 805 out of 3,121 or 25.79 per cent of the total deaths certified as due to malignant disease.

TABLE III—DEATHS FROM NEOPLASMS, MALIGNANT AND OTHERWISE, 1960-1965
(I.S.C. Nos 140-239)

Year	Number of Deaths			Rate per Million Mean Population		
	Males	Females	Persons	Males	Females	Persons
1960	2,854	2,305	5,159	1,479	1,210	1,346
1961	2,866	2,465	5,331	1,454	1,268	1,362
1962	2,932	2,404	5,336	1,468	1,212	1,340
1963	3,101	2,609	5,710	1,524	1,294	1,410
1964	3,226	2,646	5,872	1,558	1,290	1,425
1965	3,157	2,588	5,745	1,498	1,239	1,369

TABLE IV—DEATHS FROM MALIGNANT NEOPLASMS OF THE LUNG (INCLUDES TRACHEA AND PLEURA), 1960-1965 (I.S.C. Nos 162, 163)

Year	Number of Deaths			Rate per Million Mean Population		
	Males	Females	Persons	Males	Females	Persons
1960	572	84	656	296	44	177
1961	626	94	720	318	48	184
1962	675	87	762	338	44	191
1963	705	104	809	346	52	200
1964	830	122	952	401	59	231
1965	805	139	944	382	67	225

Deaths from vascular lesions affecting the central nervous system have over recent years shown no significant change in rate.

TABLE V—DEATHS FROM VASCULAR LESIONS AFFECTING CENTRAL NERVOUS SYSTEM, 1960-1965
(I.S.C. Nos 330-334)

Year	Number of Deaths			Rate per Million Mean Population		
	Males	Females	Persons	Males	Females	Persons
1960	2,184	2,656	4,840	1,132	1,395	1,262
1961	2,100	2,703	4,803	1,065	1,390	1,227
1962	2,186	2,753	4,939	1,095	1,388	1,241
1963	2,155	2,908	5,063	1,059	1,442	1,250
1964	2,171	2,992	5,163	1,048	1,459	1,253
1965	2,273	3,124	5,397	1,078	1,496	1,286

Deaths from arteriosclerotic and degenerative heart disease show steady, if small, increases in rates. In 1965 it accounted for 33.33 per cent of all deaths.

TABLE VI—DEATHS FROM ARTERIOSCLEROTIC AND DEGENERATIVE HEART DISEASE, 1960-1965
(I.S.C. Nos 420-422)

Year	Number of Deaths			Rate per Million Mean Population		
	Males	Females	Persons	Males	Females	Persons
1960	6,453	4,426	10,879	3,344	2,324	2,837
1961	6,626	4,401	11,027	3,361	2,261	2,816
1962	7,170	4,784	11,954	3,591	2,412	3,003
1963	7,321	4,927	12,248	3,598	2,444	3,023
1964	7,710	5,272	12,982	3,723	2,571	3,150
1965	7,707	5,276	12,983	3,656	2,527	3,094

Pneumonia and bronchitis deaths show no consistent pattern, varying from one year to the next, but consistently rising and falling together.

The deaths from influenza (I.S.C. Nos 480-483) do the same, there being 106 deaths in 1964 and 54 in 1965. It could well be that differences in prevalence of influenza and differences of season affect mortality from influenza, pneumonia, and bronchitis alike.

TABLE VII—DEATHS FROM PNEUMONIA, 1960-1965 (I.S.C. Nos 490-493)

Year	Number of Deaths			Rate per Million Mean Population		
	Males	Females	Persons	Males	Females	Persons
1960	747	537	1,284	387	282	335
1961	589	481	1,070	299	247	273
1962	641	561	1,202	321	283	302
1963	729	499	1,228	358	248	303
1964	828	653	1,481	400	318	359
1965	806	570	1,376	382	273	328

TABLE VIII—DEATHS FROM BRONCHITIS, 1960-1965 (I.S.C. Nos. 500-502)

Year	Number of Deaths			Rate per Million Mean Population		
	Males	Females	Persons	Males	Females	Persons
1960	452	107	559	234	56	146
1961	517	91	608	262	47	155
1962	664	140	804	333	71	202
1963	653	130	783	321	64	193
1964	762	138	900	368	67	218
1965	704	157	861	334	75	205

Table XI gives the deaths from certain causes in early infancy (I.S.C. Nos 760-776), but Table XII gives all deaths for infants (age 0). I.S.C. Nos 760-776 account for 906 out of 1,492 deaths, pneumonia, congenital malformations and accidents accounting for another 429, leaving only 157 attributable to all other causes.

Accidents, poisonings and violence accounted for 3,118 deaths, of which 1,166 were motor vehicle accidents. The worst feature of this mortality is the fact that a large proportion are under 25 years of age. All other accidents accounted for another 1,143.

TABLE IX—DEATHS FROM MOTOR VEHICLE ACCIDENTS, 1960-1965 (I.S.C. Nos E810-E835)

Year	Number of Deaths			Rate per Million Mean Population		
	Males	Females	Persons	Males	Females	Persons
1960	742	256	998	385	134	260
1961	703	205	908	357	105	232
1962	708	234	942	355	118	237
1963	693	221	914	341	110	226
1964	762	277	1,039	368	135	252
1965	851	315	1,166	404	151	278

TABLE X—DEATHS FROM ALL OTHER ACCIDENTS, 1960-1965 (I.S.C. Nos E800-E802, E840-E962)

Year	Number of Deaths			Rate per Million Mean Population		
	Males	Females	Persons	Males	Females	Persons
1960	704	390	1,094	365	205	285
1961	738	364	1,102	374	187	281
1962	679	432	1,129	349	218	284
1963	664	361	1,025	326	179	253
1964	754	460	1,214	364	224	295
1965	745	398	1,143	353	191	272

TABLE XI—CAUSES OF DEATH, NEW SOUTH WALES, 1965

I.S.C. Nos.	Cause of Death	Number of Deaths			Rate per Million of Mean Population		
		Males	Females	Persons	Males	Females	Persons
001-138	Infective and parasitic diseases	140	79	219	66	38	52
001-008	Tuberculosis of respiratory system	72	14	86	34	7	20
010	Tuberculosis of meninges and central nervous system	1	1	2	0	0	0
011-019	Tuberculosis, other forms	22	13	35	10	6	8
020-029	Syphilis and its sequelae .. .. .	..	2	2	..	1	0
040-041	Typhoid and para-typhoid fever .. .. .	..	..	..	..	..	..
045-048	Dysentery .. .. .	..	..	..	..	..	..
050	Scarlet Fever .. .. .	..	..	..	..	..	..
052	Erysipelas .. .. .	..	..	..	..	..	..
055	Diphtheria .. .. .	..	1	1	..	0	0
056	Whooping Cough .. .. .	..	2	2	..	1	0
057	Meningococcal Infections	7	3	10	3	1	2
061	Tetanus	1	3	4	0	1	1
080	Acute poliomyelitis .. .. .	..	..	..	..	..	..
081	Late effects of acute poliomyelitis	6	5	11	3	2	3
082	Acute infectious encephalitis	1	..	1	0	..	0
083	Late effects of acute infectious encephalitis	2	5	7	1	2	2
085	Measles	2	10	12	1	5	3
092	Infectious hepatitis	2	19	21	1	9	11
Residue of 001-138	Other infective and parasitic diseases	26	19	45	12	9	11
140-239	Neoplasms	3,157	2,588	5,745	1,498	1,239	1,369
140-199	Malignant neoplasms	2,826	2,346	5,172	1,341	1,123	1,233
200-205	Neoplasms of lymphatic and haematopoietic tissue	295	203	498	140	97	119
210-239	Other neoplasms	36	39	75	17	19	18
240-289	Allergic, endocrine system, metabolic and nutritional diseases	347	460	807	165	220	192
260	Diabetes mellitus	189	294	483	90	141	115
280-286	Avitaminoses and nutritional deficiency states	14	9	23	7	4	5
Residue of 240-289	Other allergic, endocrine system, metabolic and nutritional diseases	144	157	301	68	75	72
290-299	Diseases of the Blood and Blood Forming Organs	71	77	148	34	37	35
300-326	Mental, Psychoneurotic and Personality Disorders	116	65	181	55	31	43
330-398	Diseases of the Nervous System and Sense Organs	2,457	3,286	5,743	1,166	1,574	1,369
330-334	Vascular lesions affecting central nervous system—	..	..	..	..	..	..
331	Cerebral haemorrhage	948	1,230	2,178	450	589	519
332	Cerebral embolism and thrombosis	987	1,368	2,355	468	655	561
330, 333, 334	Other vascular lesions of C.N.S.	338	526	864	160	252	206
340	Meningitis, except meningococcal and tuberculous	25	7	32	12	3	8
343	Encephalitis, myelitis and encephalomyelitis (except acute infectious)	1	5	6	0	2	1
341-342, 344-398	Other diseases of the nervous system and sense organs	158	150	308	75	72	73
400-468	Diseases of the Circulatory System	9,466	7,295	16,761	4,491	3,494	3,995
400-416	Rheumatic fever and chronic rheumatic heart disease	137	183	320	65	88	76
420-422	Arteriosclerotic and degenerative heart disease	7,707	5,276	12,983	3,656	2,527	3,094
430-434	Other diseases of the heart	652	724	1,376	309	347	328
440-447	Hypertensive disease	388	511	899	184	245	214
450-456	Diseases of arteries	516	532	1,048	245	255	250
460-468	Diseases of veins and other diseases of circulatory system	66	69	135	31	33	32
470-527	Diseases of the Respiratory System	1,729	835	2,564	820	400	611
480-483	Influenza	26	28	54	12	13	13
490-493	Pneumonia	806	570	1,376	382	273	328
500-502	Bronchitis	704	157	861	334	75	205
470-475, 510-527	Other diseases of the respiratory system	193	80	273	92	38	65
530-587	Diseases of the Digestive System	598	481	1,079	284	230	257
540-545	Diseases of stomach and duodenum	179	79	258	85	38	61
550-553	Appendicitis	21	6	27	10	3	6
560-561	Hernia of the abdominal cavity	27	37	64	13	18	15
570	Intestinal obstruction without mention of Hernia	48	56	104	23	27	25
571	Gastro-enteritis and colitis except ulcerative, age four weeks and over	61	45	106	29	22	25
572	Chronic enteritis and ulcerative colitis	25	42	67	12	20	16
576-577	Peritonitis and peritoneal adhesions	3	4	7	1	2	2
581	Cirrhosis of liver	124	90	214	59	43	51
Residue of 530-587	Other diseases of digestive system	110	122	232	52	58	55
590-637	Diseases of the Genito-Urinary System	493	436	929	234	209	221
590-594	Nephritis and nephrosis	183	169	352	87	81	84
610-612	Diseases of the prostate	132	..	132	63	..	31
600-609, 613-637	Other diseases of the genito-urinary system	178	267	445	84	128	106
640-689	Deliveries and Complications of Pregnancy, Child-birth and Puerperium .. .. .	..	25	25	..	12	6
640-649	Complications of Pregnancy .. .. .	..	5	5	..	2	1
650-652	Abortion—	..	..	..	..	..	..
650.2, 651.2, 652.2	Criminal .. .. .	..	3	3	..	1	1
Residue of 650-652	Other .. .. .	..	4	4	..	2	1
670-678	Complications of delivery .. .. .	..	8	8	..	4	2
680-689	Complications of puerperium .. .. .	..	5	5	..	2	1
690-716	Diseases of the Skin and Cellular Tissue	13	23	36	6	11	9
720-749	Diseases of the Bones and Organs of Movement	49	51	100	23	24	24
750-759	Congenital Malformations	197	186	383	93	89	91
760-776	Certain Diseases of Early Infancy	534	373	907	253	179	216
760-761	Injury at Birth	134	89	223	64	43	53
762	Post-natal asphyxia and atelectasis	91	69	160	43	33	38
776	Immaturity unqualified	176	132	308	84	63	73
763-775	Other diseases of early infancy	133	83	216	63	40	51
780-795	Symptoms, Senility and Ill-defined Conditions	93	111	204	44	53	49
794	Senility without mention of psychosis	54	97	151	26	46	36
780-793, 795	Other symptoms and ill-defined conditions	39	14	53	19	7	13
E800-E999	Accidents, Poisonings and Violence	2,093	1,025	3,118	993	491	743
E810-E835	Motor vehicle accidents	851	315	1,166	404	151	278
E800-E802 E840-E962	Other accidents	745	398	1,143	353	191	272
E963, E970-E979	Suicide and self inflicted injury	458	274	732	217	131	174
E964, E965, E980-E999	Homicide and operations of war	39	38	77	19	18	18
001-E999	All Causes	21,553	17,396	38,949	10,225	8,331	9,283

.. No deaths in this category
0 Rate less than 0.5 per million

TABLE XII—CAUSES OF DEATH OF INFANTS UNDER ONE YEAR OF AGE, NEW SOUTH WALES, 1965

I.S.C. Nos.	Cause of Death	Number of Deaths			Rate per 1,000 Live Births		
		Males	Females	Persons	Males	Females	Persons
001-019	Tuberculosis .. .. .	..	..	1	..	..	..
020-029	Syphilis and its sequelae .. .. .	..	1	1	..	..03	..01
037	Meningococcal infections	1	..	1	..02	..	..01
080-081	Poliomyelitis .. .. .	..	..	..	..	..	..
082-083	Infectious encephalitis	2	1	3	..05	..03	..04
Residue of 001-138	Other infective and parasitic diseases	8	4	12	..20	..11	..15
340	Meningitis, except meningococcal and tuberculous	12	3	15	..30	..08	..19
490-493	Pneumonia, age 4 weeks and over	79	40	119	1.96	1.06	1.52
500-502	Bronchitis	5	6	11	..12	..16	..14
571	Gastroenteritis and colitis, except ulcerative, age 4 weeks and over	24	14	38	..60	..37	..49
750-759	Congenital malformations	138	110	248	3.43	2.91	3.18
760, 761	Birth injury	60	36	96	1.49	..95	1.23
762	Postnatal Asphyxia and atelectasis	74	53	127	1.84	1.40	1.63
763	Pneumonia of newborn	50	23	73	1.24	..61	..94
764	Diarrhoea of newborn	41	46	87	1.02	1.22	1.11
765-773	Other diseases of early infancy	16	10	26	..40	..26	..33
774	Immaturity with mention of any other subsidiary condition	6	1	7	..15	..03	..09
776	Immaturity, unqualified	1	..	1	..02	..	..01
Residue of 140-795	All other causes, except accidents, poisonings and violence	46	27	73	1.14	..71	..94
E800-E999	Accidents, poisonings, and violence	62	40	102	1.54	1.06	1.31
		2	4	6	..05	..11	..08
		176	132	308	4.38	3.49	3.95
		44	32	62	1.09	..85	..79
		35	27	76	..87	..71	..97
	All causes	882	610	1,492	21.93	16.12	19.11

* Without mention of immaturity, 4th digit 0-4.

† With immaturity, 4th digit 5-9.

COMMUNICABLE DISEASES

Division of Epidemiology

Director: H. C. JOHNSTON, M.B., B.S., D.P.H.

Location: 93 Macquarie Street, Sydney

The functions of the Division concerned with the notification of infectious diseases under the Public Health Act, 1902-1952 were transferred on 1st January, 1965, to the Staff under the Director of State Health Services. The Division is thus now concerned solely with the administration of the Venereal Diseases Act, 1918-1963 and conducting the Divisional venereal diseases clinic for males.

Dr D. L. Jones was appointed Medical Statistician at the beginning of the year and has been placed on the Division's establishment but he is directly responsible to the Director-General of Public Health.

The venereal diseases clinic has three other medical officers working full time, together with clinic attendants and clerical staff.

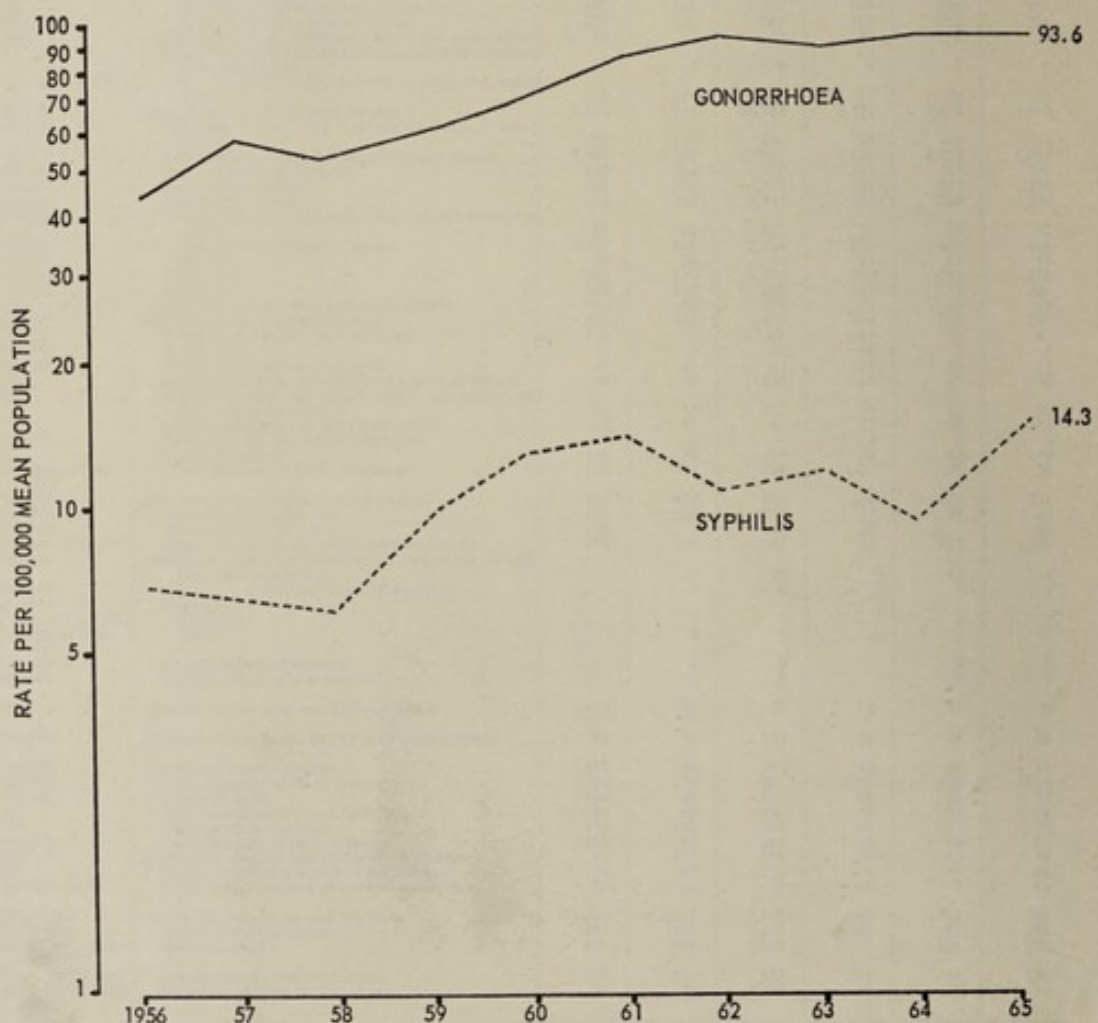
Venereal Disease in New South Wales

FIGURE 1

NEW SOUTH WALES

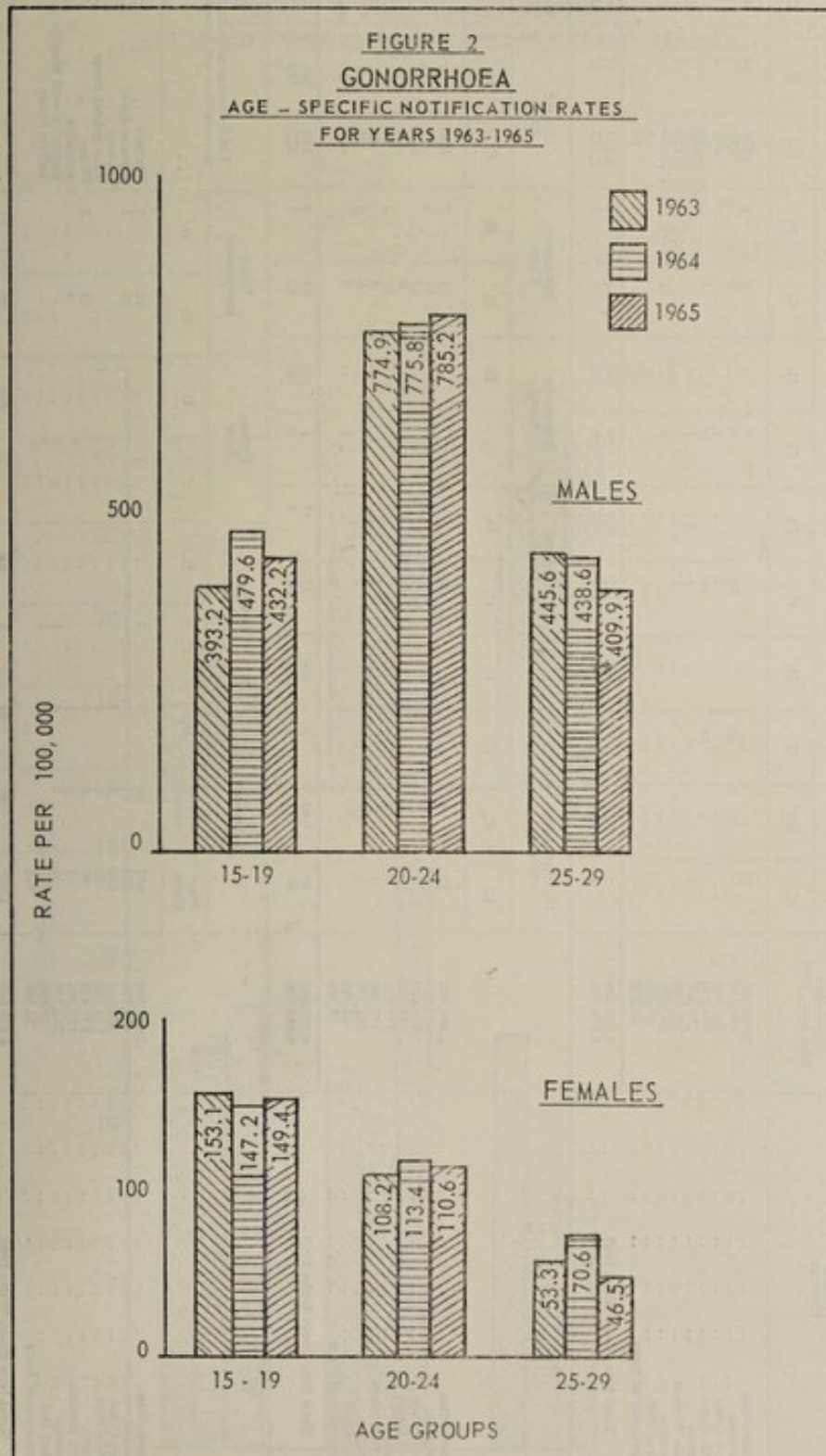
NOTIFICATION RATES FOR GONORRHOEA & SYPHILIS 1956-1965

(SEMI-LOGARITHMIC GRID)



The above graph shows the trends in the notification rates of gonorrhoea and syphilis in New South Wales over the last ten years. Compared with those for 1964 this year's total of gonorrhoea cases was approximately the same but the syphilis total rose from 399 to 601. This

rise was partly due to outbreaks of infectious syphilis mostly among aborigines and part-aborigines in two towns in the Western Health District, and partly to the Division being able to identify a greater number of un-notified cases (Table 1). Medical officers of many public hospitals as well as many private practitioners fail to notify cases of venereal disease; this is probably exemplified in the figures for the South Coast Health District (Table 1) where the true incidence in the populous industrial areas must be much higher than that shown. A disturbing feature in the notifications of syphilis is the total of 8 cases of congenital syphilis in infants under 1 year (Table 3).



NOTIFIABLE INFECTIOUS DISEASES RECORDED IN NEW SOUTH WALES DURING THE YEAR 1965 UNDER THE PUBLIC HEALTH ACT, 1902-1961, CASES AND DEATHS
CLASSIFIED BY HEALTH DISTRICTS, COMPARED WITH 1964 TOTALS

Health Districts	Estimated Population 30th June, 1965	Acute Anterior Poliomyelitis		Ascariasis		Brucellosis		Diphtheria		Infectious Hepatitis		Infantile Diarrhoea		Leptospirosis	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
Metropolitan	2,488,680	2	..	..	..	3	..	7	1	1771	11	409	19	..	..
Newcastle	496,710	..	..	..	..	4	..	2	..	421	1	64	9	..	..
South Coast	321,810	..	..	..	..	1	..	..	..	492	2	44	12	..	..
North Coast	153,270	..	..	..	..	2	..	..	..	36	..	14	5	10	..
Western	277,920	1	..	16	..	2	..	..	..	251	2	103	13	..	..
North Western	157,380	..	..	1	..	3	..	..	..	156	..	42	7	..	..
Riverina	242,770	..	..	..	..	6	..	1	..	179	1	18	4	..	..
Broken Hill	29,890	..	..	..	..	..	..	..	..	13	..	..	1	..	..
*Remainder of State	24,198	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total New South Wales 1965	4,192,648	3	Nil	52	Nil	20	Nil	11	1	3,327	17	695	70	10	Nil
1964	4,116,706	2	Nil	110	Nil	19	Nil	9	..	2,723	17	578	30	14	Nil
Metropolitan	2,488,680	19	6	30	..	..	..	13	2	306	..	19	19	533	..
Newcastle	496,710	4	3	8	..	..	..	11	1	126	..	5	3	182	..
South Coast	321,810	8	2	1	..	..	..	13	..	121	..	4	3	158	..
North Coast	153,270	2	..	..	..	..	..	4	..	73	..	1	5	98	..
Western	277,920	2	1	3	..	..	..	11	3	25	..	5	5	65	..
North Western	157,380	2	..	2	..	..	..	3	..	39	..	3	3	63	..
Riverina	242,770	3	..	..	..	..	..	6	2	..	..	..	..	41	..
Broken Hill	29,890	..	..	..	..	1	..	1	..	..	..	..	..	3	..
*Remainder of State	24,198	..	..	3	..	..	..	..	..	..	..	..	..	..	..
Total New South Wales 1965	4,192,648	45	13	57	12	1	1	62	8	619	Nil	37	34	1,141	Nil
1964	4,116,706	60	12	78	6	3	Nil	42	7	427	Nil	37	15	932	Nil
Metropolitan	2,488,680	642	64	3	..	2	..	41	5	Cholera	..	..	..	Nil	Nil
Newcastle	496,710	143	11	..	..	..	..	10	1	Dengue Fever	..	..	..	1	1
South Coast	321,810	118	9	..	..	..	..	..	..	Leprosy	..	..	..	5	..
North Coast	153,270	20	4	..	..	..	..	..	..	Paratyphoid Fever	..	..	..	6	..
Western	277,920	60	6	..	..	..	..	41	5	Plague	..	..	..	Nil	Nil
North Western	157,380	18	2	..	..	..	..	4	..	Smallpox	..	..	..	Nil	Nil
Riverina	242,770	31	3	1	..	..	..	..	..	Staphylococcal Mastitis	..	..	..	Nil	Nil
Broken Hill	29,890	1	..	..	..	..	..	..	..	Yellow Fever	..	..	..	Nil	Nil
*Remainder of State	24,198	*14	..	..	..	..	..	..	..	..	..	..	..	..	..
Total New South Wales 1965	4,192,648	1,047	99	5	Nil	2	Nil	96	11	619	Nil	37	34	1,141	Nil
1964	4,116,706	1,206	113	7	Nil	3	Nil	88	8	427	Nil	37	15	932	Nil

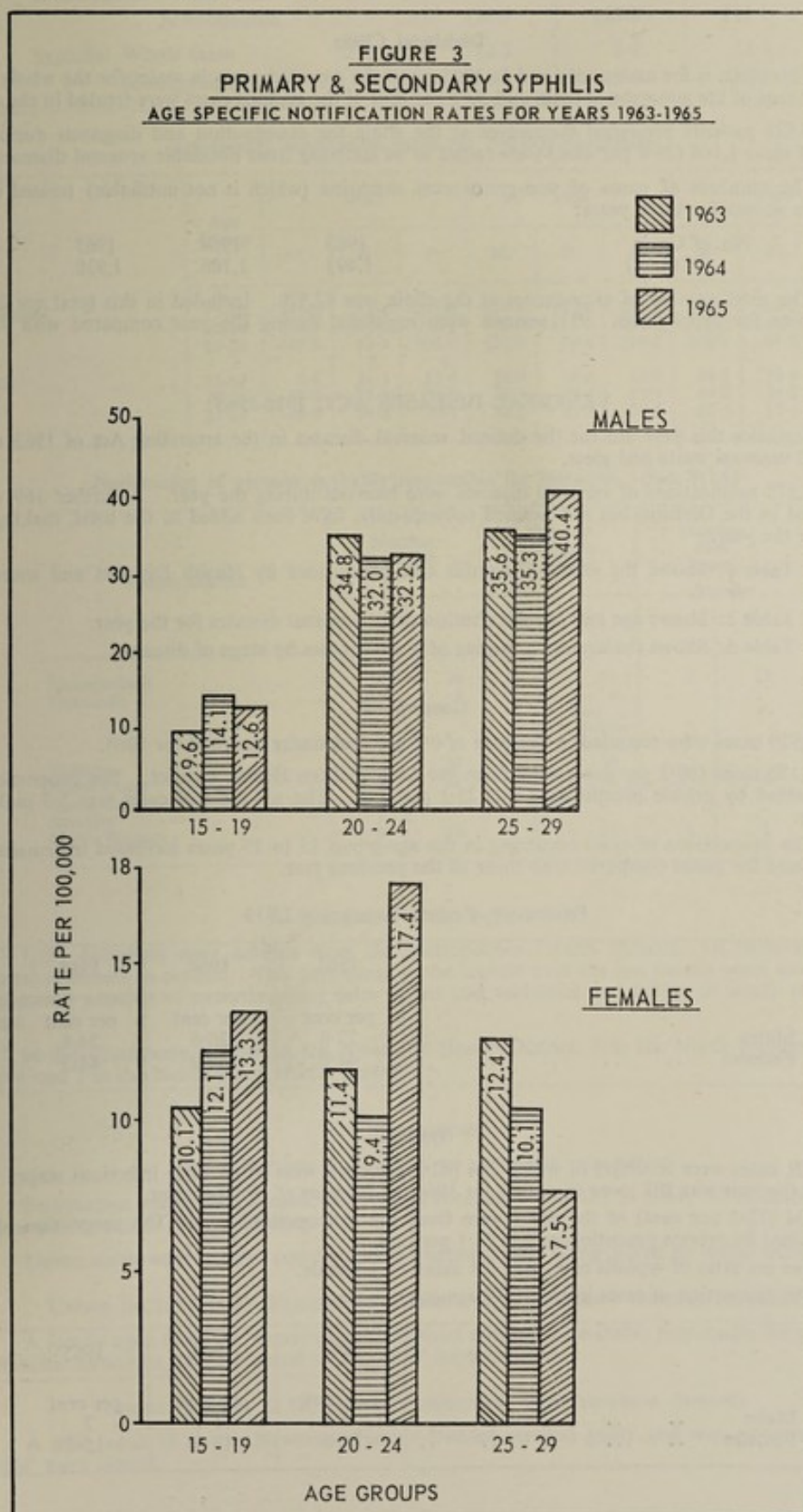
* The Riverina Health District was established on 1st August, 1965. The figures for Riverina and Remainder of State have been adjusted on an area basis for the whole year.

† Includes 11 resident outside of State.

Totals for 1964

The following notifiable infectious diseases were not recorded in 1965

The upsurge in venereal disease has focussed attention on its prevalence in teenagers. The age-group 15-19 years shows the highest proportion of female gonorrhoea cases but this proportion over the last 5 years has not changed very much, ranging from a high of 44.8 per cent in 1963 to a low of 40.9 per cent in 1964; this year it was 44.3 per cent. Teenage girls have thus not contributed significantly to the overall increase in notified female cases of gonorrhoea. Age-specific notification rates for 3 age-groups for the last three years are shown for gonorrhoea in figure 2 and for primary and secondary syphilis in figure 3.



This year was the first full year for the notification of the probable source of infection. Some details of this are shown later. Quite often on investigation of some of these it is apparent that the notifying practitioner could not have had reasonable cause to believe the person named was responsible for the infection because of other sexual exposures during the incubation periods of the diseases. In the metropolitan area the Director by arrangement with public hospital clinics and by contact with private physicians endeavours to have treated all female sexual contacts of proved cases of gonorrhoea in males.

Divisional Clinic

This clinic is for males only and in 1965 of all the reported cases in males for the whole State 49.5 per cent of the gonorrhoea cases and 30.9 per cent of the syphilis cases were treated in the clinic.

6,631 patients presented themselves at the clinic for examination and diagnosis during the year; of these 1,766 (26.6 per cent) were found to be suffering from notifiable venereal diseases.

The numbers of cases of non-gonococcal urethritis (which is not notifiable) treated in the clinic are shown for three years:

No. of Cases (N.G.U.)	1963	1964	1965
	1,493	1,786	1,918

The total number of attendances at the clinic was 42,528. Included in this total are 23,427 attendances for prophylaxis. 911 seamen were registered during the year compared with 786 in 1964.

VENEREAL DISEASES ACT, 1918-1963

Statistics this year are for the defined venereal diseases in the amending Act of 1963 which excluded venereal warts and gleet.

4,373 notifications of venereal diseases were received during the year. A further 169 cases, diagnosed in the Division but not notified subsequently, have been added to the total, making this 4,542 for the year.

Table 1: Shows the cases of syphilis and gonorrhoea by Health Districts and source of report.

Table 2: Shows age and sex distribution of all venereal diseases for the year.

Table 3: Shows the age-sex grouping of syphilis cases by stage of disease.

Gonorrhoea

3,929 cases were recorded, a decrease of 0.2 per cent under the total for 1964.

3,150 cases (80.2 per cent) were from the Metropolitan Health District. The proportion of cases notified by private practitioners was 25.1 per cent. The sex ratio of cases was 5.5 males to 1 female.

The proportions of cases occurring in the age-group 15 to 19 years increased in females but was reduced for males compared with those of the previous year.

Percentage of cases in age-group 15-19

	1963	1964	1965
	per cent	per cent	per cent
Males	22.8	26.6	24.8
Females	44.8	40.9	44.3

Syphilis

601 cases were recorded of which 374 (62.2 per cent) were in an early infectious stage. The total for the year was 202 more than that for 1964, an increase of 50.6 per cent.

434 (72.2 per cent) of the cases were from the metropolitan area. The proportion of the total notified by private practitioners was 28.1 per cent.

The sex ratio of syphilis cases was 1.8 males to 1 female.

The proportion of cases in the 15-19 age-group were:

	1963	1964	1965
	per cent	per cent	per cent
Males	5.2	11.7	7
Females	20.6	18.5	15.7

Notification Rates

The crude notification rates per 100,000 mean population are shown for three years:

			1963	1964	1965
Gonorrhoea: Whole State	..	..	89.3	95.6	93.7
Metropolitan	..	..	126.9	133.9	131.1
Syphilis: Whole State	..	..	12.3	9.7	14.3
Metropolitan	..	..	14.7	10.0	17.0

Age-specific notification rates per 100,000 population

				Age Group	1963			1964			1965		
					M.	F.	P.	M.	F.	P.	M.	F.	P.
Gonorrhoea	..	..	15-19	343.2	153.1	276.6	479.6	147.2	317.8	432.2	149.4	294.8
			20-24	774.9	108.1	450.2	776.1	113.4	454.6	785.2	110.6	458.1	
			25-29	445.5	53.3	256.0	438.6	70.6	259.7	409.9	46.5	233.4	
Syphilis	..	..	15-19	9.6	21.5	15.4	16.9	14.4	15.7	14.2	18.9	16.5
			20-24	48.8	22.9	35.9	35.3	19.1	27.5	44.2	34.2	39.3	
			25-29	40.9	18.6	30.1	38.2	16.3	27.6	52.5	17.3	35.4	

Notification of persons probably responsible for infection. Sec. 9(2A)

Health District				Number Notified		Number Medically Examined		Number Not Traced	
				M.	F.	M.	F.	M.	F.
Metropolitan	..	..	..	10	76	7	61	3	15
Newcastle	..	..	..	..	4	..	4	..	..
							(see below Prosec.)		
Western	..	..	..	12	21	12	20	..	..
North Coast	..	..	..	4	21	4	17	..	4
South Coast	..	..	..	1	..	..	..	1	..
Riverina	..	..	..	1	..	1	..	..	..
North Western	..	..	..	4	14	3	12	1	2

Notification of Default (Sec. 10)

1,191 defaulters were notified from the Metropolitan Health District. Of these 661 (55.5 per cent) remained in default. This percentage is the highest over the last twenty years and reflects the common practice of patients giving false names and addresses and failing to notify change of address.

94 defaulters were notified in the Newcastle Health District, 2 in the North Western Health District and 1 in the North Coast Health District.

Prosecutions

UNDER SECTION 5 (FAILURE TO CONTINUE TREATMENT)

Summonses were issued against 692 persons compared with 617 in 1964; 31 of these persons were in the Newcastle Health District.

Eleven males were arrested and completed treatment after being placed on verbal recognizance.

UNDER SECTION 9A(2) (FAILURE TO ATTEND FOR COMPULSORY MEDICAL EXAMINATION)

A female aged 18 in the Western Health District notified as probably responsible for a number of syphilitic infections, was sentenced to 2 months' imprisonment.

UNDER SECTION 21 (KNOWINGLY INFECTING WITH VENEREAL DISEASE)

A male aged 18 in the Newcastle Health District pleaded guilty and was sentenced to six months' hard labour.

TABLE 1

(Figures for 1964 are shown in brackets)

Source of Report	Gonorrhoea		Syphilis	
	Male	Female	Male	Female
Navy	169 (159)	....	2 (6)	....
Army	46 (116)	....	— (3)	....
Air Force	2 (4)	....	— (—)	....
Metropolitan H.D.—				
Private Practitioners	582 (673)	141 (182)	35 (29)	13 (14)
Hospitals	388 (385)	367 (414)	46 (43)	81 (68)
Divisional Clinic	1,643 (1,605)	— (—)	119 (90)	— (—)
Newcastle H.D.—				
Private Practitioners	49 (46)	11 (4)	4 (5)	7 (2)
Hospitals	248 (212)	16 (9)	15 (11)	6 (1)
South Coast H.D.—				
Private Practitioners	10 (29)	— (—)	2 (5)	5 (—)
Hospitals	5 (10)	1 (—)	8 (3)	5 (—)
North Coast H.D.—				
Private Practitioners	43 (25)	14 (11)	4 (3)	8 (1)
Hospitals	8 (5)	— (1)	— (3)	— (—)
North Western H.D.—				
Private Practitioners	28 (5)	8 (—)	4 (6)	1 (1)
Hospitals	3 (1)	— (1)	— (4)	— (7)
Western H.D.—				
Private Practitioners	66 (20)	19 (4)	45 (10)	25 (14)
Hospitals	— (5)	— (—)	4 (6)	4 (—)
Riverina H.D.—				
Private Practitioners	2 (—)	2 (—)	— (—)	1 (—)
Hospitals	— (—)	— (—)	— (—)	— (—)
Broken Hill (City only)				
Private Practitioners	4 (—)	1 (—)	— (—)	— (—)
Hospitals	10 (—)	5 (—)	1 (—)	— (—)
Remainder of State				
Private Practitioners	4 (5)	— (—)	6 (—)	9 (—)
Hospitals	4 (1)	1 (—)	— (—)	1 (1)
Diagnosed in Division but not notified	8 (5)	21 (—)	90 (37)	50 (26)
Total	3,322 (3,311)	607 (626)	385 (264)	216 (135)

TABLE II—CASES OF VENEREAL DISEASE NOTIFIED DURING 1965 BY DISEASE, AGE AND SEX

	0-14		15-19		20-24		25-29		30-39		40-49		50-59		60-69		70 and over		Age not Stated		Totals		Grand Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Gonorrhoea	2	28*	823	269	1245	165	578	62	437	64	167	10	50	3	7	..	3	10	6	3322	607	3929	
Syphilis	5	4	27	34	70	51	74	23	77	47	66	26	36	16	15	4	11	4	8	385	216	601	
Chancroid	..	..	2	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	3	..	3
Lymphogranuloma Venereum	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2
Granuloma Inguinale	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gonorrhoeal Ophthalmia	5	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	2	7
Totals	12	34	852	303	1317	216	652	85	515	111	233	36	86	19	22	4	14	14	14	3717	825	4542	

* In this total—15 girls were aged 14
 2 girls were aged 13
 1 girl was aged 12
 1 girl was aged 10
 3 girls were aged 9
 1 girl was aged 5
 1 girl was aged 4
 2 girls were aged 3
 1 girl was aged 2
 1 girl was aged 1 year 10 months.

TABLE III—SYPHILIS: AGE-SEX GROUPING BY STAGE OF DISEASE

	0-14		15-19		20-24		25-29		30-39		40-49		50-59		60-69		70 and over		Not Stated		Totals		Grand Total
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Primary	..	1	18	13	45	10	50	4	49	13	31	2	6	2	4	..	1	..	3	..	207	45	252
Secondary	..	..	6	10	6	12	7	5	9	10	7	6	2	2	3	..	1	..	1	3	41	48	89
Latent 1st Year	..	..	..	1	7	4	8	1	3	4	1	1	..	..	1	1	..	..	1	1	20	13	33
Cardio-vascular	..	..	..	..	..	..	..	..	..	..	1	..	6	..	2	1	..	..	..	..	9	1	10
C.N.S.	..	..	..	..	..	..	..	..	..	..	2	..	6	3	1	..	..	..	..	..	16	8	24
All other Late and Latent	..	..	3	10	11	25	9	12	10	20	24	14	14	9	4	2	8	3	4	83	96	179	
Congenital under 1 year of age	5	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	3	8	
Congenital over 1 year of age	..	..	..	..	1	..	..	1	1	..	..	1	2	..	..	..	..	..	..	..	4	2	6
Totals	5	4	27	34	70	51	74	23	77	47	66	26	36	16	15	4	11	3	4	385	216	601	

Hansen's Disease (Leprosy)

On 1st January, 1965, eleven patients, consisting of 6 males and 5 females, remained in hospital isolation. There were 16 listed patients.

Isolated at the Prince Henry Hospital

Number on 1st January, 1965	11
Admitted during the year	Nil
Readmitted	Nil
Discharged	4
Absconded	1
Number remaining in isolation on 31st December, 1965	6

Distributed under nationalities, the following table shows the movements of patients during the year:

	Admitted	Re-admitted	Discharged	Died	Remaining in at 31st December, 1965
Whites of European descent—					
New South Wales	1	..	3
Maltese	2	..	..
Coloured patients—					
Aboriginal	1	..	1
Indian	1
Chinese	1
Others
Totals	4	..	6

Repatriation General Hospital

One in-patient, white Australian male, remains in hospital care.

Conditionally Discharged

Two Maltese, one Aboriginal and one Australian. There are 16 listed patients for New South Wales as on 31st December, 1965.

Both in and out-patients with Hansen's Disease have available the resources of a large general hospital together with the services of consultants in tropical medicine. The patients provide important clinical material for the training of students, resident medical officers and post-graduates in the various aspects of diagnosis and treatment of this disease.

A close liaison is maintained by the Department with the Physician in Charge of the Infectious Diseases Division, The Prince Henry Hospital, and with the Professor in Charge of Tropical Medicine at the School of Public Health and Tropical Medicine on all matters concerning the care and control of the patients.

Tuberculosis Division

Director: K. W. H. HARRIS, E.D., M.B., B.S., D.P.H., F.C.C.P.

Location: 86-88 George Street North (Headquarters) and 697 George Street West, Sydney (X-ray Clinic)

FUNCTION

The Division of Tuberculosis is responsible for the planning and supervision of the Anti-Tuberculosis Campaign in New South Wales. In addition it participates in the campaign by mass x-ray surveys; the conduct of a fixed x-ray clinic; the establishment of therapeutic and follow-up clinics in general hospitals throughout the State; the medical assessment of Tuberculosis Pensions (by delegation from the Commonwealth Department of Social Services) and the organization of domiciliary treatment by its team of domiciliary nurses.

It shares the mass x-ray programme for the State with a voluntary organization, the Anti-Tuberculosis Association of New South Wales, each being allotted a sector of the State. Epidemiological studies in school children by mantoux testing was previously one of its functions but these have now been transferred to the School Medical Service. Its epidemiological function is now restricted and this in part only to other groups at risk.

The Division's activities are supported by the Commonwealth Government under a Commonwealth State Agreement in terms of the Tuberculosis Act, 1948 and powers of compulsion and other statutory authority for its campaign are contained in Division 3 of the Public Health Act, 1902-1965.

STAFF

The Division has a staff of 94, excluding the Director and the Deputy Director, and including medical officers, nurses, radiographers, darkroom attendants, x-ray technicians, x-ray operator receptionists, drivers, clerical staff, etc.

NOTIFICATION OF TUBERCULOSIS

There was a marked decrease in the notification of cases of tuberculosis for 1965 (1,124) as compared with 1964 (1,416). Details by age, sex, type of tuberculosis, stage of disease and source of notifications are set out in Tables I, II and III.

INCIDENCE OF TUBERCULOSIS

The rate per 100,000 of the population of cases of tuberculosis was 26.80. This can be compared with similar rates since 1950 shown in Figure 1. The death rates for the same period are also shown and discussed in a later paragraph. Of the number of new cases of tuberculosis notified in New South Wales during 1965 there were 954 cases of pulmonary tuberculosis and 97 were reactivated. In the 1963 Annual Report mention was made of the effect of new methods of collecting statistics in the notification rates. It is considered that a realistic figure is shown in both last year and this year's statistics. The key years would now be 55.96 in 1960 (the date of the commencement of the State Campaign against tuberculosis) 62.88 in 1954 (the highest rate) and 26.80 in 1965.

The general trend seems to be the same with a greater decrease in the rate than previously forecast. It is considered that this lessening is realistic and the importance of this will be seen in succeeding years.

FIGURE 1

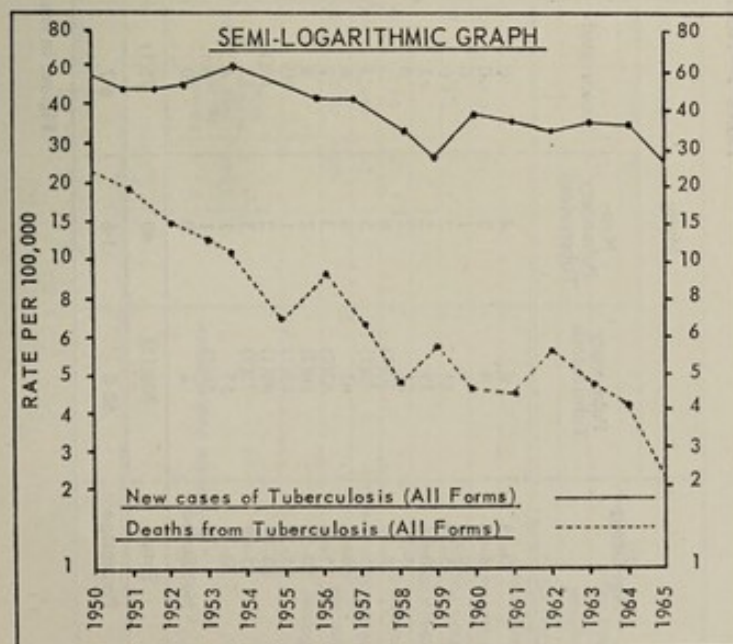


TABLE I—NOTIFICATIONS OF TUBERCULOSIS FOR 1965 SHOWING AGE, SEX AND FORM

Age Group	Males			Females			Persons			Total	Per cent
	Pulmonary Tuberculosis	Non-Pulmonary Tuberculosis	Reactivated	Pulmonary Tuberculosis	Non-Pulmonary Tuberculosis	Reactivated	Pulmonary Tuberculosis	Non-Pulmonary Tuberculosis	Reactivated		
0-4	6	4	0	7	8	0	13	12	0	25	2.2
5-9	4	3	0	2	4	0	6	7	0	13	1.2
10-14	3	1	0	5	2	0	8	3	0	11	1.0
15-19	11	2	0	9	1	0	20	3	0	23	2.0
20-24	19	1	1	12	1	1	31	2	2	35	3.1
25-29	21	2	0	16	4	0	37	3	0	40	3.6
30-34	30(1)	6	3	24	1	2	54(1)	10	5	69(1)	6.1
35-39	42(1)	5	3	23	1	3	65(1)	6	6	77(1)	6.9
40-44	62	3	6	19	2	3	81	5	9	95	8.4
45-49	83(2)	3	7	22	4	5	105(2)	7	12	124(2)	11.0
50-54	80(2)	2	9	21(1)	2	2	101(3)	4	11	116(3)	10.2
55-59	85(1)	1	10	21	0	2	106(1)	1	12	119(1)	10.6
60-64	69(1)	2	14(1)	13(1)	1	2	82(2)	3	16(1)	101(3)	9.0
65-69	75(2)	3	12	21	0	1	96(2)	3	12	112(2)	10.0
70-74	55	1	4	10	2(1)	0	65	3(1)	4	72(1)	6.4
75	59(5)	1	6	20	0	1	79(5)	1	7	87(5)	7.8
Not Stated	2	0	0	3	0	0	5	0	0	5	0.5
Total	706(15)	40	75(1)	248(2)	33(1)	22	954(17)	73(1)	97(1)	1,124(19)	100
Percentage	62.8	3.6	6.7	22.1	2.9	1.9	84.9	6.5	8.6		

Figures in brackets refer to atypical infections and are included in the figure they refer to.

TABLE II—COMPARISON OF FORM AND/OR STAGE OF DISEASE FOR 1965 AS COMPARED WITH PRECEDING YEARS

Form and/or Stage of Disease	1956		1957		1958		1959		1960		1961		1962		1963		1964		1965	
	Cases	Percent- age of total notifica- tions	Cases	Percent- age of total notifica- tions	Cases	Percent- age of total notifica- tions	Cases	Percent- age of total notifica- tions	Cases	Percent- age of total notifica- tions	Cases	Percent- age of total notifica- tions	Cases	Percent- age of total notifica- tions	Cases	Percent- age of total notifica- tions	Cases	Percent- age of total notifica- tions	Cases	Percent- age of total notifica- tions
Primary ..	..	..	..	..	..	..	..	..	..	..	10	0.6	10	0.6	17	1.2	10	0.7	17	1.5
Minimal ..	562	33.02	437	26.50	418	29.88	346	29.68	496	32.35	493	33.9	552	37.8	380	27.7	346	24.7	274	24.4
Moderately Advanced ..	791	46.47	911	55.25	692	49.46	540	46.31	675	44.04	622	42.8	526	36.0	491	35.7	527	37.6	568	50.5
Advanced ..	156	9.17	144	8.73	134	9.58	147	12.60	156	10.17	132	9.1	117	8.0	99	7.2	157	11.2	77	6.9
Pleural Effusion ..	..	..	..	..	..	..	..	..	11	0.72	29	2.0	36	2.5	28	2.0	51	3.6	18	1.6
Extra Pulmonary ..	50	2.94	44	2.67	52	3.72	39	3.35	78	5.08	90	6.2	113	7.8	70	5.1	88	6.3	73	6.5
Death Certificate ..	118	6.93	113	6.85	102	7.29	94	8.06	117	7.65	79	5.4	106	7.3	74	5.4	71	5.05	..*	..*
Reactivated ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	142	10.3	113	8.05	97	8.6
Quiescent ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	67	4.9	35	2.5	..*	..*
Atypical ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	0.5	4	..3	..*	..*
Not Stated ..	25	1.47	..	..	1	0.07	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	1,702	100.00	1,649	100.00	1,399	100.00	1,166	100.00	1,533	100.00	1,460	100.00	1,455	100.00	1,375†	100.00	1,402†	100.00	1,124	100.00

* Included in other headings. † This includes reactivated cases.

Death Rate

There has been a further drop in the death rate. This was in part due to a complete follow-up being carried out on each death certificate where the cause of death was claimed to be due to tuberculosis. This resulted in an approximate decrease of 25 per cent from those originally claimed. As in the recent years the majority of deaths were in the over fifty years age group and were mainly clinic cases of long standing.

The total number of deaths from tuberculosis in 1965 was:

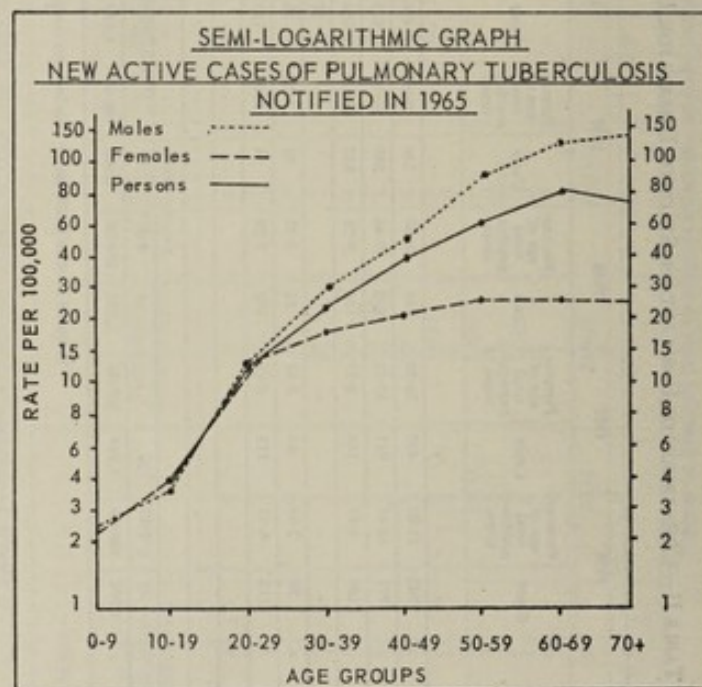
Pulmonary Tuberculosis	79
Pulmonary Tuberculosis associated with an occupational disease of the lung	4
Trachea, glandular tuberculosis with symptom	1
Tuberculosis of the meninges and central nervous system	1
Disseminated Tuberculosis	2
	<hr/>
	87

Compared with the total number of deaths in 1964 a decrease is noted from 167 to 87. These cases include only those where tuberculosis was related to the cause of death. Cases where the patient died from other causes when the patient had a past history of tuberculosis have been excluded. This represents a rate of 2.07 per 100,000 as compared with 4.04 for 1964.

Age and Sex

Following the pattern of previous years the incidence of new active cases of tuberculosis is highest in the group 50 to 70 years of age with this predominance most marked in males (Figure 2 and Table I).

FIGURE 2



The sex ratios for tuberculosis male/female has shown a marked increase in 1965. These ratios since 1958, inclusive, are as under:

Year	Total Notifications Including reactivated	Total Males	Total Females	Ratio Male to Female
1958	1,399	959	440	1 : 0.46
1959	1,166	789	377	1 : 0.48
1960	1,533	1,068	465	1 : 0.45
1961	1,455	1,041	414	1 : 0.40
1962	1,460	1,040	420	1 : 0.40
1963	1,375	963	420	1 : 0.43
1964	1,402	951	415	1 : 0.47
1965	1,124	821	303	1 : 0.36

Stage of Disease

As in previous years when commenting on the figures shown in Table II, it should be noted that no statistics in this form were kept prior to 1954 and since then further changes in classification occurred in 1960, 1961, 1963 and 1965. It is preferable to compare numbers rather than percentages to get a more accurate picture.

A decrease in the total numbers of minimal, advanced, pleural effusion, extra pulmonary and reactivated cases has occurred which is in accord with the gradually decreasing total notification rate. An increase in the number of primary and moderately advanced cases has occurred. The primary figure is not grossly out of proportion when compared with previous years. The reduction in advanced cases is more marked and is the best indication of the progress of the campaign.

It must be stressed that even though there has been a decrease in the first mentioned categories all classifications have been augmented by those coming from death certificate, quiescent and atypical notifications which are not shown as separate groups as in preceding years.

Source of Discovery

Table III shows that the greatest source of discovery of all cases was by Mass Miniature Radiography which total 42.8 per cent, an increase of 5.6 per cent over the 1964 figure.

There was a slight increase in private practitioners and Repatriation Department notifications. The most satisfactory decrease is that in death certificate notifications which dropped from 5.3 per cent to 1.15 per cent of the pulmonary cases.

TABLE III

Source	Pulmonary Cases		Non-Pulmonary Cases		Total cases
	No.	Percentage	No.	Percentage	
Mass Community Surveys—					
1. T.B. Division 153 }	410	42.80			410
2. Anti T.B. Association 257 }					
Private Medical Practitioners—					
(a) direct 3	83	8.67	28	40.57	111
(b) via Chest Clinic 4	105	10.96	10	14.50	115
General Hospitals 5	92	9.60	24	34.78	116
Chest Hospitals, Annexes and Sanatoria 6	19	1.98			19
Chest Clinics 7	148	15.45			148
Repatriation Clinics and Hospitals 8	28	2.92	1	1.45	29
Death Certificates 9	11	1.15	2	2.90	13
Special Groups—					
(a) Mental Hospital Surveys 11	44	4.59	2	2.90	46
(b) Gaol Surveys 12	2	0.21			2
(c) Ante-Natal Hospitals 13	5	0.52	1	1.45	6
(d) Other 15	11	1.15	1	1.45	12
Totals	958	100.00	69	100.00	1,027

Migrants

The total number of migrants notified during 1965 was 229, 170 males and 59 females. As these figures do not include the reactivated cases nor cases notified by Death Certificate it can be shown that the migrant percentage is 22.58 per cent as compared with 23.15 per cent in 1964.

Of the 229 migrant notifications for tuberculosis, 15 were notified within one year of arrival; 43 were notified within one to five years of arrival; 22 were notified within six to ten years of arrival; 138 were notified over ten years of arrival and 11 were notified—no time of arrival stated.

The male to female ratio is 1:0.35 which is much the same as the overall sex ratio figures from 1963, but different from the ratio of 1964 which was 1:0.46.

As has been the pattern in previous years there was a greater preponderance of migrant notifications in the 15-29 years age group inclusive when compared with the Australian born persons in the same age group. Although the numbers of notifications could be related to the country of origin this is of little significance as the total numbers of migrants from each country is not known.

TUBERCULOSIS ALLOWANCE SECTION

Table IV shows the number of patients receiving Tuberculosis Allowances who are having Institutional or Domiciliary treatment and also the length of time these persons have been in receipt of this Allowance.

TABLE IV—PERSONS RECEIVING THE TUBERCULOSIS ALLOWANCE IN NEW SOUTH WALES AT 31ST DECEMBER, 1965

Location of Patients								
Receiving Treatment in Institutions			Receiving Treatment outside Institutions			Total Persons Receiving Treatment		
Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
159	36	195	161	29	190	320	65	385

Period in Receipt of Allowance								
Period						Males	Females	Persons
Under 1 year	..	..	..	..	..	232	50	282
1-2 years	..	..	..	..	..	40	7	47
2-3 years	..	..	..	..	..	7	3	10
3-4 years	..	..	..	..	..	9	..	9
4-5 years	..	..	..	..	..	2	..	2
Over 5 years	..	..	..	..	..	30	5	35
Total	..	..	..	..	..	320	65	385

There was a marked drop in the number of patients receiving the Tuberculosis Allowance from 547 in 1964 to 385 in 1965. Of this number, 320 were males and 65 females. Of the total of 385, 195 persons were receiving treatment in hospitals and 190 were receiving home treatment at the end of the year. This is in accord with the marked drop in notifications over the twelve month period ending 31st December, 1965.

Twenty-two cases were nominated by the Tuberculosis Housing Committee for "out of Priority" housing to the Housing Commission of New South Wales. Five of the above number were allocated houses as well as one other which was finalised at the commencement of 1965, making a total of six.

The remaining seventeen of the twenty-two nominations failed to gain accommodation from the Housing Commission for the following reasons:

Excess income	..	..	..	..	..	..	..	..	5
Existing accommodation suitable	..	..	..	..	..	..	..	..	7
Unsuitable as a tenant	..	..	..	..	..	..	..	..	1
Withdrew applications	..	..	..	..	..	..	..	..	2
Not yet finalised	..	..	..	..	..	..	..	..	2

RADIOLOGICAL SURVEYS

Mass Radiological Surveys are carried out by the Tuberculosis Division and the Anti-Tuberculosis Association of New South Wales. Statistics from each organization will be given separately later in the Report. Statistics for the total mass radiography campaign are given in Table V.

TABLE V—X-RAY CAMPAIGNS IN N.S.W., 1965

Number x-rayed—all ages: 919,633 Psychiatric Hospitals: 10,836

These figures include mass x-ray campaigns conducted by the Tuberculosis Division, the Anti-Tuberculosis Association of New South Wales, the Departmental Chest Centre, the Anti-Tuberculosis Association of New South Wales Clinic, Psychiatric Hospitals and Special X-ray Surveys.

Age	No. X-rayed	Active	Suspect Active	Inactive	Other conditions
Metropolitan Areas					
-14	2	..	..	16
15-19	4	7	63	230
20-24	10	5	80	273
25-29	17	8	162	201
30-34	10	14	222	186
35-39	26	13	401	300
40-44	29	7	513	354
45-49	30	11	427	507
50-54	34	20	539	612
55-59	18	19	569	736
60-64	27	12	603	836
65-69	35	8	576	667
70-74	18	4	445	313
75 and over	23	9	331	344
Totals	919,633	283	137	4,931	5,759
PSYCHIATRIC HOSPITAL SURVEYS					
All ages	31	12	156	162

TABLE VI—ABNORMALITIES OTHER THAN TUBERCULOSIS DISCOVERED IN X-RAY SURVEYS BY THE DIVISION OF TUBERCULOSIS AND THE ANTI-TUBERCULOSIS ASSOCIATION OF NEW SOUTH WALES

	Country	Metropolitan	Chest Centre & A.T.A. Clinic
Tumours—			
Carcinoma of Lung—	4	..	..
Proven	14	38	30
Radiological Diagnosis Only	17	31	5
Secondary	4	11	8
Other Malignant Tumours	2	1	..
Benign Tumours	6	29	8
Cysts—			
Hydatid	23	5	1
Others	71	144	24
Substernal Goitre	135	243	14
Non-Specific Calcifications	25	26	10
Inflammatory and Degenerative Conditions—			
Acute—			
Pneumonia and Pneumonitis	110	293	143
Pleural Effusion	6	10	10
Abscess .. ..	..	..	4
Chronic—			
Bronchiectasis	1,095	2,818	683
Bronchitis			
Fibrotic scare			
Emphysema			
Pleurisy etc.			
Non-Specific Aetiology—			
Sarcoid	9	19	10
Pulmonary Eosinophilia .. ..	..	1	1
Adenopathy	1	16	2
Interstitial Fibrosis	9	11	8
Middle lobe syndrome .. ..	..	6	..
Silicosis and Other Industrial Diseases	52	57	28
Cardio-Vascular Conditions	868	1,861	211
Diaphragmatic Abnormalities	161	218	29
Bony Abnormalities	68	183	40
Histoplasmosis .. ..	..	1	..
Physical Agencies—			
Spontaneous Pneumothorax	2	11	15
Injuries and surgery	127	182	69
Vascular Abnormalities	3	..	2
Developmental Abnormalities	13	6	4

General Comment on Mass Surveys

As in 1964 and preceding years the yield of cases in the under 21 age groups seem to be less than each other age group. This has been now dealt with in the alteration of the Health Act deleting the words "over the age of 14" in the relevant paragraph. This enables any group of people whatever the age, to be included in the proclamation and gives greater freedom of action when planning mass surveys. This change is also in accord with the recommendation of the National Tuberculosis Advisory Council and the National Radiation Advisory Committee, mentioned later in the report. Mass Radiography still remains the most important source of discovery and during 1965 was responsible for 42.8 per cent of cases notified.

A list of abnormalities of conditions other than tuberculosis discovered by both the Tuberculosis Division and the Anti-Tuberculosis Association of New South Wales is given in Table VI.

Radiological Surveys—Division of Tuberculosis

Statistics for this activity of the Division are set out in Table VII.

(A) MASS MINIATURE SURVEYS

During the year 1965, the following areas were surveyed:

(1) *Third Round Surveys—*

Shire of Wentworth.
Shire of Balranald.
Shire of Wakool.
Shire of Murray.
Shire of Corowa.
Shire of Urana.
Shire of Lockhart.
Shire of Culcairn.
Shire of Central Darling.
Shire of Tumbarumba.
Shire of Illabo.
Shire of Gundagai.
Shire of Tumut.
Shire of Demondrille.
Shire of Jindalee.
Shire of Boorowa.
Shire of Burrangong.

Shire of Narraburra.
Shire of Bland.
Shire of Goodradigbee.
Shire of Weddin.
Shire of Timbreebongie.
Shire of Talbragar.
Shire of Wellington.
Shire of Tallaganda.
Municipality of Junee.
Municipality of Murrumburrah.
Municipality of Cootamundra.
Municipality of Young.
Municipality of Temora.
Municipality of Yass.
Municipality of Grenfell.
City of Broken Hill.

(2) *Fourth Round Surveys—*

Shire of Jerilderie.
Shire of Goobang.
Shire of Lachlan.
Shire of Shoalhaven.

Electorate of Bankstown.
Electorate of Bass Hill.
Subdivision of Condell Park.
Subdivision of Bass Hill.
Electorate of East Hills.

Municipality of Parkes.
Municipality of Peak Hill.
Municipality of Condobolin.
Municipality of Dubbo.

(3) *Fifth Round Surveys—*

Electorate of Blacktown.
Electorate of Nepean.
Electorate of Hawkesbury.
Subdivision of Kurrajong.
Subdivision of Richmond.
Subdivision of Windsor.
Subdivision of Wiseman's Ferry.

(B) CHEST X-RAY CENTRE

The total number of persons X-rayed at the Chest X-ray Centre was 43,528 compared with 43,562 in the year 1964. Twelve (12) cases of active tuberculosis were discovered representing 0.28 cases per 1,000 films taken, as against 0.50 cases per 1,000 films in 1964. A further eight (8) cases will probably be notified following completion of investigations. A further four (4) cases were notified from persons X-rayed in 1964, as the investigations were completed, bringing the total for the year 1965 to 76.

TABLE VII—SUMMARY OF X-RAYS TAKEN BY TUBERCULOSIS DIVISION DURING THE YEAR ENDING 31ST DECEMBER, 1965

	1	2	3	4	5	6	7	8	9	10	11	12
	Total Number of Persons X-rayed	Estimated percentage of population of proclaimed area	Number of persons rerayed on large films	Percentage	Technical Faults	Percentage	Cases of active Tuberculosis	Cases per 1,000 micro films	Cases of suspect active Tuberculosis	Cases of Inactive Tuberculosis	Other Abnorm- alities	Cases under investigation excluding cases in Column 9
Metropolitan	155,442	80.75	1,223	0.78	309	0.19	38	0.24	21	694	1,867	38
Country	131,928	84.43	973	0.74	785	0.51	38	0.29	11	460	1,707	34
Total	287,370	82.40	2,196	0.77	1,094	0.38	76	0.26	32	1,154	3,574	72
Chest Centre	43,528	..	473	1.13	808	1.85	12	0.28	8	371	661	14
Special Surveys	6,279	..	43	0.69	29	0.64	..	..	..	15	27	..
Psychiatric	4,637	..	29	0.62	47	1.01	1	0.22	7	66	91	75

(C) SPECIAL SURVEYS

A number of special surveys were conducted during the year including prisons, various homes for aged people, factories and Army personnel including national service trainees.

The total number of persons X-rayed was 6,279, no cases of tuberculosis were found. The majority were service personnel.

(D) PSYCHIATRIC HOSPITALS

Surveys were conducted at the Bloomfield, Parramatta, Gladesville and Rydalmere Psychiatric Hospitals. The total number of persons X-rayed was 4,637, including staff. Amongst the cases found was one case of active tuberculosis, 66 cases of inactive disease. A further seven (7) cases were expected to be notified at the conclusion of further investigations and 75 other abnormalities were noted.

(E) STATE PENITENTIARY, MALABAR

The 70 mm X-ray unit which was installed in December, 1964, continued to function, and all new admissions were X-rayed on arrival. Arrangements were completed for the X-raying of all admissions to the State Reformatory for Women, Malabar, on the X-ray machine at the State Penitentiary. Prior to this a preliminary survey by a mobile unit was arranged to cover all those then in gaol. For the year the total number X-rayed was 4,321 and as a result, 4 active cases of tuberculosis were discovered and 4 others will probably be notified when investigations are complete. This emphasizes the considerable value of such an X-ray unit as the persons X-rayed would not usually attend mass X-ray surveys.

(F) MAINTENANCE OF X-RAY UNITS

Following the agreement made with the Anti-Tuberculosis Association of New South Wales, the maintenance and repair facilities have been integrated. This has given the Tuberculosis Division adequate repair facilities for the first time. As a result of this the rebuilding and modernization of the four original 70 mm X-ray units has been undertaken. One unit has been completed and the necessary work for three others is considerably advanced. Accordingly, the necessary repairs following breakdowns will be very much easier to effect and should become rarer in occurrence. Thus when the maintenance programme is completed in 1966, new machines will be available for a fraction of the cost if these were purchased.

To enable the conversions to be carried on, a new tubehead and generator section of a Siemens Nanaphos Unit has been obtained. This equipment will be used later as spare emergency parts for both the Tuberculosis Division and the Anti-Tuberculosis Association.

The effect of this programme is being demonstrated in the reduction of the number of technical faults as compared with previous years and a further reduction is to be expected.

Radiological Surveys—Anti-Tuberculosis Association of New South Wales

(A) MASS SURVEYS

Statistics of Mass Radiological Surveys conducted by this organization are given in Table VIII.

TABLE VIII—MASS RADIOLOGICAL SURVEYS—THE ANTI-TUBERCULOSIS ASSOCIATION OF NEW SOUTH WALES

Total Number of X-rays	Active T.B.	Inactive T.B.	Suspect active T.B.	Other Conditions
<i>Metropolitan Area—</i>				
366,940	74	1,769	31	3,661
<i>Country Areas—</i>				
88,323	29	564	8	1,192

To the figures for active tuberculosis should be added 90 additional cases from surveys in 1964, the diagnoses of which were not confirmed until 1965.

(B) ANTI-TUBERCULOSIS ASSOCIATION CLINIC

The value of this unit continues to be demonstrated by the number of active cases found where in 20,683 the rate was 1.55 per 1,000 films taken. The number of referrals by medical practitioners should account for this.

(C) SPECIAL SURVEYS

Sixteen cases of active tuberculosis and five suspect active cases were found from 41,936 persons X-rayed in Special Surveys of Industrial Groups and people at risk. This showed a higher yield than the previous year but there is still need for further revision of this programme. Discussions have been held with the Anti-Tuberculosis Association with this in view.

EPIDEMIOLOGICAL SURVEYS

An examination of the Mantoux Tests carried out for the Tuberculosis Division by the Bureau of Maternal and Child Health, shows a reduction of the infection rate when compared with the 1964 figures. Second and fourth year secondary students in the Metropolitan areas and in parts of the North Western, Newcastle, North and South Coast Health Districts were tested. In addition when there was a case of tuberculosis notified from amongst the pupils or the staff, arrangements were made for the skin testing and where necessary, the X-raying of all the school inhabitants.

TABLE IX—EPIDEMIOLOGICAL TUBERCULIN TESTS

Health District	Age group	Total Read	Positive				Percentage Negative
			Not previously vaccinated with B.C.G.		Previously vaccinated with B.C.G.		
			No.	Percentage *	No.	Percentage †	
Metropolitan	0-4	190	1	0.5	..	..	99.5
	5-9	887	16	1.8	3	0.34	98.2
	10-14	27582	2737	9.95	89	0.32	90.05
	(Average 14)						
	15-19	13023	1649	12.7	38	0.29	87.3
	(Average 16)						
	Miscellaneous	1885	585	32.2	71	3.77	67.8
Total		42490	4971	11.75	198	0.47	88.25
North Western	10-14	463	43	9.7	1	0.2	90.7
	(Average 14)						
	15-19	299	35	11.7	..	..	88.3
	(Average 16)						
	Miscellaneous	326	61	18.7	..	..	81.3
Total		1088	139	12.8	1	0.09	87.2
Newcastle	10-14	2198	68	3.1	19	0.9	96.9
	(Average 14)						
	15-19	849	27	3.2	14	1.6	96.8
	(Average 16)						
Total		3047	95	3.15	33	1.1	96.85
South Coast	10-14	2490	176	7.1	18	0.7	92.9
	(Average 14)						
	15-19	770	72	9.5	9	1.2	90.5
	(Average 16)						
Total		3260	248	8.0	27	0.8	92.0
North Coast	10-14	1782	126	7.1	2	0.1	92.9
	(Average 14)						
	15-19	940	89	9.5	2	0.2	90.5
	(Average 16)						
Total		2722	215	7.9	4	0.1	92.1
Total for N.S.W.	10-14	34515	3150	9.2	129	0.37	90.8
	(Average 14)						
	15-19	15881	1872	11.8	63	0.4	88.2
	(Average 16)						
	All ages	53684	5685	10.6	266	0.5	89.4

NOTE—

- (1) 53684 persons out of 54,961 persons tested reported for reading.
- (2) * The percentage of the number of persons tested less the number of these persons tested who were previously vaccinated with B.C.G.
- (3) † This percentage relates to the number tested.

TABLE IX (Above)

An examination of the statistics shows that although the percentage infected in the 0-4 and 5-9 groups is low, being 0.5 and 1.8 respectively; there is a steep rise in the 10-14 group—average age fourteen years; to 9.2; and to 11.8 per cent in the 15-19 group—average age 16 years. This compares favourably with the 1964 figures of 9.5 and 14 per cent for the latter two age groupings. There is a marked variation between the metropolitan and various Health Districts and is related to the incidence of disease in each District. The higher figures in the North Western Health District are undoubtedly related to infection by the anonymous mycobacteria. After comparison of result from 1965 and 1966 thought should be given to extending the tuberculin surveys to a lower age group

in the primary school where a large percentage of initial infection may be occurring. Also consideration should be given to a limited use of P.P.D.G. as well as O.T. in limited areas where the anonymous mycobacterial infection is suspected. As previously arrangements were made for chemoprophylaxis of young new positive reactors and large reactors where considered necessary.

VISITING NURSE SECTION

There has been a decrease in visits of 276, which is offset by an increased number of days spent at Clinics and in relieving and assisting in country areas which curtailed Divisional work in the metropolitan area. The reduction in the number of visits to cases receiving Streptomycin is related to the decrease of notifications during the year 1965. Whilst the increase in clinic work is related to the increase in attendances at the majority of the Chest Clinics. During the year a greater time has been spent in relieving duties in the Health Districts.

Due to shortage of staff at the Page Chest Pavilion the Division complied with a request to supervise those patients on out-patient treatment from that clinic.

Also since the introduction of compulsory National Service Training, assistance has been given by medical and nursing staff for the skin testing and vaccination for these service men. Eight visits were made to Holsworthy Camp for this purpose. Another duty continued from 1964 was the visiting of defaulters from the implemented compulsory surveys. This onerous work is considered to be more suitable for a male. Action to deal with this problem will be taken in the New Year.

HOSPITAL X-RAY PROGRAMMES

70 mm X-ray units were installed in Wagga Wagga Base Hospital, Broughton Hall, Parramatta Psychiatric Hospital. The returns generally from hospitals using 70 mm X-ray units have been rendered in a much more satisfactory form than for 1964. The returns for some hospitals are incomplete or non-existent. In the reports available, a total of 26,344 X-rays were taken which showed a yield of 33 cases of active tuberculosis representing 1.26 cases per 1,000 with a further two cases of suspect active disease. These figures show a higher yield than for the mass radiography and demonstrate the value of these units.

HOSPITAL BEDS—Table X

No comment is considered necessary for this return. The use of beds for tuberculous patients is being kept under constant review.

TABLE X—TUBERCULOSIS BEDS AVAILABLE
State: New South Wales. Year ended 31st December, 1965

Institution	Number of T.B. beds available	Number released for use of non T.B. patients	Average number of daily occupied beds during year by T.B. patients	Remarks
Albury Base Hospital	8	....	3.5	....
Broken Hill District Hospital	18	....	5.5	....
Dubbo Base Hospital	10	....	8.2	....
Grafton Base Hospital	10	....	1.9	....
Lismore Base Hospital	10	....	4.6	....
Goulburn Base Hospital	10	....	4.4	....
Rankin Park	114	24	55.8	....
Tamworth Base Hospital	21	....	7.4	....
Wollongong Hospital	16	....	15.0	....
Wagga Wagga Base Hospital	11	....	6.1	....
Canterbury District Hospital	25	....	18.4	....
Lidcombe State Hospital—				
Ordinary Ward	32	....	22.1	....
Locked Ward	10	....	1.2	....
Lourdes	17	....	13.2	To be closed as from 1-1-1967.
Manly District Hospital	15	....	9.3	....
Parramatta District Hospital	16	....	12.0	....
Princess Juliana	100	....	55.8	....
Royal North Shore Hospital	100	25	25.5	....
St. George Hospital	15	....	11.1	....
St Vincents Hospital	42	10	24.0	....
North Ryde Psychiatric Centre	138	6	132	Extra beds erected at times.
Randwick Chest Hospital	198	....	127.0	For periods one ward of 32 beds not used to allow for a repainting programme.
Royal Prince Alfred Hospital	161	61	35.0	It is doubtful whether all the Tuberculosis investigation cases are included in this figure.
Totals	1,097	126	600	....

TABLE XI—BACTERIOLOGICALLY POSITIVE CASES
State: New South Wales. Year ended 31st December, 1965

Age Group	Persons who became positive during year*						All Known Positive Persons in State at End of Year†		
	Total number of persons who became positive during year*	Number of Persons hospitalized during year	Number of persons NOT hospitalized during year	Persons positive at end of year		Total	Number of persons in hospital	Number of persons NOT in hospital	Total of all known positive persons at end of year
				In hospital	Not in hospital				
0-4	8	8	0	1	0	1	1	0	1
5-9	6	6	0	1	0	1	1	0	1
10-14	6	6	0	2	0	2	1	0	1
15-19	11	11	0	4	0	4	4	0	4
20-24	20	20	0	9	0	9	9	0	9
25-29	21	20	0	7	0	7	7	0	7
30-34	41	41	1	12	1	13	12	1	13
35-39	54	53	1	11	1	12	11	1	12
40-44	68	65	3	14	1	15	15	0	15
45-49	89	85	4	23	3	26	28	4	32
50-54	82	76	6	18	1	19	25	3	28
55-59	92	87	5	20	2	22	24	4	28
60-64	65	62	3	14	2	16	20	6	26
65-69	78	75	3	18	2	20	21	9	30
70-74	43	40	3	8	2	10	9	4	13
75 and over	59	56	3	20	1	21	22	2	24
N/S	..	..	..	..	..	..	..	..	..
Total	743	711	32	182	16	198	210	45	255

* Includes notifications, reactivated cases and relapsed cases.

† Includes persons who became positive both prior to or during the year and were positive at end of year.

NOTE: Atypical cases are not to be included with human strain cases in this form but should be shown on a separate copy of the form.

BACTERIOLOGICALLY POSITIVE CASES—Table XI

Although the number of positive cases out of hospital is not considered large they are kept under constant supervision. They are in the main chronic positive elderly cases receiving regular home visits to safeguard the public health aspect. In addition they are frequently assessed medically and hospitalized when required.

It was not possible to accurately differentiate between the untreated and previously treated cases due to inadequate returns sent to the main laboratory. Steps will be taken to overcome this in the future. A total of culture from 1,035 patients were tested and the results are shown in Table XII.

DRUG RESISTANCE

TABLE XII

Resistant to						Resistant to					
Streptomycin		P.A.S.		Isoniazid		Two Drugs		All three		Other drugs	
Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
154	15	207	20	242	23.5	97	9.4	116	11.3	43	7

(1) Included in the above are sensitivities of 86 strains of atypical organisms the majority of which were resistant to all drugs.

(2) It is not possible to separate accurately from figures obtainable the results due to treated and untreated cases.

(3) Testing and reporting of results were in conformity with the recommendations of the Bacteriological Sub-Committee of the National Tuberculosis Advisory Council.

(4) All laboratories tested for sensitivities to other drugs.

TUBERCULOSIS IN THE HEALTH DISTRICTS

Visits were made to all Health Districts during the year. Certain of the districts have had difficulties relating to the radiological services; steps are being taken to overcome the associated problems. The Riverina Health District commenced functioning in August, 1965.

Brief notes on tuberculosis control work from each centre are given below.

Newcastle Health District

During this year the Anti-Tuberculosis Association of New South Wales carried out Mass Miniature Radiography Surveys in areas not covered in 1964. A total of 80,718 people were X-rayed. From these, 28 cases were found to be active and 8 cases were still under investigation. A total of 515 inactive cases of tuberculosis were reported and 1,096 other non-tuberculosis abnormalities were detected.

A total of 160 cases were notified throughout the Health District, 121 males and 39 females. The notifications per 1,000 were 0.33, the highest incidence areas were Port Macquarie 0.78, Macleay 0.65 and Wyong 0.55. 3,047 children in second and fourth year Secondary Schools were mantoux tested and showed an infection rate of 3.15 per cent which is in accord with the notification rate.

Increased attendances were noted at most clinics especially at Gosford, Cessnock, Kempsey and Taree. Further steps have been taken towards the extension of out-patient clinic services in the Muswellbrook area and more satisfactory housing for the Gosford Chest Clinic. An increase of staff of one Tuberculosis Sister has been recommended for this Health District.

North Coast Health District

There has been an increase in the attendance at Grafton and Kyogle clinics during the past year.

The Anti-Tuberculosis Association carried out Miniature Mass X-ray Surveys in the Bellingen and Nambucca Shires.

A total of 7,605 persons were X-rayed, resulting in 1 case of active tuberculosis, 49 cases of inactive tuberculosis and 96 other abnormalities were also found. 26 new cases of tuberculosis were notified, 17 male and 9 females—a notification rate of 0.27 per 1,000. The highest incidence areas were Gundurimba 1.02 and Bellingen 0.62.

Of the second and fourth year secondary school pupils, 2,722 were tuberculin tested—giving an infection rate of 7.9 per cent. This is higher than expected when compared with the notification rate. However, there has been a marked decrease in infection rate over the latter ten years, the difference mentioned being most probably due to the effect of the atypical organism.

Increased consultant services have been made in this Health District.

North Western Health District

No Mass Chest X-ray Surveys were carried out in this district during the year. The clinic attendance returns showed approximately the same numbers as in 1964.

A total of 23 cases of active tuberculosis were notified, 20 males and 3 females, giving a notification rate of 0.25 per 1,000. There was a high mantoux conversion rate in this district; 12.8 per cent of the 1,088 secondary school children tuberculin tested were positive. The apparent disproportion between this and the notification rate is undoubtedly related to the effect of the anonymous mycobacterial organisms.

Recommendations have been forwarded regarding extension of clinic facilities at Narrabri, Moree, Gunnedah, Inverell, Glen Innes and Tenterfield. In addition, the appointment of a further clinic sister has been recommended in order to enable the full clinic programme to be carried out.

Western Health District

Mass Miniature X-ray Surveys were conducted by the Tuberculosis Division during the year in the Shires of Wellington, Colo, Goobang, Lachlan, Talbragar and the Municipalities of Dubbo, Parkes, Peak Hill and Narromine.

A total of 36,480 chest X-rays were taken which represents 86.0 per cent of the estimated eligible population. From these, 7 cases of tuberculosis were discovered and a further 8 are suspect active. A total of 78 cases of inactive tuberculosis and 481 other abnormalities were also found. Attendances at chest clinics showed an increase at Lithgow and Wellington.

New cases of active tuberculosis totalled 69, there being 46 males and 23 females, a rate of 0.34 per 1,000. No tuberculin testing of school children was carried out.

As in other Health Districts, recommendations have been forwarded in order to extend the clinic services.

South Coast Health District

Clinic attendances showed a marked increase at Wollongong, Nowra and Byron. The Tuberculosis Division conducted Mass Miniature X-ray Surveys in the Shires of Shoalhaven and Tallagandra.

A total of 12,922 X-rays were done representing 82.0 per cent of the estimated eligible population, 12 cases of active tuberculosis have been notified and no suspect cases are under investigation. The number of inactive cases discovered was 16 and 33 other abnormalities were also found.

During 1965, 124 active tuberculosis cases were reported, 94 males and 30 females, giving a rate of 0.41 cases per 1,000. This would be in accord with the tuberculin infection rate of 8 per cent obtained from the skin testing of 3,260 secondary school children.

The new tuberculosis in and out-patient Block is nearing completion and should be in use by mid-1966. Recommendations have been forwarded relating to the extension of clinic services and the increase of nursing staff.

Riverina Health District

Increased clinic attendances occurred at Wagga and Tumut. Mass miniature chest X-ray surveys were conducted by the Tuberculosis Division in approximately half of this Health District.

A total of 61,531 X-rays were taken representing 80.6 per cent of the estimated eligible population, 8 cases of active tuberculosis have been notified and a further 4 are regarded as suspect cases. In addition, 173 inactive cases of tuberculosis were discovered and 505 other abnormalities were also found.

Thirty-four new cases of tuberculosis were notified during the year, 23 males and 11 females—a rate of 0.29 per 1,000. No tuberculin skin testing of school children was carried out.

Recommendations relating to the extension of clinic facilities have been forwarded, including an increase in the nursing staff.

TUBERCULOSIS IN THE MINING INDUSTRY

The following is the list of notifications of tuberculosis in the coal mining industries and the mines at Broken Hill.

Year	Joint Coal Board	Bureau of Medical Inspection
1956	5	.. } not available
1957	9	.. }
1958	8	.. }
1959	8	9
1960	2	4
1961	3	3
1962	3	5
1963	4	2
1964	7	2
1965	5	1

The Joint Coal Board's compulsory withdrawal scheme continues to function satisfactorily. Ex-miners are increasingly being followed up by the Wollongong Chest Clinic.

IMPLEMENTATION OF COMPULSORY SURVEYS

The policy of implementation of selected surveys was continued during the year. The progress of following up of non-attendances at the survey of the Electorate of Fairfield was completed and the results of eight prosecutions were as follows:

Information was withdrawn in two cases as these persons had since been admitted to Psychiatric Hospitals.

Three persons were convicted ex parte: Fined £5 with Court costs £1 and Professional Costs £8 8s. 0d. in default 29 days' imprisonment. One pleaded guilty but produced proof of X-ray—information dismissed under Section 556A of the Crimes Act: ordered to pay Court Costs £1 and Professional Costs £1 1s. 0d. One person pleaded guilty: Fined £10, Court Costs £1 1s. 0d. Professional costs £5 5s. 0d. in default 33 days' imprisonment—warrant issued forthwith. One person pleaded not guilty—information dismissed for lack of sufficient evidence to establish that he had not had an X-ray within the twelve months preceding the date of the Proclamation.

The revisit of an X-ray unit in January, 1965, to enable non-attenders for the Dapto, Oak Flats Subdivisions of the Wollondilly Electorate resulted in 493 persons being X-rayed and 2 of these were found to have active tuberculosis. No prosecutions were necessary in this survey.

The survey of the Australian Capital Territory conducted by the Tuberculosis Division for the Commonwealth Health Department was also implemented in a similar manner but the results of the survey and the statistics of the follow up procedures are not yet available.

The Electorate of Burrinjuck and the Dubbo Subdivision of the Electorate of Dubbo were implemented. Considerable difficulties were experienced following up non-attenders in areas outside towns in this area. As a result of the survey one prosecution was made in Yass, the person concerned was fined £7 and £6 6s. 0d. costs. The proceedings in the case of another twelve defaulters could not be completed within the limiting period of six months so that these prosecutions were not proceeded with.

In the Metropolitan areas the Electorate of Bankstown and Blacktown were followed up.

The proceedings relating to the latter will not be completed until 1966.

The Bankstown Survey showed the value of follow-up surveys in city areas. From a roll of 30,000 voters 17 active and suspect active cases were discovered in comparison with 11 in the same area three years before. In addition, a further 6 cases were notified from clinics and hospitals as a result of the follow-up of approximately 4,000 non-attenders.

The value of follow-up in metropolitan areas is considerable, but in country areas the original response to the surveys is much more satisfactory, so that in future the majority of the follow-up surveys could be limited to city areas.

One interesting fact was that one person who wrote to the Division requesting exemption on the grounds of fear of radiation proved on further investigation to be a notified case who had not attended a chest clinic for routine supervision for some years. After persuasion he was X-rayed and found to be radiologically and bacteriologically active and was hospitalized. One important aspect arising from the various follow-up procedures is the necessity for the home visiting to be carried out by a male with social worker or ex-Commonwealth Police experience instead of Sisters, or for that matter, Health Inspectors.

SIXTEENTH NATIONAL TUBERCULOSIS ADVISORY COUNCIL

Amongst the many topics discussed at this meeting were those relating to chest X-ray surveys. As a result, the following important recommendations were agreed to.

In the light of present knowledge, the risks of radiation injury to the individual and to subsequent generations of the population as a result of X-ray surveys of the population at large as a tuberculosis control measure can be accepted as insignificant compared with the benefits obtained provided:

proper protective measures are employed for the persons subject to irradiation; and there are clearly established public health needs for subjecting persons to such surveys.

In order that the above conditions may be satisfied, the following recommendations are made:

Having regard to the incidence of tuberculosis in the community, the nature, extent and frequency of X-ray tuberculosis case-finding programmes in the community and the minimum age for them should be reviewed at intervals to ensure that the programmes are undertaken only on soundly based criteria of public health.

The X-ray tube of miniature radiographic equipment shall be fitted with a fixed diaphragm which will limit the direct X-ray beam to the maximum dimensions of the fluorescent screen. An adjustable diaphragm should also be used to reduce the dimensions of the direct X-ray beam to those appropriate for each person. Preferably the top diaphragm of this device should be fixed so that the upper margin of the direct X-ray beam will coincide with the upper margin of the fluorescent screen. It is noted that the light-beam diaphragms commercially available, at present in Australia do not appear to provide adequate illumination for use in well-lighted halls, caravans, etc. with persons wearing clothes of a variety of colours. The use of a light-beam diaphragm with inadequate illumination is contra-indicated. An adjustable diaphragm, with vertical and horizontal shutters moving independently, to provide a wide range of field sizes permanently marked on the face of the camera tunnel and set according to a code on the controls would be an acceptable alternative to a light-beam diaphragm.

A lead-rubber or lead-plastic drape of lead equivalent of at least 0.25 mm shall be adjusted on the X-ray tube side of each person being radiographed to reduce the radiation dose to the lower abdomen. The drape shall be of sufficient width to cover the lower abdomen of persons of all sizes and of sufficient length to extend from the diaphragm of each person to at least 6 inches below the gonads of each person. The mounting of the drape should be designed to permit its adjustment in use.

The optical system, the fluorescent screen-film combination and the processing conditions for the film shall be such that, consistent with satisfactory diagnostic quality, the minimum radiation exposure is used for each person examined. Mirror-optics should be used.

Automatic exposure devices shall be used in all miniature radiographic equipments.

A total filtration equivalent to 2 mm of aluminium in the direct X-ray beam shall be permanently fixed in the X-ray tube.

Standards in both positioning of persons being examined and in all technical procedures shall be high so as to avoid unsatisfactory miniature radiographs resulting in the need for re-examination.

Arrangements shall be made to ensure that persons awaiting examination, in queues or elsewhere, are not subject to unnecessary radiation exposure. Distances, careful disposition of equipment and clerical staff and/or the use of protective barriers should be such as to satisfy this recommendation.

Competent supervision of equipment and practices by a person or persons of appropriate qualifications and relevant experience should be maintained to ensure that protective devices are in good working condition and in regular use. This supervision should extend to examination of the actual miniature radiographs with a view to eliminating poor positioning and unsatisfactory technical procedures such as the use of X-ray fields larger than necessary or of poor processing conditions. Attention should also be directed to such components of the equipment as are liable to deterioration with use or age (e.g. the fluorescent screen).

Examination of the chests of women who are known to be pregnant should be carried out not with miniature radiographic techniques but with full size films, with strict limitation of field size.

Technical staff who operate miniature radiographic equipments should receive formal instruction under the supervision of an appropriately qualified medical officer.

EIGHTEENTH INTERNATIONAL TUBERCULOSIS CONFERENCE

The Director of Tuberculosis for N.S.W. along with the similar representation from other States was privileged to attend the above Conference in Munich, Germany. In addition, visits were made to various tuberculosis clinics, institutions and research centres in Canada, America, The Netherlands, Czechoslovakia, England, Wales, Scotland, Norway, Sweden and Denmark. This proved most valuable, especially in relation to Epidemiological Case Finding, Vaccination and Bacteriological Procedures. The report covering these aspects will be dealt with separately to this writing.

CONCLUSION

The marked reduction in both the mortality and morbidity rates for the year 1965 have demonstrated the effectiveness of the campaign being waged against tuberculosis. Emphasis needs to be especially placed on the education of the public to accept changes in the case finding procedures which must come about over the next decade, the continued orientation of the general practitioner and the maintenance of standards in bacteriological procedures.

This opportunity is taken to thank the Senior Officers of the Department of Public Health of New South Wales, the Commonwealth Health Department, the staff of the Division of Tuberculosis and extra-Departmental personnel and organizations for the assistance given and co-operation received.

Poliomyelitis

Medical Officer-in-Charge: R. W. D. MAXWELL, O.B.E., M.B., Ch.B., D.P.H., D.T.M.&H.

Location: 52 Bridge Street, Sydney

FUNCTION

This Section undertakes the distribution of Salk poliomyelitis vaccine in New South Wales to local health authorities for organized vaccination campaigns and to private medical practitioners for individual patient vaccination.

It also conducts a Poliomyelitis Immunization Centre in the Sydney metropolitan area.

INCIDENCE OF POLIOMYELITIS

Following the epidemic years of 1961 and 1962, the annual incidence of poliomyelitis in New South Wales has continued at the lowest level ever recorded. During 1965, only three confirmed cases occurred, two in the Sydney metropolitan area and one at Condobolin. All three cases occurred in males, one aged 12 months, one aged 17 months and one aged 34 years. Type 1 poliovirus was isolated from the adult case and Type 2 poliovirus from each of the two children. Neither of the two children had had any previous vaccination against poliomyelitis, whilst the adult patient was said to have had a single injection only, some two years previously.

The following table summarises the poliomyelitis situation in New South Wales over the 3-year post-epidemic period to the end of 1965.

Year	Month of Onset	Age	Sex	Locality of Origin	Virology	Vaccination
1963	February	62 years	F.	Sydney	No poliovirus isolated	None
	February	13 months	M.	Gunnedah	No poliovirus isolated	None
	October	7 years	M.	Sydney	No poliovirus isolated	None
1964	May	18 months	M.	Deniliquin	Poliovirus Type 2	None
	September	10 months	M.	Gillendbah	Poliovirus Type 2	None
1965	March	34 years	M.	Sydney	Poliovirus Type 1	One injection only.
	May	17 months	M.	Condobolin	Poliovirus Type 2	None
	June	12 months	M.	Sydney	Poliovirus Type 2	None

Eight cases of poliomyelitis, with no deaths, have occurred over this 3-year period, four in the Sydney metropolitan area and four in widely separated country towns. Of these eight cases, six have occurred in male children—five under two years of age—all unvaccinated. No case of poliomyelitis has occurred in any adequately vaccinated person.

Of the five isolations of poliovirus from among these cases, four were of Type 2. These are the first recorded isolations of the Type 2 poliovirus from cases of poliomyelitis originating in New South Wales. On one previous occasion, in 1959, Type 2 poliovirus was isolated from a patient who developed poliomyelitis almost immediately after his return to Sydney from overseas. In this case the virus was undoubtedly imported.

Over the 5-year period, 1961-1965, cases of paralytic poliomyelitis-like illness have also occurred in New South Wales in which the only virus isolated has been a Coxsackie virus of one of the Types A9, A20, B1, B4 or B5.

There has been no death from poliomyelitis in New South Wales since July, 1962.

THE POLIOMYELITIS VACCINATION CAMPAIGN

Quantities of poliomyelitis vaccine distributed to local authorities and private medical practitioners, and used at the Immunization Centre, during 1965, as compared with the previous two years, were as follows:

	1963	1964	1965
	Doses	Doses	Doses
Local authorities and medical practitioners	788,318	570,352	415,643
Immunisation Centre	22,625	12,946	4,130
Totals	810,943	583,298	419,773

There was a further considerable reduction in the demand for poliomyelitis vaccine during 1965 as compared with the previous two years.

Towards the end of the year—from early October to early December—there was a temporary shortage of vaccine and, over a brief period, all Departmental stocks of vaccine were depleted. Over the greater part of the year, however, fully adequate stocks of vaccine were available.

PUBLIC HEALTH SERVICES

Health Inspection Branch

Location: 52 Bridge Street, Sydney

STAFF

The establishment for the Health Inspection Branch at Central Administration, as at 31st December, 1965, was as follows:

Chief Health Inspector—Mr H. K. Evans; Deputy Chief Health Inspector—Mr K. W. Bagnall; two Senior Health Inspectors; 18 Health Inspectors (5 vacant positions); eight Cadet Health Inspectors (2 vacancies); two Registered Surveyors (1 vacancy); one Senior and one Junior Tracer (female); two Office Assistants (female); one Records Clerk.

To provide for adequate supervision and training of staff, approval has been obtained to increase the number of Senior Inspectors from two to four; however no appointments for the positions had been made.

In addition to the staff at Central Administration there were five Senior Health Inspectors and eleven Health Inspectors seconded for duty in the Health Districts. There was one vacant position for a Senior Health Inspector (Wollongong) and three vacancies for a Health Inspector (Cootamundra and Bathurst).

STAFF CHANGES

Mr D. H. Way, Chief Health Inspector, retired on 6th August, 1965, after 36 years service. There were three resignations (two Health Inspectors and one Cadet) and two secondments from the Branch. One new appointment as a Senior Health Inspector, seven as Health Inspectors, one Junior Tracer (female) and two Office Assistants (female) were made. Five Cadet Health Inspectors were also appointed, three of these positions being filled by the three Junior Clerks already employed in the Branch, the latter clerical positions being superseded by the Office Assistants.

DECENTRALIZATION

The Riverina Health District was established in August, 1965, with headquarters at Cootamundra and a Senior Health Inspector was attached to that office. Previously work in that District was carried out by staff from Central Administration. Work in the Kosciusko State Park was also carried out by Central Administration staff, prior to the abovementioned area reverting to the South Coast Health District in September, 1965.

FUNCTIONS AND RESPONSIBILITIES

The Officers of this Branch are authorized to carry out the duties and to make inspections and reports on matters arising out of the administration of the following Acts:

- Public Health Act, 1902, as amended and Regulations.
- Noxious Trades Act, 1902, as amended and Regulations.
- Local Government Act, 1919, as amended and Ordinances.
- Fluoridation of Public Water Supplies Act, 1957 and Regulations.

The Chief Health Inspector and his Deputy were responsible for the general administration of the Branch and for environmental sanitation matters referred to Central Administration from the various Health Districts. Health Inspection work in the Metropolitan Health District was carried out by the Officers of the Branch under the supervision of two Senior Health Inspectors.

ACTIVITIES

Health Inspection work carried out in the Metropolitan Health District forms part of the report of the Metropolitan Medical Officer of Health. Apart from this work, six sanitary surveys designed to ascertain the general standard of sanitation were carried out in the Municipalities of Junee, Young and Murrumburrah, also the Shires of Murray, Demondrille and Hay. Progress was made in solving problems associated with the treatment of sewage in the Kosciusko State Park with the commencement of construction of sewage treatment works to serve the Perisher Valley, Charlotte Pass and Smiggin Holes areas.

Departmental and other Institutions were inspected in the Riverina prior to August, by staff from Central Administration as time permitted.

NEW DEVELOPMENTS

A standard form for the submission of septic tank applications was designed and proved highly successful in reducing the time needed to process the applications. As approximately 9,000 septic tank applications are dealt with annually, the advantage of the streamlined procedure is considerable.

Approval was granted for the construction of a septic tank manufactured from fibre glass. This is a new material for the manufacture of septic tanks and it is anticipated that the numbers of septic tanks manufactured from fibre glass will increase due to their light weight and ease of handling.

SURVEY SECTION

Despite repeated advertising it was not possible to fill a vacant position of Surveyor in the Section. Consequently the field work has been limited to the volume which could be carried out by one Surveyor assisted by a Cadet Health Inspector. Because of this limitation, notification of new areas of unhealthy building land could not be undertaken. Wherever practicable, advice was provided to Councils on remedial measures required as a condition of subdivision approval.

The number of solicitors enquiries relating to Section 55 notices continues to increase and reached a record figure of 79,040 for the year.

CONFERENCES

One three day conference was held at Head Office for Senior Health Inspectors. Lectures were given on extended aeration sewage treatment plants, ponding of abattoir drainage and development and use of pesticides. Field inspections were made of several packaged sewage treatment plants. These conferences continue to prove very useful in keeping officers stationed in country centres in touch with modern trends and developments.

ROUTINE WORK

In the year under review, the following work was carried out. These figures are supplementary to those shown in the report of the Metropolitan Medical Officer of Health.

	1964	1965
Institutions	2	3
Schools	1	32
Hotels	2	30
Slaughtering premises and abattoirs	11	20
Saleyards	1	9
Sanitary Depots—proposed sites	4	..
Sanitary Depots—existing	7	15
Scavenging Districts proposed	3	..
Septic Tank applications recommended for approval	705	509
Sewage treatment works inspected	5	6
Water supplies investigated—Public	2	3
Nuisances (investigations)	5	2
Samples: Water (other than from swimming pools)	10	2
Noxious Trades premises	3	20
Sanitary surveys of Local Government areas .. .. .	..	6
Theatres and Public Halls .. .. .	..	28
Swimming pools .. .. .	..	10
Dairies .. .. .	..	10
Barbers Shops .. .. .	..	14
Unhealthy Building Land Inspections	334	131
Unhealthy Building Land Surveys	142	333
Areas Gazetted and Location	5	..
Areas revoked	5	1
Land enquiries	78,721	79,040
Land enquiries Searches	553	1,235
Reports on Unhealthy Building Land	509	464
Branch Records—new registrations	10,807	9,537

Food Inspection Branch

Location: 52 Bridge Street, Sydney

STAFF

Chief Inspector, W. J. Madgwick; Deputy Chief Inspector, J. W. Wing; six Senior Food Inspectors; fifteen Food Inspectors (Established Strength of seventeen Food Inspectors); one Attendant.

Note:

- (1) Of the six Senior Food Inspectors referred to above one is detailed for duty at each of the following Health Districts: North Coast, South Coast, North Western, Western, Newcastle and Riverina and one Food Inspector is detailed for duty at each of the Health Districts of the North Coast, South Coast, Western and Newcastle.

- (2) The Report of the work of the Branch does not include that carried out in any of the aforementioned Health Districts.
- (3) Three newly appointed Inspectors commenced duty during the year.

ACTIVITIES

The work of the Branch is primarily concerned with the supervision of the sale of food and drugs in regard to their composition identity and labelling, the structure and condition of premises in which they are manufactured, prepared, stored and sold; the inspection of the equipment, appliances and vehicles used; the incidental duties associated with matters to secure the wholesomeness, cleanliness and freedom from contamination of food and drugs; and the implementation of the legal provisions required by the Pure Food Act, 1908, as amended.

PREMISES

Of 12,007 premises inspected, it was only found necessary to serve notices in 287 cases, to effect structural repairs or to remedy other defects in regard to premises. This indicates a very satisfactory position in food premises generally 18 traders were prosecuted for failing to keep their premises clean, 14 traders for failing to keep their premises free from cockroaches and 4 traders for failing to keep their premises free from flies. This total is only four more than for prosecutions undertaken of a similar nature last year.

SAMPLES

The total number of food and drug samples obtained for analysis represented nearly 1,000 more than last year. The number of prosecutions for the sale of adulterated food and drugs was less than last year and the results show that from a wide range of food samples submitted for analysis more were found to be in accordance with the standards than in the previous year.

SEIZURES

Over 17 tons of food were found to be unfit for human consumption and subsequently destroyed under the supervision of Departmental Officers. Additionally 5 tons of what can be described as meat residue were seized and destroyed as being prohibited article. This was meat from which the meat juice had been mechanically extracted and it was proposed that the residue minus the meat juice be used in the manufacture of smallgoods. 1,050 lbs of kangaroo meat about to be made into smallgoods were also seized and destroyed in a metropolitan smallgoods factory.

LEGAL PROCEEDINGS

The total number of prosecutions instituted by the Branch's officers and the amount of fines and costs imposed was substantially the same as last year, there being 632 prosecutions in the previous year and 628 this year; the total fines and costs being £7,498 last year and £7,274 this year. A prosecution of particular interest was that taken against Richard John Williams of Lower Bucca, a person who is a non-medical practitioner. Williams claimed that he could cure cancer with an infusion of lantana leaves and other substances which he referred to as "secret ingredients". He was charged on three informations under the Medical Practitioners Act with offering medical treatment for cancer to three persons who believed that they were each suffering from cancer. He was convicted and fined a total amount in fines and costs of £60 17s. 0d.

LOOSE LEAF REGULATIONS

In July of this year a loose leaf set of the Pure Food Act Regulations was printed. This was a step which was widely acclaimed by Industry as a boon to New South Wales manufacturers and to those throughout the Commonwealth and other parts of the world who must keep abreast of the legal situation in food matters. Cost of the publication which is known as the *Handbook of Pure Food Legislation* is \$3 and subscribers to the Handbook are kept up to date on amendments as they appear for \$2 per year commencing from 1st July in each year.

TRAINING OF CADET HEALTH INSPECTORS

Upon the appointment of six Cadet Health Inspectors to the Health Inspection Branch this year, it was decided that the Cadets in pairs should be given general purpose food inspection training. In March this Branch commenced this programme and to the end of the year two of the cadets had received nine months training whilst attached to the Branch.

TABLE I—SUMMARY OF WORK PERFORMED BY PURE FOOD BRANCH (CENTRAL ADMINISTRATION)
FOR THE YEAR ENDING 31ST DECEMBER, 1965

<i>Food and Drugs (other than Milk)</i>									
Number of samples taken .. .. .	..	..	..	..	..	..	..	..	3,758
Number below standard .. .. .	..	..	..	..	..	..	..	..	455
Number of warnings .. .. .	..	..	..	..	..	..	..	..	92
Number of prosecutions .. .. .	..	..	..	..	..	..	..	..	363
Amount of Fines and Costs .. .. .	..	..	..	..	..	..	..	..	£4,497 18s. 0d.

<i>Milk</i>									
Number of samples taken .. .. .	..	..	..	..	..	..	..	..	3,192
Number below standard .. .. .	..	..	..	..	..	..	..	..	93
Number of warnings .. .. .	..	..	..	..	..	..	..	..	23
Number of prosecutions .. .. .	..	..	..	..	..	..	..	..	70
Amount of Fines and Costs .. .. .	..	..	..	..	..	..	..	..	£473 0s. 0d.

<i>Food Samples Field Tested</i>									
Meat (fresh) 8, 647, Spirits 4,496 .. .. .	..	..	..	..	..	..	..	..	13,143

Food and Drugs Unfit for Human Consumption, Seized and Destroyed
The seizures and destructions comprised over 16 tons 4,936 dozen cans and bottles, 60 cartons and 12 gallons and 24,356 head of poultry.

<i>Inspection of Premises Used for the Preparation, Sale and Storage of Food and Drugs</i>									
Number of inspections .. .. .	..	..	..	..	..	..	..	..	12,007
Number of warning notices .. .. .	..	..	..	..	..	..	..	..	287
Number of prosecutions for unclean premises .. .. .	..	..	..	..	..	..	..	..	18
Amount of Fines and Costs .. .. .	..	..	..	..	..	..	..	..	£385 0s. 0d.

<i>Particulars of General Breaches of the Pure Food Act and Regulations</i>									
Number of Prosecutions .. .. .	..	..	..	..	..	..	..	..	173
Amount of Fines and Costs .. .. .	..	..	..	..	..	..	..	..	£1,755 9s. 0d.

<i>Action Taken Under Other Acts</i>									
Number of Prosecutions					Local Govt. Act	Medical Practitioners Act			
					1	3	4		
Amount of Fines and Costs					£51 0s. 0d.	£60 17s. 0d.	£111 17s. 0d.		

<i>Other Matters</i>									
Number of complaints investigated .. .. .	..	..	..	..	..	..	..	..	1,425
Inspections of Government Establishments and Hospitals .. .. .	..	..	..	..	..	..	..	..	30

TABLE II—SUMMARY OF LEGAL PROCEEDINGS, 1966

Offences under the Pure Food Act and Regulations							Number of Prosecutions	Amount of Fines and Costs
								£ s. d.
Adulterated Foods and Drugs .. .. .	..	..	..	..	..	..	363	4,497 18 0
Adulterated Milk .. .. .	..	..	..	..	..	..	70	473 0 0
Unclean Premises .. .. .	..	..	..	..	..	..	18	385 0 0
General Breaches .. .. .	..	..	..	..	..	..	173	1,755 9 0
Other Acts—								
Local Government Act .. .. .	..	..	..	..	..	..	1	51 0 0
Medical Practitioners Act .. .. .	..	..	..	..	..	..	3	111 17 0
Grand Total .. .. .	..	..	..	..	..	..	628	£7,274 4 0

TABLE III—SUMMARY OF WORK CARRIED OUT BY THE PURE FOOD BRANCH (CENTRAL ADMINISTRATION) UNDER THE PURE FOOD ACT, 1908, AS AMENDED, FROM THE DATE OF ITS OPERATION, OCTOBER, 1909, TO 31ST DECEMBER, 1965

	No. of Premises Inspected	Total No. Samples Taken	Total Below Standard	Prosecutions	Amount of Fines and Costs		
					£	s.	d.
Premises Inspected	522,045			3,277	24,783	0	0
Breaches of Act and Regulations ..				6,225	34,568	0	0
Milk Samples		406,288	13,636	8,930	46,781	0	0
Food and Drug Samples		274,258	23,778	17,543	100,639	0	0
Food and Drug Seizures				435	2,045	0	0
Total	522,045	680,546	37,414	36,410	£208,816	0	0

Private Hospitals and Rest Homes

Medical Officer-in-Charge: Dr R. Y. DUNLOP, M.D., Ch.B., D.P.H., D.T.M.&H.

Location: 52 Bridge Street, Sydney

FUNCTION

This Section has continued in 1965 to supervise Private Hospitals and Rest Homes under the licensing provisions and standards prescribed by the Private Hospitals Act, 1908-1964. During the year it was staffed by a Medical Officer-in-Charge and although the establishment provided for three Supervisory Nursing Sisters, owing to illness and resignations only two were available for nine months of the year because of recruitment difficulties.

INSPECTIONS

Inspections have continued in 1965, although these had to be curtailed considerably owing to lack of staff. Joint inspections where the Supervisory Nursing Sister was accompanied by the Medical Officer of the Section or a Medical Officer of a Health District again took place in all areas.

The number of inspections carried out in 1965 compared with 1964 is detailed in Table I for the metropolitan area (similar statistics for Health Districts are included in the Reports for each District).

TABLE I—ROUTINE OUTDOOR DUTIES—METROPOLITAN AREA

	1964	1965
Routine inspections of Private Hospitals	246	107
Routine inspections of Rest Homes	635	332
Initial inspections of Private Hospitals and Rest Homes ..	39	29
Final inspections of Private Hospitals and Rest Homes ..	14	14
Joint inspections (Medical Officer and Supervisory Nursing Sister)	75	52
Special Visits	62	88
Complaints investigated	26	35

SUPERVISION

The Section continued supervisory processing of schedules for the Board of Health from Health Districts while also attending to these duties in connection with the metropolitan area. Details of the supervisory duties for the whole of the State are included in Table II with comparative figures for 1964.

TABLE II—DETAILS OF SUPERVISORY DUTIES IN CONNECTION WITH SCHEDULES FOR THE BOARD OF HEALTH

Procedures	1964	1965
Plans scrutinized	185	166
Registration of Resident Manager	316	320
Licenses amended	122	89
Transfer of licenses	37	64
New licenses	31	17

The reason for the large increase in transfers of licenses has not been understood but it has necessitated a considerable amount of extra work which has included inspections in this connection. Each of the premises was either brought up to standard before the transfer or the transferee was given six months to complete the requirements subsequent to the transfer. This has meant a considerable improvement in premises in the metropolitan area since 98 per cent of the transfers occurred in this area.

STANDARDS

It has not been possible to rate the standards in Private Hospitals or Rest Homes during 1965 due to the paucity of inspections in the metropolitan area, but it is hoped, to continue this practice in 1966. It can be said, though, that general standards have improved considerably during the year in those premises which were inspected.

The grading in the Health Districts is given in Table III below.

TABLE III—STATISTICAL ANALYSIS OF STANDARDS IN PRIVATE HOSPITALS AND REST HOMES—HEALTH DISTRICTS—1965

Rating	Private Hospitals				Rest Homes			
	1964	Per cent	1965	Per cent	1964	Per cent	1965	Per cent
Three stars	26	47.2	12	22.5	22	44.9	12	25.0
Two stars	24	43.6	29	55.0	19	33.7	21	43.8
One star	5	9.2	12	22.5	8	16.4	15	31.2
Nil .. .. .	..	..	..	..	..	..	..	..
Total	55	100	53	100	49	100	48	100

If the above figures can be taken as a guide standards in the Districts have fallen during 1965.

ACCOMMODATION IN PRIVATE HOSPITALS AND REST HOMES

At 31st December, 1965, on account of closures there were three fewer private hospitals with a loss of 44 beds making the total number of beds and cots available at 4,433 and 273 respectively. Rest Homes also decreased by two but consequent on additions to premises beds increased by 774 making the total number of beds and cots available at 9,358 and 71 respectively.

The number of beds available in Private Hospitals and Rest Homes over the past five years is given in Table IV.

TABLE IV—NUMBER OF BEDS AVAILABLE IN PRIVATE HOSPITALS AND REST HOMES OVER THE PAST FIVE YEARS 1961-1965 NEW SOUTH WALES

Year	Private Hospitals		Rest Homes	
	Beds	Cots	Beds	Cots
1961	4,131	191	5,680	58
1962	4,295	231	6,399	58
1963	4,619	252	7,497	49
1964	4,477	266	8,584	55
1965	4,433	273	9,358	71

From the above Table it will be observed that there has been an increase of 302 beds in Private Hospitals and 3,678 beds in Rest Homes during this five year period.

Health Education

Health Educationist: S. J. KRISTER, M.R.C.S., L.R.C.P., D.P.H., D.I.H.

Location: 52 Bridge Street, Sydney

The year 1965 was marked by an increased interest in health education activities by the Health Districts and the Specialist Divisions and Branches as well as by various non-departmental organizations. This interest was demonstrated by the steadily increasing volume of approaches for consultation and training received by the Health Educationist.

Two important events should be specially noted. The first was the approval by the Public Service Board of the increased staff needs for phase one of the long range development programme for health education presented in 1964. The second was the approval by the Board of Secondary School Studies after protracted discussions, of a syllabus of health education to be introduced into

the secondary curriculum. The implementation of the syllabus on a basis of one period per week for, at present, three years of the course is being made possible by a reorganization of physical education and games teaching. The problems involved in teacher training are considerable and some reorganization of the role of Health Department Officers in Teachers Training Colleges may be inevitable to allow for the increased teaching load. However, no one can doubt the importance of the progressive step which has been taken by the Education Department and the Board of Secondary School Studies.

TRAINING

It is not yet possible to conduct the number of full courses in health education needed for the development of health education competency by all those who need it. A beginning has been made, however, in providing a systematic course for the in-service training programme of public health nurses, and many lectures have been given to departmental, University and community groups desiring instruction.

It has been a disappointing feature that the appointment of a lecturer in health education at the University of Sydney, approved early in 1965, has not yet taken place. The professional leadership in teaching and research to be expected from such an appointment has thus been lacking.

The following teaching was carried out during the year:

- (1) *Departmental*
 - (a) Public health nursing in-service course, health education course.
 - (b) Lectures to—
 - Senior Officers' residential seminar.
 - Nurses.
 - Health and Food Inspectors, including visits to three Health Districts.
 - Induction Trainees.
 - Occupational Health Staff.
- (2) *Non-Departmental*—
 - (a) Participation in Seminars for—
 - Dentists.
 - Optometrists.
 - Red Cross Teachers Group.
 - Professional workers with the mentally retarded.
 - Public health nurses.
 - (b) Lectures to—
 - Undergraduate medical students.
 - Undergraduate social work students.
 - D.P.H. and D.T.M. students.
 - D.P.H. (Dentistry) students.
 - (c) Lectures to Red Cross and other community groups on a number of occasions.

PUBLICATIONS

1. The Department's Handbook for Medical Practitioners was rewritten during the year. There is evidence that this publication has been well accepted and the new edition has been improved in various ways. The Newsletter for Medical Practitioners has continued to gain support during the year.

2. School and Community Health, our handbook for primary teachers, was revised and added to during the year and the second edition is now in production.

3. A kit of educational materials on smoking, for the use of school teachers, was prepared during the year. It is at present under study by the Department of Education.

4. Three health education guides were prepared:

- (a) Learning.
- (b) Communication.
- (c) Notes for School Canteen Committees.

5. A new leaflet on Venereal Disease was prepared for late adolescents. Several other leaflets were revised.

LIAISON WITH OTHER DEPARTMENTS AND ORGANIZATIONS

The Health Educationist continued to represent the Department on a number of Councils and Committees having important health education functions.

Nutrition Section

Location: 52 Bridge Street, Sydney

STAFF

Senior Dietitian: Miss R. STERN, M.Sc. (Pretoria), M.Sc., (Ohio).

Two dietitians; one health education officer; one office assistant.

FUNCTIONS AND RESPONSIBILITIES

The Nutrition Section is responsible to the Health Educationist for the interpretation of the findings of recent nutrition research to the lay public and for the dissemination of information on nutritional requirements in health and disease, food values and costs, cooking methods and the organization of food services.

ACTIVITIES DURING THE YEAR

(a) Press Articles and Broadcasts

Weekly articles and radio scripts (200-400 words) were prepared for circulation to editors of approximately 300 country and suburban newspapers and 40 radio stations.

A television programme was prepared for inclusion in the countryside series for the local station in Wagga Wagga.

An article was prepared for the Departmental Bulletin, *Health in New South Wales* and another for the *Education Gazette* for Health Week.

(b) Publications

Publications were reviewed when necessary for reprinting. The chapter on Nutrition in the teachers' handbook, *School and Community Health* and the Low Cost Food Budget were revised. Slides were made for teaching purposes.

Material on food service for elderly people was prepared for publication.

(c) Lectures and Talks

A total of ten (two hours) lectures and ten cookery classes were given to junior and senior trainee nursing assistants at Lidcombe State Hospital.

Two courses of ten lectures were given to kindergarten and Sydney Day Nursery Training College students.

Two courses of four lectures were given to students at the Karitane Mothercraft Training Centre and a course of four lectures to the Public Health Nurses at Forest Lodge Child Health Centre.

Three lectures were given for social workers at the University of New South Wales.

Talks were given to members of various organizations. They included the Junior Red Cross, the Women's Chapter of the Albert Einstein B'nai B'rith Lodge, the Science Association at Abbotsleigh School, two groups attending a beauty care seminar at the Warringah Mall and a group of nuns in children's homes as part of a course organized by the Catholic Family Welfare Bureau.

(d) Maternal and Baby Welfare

Four prenatal clinics were attended weekly for most of the year. They were at Liverpool, Blacktown and two at Parramatta. Dee Why and Manly were also attended for two months and for three months during the year it was only possible to attend Blacktown and Liverpool due to lack of staff.

Ten lectures were given as part of ten series of eight lectures for expectant mothers attending Parramatta, Dee Why and Blacktown prenatal clinics.

(e) Clinic for Overweight Children

This clinic at Forest Lodge Child Health Centre was conducted weekly during the school year.

(f) Enquiries

Many enquiries on all aspects of food and nutrition were received.

The majority of requests for therapeutic diets were for weight reduction, diabetes, peptic or duodenal ulcers and coeliac disease.

(g) Institutions

A visit was made to "Our Children's Home", North Strathfield and the "Adelaide Walker Home", Strathfield and a report on the food service in each Home forwarded to the Department of Child Welfare.

A visit was made to Barker College, Hornsby, and to the Sydney Missionary and Bible College, Croydon, and a report on the adequacy of the diet forwarded to each institution.

(h) Survey Work

The planning and field work for a survey of food eaten at school by approximately 4,000 fourth, fifth and sixth grades children in 20 metropolitan schools was conducted. Included in this as separate items were the school canteens, school milk, and nutrition education practices.

(i) Student Dietitians

One student dietitian training at the Royal North Shore Hospital spent two weeks in the Section, during which time a special programme was arranged.

(j) Trainee Dietitians

Six trainee dietitians were working in the Section during the summer University vacation. Various educational activities were arranged for them.

Publicity Branch

Location: 52 Bridge Street, Sydney

Publicity Officer: Mr G. KEEP

STAFF

One assistant publicity officer, one clerk, one office assistant, one projectionist.

ACTIVITIES

The functions of the Branch are to promote health education and public relations programmes, using all media, involving press, radio, television, films, posters, pamphlets and displays.

The Branch's film library was used extensively by schools, teachers colleges, and teaching hospitals, whilst much of the material issued such as posters and pamphlets was distributed to these locations for teaching purposes.

A heavy demand was again placed upon the Branch for all types of publicity material. Distribution was chiefly to local authorities, schools and Baby Health Centres. The extension of health education programmes in the Health Districts again created a heavy demand for material for distribution to Medical Officers of Health. Total approximate distribution figures are as under:

Posters	..	..	..	..	..	..	..	..	25,600
Pamphlets	..	..	..	..	..	..	883,000		
Books	..	..	..	..	..	..	190,500		
									1,073,500
									1,099,100

A large quantity of booklets and leaflets were also sent direct to schools and Baby Health Centres by the Government Printer, including 80,000 *Our Babies* and 90,000 *Healthy Motherhood*.

Medical Records, Polio (Adult) and Polio (Children) cards distribution figures amounted to approximately 100,250, 14,500 and 37,200 respectively.

Two hundred and eighteen 16 mm film screenings were carried out by the Branch to a total audience of 16,435. Film loans (16 mm) totalled 2,175. These were screened to an audience of 37,063.

New Films: During the year 28 new films were added to the Department's library. A number of these were made available to Medical Officers of Health on a permanent loan basis for health education programmes in country districts.

Other details of the Branch's work during 1965 included:

Special Campaigns

- (a) *Press:* Tuberculosis surveys and an Immunization Campaign accounted for most of the paid advertising used this year. All metropolitan, suburban and country papers were supplied with weekly press articles and every opportunity taken to provide articles of a topical nature.

- (b) *Radio*: Paid announcements over commercial radio stations were used in connection with the Department's Immunization Campaign. Weekly articles were sent to all radio stations for broadcasting and Departmental staff frequently made broadcasts on general health subjects.
- (c) *Television*: Paid television was used to publicise the Department's Chest X-ray surveys.

V.D. Education

During the year a special publication on the subject of Venereal Disease was issued with the title *Lots of Young People are asking about V.D.* A poster "V.D. is on the Increase" was also issued and widely distributed principally in public transport. As a result of this publicity a wide demand was made for the pamphlet mentioned.

HEALTH WEEK, 1965

This Week is organized by this Branch, the Publicity Officer acting as Secretary. The campaign was conducted on open lines with the slogan "Time to check for Health and Safety".

Emphasis was placed on the numerous health services provided for prevention of sickness and their fuller use encouraged. The need for continued observance of personal and communal hygiene was stressed. Two essay competitions were held in which primary and secondary school children were invited to compete. Health education material, notes for radio talks and newspaper articles were also distributed.

During Health Week 70,000 copies of a Health Week Newspaper were again published in the metropolitan area and the Newcastle district, this again proved most successful.

100,000 copies of a special Health Week pamphlet were again issued.

VOLUNTARY ORGANIZATIONS

The Branch works as closely as possible with the many voluntary organizations operating in the field of public health and endeavours to assist these groups by personal liaison, film screenings, supply of health education material and expert advice.

During the year the Branch co-operated with these groups on a wide variety of projects.

A Departmental Exhibit was arranged at the Town Hall in November during Old People's Week, which was conducted by the Old People's Welfare Council.

ROYAL EASTER SHOW

For the third time the Department entered an exhibit in the above show during the month of April, 1965. A feature of the exhibition was the screening of special films with emphasis on the dangers of smoking.

"SCIENCE IN THE DEVELOPMENT OF AUSTRALIA" EXHIBITION

During March, 1965, the Department entered a display at the above exhibition featuring the work of the Occupational Health Division.

During the same month a small display was arranged by the Department at the University of N.S.W. in conjunction with the Clean Air Conference.

WARATAH SPRING FESTIVAL

For the third occasion the Health Department entered a float in the procession held in conjunction with the above festival. The float featuring the Goddess Hygiea and her handmaidens placed emphasis on hygiene and preventive medicine and was the most impressive display yet entered.

DISPLAYS FOR MEDICAL HEALTH DISTRICTS

During the year basic display units were made available for permanent use by Medical Officers of Health in country districts.

DEPARTMENTAL JOURNAL

The quarterly Journal of the Department, *Health in N.S.W.* continued to be popular and the circulation was increased during the year to 16,500.

NEWSLETTER FOR PRACTITIONERS

A quarterly Newsletter for Medical Practitioners initiated at the end of 1964 was well received and during the year circulation was increased to 5,500.

Medical Examination Centre

Location: 86-88 George Street North, Sydney

STAFF

Medical officer-in-charge; 4 permanent medical officers; 3 part-time psychiatrists; 1 nursing sister; 1 clerk; 9 clerical officers.

FUNCTION

This Centre conducts medical examinations to determine fitness for employment in Government Departments with the exception of the Department of Government Transport and the New South Wales Police Force. The Centre arranges examinations in country areas when necessary and processes all medical documents to determine fitness for employment and admission to the State Superannuation Fund. Assessment of medical fitness to continue in employment and examination of employees on sick leave is arranged at the request of the various Departments. The Centre is responsible for assessment of students' fitness to enter Teachers College and fitness to continue The Teacher Training Course. Examinations are also carried out on behalf of the following Allied Services:

- The Ambulance Transport Service Trainees.
- Board of Fire Commissioners.
- The Civil Defence Organization.
- The Grain Elevators Board.
- The Hunter District Water Board.
- The Main Roads Board.
- The Maritime Services Board.
- The Meat Industry Board.
- The New South Wales Milk Board.
- The Public Service Association.
- The Rural Bank of New South Wales.
- The State Dockyard, Newcastle.
- The State Planning Authority.
- The Sydney Grammar School.
- The United Dental Hospital.
- The University of New England.
- The University of New South Wales.
- The University of Sydney.
- The Macquarie University.
- The Water Conservation and Irrigation Commission.
- The Western Lands Commission.
- The Metropolitan Water, Sewerage and Drainage Board.
- The Electricity Commission.

Members of the general public are vaccinated against smallpox on request and Repatriation Pensioners are examined at the request of the Transport Department to determine their suitability for transport concessions.

MEDICAL EXAMINATIONS

Teaching Service

The following examinations have been carried out at the Medical Examination Centre:

	1964	1965
Full medical examinations of Teachers College entrants ..	2	35
Full medical examination to determine fitness for permanent employment and admission to the State Superannuation Fund	1,394	949
Examination of applicants for employment as temporary teachers	818	1,145
Sick leave cases	225	187
Review Examinations and re-examinations	471	36
Psychiatric examinations	495	513
	<hr/> 3,405	<hr/> 2,865

The results of the following examinations were also assessed at this Centre:

	1964	1965
Students seeking entry to Teachers College	3,545	3,404
Students graduating from Teachers College	2,351	2,475

This Centre also arranged for the following examinations of Teachers to be carried out in country areas and the results were then assessed at this Centre:

	1964	1965
Full examination for permanent appointment and admission to the Superannuation Fund	283	159
Examination of applicants for employment as temporary teachers	491	706
Sick leave cases	102	65
Other examinations including X-rays and examination for overseas exchange .. .. .	..	165
	<u>876</u>	<u>1,095</u>

During the year fifty-five teachers were retired on medical grounds, twenty-two of these retirements being for psychiatric reasons and thirty-three for general medical reasons.

The following conditions were responsible for these retirements:

	1964			1965		
	M.	F.	Total	M.	F.	Total
Cardio vascular disease	5	2	7	9	5	14
Mental illness	3	6	9	12	10	22
Disease of central nervous system	1	0	1	4	3	7
Kidney disease	0	1	1	0	0	0
Malignant disease	1	0	1	2	1	3
Arthritis	2	1	3	3	2	5
Respiratory disease	1	0	1	0	1	1
Other conditions	0	0	0	3	0	3
	<u>13</u>	<u>10</u>	<u>23</u>	<u>33</u>	<u>22</u>	<u>55</u>

Age distribution of the retirements is as follows:

	1964	1965
20 to 30 years	3	6
30 to 40 years	2	4
40 to 50 years	2	10
50 to 60 years	14	29
60 to 65 years	2	6

Retirements under the age of forty years are analysed below:

Age	Sex	Medical Condition
23	M.	Psycho-neurotic personality disorder.
23	M.	Schizophrenia.
24	M.	Schizophrenic reaction.
24	M.	Post-traumatic cerebral damage.
27	F.	Cerebral tumour.
28	F.	Psycho-neurotic depressive reaction.
31	M.	Malignant disease.
36	F.	Paranoid schizophrenia.
36	M.	Psycho-neurotic depression.
37	F.	Schizophrenia.

Public Service and Allied Service

Examinations carried out at Medical Examination Centre:

	1964	1965
Full medical examinations for permanent appointment and admission to the State Superannuation Fund	4,027	4,386
Examinations for fitness to continue in the Service	234	257
Re-examinations	168	297
Special examinations	47	101
Psychiatric examinations	203	255
	<u>4,679</u>	<u>5,296</u>

This Centre also arranged the following examinations in country areas and results were assessed at this Centre.

	1964	1965
Full examinations for permanent appointment and admission to the Superannuation Fund	1,214	1,388
Examinations for fitness to continue in the Service	42	56
Special examinations .. .. .	..	248
	1,256	1,692

During the year sixty-two public servants were retired on medical grounds twelve of these were for psychiatric reasons and fifty for general medical reasons.

The following conditions were responsible for these retirements:

	M.	F.	Total
Cardio vascular disease	18	2	20
Mental illness	8	4	12
Disease of the central nervous system	5	0	5
Kidney disease	1	0	1
Malignant disease	2	0	2
Arthritis	5	1	6
Respiratory disease	2	0	2
Other conditions	8	6	14

The age distribution of the retirements is as follows:

20 to 30 years	5
30 to 40 years	7
40 to 50 years	17
50 to 60 years	29
60 to 65 years	5

Retirements under the age of forty years are analysed below:

Age	Sex	Medical Condition
21	F.	Personality disorder.
25	M.	Malignant hypertension.
28	F.	Anxiety state.
29	F.	Personality disorder.
29	M.	Schizo affective psychosis.
33	F.	Back injury.
34	M.	Lumbo sacral disc lesion.
35	M.	Malignant disease.
38	M.	Traumatic arthritis and brain damage.
39	F.	Schizophrenia.
40	F.	Hand injury.
40	M.	Fractured neck and paraplegia.

The Centre has conducted other services as follows:

	1964	1965
Examination of Returned Servicemen for travelling concessions	1,546	1,939
Vaccinations	481	419
Electrocardiographs	56	81
Audiograms .. .. .	..	132

In addition applicants for employment by the Electricity Commission of New South Wales, The Metropolitan Water, Sewerage and Drainage Board are examined by their own Medical Officers and documents are referred to this Centre for assessment. In 1965, 803 candidates were assessed in this way.

Also 530 sick leave certificates for non pathological conditions were reviewed in 1965.

Medical Statistics

Medical Statistician: Dr D. L. JONES, M.B., B.S., B.Sc.

Location: 93 Macquarie Street, Sydney

The Medical Statistician provides a central point of enquiry for health statistics.

Help has been given in planning surveys by several sections of the Department, and in the execution of these, as well as in the interpretation of results. It is highly desirable that all new projects involving surveys are examined at the planning stage for much waste can be avoided thereby. Two major projects involving the Medical Statistician are a school lunch survey in the Nutrition Section, and a Caesarian section survey for the Committee Investigating Maternal Deaths.

A larger project on which work has started involves the Cancer Detection (Exfoliative Cytology) Section of the Institute of Clinical Pathology and Medical Research, Lidcombe. The proposal is to convert the record keeping of this service for computer processing. When completed this will make the large number of reports available for scientific analysis in a way that is now just not practicable.

MEMBERSHIP OF COMMITTEES

The Medical Statistician is a member of the following committees:

Medical Statistics Committee.

National Morbidity Subcommittee, of the National Health and Medical Research Council.

PREVENTIVE MEDICINE

Bureau of Maternal and Child Health

Director: N. S. SOLOMONS, M.B., Ch.M.

Location: 19 O'Connell Street, Sydney

The staff of the Bureau is distributed amongst its three Sections and each Section accounts for its own staff in the Annual Report.

The Bureau of Maternal and Child Health was formed with a twofold object. Firstly, to amalgamate the available services of the School Medical Service and the Division of Maternal and Baby Welfare, and, secondly, to extend those services in order to provide a continuing preventive health service to prospective mothers, mothers, and children of all ages until they leave school.

Although authorised at the beginning of the year, the Bureau did not commence to function as such until April, following the appointment of the Assistant Director of Child Health.

Administratively, the Bureau consists of a Section of Maternal and Infant Care, a Section of Child Health and a Section of Special Services, each under the administration of an Assistant Director.

The Section of Maternal and Infant Care provides preventive health services to prospective mothers, mothers and children up to the age of two years; the Section of Child Health from two years to school leaving age, and the Section of Special Services gives to both these Sections and to other agencies interested in the welfare of children special and specialized services for the investigation and evaluation of children with problems of any kind.

It has to be noted that the dividing line of two years of age is purely administrative and in practice both the Sections involved deal with an overlap into each others area, particularly in regard to preschool children and Well Baby Clinics.

In New South Wales there has been a very significant gap in the provision of preventive health services to children and their parents, and this gap consists of the preschool child aged from two to five years. The former Division of Maternal and Baby Welfare provided a service for approximately 2,000 of these children only and the old School Medical Service to another 625, whereas the number of children in this age group in New South Wales would be very considerable and would probably exceed 200,000 (approximately 80,000 children are born each year.)

Some progress has been made even during the last nine months in carrying out the objects of the Bureau. The number of Well Baby Clinics conducted prior to the formation of the Bureau has been considerably increased by using the services of medical officers on the establishment of the Section of Child Health and training them in the conduct of such Clinics. A start has also been made with the provision of preventive health services to preschool kindergartens and nursery schools not conducted by the Sydney Day Nursery and Nursery Schools Association or the Kindergarten Union, particularly in one part of the metropolitan area and it is anticipated that early in 1966 this service will be extended until, finally, the Bureau's services are offered to all such establishments. Again, the staff of the Section of Child Health is being used for this purpose, particularly those who have been trained paediatrically or are attached to Child Health Centres.

The number of Paediatric Referral Clinics conducted by the Section of Maternal and Infant Care has also been considerably increased since the appointment of a paediatrician to the Section of Special Services. The officers of the Section of Maternal and Infant Care, both medical officers and nurses, are now encouraged to make use of the facilities provided in the Child Health Centres for the investigation and evaluation of atypical children.

It has always been felt that there is a need for the evaluation of the hearing of infants at as early an age as possible. Following consultation with officers of the Commonwealth Acoustic Laboratories and with Ear, Nose and Throat Specialists, the Assistant Director of Special Services, with the co-operation of the Commonwealth Acoustic Laboratories, is endeavouring to produce a set of tests which can be used by nurses, following a short course of training, to evaluate the hearing of children at approximately the age of six months. A pilot scheme has been commenced at Chatswood Baby Health Centre and, following the evaluation of this, it is hoped that in 1966 the scheme will be extended to other areas.

Difficulty has been experienced for many years in filling the establishment of Baby Health Centre sisters and, in spite of various schemes which have been devised to overcome this, for a considerable time now there has always been at least twenty vacancies. In a further attempt to overcome this, approval was obtained to employ two mothercraft trained nurses, instead of nurses with a general and mothercraft certificate, as a pilot scheme, to work under the supervision of Baby Health Centre sisters and relieve them of some of the actual mothercraft work. If this scheme is successful it could be expanded to take up other vacancies, and these nurses could be used in multiple staffed Centres, so helping to spread our resources further.

During 1965 the Bureau was able to provide, to a very limited degree, somewhat equivalent services to country school children in certain areas as are provided for children in the metropolitan area who have problems, particularly those with learning difficulties. Diagnostic teams, consisting of a paediatrically trained medical officer, psychologist, social worker and speech therapist, visited Bathurst, Lismore, Tamworth and Albury and spent about a week in each, investigating approximately thirty or forty children in each area. These children were selected by school counsellors in the area and, in the main, were children with learning difficulties, although behaviour problems in some cases were investigated. Return visits will be made in 1966 to these areas and the service will also be extended to other centres.

The Assistant Director of Special Services visits Wollongong regularly at six weekly intervals to evaluate on the spot atypical children, in consultation and with the co-operation of the paediatrician attached to the Wollongong Hospital.

Approval has been obtained for the erection of a diagnostic centre in the grounds of Grosvenor Hospital, to be staffed by the Section of Special Services, for the special investigation and evaluation of atypical children from country areas who need a more highly specialized and prolonged investigation and evaluation than can be given by visiting teams to country areas. This centre will be built as soon as funds are available. The centre will also incorporate a hostel for mothers of some of these children to cope with instances when it is necessary for the mother to be present to assist with the investigation.

A combined meeting of staff of all Sections was held on 8th July, 1965, and the majority of metropolitan officers attended this meeting which was addressed by the Under Secretary, the Director-General of Public Health, the Director of the Bureau and the three Assistant Directors. The object of the meeting was to explain to the staff the reasons for the establishment of the Bureau and the projected future procedures and policy. Opportunity was also taken to get to know each other, with the help of a light supper. There is no doubt that the meeting achieved a measure of success and it is hoped in the future that further such gatherings will be held, with the object mainly of integrating the staff into one establishment and learning of each others work and problems.

No real difficulties have been experienced as a result of the decentralization of the activities of the Bureau to Medical Officers of Health within their own areas. The administration of the services of the Sections of Maternal and Infant Care and Child Health within these areas has been handed over almost completely to the Medical Officers of Health. However, the activities and administration of the Section of Special Services within these areas have not been decentralized owing to the unavailability of personnel and resources for these special and specialized services, but the facilities of the Section are gradually being extended to the areas by means of the visiting diagnostic teams. Individual cases requiring urgent assessment and advice still need to be referred to the metropolitan area of Sydney or Newcastle.

The Advisory Committee on Maternal and Child Health, which consists of the Director of the Bureau and the three Assistant Directors, met on ten occasions and discussed various problems in procedure and ways and means of expanding the activities of the Bureau and implementing new policies.

All senior officers of the Bureau have been busy throughout the year with lecturing, talks, radio and television interviews and in the preparation of many articles for publication on various aspects of the work of the Bureau.

One of the principal roles of all members of the staff of the Bureau is to take an active part in health education. Health education, its motivation and application begins at the earliest possible age. The staff daily practice health education in the preparation for motherhood classes, prenatal clinics, baby health centres, preschool kindergarten and nursery school medical examinations and school medical examinations. Special members of the staff, particularly the "follow up" sisters and others carrying out home visiting are emphasising the principles and practices of health education to a very large cross-section of the community. The teachers' college medical officers are developing correct attitudes in trainee teachers to the principles and the teaching of health education, which is now a core subject in secondary schools and a large section in the curriculum for primary schools. All senior members of the staff in their contact with groups of people, either by lectures, discussions, talks and interviews, take every opportunity to participate in the health education programme of the Department. Full use has been and is being made by all members of the staff of the resources of the departmental health educationist and his advice has been sought on very many occasions. Close collaboration is maintained with him in various projects, including some research activities.

It is anticipated that when all the Sections of the Bureau have been housed under one roof that the integration of the staffs of the Sections, and particularly the work carried out by them, will become accelerated and eventually provide the continuing preventive health service to mothers and children which was the prime reason for the formation of the Bureau, although any further extension of the Bureau's activities will necessitate increases in professional staff.

The activities of the three Sections are detailed separately on the following pages of the report.

The opportunity is taken to thank the Assistant Directors and their staffs for their support and loyal co-operation during the year.

SECTION OF MATERNAL AND INFANT CARE

STAFF

Assistant Director: MAUREEN GRATTAN-SMITH, M.B., B.S., D.P.H.

Establishment: One Senior Medical Officer (Maternity and Newborn); one Senior Medical Officer (Infant Care); 3 full-time and 1 part-time medical officers; 2 Nurse Inspectors; 8 clerical staff. At the Baby Health Centres there were 238 full-time Sisters employed; 44 part-time Sisters; 3 Sisters in training under bond.

The Section of Maternal and Infant Care replaces the old Division of Maternal and Baby Welfare, and forms one part of the Bureau of Maternal and Child Health. Although ultimate amalgamation of all sections is envisaged, during the initial year (1965), the Section continued to maintain its previous activities with little or no alteration. Indication of the future full amalgamation is given in the two changes which have occurred. These are the transfer of the paediatrically trained medical officer to the direct supervision of the Section of Special Services, and the increase in Well Baby Clinics by using Child Health Section's medical staff. This combined use of medical staff foreshadows the future, and, in time, it is expected that introduction of new services, will thus be made possible.

Decentralization of activities to the Health Districts, although involving some administrative difficulties, has resulted in country areas obtaining a far better coverage of the nursing staff in Baby Health Centres. The Medical Officers of Health and their staff, particularly the Assistant Nurse Inspectors, have helped considerably in facilitating the work of the Section. This applies particularly to the elimination of the "isolation" of country Baby Health Centre Sisters, the rearrangements of country circuits, and the "follow-up" of surveys initiated by the Special Medical Committee Investigating Maternal Morality.

Although the low maternal and perinatal mortality statistics continue to reflect a high standard of care of mother and infant compared to other countries, a detailed study of the deaths suggests that there are still areas in which improvement can be made. Antenatal care, particularly in country areas, falls below the required standard, and the resultant high prematurity rate is still the major cause of death in the perinatal period. With the augmentation of services made possible by the establishment of the Bureau, plus the benefits of decentralization, it should be possible to reduce not only the mortality but the morbidity associated with pregnancy, childbirth and the rearing of children.

At all times the Section has received full co-operation from other agencies concerned with the care of the mother and her child. These agencies include State Departments, hospitals, Local Government authorities, Country Women's Association, the Red Cross Blood Transfusion Service, the Mental Health Association of New South Wales, the Kindergarten Union of New South Wales and the Sydney Day Nursery Schools Association.

MATERNITY AND NEWBORN

The number of maternal deaths in New South Wales per annum is small averaging about 27. Although each death is examined in detail by the Maternal Mortality Committee, statistical analysis of such a small number is unsatisfactory. The perinatal period is now regarded as the most significant and rewarding, and studies aimed at the elucidation of causes of death in stillbirths and neonates are more effective in demonstrating the need for improvement in the care of pregnant and parturient women, with a resultant salvage of foetal and infant life.

In New South Wales perinatal deaths cover stillbirths and neonatal deaths under 28 days. Because a further break down to deaths under 7 days is desirable, the following tables include maternal, infant and perinatal figures both under 7 days and under 28 days.

VITAL STATISTICS

Birth Statistics

Figures as submitted by Bureau of Census and Statistics—28th July, 1966

The number of live births registered in New South Wales during 1965 was 78,069, a decrease of 2,449, compared with the previous year. The rate of 18.61 per 1,000 of mean population was the lowest since 1942.

Stillbirths registered decreased from 1,003 in 1964 to 947 in 1965. Both the number of stillbirths and the rate of 12.0 per 1,000 total births were the lowest ever recorded.

TABLE V—SUMMARY OF LIVE BIRTHS AND MATERNAL, FOETAL AND INFANT DEATHS—NEW SOUTH WALES 1940-1965

Year	Live Births	Maternal Deaths	Deaths Under 1 Year of Age	Deaths Under 28 Days of Age	Stillbirths (a)	Perinatal Deaths (b)
Number						
1940	49,382	209	1,927	1,263	1,342	2,605
1950	71,592	80	1,936	1,345	1,406	2,751
1960	81,983	56	1,735	1,250	1,261	2,511
1961	86,392	43	1,800	1,284	1,306	2,590
1962	85,439	29	1,825	1,321	1,099	2,420
1963	84,065	27	1,673	1,185	1,165	2,350
1964	80,518	28	1,634	1,152	1,003	2,155
1965	78,069	25	1,492	1,087	947	2,034
Rate						
	(c)	(d)	(d)	(d)	(e)	(e)
1940	17.78	4.23	39.02	25.58	26.46	51.36
1950	22.24	1.12	27.04	18.79	19.26	37.69
1960	21.38	0.68	21.16	15.25	15.15	30.16
1961	22.07	0.50	20.84	14.86	14.89	29.53
1962	21.46	0.34	21.36	15.46	12.70	27.96
1963	20.75	0.32	19.90	14.10	13.67	27.57
1964	19.54	0.35	20.29	14.31	12.30	26.43
1965	18.61	0.32	19.11	13.92	11.98	25.74

(a) A stillborn child is defined as "any child of seven months gestation or over not born alive and includes any child not born alive which measures at least fourteen inches, but does not include any child which has actually breathed."

(b) Stillbirths plus deaths under 28 days of life.

(c) Number per 1,000 of mean population.

(d) Number per 1,000 live births.

(e) Number per 1,000 total births (live and still).

MATERNAL MORTALITY

Figures as submitted by Bureau of Census and Statistics—28th July, 1966

Information relating to maternal mortality is shown in Tables V, VI, VII.

During 1965 the number of deaths from maternal causes (excluding criminal abortion) in New South Wales was 22 which represents a mortality rate of 0.28 women per 1,000 live births.

In 1965, three women died in New South Wales from criminal abortion compared with nine in 1961.

TABLE VI—TOTAL MATERNAL DEATHS AND DEATHS FROM CRIMINAL ABORTION, NEW SOUTH WALES 1940-1965

Year	Total Maternal Deaths (including Criminal Abortion)		Deaths from Criminal Abortion	
	Number	Rate per 1,000 Live Births	Number	Rate per 1,000 Live Births
SYDNEY METROPOLITAN AREA				
1940	81	4.06	22	1.10
1950	24	.81	6	.20
1960	21	.51	7	.17
1961	21	.48	5	.11
1962	15	.34	3	.07
1963	10	.23	1	.02
1964	9	.21	4	.09
1965	12	.29	3	.07
REMAINDER OF STATE				
1940	128	4.35	12	.41
1950	56	1.33	4	.09
1960	35	.85	5	.12
1961	22	.52	4	.09
1962	14	.33	....	....
1963	17	.42	....	....
1964	19	.50	1	.03
1965	13	.36	—	—
NEW SOUTH WALES				
1940	209	4.23	34	.11
1950	80	1.12	10	.14
1960	56	.68	12	.14
1961	43	.50	9	.11
1962	29	.34	3	.04
1963	27	.32	1	.01
1964	28	.35	5	.06
1965	25	.32	3	.04

Table VII shows a comparison of the causes of maternal deaths for the years 1960-1965.

TABLE VII—DEATHS DUE TO MATERNAL CAUSES NEW SOUTH WALES NUMBER AND RATE 1960-1965

Causes of Death	1960	1961	1962	1963	1964	1965
NUMBER (a)						
Toxaemia of Pregnancy	9	4	4	2	7	1
Ectopic Pregnancy	3	1	3	1	1	..
Placenta Praevia and other Haemorrhages of pregnancy .. .. .	..	3	..	1	..	..
Other Complications of pregnancy	4	2	4	1	4	..
Abortion (excluding criminal)	3	4	2	2	4	..
Delivery complicated by Haemorrhage	4	2	1	3	4	..
Delivery with other specified Complications	5	5	7	3	4	..
Puerperal Urinary Infection without other Sepsis .. .. .	..	1	..	..	..	..
Sepsis of Childbirth and the Puerperium	2	2	..	..	2	2
Puerperal Phlebitis and Thrombosis	1	..	2	2	2	..
Puerperal Pulmonary embolism	2	3	3	2	1	..
Other and unspecified complications of the Puerperium	5	..	3	2	..	..
Total excluding Criminal Abortion	34	26	26	23	22	..
Criminal Abortion	9	3	1	5	3	..
Total	43	29	27	28	25	..
RATE (b)						
Toxaemia of Pregnancy	·05	·05	·02	·09	·01	·11
Ectopic Pregnancy	·01	·04	·01	·01	..	·04
Placenta Praevia and other Haemorrhages of pregnancy	·03	..	·01	..	..	..
Other Complications of pregnancy	·05	·02	·05	·01	·05	·06
Abortion excluding criminal	·03	·05	·02	·02	·05	·05
Delivery complicated by Haemorrhage	·05	·02	·01	·04	·05	·10
Delivery with other specified complications	·06	·06	·08	·04	·05	·06
Puerperal Urinary Infection without other Sepsis .. .. .	..	·01	..	..	..	..
Sepsis of Childbirth and the Puerperium	·02	·02	..	..	·03	..
Puerperal Phlebitis and Thrombosis	·01	..	·02	·02	·03	·01
Puerperal Pulmonary Embolism	·02	·04	·04	·02	·01	·07
Other and Unspecified Complications of the Puerperium	·06	..	·04	·02	..	·04
Total excluding Criminal Abortion	·39	·30	·31	·29	·28	·54
Criminal Abortion	·11	·04	·01	·06	·04	·14
Total	·50	·34	·32	·35	·32	·68

(a) Classified according to the Seventh Revision (1955) of the International Classification of Diseases.

(b) Number of deaths per 1,000 live births.

INFANT MORTALITY

The figures for infant mortality from 1940 to 1965 are shown dissected by age groups in Table VIII.

Nearly three-quarters of the deaths under one year of age occur in the first 28 days of life and the majority of these occur within 7 days of birth. At these ages the causes of death are mainly attributed to antenatal factors and are similar to the causes of stillbirths. The number and mortality rate from stillbirths and neonatal deaths (deaths under 28 days) combined (perinatal deaths) are shown in Table V.

TABLE VIII—INFANT MORTALITY IN AGE GROUPS NEW SOUTH WALES 1940-1965

Year	Under one week	1 week and under 1 month	1 month and under 1 year	Total under one year
NUMBER OF DEATHS				
1940	1,043	220	664	1,927
1950	1,157	188	591	1,936
1960	1,109	141	485	1,735
1961	1,135	149	516	1,800
1962	1,160	161	504	1,825
1963	1,071	114	488	1,673
1964	1,058	94	482	1,634
1965	992	95	405	1,492

TABLE VIII—INFANT MORTALITY IN AGE GROUPS NEW SOUTH WALES 1940-1965—Continued

Year	Under one week	1 week and under 1 month	1 month and under 1 year	Total under one year
RATE PER 1,000 LIVE BIRTHS				
1940	21.12	4.46	13.44	39.02
1950	16.16	2.63	8.25	27.04
1960	13.53	1.72	5.91	21.16
1961	13.14	1.72	5.98	20.84
1962	13.58	1.88	5.90	21.36
1963	12.74	1.36	5.81	19.90
1964	13.14	1.17	5.99	20.29
1965	12.71	1.22	5.19	19.11

Infant mortality during the years 1964 and 1965 from causes assigned to the major groups of diseases in the International Classification are set out in Table IX. The table compares the rates in the Metropolis and the remainder of the State.

TABLE IX—CAUSES OF DEATH WITH RATES OF CHILDREN UNDER ONE YEAR OF AGE, NEW SOUTH WALES—1964-1965

Cause of Death*	Sydney Metropolis Area		Remainder of State		New South Wales			
	Rate†		Rate†		Rate†		Number	
	1964	1965	1964	1965	1964	1965	1964	1965
Infective and parasitic diseases	12	19	26	25	19	22	15	17
Neoplasms	17	02	05	08	11	05	9	4
Allergic endocrine system, metabolic & nutritional diseases	09	05	21	16	15	10	12	8
Diseases of the blood and blood forming organs	02	05	03	..	02	03	2	2
Mental psychoneurotic and personality disorders	09	12	08	03	09	08	7	6
Diseases of the nervous system and sense organs	21	34	13	30	17	32	14	25
Diseases of the circulatory system	05	05	08	14	06	09	5	7
Diseases of the respiratory system	1.35	1.68	2.40	1.86	1.85	1.77	149	138
Diseases of the digestive system	66	67	86	99	76	82	61	64
Diseases of the genito-urinary system	05	02	16	05	10	04	8	3
Diseases of the skin and cellular tissue .. ..	..	..	03	..	01	..	1	..
Diseases of the bones and organs of movement	02	..	05	03	04	01	3	1
Congenital malformations	4.15	3.22	3.78	3.12	3.97	3.18	320	248
Certain diseases of early infancy	10.32	10.97	12.91	12.33	11.55	11.61	930	906
Symptoms and ill-defined conditions	17	..	03	03	10	01	8	1
Accidents, poisoning and violence	1.04	.75	1.20	.85	1.12	.79	90	62
Total, All Causes	18.52	18.14	22.24	20.22	20.29	19.11	1,634	1,492

* Classified according to Seventh Revision (1955) of the International Classification of Diseases.

† Number of deaths per 1,000 live births.

PRENATAL CLINICS

The Section of Maternal and Infant Care provides prenatal clinics for public hospital patients in the fringe areas of the city and in close proximity to the patient's neighbourhood.

The clinics, which are free, are held in Baby Health Centres and the service is greatly appreciated by the mothers. Long, tiring, and often costly journeys by public transport are avoided, as are long periods of waiting. In addition, patients can bring their toddlers and other children with them. These factors lead to earlier and more frequent attendance, as well as easier and more rapid follow-up by the clinic sister if a mother fails to keep her appointment.

The clinics are conducted by Departmental medical officers on similar lines to the hospital antenatal clinics and the closest association is maintained with the hospital at which the mother has booked. Medical officers and hospital consultants work in collaboration in dealing with "problem" patients.

Consultant obstetricians who are on the staff of two of the teaching hospitals in Sydney attend three of the larger clinics once a week. Patients attending these clinics, having made their bookings at the Obstetric Hospital of their choice, can have their initial interview and examination at the Departmental clinic where a blood specimen is taken to be forwarded for blood count, grouping, Rh factor and Kline test. They have a full initial assessment and a pelvic examination when necessary.

In this way many mothers do not need to travel to the parent hospital until they are admitted for their confinement.

Nine prenatal clinics are held in the metropolitan area of Sydney. The Newcastle area is served by three prenatal clinics staffed by consultant obstetricians from the staff of the Royal Newcastle Hospital.

ATTENDANCES AT PRENATAL CLINICS—1965

Clinic	Primiparae		Multiparae		Post Natal	Total Visits	No. of Sessions
	First	Subsequent	First	Subsequent			
Metropolitan Health District—							
Blacktown	46	326	173	1,541	15	2,101	100
Campsie	16	117	30	169	..	332	52
Dee Why	37	315	73	575	2	1,002	52
Granville	25	90	46	309	..	480	52
Hornsby	6	38	5	52	1	102	49
Hurstville	16	129	44	298	..	487	51
Liverpool	53	431	225	1,612	..	2,321	68
Manly	56	263	76	604	..	999	46
Mascot	22	251	27	246	..	546	52
Parramatta	89	638	155	1,119	..	2,001	97
Totals	366	2,598	854	6,535	18	10,371	619
Newcastle Health District—							
Belmont	30	210	105	881	125	1,351	51
Cardiff	11	58	20	313	41	443	43
Charlestown	34	225	68	609	80	1,016	51
Totals	75	493	193	1,803	246	2,810	145
Grand Totals	441	3,091	1,047	8,338	264	1,381	764

SURVEY OF THE CERVICAL SMEAR TEST FOR CANCER

A survey was conducted at 50 Baby Health Centres during November-December, 1965, in order to ascertain the number of women in the over 30 age group who had a cervical smear test for cancer. Over 10,000 replies were received and it was found that only 24 per cent of the over 30 age group (total 1,159) living in country areas had been tested, and in the metropolitan area 44 per cent (total 1,970). This was a short initial study and is open to criticism statistically, but the object was to obtain some indication of the coverage. A further controlled study will be undertaken when a more representative sample will be planned.

SPECIAL MEDICAL COMMITTEE INVESTIGATING MATERNAL MORTALITY

Seven meetings of this Committee were held during 1965 and 32 deaths associated with pregnancy or childbirth were investigated and considered.

Of the 16 deaths which occurred during 1965, 10 were classified as being due to maternal causes and 6 as non-maternal. Two of the remaining deaths studied had occurred during 1963 and 14 in 1964.

During 1965 the Publications Sub-Committee finalized 2 papers—"Statement on Deaths from Ectopic Gestation", and "Statement on Deaths from Puerperal Infection"—these were presented to the main Committee, and after Ministerial approval, sent to the Editor of the *Medical Journal of Australia* for publication.

Three papers which had been prepared before 1965 were published in the *Journal* during the year; these were "Statement on Deaths from Toxaemia", "Statement on Deaths from Abortion" and "Statement on Deaths from Renal Disease".

The Publications Sub-Committee met on 6 occasions during 1965 in order to plan a survey into the morbidity following Caesarean Section in New South Wales. As a preliminary to this survey, a confidential investigation into the number of Caesarean Sections performed and the number of deliveries was undertaken in every hospital in the State, and by the end of 1965 only 4 per cent of the hospitals had not completed the questionnaire. The Caesarean Section morbidity survey questionnaire was also drawn up together with a short form to use as a baseline in determining the morbidity following normal deliveries. The survey will start during 1966.

The members of the Special Medical Committee Investigating Maternal Mortality, and special Sub-Committees formed for the purpose, have made a considerable contribution in time and assistance to the Department in the preparation of the booklet "Obstetric Practice in New South Wales". The sections on Haemorrhage, Anaesthesia and Rh Incompatibility have been rewritten and brought into line with modern procedures.

The unprecedented low level of maternal deaths in New South Wales must be considered, in part, due to the investigations and the educational work carried out by the Maternal Mortality Committee.

SPECIAL SERVICES ASSOCIATED WITH INFECTION IN OBSTETRIC HOSPITALS AND UNITS

The Section continues to play a significant role in helping to lower the incidence particularly of staphylococcal infections in nurseries. This has been done by encouraging hospitals to keep records of infections and to supervise meticulously the staff and the routines in obstetric units.

From time to time requests are received from hospitals for assistance in assessing the infection rate, and the possible causes of any increase in incidence. The nursing and medical routines followed in the wards are analysed and the lay-out of the ward and furniture and furnishings examined.

The Departmental medical officer who makes the examination recommends in a report to the hospital authorities any changes deemed necessary in order to control the infection.

FREE CONSULTANT SERVICE DURING PREGNANCY AND DELIVERY

The free obstetric consultant service which has been established by the Department encourages the general practitioner who has a difficult obstetric problem to call in specialist advice. The services are available to patients with limited means and the costs involved in the consultation fee or transport of the consultant are met by the Department of Public Health. In 1965, 26 free consultations were arranged.

The Anaesthetic Consultant Panel

A panel of Consultant Anaesthetists has been established in order that the Consultant Obstetrician can arrange for an Anaesthetist to accompany him when he attends an obstetrical emergency. The anaesthetist's consultation and transport fee are reimbursed by the Department of Public Health. An anaesthetist attended with Consultant Obstetrician on 1 occasion in 1965.

FREE SERVICES FOR MOTHERS AND BABIES SUFFERING FROM Rh INCOMPATIBILITY

In cases where it is considered that a mother with Rh incompatibility is at risk of delivering an infant with Haemolytic Disease, and needs financial assistance to cover the cost of transfer to a hospital which has the facilities for treatment, the Department of Public Health will pay the cost of transport. The Red Cross Blood Transfusion Service, by arrangement with the Public Health Department, provides a free haematological service to practitioners of patients who cannot afford the additional expense and who live outside the metropolitan area.

During 1965 two mothers were transferred to Sydney, one from Bourke and one from Trangie.

BLOOD TRANSFUSION SERVICE

Mobile Blood Transfusion Units

There are five mobile units in the metropolitan area, each situated at a teaching hospital. These work in co-operation with the Red Cross Blood Transfusion Service and the Department of Public Health, and are continuously available day and night on the request of medical practitioners in charge of an obstetric case. A further unit is based at the Royal Newcastle Hospital and serves obstetric hospitals within 100 miles of the hospital.

Regional Blood Banks in the Remainder of the State

There are seventeen Regional Blood Banks throughout the State where blood is collected and despatched to District Hospitals on demand. 54 Donor Panels are functioning outside the metropolitan area and these are situated in areas where the district hospital has an obstetric unit. The information about these services have been included in the new edition of *Obstetric Practice in New South Wales*.

PREPARATION FOR MOTHERHOOD CLASSES

Following the recommendations of the National Health and Medical Research Council that there should be continuous training for motherhood and fatherhood in the prenatal period, "Preparation for Motherhood" classes have been introduced as a valid public health service into some of the clinics.

During the past twelve months instruction classes have been extended to four of the prenatal clinics conducted by the Section of Maternal and Infant Care to provide for mothers living on the periphery of the Sydney metropolitan area. At present they are running continuously at Parramatta and Dee Why, and intermittently at the Blacktown and Liverpool Baby Health Centres, providing educational facilities for mothers who live far away from the teaching hospitals.

There is no doubt about the popularity of these classes—attendance figures have been steadily rising and many enquiries are made by mothers and local medical practitioners. Although these classes were designed primarily to help public hospital patients, intermediate patients are permitted to join, provided that the course is not over-booked, and they have obtained written permission from their obstetrician. Over two hundred mothers received this training during the past twelve months. Many requests have been received for some form of combined class which husband and wife can together attend. Such a class is to be incorporated in the Parramatta course in 1966 and, depending on its success, it will then become routine at all Centres.

PERINATAL MORTALITY SURVEYS

Following the perinatal mortality survey conducted in 1962, a continuous study has been carried out using the proposed compulsory perinatal death notification form. The form was originally designed to cover all the information which would be required on a death notification and the studies were done to determine the difficulties which might be encountered by medical practitioners in completing the form. The questions have been modified slightly, but for the last two years, 1964 and 1965, no alterations have been required.

Completion of the form was voluntary, but each practitioner was informed that this type of notification certificate foreshadowed a compulsory perinatal form which it is intended to introduce in this State in 1967. Tables have been made by the Bureau of Census and Statistics, and with three consecutive years of results available, it should be possible to produce findings of interest. This work will be undertaken during 1966.

BABY HEALTH CENTRES

At the end of 1965 there were 424 Baby Health Centres operating in New South Wales, 153 in the metropolitan area and 271 in the rest of the State. During that year 10 additional new centres were established and 4 were transferred to new premises as shown hereunder. The building and equipment in each case was subject to 75 per cent subsidy by the Department of Public Health.

Additional Centres in New Premises

15th January, 1965	Batemans Bay.
19th January, 1965	West Pennant Hills.
17th February, 1965	South Lismore.
26th February, 1965	Milton.
12th May, 1965	Rutherford.
13th October, 1965	Oyster Bay.
4th November, 1965	Macquarie Fields.
9th November, 1965	Elanora Heights.
17th November, 1965	Old Toongabbie.
1st December, 1965	South Tamworth.

Replacement Centres in New Premises

24th April, 1965	Stanwell Park.
25th October, 1965	The Entrance.
10th November, 1965	Warragamba Dam.
22nd December, 1965	Fairy Meadow.

Funds for subsidizing new Baby Health Centres and equipment are made available each year from Loan Vote funds and are allocated to those Centres most urgently required. Consideration must be given to the many applications received for new buildings and a priority list is maintained.

The Loan Vote allocation for Baby Health Centres for the financial year ending 30th June, 1965 was £76,500. The total expenditure for 1964-65 was £60,993.

The allocation for 1965-66 is £76,297, and provision has been made for the establishment, replacement or alteration of Baby Health Centres in the following areas:

McMahons Point.	Stroud.	Millthorpe.
Oyster Bay.	Bullahdelah.	Cowra.
Old Toongabbie.	The Entrance.	South Tamworth.
North Epping.	Shortland.	Green Valley.
Elanora Heights.	Stanwell Park.	Nyngan.
Macquarie Fields.	Coffs Harbour.	Fairy Meadow.
	Mittagong.	

Attendances at Baby Health Centres

The details of attendances at Baby Health Centres are as set out hereunder. These indicate an increase (1,326) in the number of individual mothers attending with a concomitant fall off in the total number of visits (72,557). This is interpreted as an indication of the continued popularity of Baby Health Centres as a source of advice but, with an increased confidence on the part of the mother in her own ability to handle her child, so that the number of visits she makes has been reduced. The new attitude towards feeding schedules resulting in less regimentation and less dependence by the mother on the sister appears to be showing results.

The individual and total attendances at Baby Health Centres situated within the Health Districts during 1965, compared with those for 1964 were:

Health District	Individual Attendances		Total Attendances	
	1964	1965	1964	1965
Metropolitan	81,290	81,509	714,509	668,111
Newcastle	12,789	13,853	105,331	102,627
South Coast	11,075	11,666	95,748	89,584
Western	9,099	9,086	78,034	72,416
North Coast	4,556	4,490	38,547	36,081
North Western	4,878	4,810	38,530	34,222
Riverina	8,798	8,398	69,388	63,971
Broken Hill	1,239	1,238	12,019	12,537
Total	133,724	135,050	1,152,106	1,079,549

NURSING SERVICES

The services given to the community by the Section of Maternal and Infant Care are based primarily on nursing personnel who staff Baby Health Centres, where a nurse-mother relationship is developed with only limited medical supervision. This type of care is peculiar to Australia and New Zealand and is regarded as a most satisfactory way of maintaining supervision of the well babies in the community. The service developed from a home visiting service and the duties of the nurse include interviewing mothers at the centre combined with home and hospital visiting.

The establishment of Health Districts has made possible more intensive advertising campaigns in country districts. It is planned that wherever possible nurses will be recruited and appointed to country towns which are their homes or towns in close proximity. This should assist in staffing country circuits.

In 1965 Public Service Board approval was obtained to employ two nurses who were not registered nurses but had completed the mothercraft training course which extends over eighteen months. These nurses act under the supervision of the Sister and assist in the activities of the Baby Health Centre. They have been appointed to two of the major centres which normally carry a staff of three or four sisters and appropriate saving of Baby Health Centre Sisters' time has been made.

Many requests are made for observation visits to Baby Health Centres and these come from major hospitals which require that student nurses visit and hear from a sister the role she plays in community health. Overseas and interstate visitors belonging to medical and ancillary professions are also frequent visitors.

The new curriculum for mothercraft nursing includes the necessity for 10 working days to be spent in Baby Health Centres as part of the training. The students actively partake in the work of the centre and in this way learn much of the practical application of mothercraft training.

Students undertaking studies directed at kindergarten and nursery school training also observe in Baby Health Centres. This is normally done in groups but ample time is given for discussion so that a realization of the close ties between Baby Health Centres and preschool care can be achieved.

Sisters are called upon to give lectures from time to time. These are requested particularly by girls' schools where the head mistress considers there is value in introducing schoolgirls to the basic principles of mothercraft and motherhood.

The Departmental in-service training programme for nurses continues, but it remains difficult to include many Baby Health Centre Sisters. The course covers 40 weeks involving only one day a week, but because of the difficulty in relieving staff, only a limited number have been able to attend.

During 1965 three Nurse Inspector Conferences were held in Sydney. Nurse Inspectors from decentralized areas attended. These meetings offer an excellent venue for discussion of problems. On each occasion special subjects were nominated and talks were given by medical and allied personnel. Time is also spent with the Private Hospitals Section and country officers are given an opportunity to clarify any difficulties.

A newsletter to Baby Health Centre Sisters was introduced some years ago and has proved successful. Two were compiled and distributed during 1965. The contents cover all aspects of the work including new commercial products, changes in attitudes and conditions affecting the mother and child, and the sister's role in community health.

The sisters continue to co-operate with the Mental Health Association of New South Wales in arranging mother discussion groups in Baby Health Centres at night. These have been very successful but an extension to father discussion groups would be of great value but not as yet practicable.

In 1965, 135,050 different mothers attended centres and sought advice which is evidence in itself as to their popularity, if not their usefulness. The mothers who attend come from all walks of life and a small survey was conducted during 1965 to determine the number of mothers from medically trained families who found it worthwhile to attend with their babies. It was discovered that during 1965, 20 women doctors, 225 doctors' wives and 70 doctors' daughters attended in the metropolitan area. No survey was done in the country.

WELL BABY CLINICS

This year has seen an extension of the Well Baby Clinics because of the increase in the number of medical officers available from the Section of Child Health.

The purpose of these clinics is twofold. The majority of children attending are under the age of two years and are directed to the Well Baby Clinics by Baby Health Centre Sisters, who need assistance in assessing the child and advising the mother. A smaller number are routine medical examinations of three year olds. None of the children attending are ill as all sick babies are referred to their medical practitioners and the clinics are confined to well babies.

The problems presenting in the young child are mostly those of management and require only reassurance of the mothers. Defects are however detected in this age group, and in the three year olds, are mostly visual, hearing and orthopaedic. All cases so detected are referred either to their own practitioner or, if the parents cannot afford it, to the appropriate hospital and out patient's department.

Well Baby Clinics are conducted by Departmental medical officers but occasionally more expert assistance is required. These cases are mostly behavioural problems or suspected mental retardation, also speech and hearing defects.

It is the ultimate aim of the Department for these children to be referred to Child Health Centres. However, the number of these are limited and special clinics are at present conducted by paediatrically trained medical officers in Baby Health Centres. These are called Paediatric Referral Clinics, and the Baby Health Centres in which these are conducted are chosen so that facilities will be available to all parents irrespective of where they live. Once again a full assessment of the child is made with appropriate referrals.

The medical examination of three-year-old children is directly related to the prevention or control of conditions which will interfere with the later education of the child; thus the emphasis on hearing, vision, behaviour and development generally.

Well Baby Clinics	Attendances			Referral to				
	New Cases	Reviews	Total	Paed. Ref Clinics	Child Health Centres	General Practitioners	Hospitals	Other
Auburn	114	22	136	1	2	5	..	..
Bankstown	229	77	306	4	5	44	33	29
Blacktown	104	46	150	6	7	22	14	6
Campsie (Established Sept. 1965) ..	26	5	31	6	5	2	1	1
Caringbah (Established Sept. 1965) ..	43	3	46	..	..	3	..	2
Dee Why	202	118	320	3	3	7	79	4
Dulwich Hill	97	14	111	..	1	3	7	..
Epping	78	29	107	3	1	18	1	2
Fairfield (Established March, 1965) ..	71	15	86	2	..	4	14	1
Forestville (Established Feb. 1965) ..	101	18	119	..	..	30	..	2
Gladesville	218	50	268	1	2	40	9	3
Glebe	34	4	38	..	2	2	4	..
Granville	123	20	143	..	4	..	..	1
Liverpool	90	33	123	..	2	5	28	2
Manly	55	22	77	..	..	1	3	..
Newtown	62	11	73	..	2	2	..	..
Ryde (Established Feb. 1965) ..	96	9	105	1	2	17	1	2
Sutherland	127	32	159	6	..	15	12	1
Turramurra (Established Sept. 1965) ..	24	..	24	..	1	..	..	2
Totals	1,894	528	2,422	33	39	220	206	58

Paediatric Referral Clinics	Attendances			Referrals		
	New Cases	Reviews	Total	Hospitals	Child Health Centres	General Practitioners and Specialists, etc.
Chatswood (Established March, 1965)	84	77	161	5	5	5
Kogarah (Established March, 1965)	93	118	211	9	3	10
Paddington (Established March, 1965)	85	62	147	10	..	12
Parramatta (Established March, 1965)	87	116	203	11	..	14
	349	373	722	35	8	41

THE PRESCHOOL CHILD

Kindergartens and Day Nurseries

The Section of Maternal and Infant Care has for many years provided a health service to the children under school age who attend pre-school centres conducted by the Sydney Day Nursery and Nursery Schools Association and the Kindergarten Union of New South Wales and certain Local Government Authorities. The health service provides for an initial examination of every child enrolled during the year, and for subsequent review where warranted.

The medical examinations are carried out in the informal and familiar atmosphere of the kindergarten or day nursery. The mother is invited to be present, and the child is introduced to a "visit" to the doctor without any associations of fear or discomfort.

If a deviation from the normal, either physical or emotional, is detected the child is referred to its medical practitioner for treatment, or hospital out-patient's, and a review examination is carried out at a later date.

During 1965 a total of 235 visits were made by the medical officers to the 33 kindergartens and 13 day nurseries in the Metropolitan Health District and to three kindergartens in the Newcastle Health District.

The number of pre-school examinations carried out by the Section were as follows:

Day Nurseries—

1st examination	..	..	..	..	..	..	..	..	664
Review	..	..	..	..	..	..	..	..	193
Total	..	..	..	..	..	..	..	..	857

Kindergartens—

1st examination	..	..	..	..	..	..	..	..	1,457
Review	..	..	..	..	..	..	..	..	390
Total	..	..	..	..	..	..	..	..	1,849

Grand total 2,706

The medical officers also carried out 1,393 parent interviews during their visits and of the cases assessed, 372 were referred for treatment.

FREE PAEDIATRIC CONSULTANT SERVICE

As a result of the recommendations made by the Paediatric Advisory Committee on the completion of the 1958 Infant Mortality Survey, a free Paediatric Consultant Scheme was commenced in June, 1964. This scheme has been set up for the benefit of families outside the metropolitan area of Sydney, and the service ensures that no baby under 1 year of age requiring specialist paediatric attention will be denied the benefit of treatment through lack of family means. The service is not subject to the means test, and the need for financial assistance is left to the discretion of the general practitioner in charge of the case.

The Consultant Panel now consists of 44 paediatricians and includes members of the staffs of The Institute of Child Health, University of Sydney, and the Paediatric Unit, University of New South Wales.

During 1965, 53 claims were received.

SURVEY OF INBORN ERRORS OF METABOLISM

Urine Testing Survey

Since March, 1964, a urine testing survey has been conducted in young infants to detect inborn errors of metabolism.

During the early part of 1965 the test was extended to include every Baby Health Centre in New South Wales, and in May, it was further extended to the Far West Children's Health Scheme, the Bush Nursing Association, the Australian Mothercraft Society (Truby King Clinics) and to the cot rooms in Day Nurseries under the auspices of the Sydney Day Nursery and Nursery Schools Association.

Since the start of the survey a total of 110,128 tests have been carried out, of which, 68,562 tests were performed during 1965. The abnormalities detected include seven cases of Phenylketonuria and two of Galactosaemia. During 1965, five cases of Phenylketonuria were confirmed. Cases of other amino acidurias have also been detected in children who appeared to be perfectly normal, and these are at present under the supervision of the Paediatric Units of both the University of Sydney and the University of New South Wales. The results of the first year of testing are at present being assessed and it is anticipated that they will be available during 1966.

Guthrie Test

The introduction of the Guthrie Test has been given serious consideration by the Department for some time and during the latter part of 1965 it was decided that a pilot study should be conducted during 1966 to determine the possibility of routine testing. It was agreed that the urine testing would continue and probably would always remain even if it were practicable to carry out routine Guthrie testing or a similar blood test in all obstetric hospitals.

The difficulties lie primarily in providing adequate laboratory facilities and it has been decided that all tests will be carried out at one central laboratory, and the Neuropathological Laboratories at North Ryde will be responsible. The preliminary organization of laboratory techniques is at present being done and the pilot study should start by the middle of 1966. The findings of this study will indicate the Department's future policy.

PUBLICATIONS

Questions for use in prenatal clinics and the "Normal", "Low Calorie" and "Low Salt" diet sheets have been translated into 12 languages through the co-operation of the Commonwealth Migrant Centre. These are available to obstetric hospitals, general practitioners and are also used in the Section's Prenatal Clinics.

In 1964, 80,000 copies of *Our Babies* were reprinted. The demand for this booklet proved greater than anticipated and a further reprint was necessary in 1965. This afforded the Section the opportunity of amending the immunization schedule in accordance with the latest recommendations of the National Health and Medical Research Council, and making appropriate alterations in preparation for the change to the metric system. During 1966 it is planned to review completely the text of *Our Babies* to ensure that its contents are in line with the modern concepts of child management and rearing, and possibly, to extend its coverage of the preschool child.

Although it would be uneconomical to have this booklet translated into foreign languages, the Section has long been aware that there is a need for certain extracts to be translated. It is therefore planned during 1966 to compile a small brochure to be translated into selected foreign languages for distribution. This brochure will include advice concerning the need for immunization, vitamins, accident prevention, urine tests etc.

SECTION OF CHILD HEALTH

Assistant Director: J. R. F. BOGER, M.R.C.S., L.R.C.P., D.P.H., D.C.H.

Location: 86-88 George Street North, Sydney

STAFF

Assistant Director; 7 senior medical officers; 8 Teachers' College medical officers; 2 part-time Teachers' College medical officers; 36 school medical officers; 1 senior nurse; 80 nurses; 22 clerical officers; 1 switchboard operator.

The establishment was increased during the year by two senior medical officers, one school medical officer and four nurses. A part-time position of school medical officer was converted to a full-time appointment. Pending the creation of a position for the Section of Special Services, one of the positions of medical officer was temporarily borrowed by the Section of Special Services so that a paediatrically trained medical officer (of Senior Medical Officer status) could be employed. Following the abolition of the Camperdown Child Guidance Clinic, one clerical officer position was abolished.

When the Bureau was established the child guidance teams and speech therapists were placed with the Section of Special Services.

FUNCTIONS

On the establishment of the Bureau in April, 1965, the Section took over, with the several subtractions and additions enumerated below, the day to day management of the bodies contained within the School Medical Service. The facilities provided for the diagnosis and evaluation of atypical children, child guidance, speech therapy, hearing clinics and in-service training were transferred to the Section of Special Services.

The Section of Child Health is charged with providing preventive health services to school children of all ages. In addition, since the formation of the Bureau, and, as distinct from the role of the School Medical Service, it is responsible for the provision of health checks, similar to those provided at schools, to preschool children over the age of two years.

Medical officers are seconded to Teachers' Colleges and nurses to three of the larger and more remote National Fitness Camps.

The Section plays a major role in health education through its medical officers and nurses who are specially well placed for the purpose.

POLICY ALTERATIONS

In the last annual report of the School Medical Service, it was noted that the new policy is to fully examine the school child only once in his career at school, at kindergarten level, or at first or second grade, whichever is the grade at which the pupil commences school. Because the review examinations at fourth grade in primary school and in second and fourth form in secondary school include checks on vision and hearing, there is comparatively little loss in the number of defects found, and a large saving in the use of both medical officers and nurses, who are more productively employed. The atypical child, who has not been detected previously, can usually be detected at the initial school examination, and if he is not, there is adequate safeguard. This is because, as stated in last year's report, anyone (e.g. parent, teacher, general practitioner, voluntary society worker) interested in the welfare of children can request a special full examination at any time. Children are most likely to be referred when nurses conduct review examinations, making inquiry at the schools.

One of the principal reasons for the formation of the Bureau was to achieve the maximum utilization of staff between the three Sections. So far in the case of nurses this has not been achieved, but it has, in part, for medical officers. In the Annual Report of the Assistant Director, Maternal and Infant Care, there is an account of the work of the "Well-Baby Clinics", which describes how the number of clinics has been increased using the services of medical officers of the Section of Child Health. The particular clinics are in the Sydney metropolitan area, at Top Ryde, Newtown, Dulwich Hill, Glebe, Granville, Auburn, Fairfield, Yagoona and Caringbah.

In schools visited by sessional doctors working under the "Shire" scheme, it is still the policy for the doctor to fully examine any children in second form who do not have a medical history card.

In order to carry out the main purpose of the formation of the Bureau which was to provide a continuing service for expectant mothers and children, towards the end of the year approaches were made to several preschool kindergartens and residential homes, both governmental and voluntary. In the Cronulla Sutherland area, the medical officers were particularly keen to start examining preschool children, and therefore a large number of nursery schools and day nurseries were visited as part of a pilot study.

The Child Health Centre to serve the Eastern Suburbs opened at Brisbane Street in February, 1965. The Child Health Centre at Yagoona commenced operation in February, 1965, and was opened by the Minister, Mr W. Sheahan, M.L.A., Q.C., LL.B., in April, 1965.

The Child Health Centre at Ryde saw its first patients in June, 1965, and was opened by the Minister, Mr A. H. Jago, M.L.A., in October, 1965.

There are now seven child health centres in the Sydney metropolitan area and it is planned to complete the scheme in Sydney by building four more. Suitable sites have been found for all four and one will be built during the next financial year. The Centre at Parramatta was originally established in rented premises and a new 3 year lease was taken out at the end of the year. In spite of an exhaustive search, no suitable site has yet been found for a new Centre in Parramatta. The new Centre at Newcastle, which will be larger than any of the existing centres because it has to serve a bigger school population, is at present under construction and is scheduled for completion in September, 1966. A site for the Centre at Wollongong has been found and will be built on as soon as funds are available.

It was mentioned in the last report that there was to be an alteration in the medical screening of students entering Teachers' Colleges in 1965. In the light of the experience gained in 1965, some minor modifications have been made, but the system remains largely the same for 1966. During the year there was a change in the area of responsibility for the medical check of intending and student teachers. Formerly, the "suitability" examinations (mostly for school pupils who propose to take up teaching and who have not yet attained the academic standard required) and "incoming"

examinations (students who are actually entering college) were the responsibility of the Assistant Director, while "fitness to continue" examinations and "outgoing" examinations were the responsibility of the Physician-in-Charge of the Medical Examination Centre. The Assistant Director is now responsible only for "suitability" examinations in school children. It was argued that it would be better for all the three other types of examination to be supervised by the Physician-in-Charge, Medical Examination Centre, because he already makes the decision regarding fitness to continue at colleges and the entrance to the Teaching Service. By making him also responsible for the medical requirements for entrance to college there is far better continuity and less likelihood of variation of standards. Since the practice of sending out "warning letters" to all those pupils who were considering becoming teachers was discontinued, there has been a marked reduction in the number of suitability examinations carried out. While the "incoming" and "fitness to continue" examinations are, for the most part, managed by the Teachers' College medical officers, the "outgoing" examinations at Sydney Teachers' College are now carried out during the May and August/September vacations using school medical officers and school nurses. The "outgoing" examination is a lengthy procedure because it determines the candidate's suitability for entrance to the Public Service and to the State Superannuation Fund.

The Assistant Director and Senior Medical Officers-in-Charge of child health centres took part in lectures to Rotary groups, parents' organizations, meetings of school teachers, counsellors and inspectors. On a programme designed for mothers and preschool children, from one of the commercial television stations, a school medical officer demonstrated a typical medical examination.

Most of the instruction in health education was carried out in schools, at child health centres and at homes, by the individual school doctor and nurse carrying out the routine work of school medical examination and follow-up.

MEDICAL INSPECTION OF SCHOOL CHILDREN

During 1965 although the total number of children seen by the staff of the Sections of Child Health and Special Services did not vary greatly from previous years, in the schools the number fully examined or reviewed was considerably less. The principal reason was because the new policy, established a few years ago by the School Medical Service, and now pursued by the Bureau, is not to spend unnecessary time in the examination of mostly normal, healthy children, but to find, evaluate and secure treatment for those children who are in special need. The change of procedure will be apparent by examination of the report of the Assistant Director, Special Services.

In three of the Sydney metropolitan child health centre areas, which have been established for some years, the programme for medical examinations in the schools was virtually completed. However, elsewhere, because of shortage of staff, large numbers of schools were not visited. Even in the Sydney metropolitan area where 756 schools were visited, 149 were not visited.

During the year medical officers actually examined 199,166 children, of whom 106,783 were fully examined and 92,383 were reviewed. Of the reviews 39,240 were in fourth grade and fourth year (Table I).

TABLE I

New South Wales	1963	1964	1965
School population	837,589	849,996	889,957
Number of pupils fully examined or reviewed	221,503	260,148	199,166
Number of pupils fully examined	145,173	140,629	106,783
Number of pupils reviewed in 4th Grade and in 4th Year	33,605	40,913	39,240
Other reviews	42,725	78,606	53,143
Number of pupils fully examined and number reviewed in 4th Grade and 4th Year, expressed as percentage of school children	21.34	21.38	16.40

In Table I above, the figures for 1965 do not include the work of school nurses carrying out review examinations in secondary schools. School nurses are now solely responsible for the screening review examinations at second and fourth form levels, including vision and hearing tests, and skin and hair examinations. In the Sydney metropolitan area during the year 57,148 such review examinations were conducted. Similar figures applied to country areas and will appear in the individual reports of the medical officers of health.

Table II shows in detail the number of children who were fully examined or whose cases were reviewed in primary and secondary schools for the years 1964 and 1965. The figures for 1965 do not include the work of school nurses in secondary schools conducting review examinations on second and fourth form pupils.

TABLE II—NUMBER OF PUPILS WHO WERE FULLY EXAMINED OR WHOSE CASES WERE REVIEWED IN THE METROPOLITAN AREA, REMAINDER OF STATE AND NEW SOUTH WALES, IN 1964 AND 1965

	Metropolitan Area		Remainder of State		New South Wales	
	1964	1965	1964	1965	1964	1965
Primary—						
(a) Full examinations—						
Kindergarten to Grade I	30,139	43,166	28,347	26,790	58,486	69,956
Others	12,247	18,238	24,748	17,356	36,995	35,594
Total	42,386	61,404	53,095	44,146	95,481	105,550
(b) Reviews—	45,840	59,002	31,352	31,890	77,192	90,892
Grand Total	88,226	120,406	84,447	76,036	172,673	196,442
Secondary—						
(a) Full Examinations	35,095	279	10,053	954	45,148	1,233
(b) Reviews	21,295	308	21,032	1,183	42,327	1,491
Grand Total	56,390	587	31,085	2,137	87,475	2,724

Tables I and II reveal that considerably fewer full examinations were carried out in 1965 than in 1963 or 1964. When 1964 and 1965 figures are compared it is evident that although the number of full examinations in secondary schools fell by 43,915, those in primary schools rose by only 10,069. In part this is due to the fact that a full medical examination of a primary school pupil, particularly kindergarten or grade I, takes considerably longer than that of a secondary school pupil. Of the State total for 1965 of 69,956 full examinations of kindergarten and grade I pupils, 44,773 were of kindergarten pupils.

TABLE III—NUMBER OF PUPILS WHO WERE FULLY EXAMINED OR WHOSE CASES WERE REVIEWED IN PRIMARY SCHOOLS, AND SCHOOL POPULATION IN THE METROPOLITAN AREA, IN THE REMAINDER OF STATE AND IN NEW SOUTH WALES, 1965

Primary Schools	Metropolitan Area		Remainder of State		New South Wales	
		Percentage		Percentage		Percentage
Population—						
Departmental	250,162	..	217,636	..	467,798	..
Non-Departmental	84,235	..	60,333	..	144,568	..
Total population	334,397	..	277,969	..	612,366	..
Full examinations	61,404	18.36	44,146	15.88	105,550	17.24
Reviews	59,002	17.64	31,890	11.47	90,892	14.84

Excluding dental defects the number of defects of notifiable standard found in primary school pupils fully examined was 33,356, and it was necessary to notify 61.3 per cent of these defects to parents or guardians in order that investigation and/or treatment could be instituted. The most important defects are shown in Table IV below.

TABLE IV—DEFECTS OF NOTIFIABLE STANDARD FOUND IN PRIMARY SCHOOL PUPILS FULLY EXAMINED IN NEW SOUTH WALES, 1965, EXPRESSED AS A PERCENTAGE

	Primary Schools	
	Boys	Girls
Number Examined	54,710	50,840
Defects—		
Vision*	5.31	5.78
Number with glasses	0.54	0.65
Squint	0.97	1.06
Hearing	3.68	3.15
Nose and Throat	2.10	2.32
Teeth	3.32	3.11
Skin	2.52	2.56
Thyroid	0.07	0.10
Heart and Circulation	0.62	0.67
Asthma	2.92	1.72
Other Lung Defects	4.82	3.83
Development (Hernia)	0.62	0.39
Orthopaedic	1.78	1.37
Nervous System	0.38	0.31
Psychological	1.34	0.89
Speech	1.94	0.78

* Includes with and without glasses

In the Sydney metropolitan area the number of parents interviewed by medical officers at primary and secondary schools was 20,554. The percentage of parents interviewed to the number of children fully examined in primary schools was 33.5.

In the same way as in previous years school nurses carried out visits to the schools to obtain first results—i.e. following medical examinations, to determine from children whether they had visited doctors, and so obtained the necessary investigation and/or treatment. If they had not, the school nurses made home visits to explain the case to the parents in an endeavour to persuade them to act on the advice of the school medical officer.

In addition to this, school nurses were involved in the follow-up of special cases which included all kinds of problem and atypical children. In the Sydney metropolitan area, in the area not served by the existing seven child health centres, 3,443 such visits were made.

Two school nurses were only employed on such follow-up work in the Sydney metropolitan area which is not yet served by child health centres. In nine months in which she saw 282 children, one of these two school nurses, employed principally in Green Valley, made 532 home visits. Her work included interviews with school principals and inspectors, class teachers, school counsellors, general practitioners, psychiatrists and other members of child guidance teams, speech therapists, and so on. The very nature of the problems which presented in this developing area meant working in close co-operation with officers of the Child Welfare Department and the Housing Commission, Magistrates and the Police. This, in addition to close liaison with various voluntary agencies and many other bodies.

During the year medical officers examined boys admitted to the Child Welfare Department Shelters at Albion Street and Yasmar, Haberfield. Details are given in the reports of Eastern Suburbs and Forest Lodge Child Health Centres.

In 1965, visits were paid to nursery schools, the details of which are given in a later section of this report.

Similarly, the medical examination of children at special schools is dealt with separately.

CHILD HEALTH CENTRE, BEXLEY

R. ELLAM, M.B., Ch.B.

The number of schools covered by the Centre has been increased to 77 by the addition of two private and two departmental schools. However, there has not been an increase in the total school population, which was approximately 40,323. This total was made up by the 30,299 children attending departmental schools and 10,024 children attending private and parochial schools in the area. The ratio of boys to girls remained roughly equal; there were 20,196 boys and 20,127 girls.

Routine medical inspections were carried out in 75 of the schools. Two schools, both with acute shortage of accommodation, were omitted from the programme at the principals' request. A total of 10,368 children were examined by the medical officers in the schools. Full medical examinations were carried out on 5,155 children and review or partial examination on a further 5,213 children. The school nurses screened an additional 10,131 children in regard to their visual acuity, hearing, skin, hair and previously noted defects. Parents were interviewed at the school by the medical officers on 1,719 occasions. Defects of a notifiable standard were found in 11.59 per cent of the children examined by the medical officers.

The 4th grade, 2nd form and 4th form pupils were screened by the school nurses in regard to visual acuity, hearing, skin and hair. Children thought to have defects were referred to the medical officers. The following table illustrates the number of pupils screened, the number referred by the school nurse to the medical officers and the total number of defects detected:

Class	No. Reviews by Sister			No. Referred to M.O.			No. Defects Elicited		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
4th Class	1,872	1,852	3,724	545	513	1,058	78	72	150
2nd Form	1,943	2,364	4,307	137	198	335	64	52	116
4th Form	1,402	974	2,376	62	63	125	34	14	48
Combined 2nd and 4th Form Totals	3,345	3,338	6,683	199	261	460	98	66	164

The more detailed analysis of the defects is as follows:

Defects	4th Class			2nd Form			4th Form			Combined 2nd and 4th Forms		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Vision	28	34	62	38	34	72	26	11	37	64	45	109
Hearing	17	18	35	21	15	36	7	3	10	28	18	46
Skin	1	3	4	3	..	3	1	..	1	4	..	4
Hair .. .. .	..	2	2	..	1	1	..	..	..	..	1	1
Teeth	14	12	26	1	..	1	..	..	..	1	..	1
Cardiovascular system .. .. .	..	1	1	..	..	..	..	..	..	..	..	..
Nocturnal enuresis	8	2	10	..	..	..	..	..	..	..	..	..
Development—												
(a) Inguinal hernia	2	..	2	..	..	..	..	..	..	..	..	..
(b) Other hernias	1	..	1	..	..	..	..	..	..	..	..	..
(c) Other	6	..	6	..	..	..	..	..	..	..	..	..
Chest	1	..	1	..	..	..	..	..	..	..	..	..
Headaches .. .. .	..	..	..	..	2	2	..	..	..	..	2	2
General Condition .. .. .	..	..	..	1	..	1	..	..	..	1	..	1
Totals	78	72	150	64	52	116	34	14	48	98	66	164

In the follow-up of notified defects the nurses made 82 visits to the schools, where 1,923 children were interviewed. In addition 791 home visits were made.

At the Centre the appointment system for consultations for parent and child with the medical officers was used on 944 occasions during 1965. This total included 595 new cases and 349 review consultations. The new cases included children from the following age groups; figures are expressed as a percentage of the total:

	Boys	Girls	Total
Preschool children	8.75	3.70	12.45
Infant school children	27.19	12.12	39.31
Primary school children	25.21	10.10	35.31
High school children	7.73	5.20	12.93
Totals	68.88	31.12	100.00

The referring agencies of the new cases were as follows:

Centre Staff	190
Parents	249
Teaching Staffs	62
Division of Guidance and Adjustment	27
Medical Practitioners	43
Baby Health Centres	6
Police	3
Vocational Guidance Bureau	1
Catholic Family Welfare Bureau	4
Department of Child Welfare	3
Others	7
Total	595

A detailed analysis of the reasons for referral of all new cases, expressed as a percentage of the total referrals is given below:

Defects	Pre-School		Infants		Primary		Secondary		Total
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	
Physical	0.34	0.34	3.18	1.84	2.52	2.52	0.67	1.01	12.42
Speech	2.52	0.67	10.75	3.53	4.37	1.20	1.01	0.84	24.89
Specific Learning Disability .. .. .	..	..	1.01	0.34	2.35	0.50	0.17	..	4.37
Educational Handicap—									
Mild	0.34	0.17	0.67	1.20	0.84	0.84	0.34	..	4.40
Moderate	0.67	..	0.34	..	0.84	0.84	..	..	2.69
Severe .. .. .	..	..	..	..	..	..	..	..	..
Behaviour Disorders—									
Primarily Psychological	4.20	2.35	10.57	4.70	13.78	3.70	5.37	3.35	48.02
Behaviour Disorders—									
Primary Dysrhythmia	0.34	0.17	0.17	0.34	0.34	..	0.17	..	1.53
Others (including nocturnal enuresis)	0.34	..	0.50	0.17	0.17	0.50	..	..	1.68
Totals	8.75	3.70	27.19	12.12	25.21	10.10	7.73	5.20	100.00

The weekly "New Case Intake Conference" was continued this year because mental health problems continued to account for the majority of the new referrals. The conferences provided an opportunity for the medical officers and other staff members to seek advice of the Child Guidance Clinic staff on all current cases presenting mental health problems. A series of twenty-four seminars was held between the social worker and nurses, and which included visits to special schools and sheltered workshops in the area.

A total of 125 cases were transferred to the Child Guidance Clinic by the medical officers.

The close liaison with the government departments and with various institutions and individuals, e.g. the Department of Child Welfare, Department of Education, local hospitals and local medical practitioners, has been maintained.

CHILD HEALTH CENTRE, CHATSWOOD

G. J. COUSINS, M.B., Ch.M., D.C.H.

During 1965, the facilities of this Centre were used more fully by the community than in 1964 and there was an increase in the figures in all sections, particularly in Child Guidance Clinic work.

Medical inspections were completed in the 107 schools of the area. In addition, four schools for handicapped children, and one unit for partially sighted children, were inspected each term.

The following tables indicate the work done in the schools.

(1) Primary Schools

Full examinations by medical officers	..	..	..	..	7,629
Partial or review examinations by medical officers	..	..	..	..	3,452
Total number of examinations by medical officers	..	..	..	..	11,081
Parent interviews in schools	..	..	..	..	1,669
Review examinations (vision, hearing etc.) by nurses for children not seen by medical officers	..	..	..	..	10,986

(2) High Schools—Review examinations by nurses

				2nd year	4th year	Total
Reviews made by nurses—						
Boys	..	..	..	1,868	1,475	3,343
Girls	..	..	..	2,194	1,514	3,708
Total	..	..	..	4,062	2,989	7,051
Reviews referred to medical officers—						
Boys	..	..	..	90	69	159
Girls	..	..	..	217	160	377
Total	..	..	..	307	229	536
Defects found and notified—						
Hearing—						
Boys	..	..	..	7	8	15
Girls	..	..	..	10	2	12
Total	..	..	..	17	10	27
Vision—						
Boys	..	..	..	57	42	99
Girls	..	..	..	73	46	119
Total	..	..	..	130	88	218

Other defects—Nil.

Defect rate of vision—3.08 per cent
Defect rate of hearing—0.38 per cent } (of the children examined).

Defects notified to parents and followed up in schools and homes by school nurses

Children interviewed and/or examined at follow-up in schools	..	..	2,301
Visits to homes	..	..	1,026
Children taken to hospitals or clinics by nurses	..	..	20

Survey of the results of notification and follow-up service

Schools surveyed	103
Notified defects dealt with	1,173
Defects found to have had adequate attention within 3 months	901 or 76.8 per cent
Defects adequately attended to after a delay exceeding 3 months	98 or 8.3 per cent
Total defects attended to	999 or 85.1 per cent
Defects which resolved without treatment	45 or 3.8 per cent
Defects for which parents did not have attention	129 or 1.10 per cent

Medical Officer appointments with parent and child at the Centre

New appointments	684
Review appointments	414
Total	1,098
Cases which failed to attend	46 or 4.1 per cent

Sources of referral for the 684 new cases

Parent application	291
School principals	131
Child Health Centre Staff	89
General practitioners	82
Paediatricians	10
Division of Guidance and Adjustment	27
School Counsellors	25
Baby Health Clinics	15
Department of Child Welfare	5
Catholic Family Welfare Bureau	5
Hospitals	2
Assistant Superintendent of Police	2
Total	684

Schools attended by children referred

Public schools	455 or 66.5 per cent
Private schools	147 or 21.5 per cent
Preschool children	82 or 12.0 per cent

Classification of reasons for attendance

Mental health problems	518 or 75.7 per cent
Suspected physical defects	104 or 15.2 per cent
Cases of doubtful or mixed origin	62 or 9.0 per cent

Letters or reports sent, following Centre attendance

General practitioners	339
Other doctors	27
School principals	237
Division of Guidance and Adjustment	77
Baby Health Centre Sisters	12
Department of Child Welfare	4
Commonwealth Acoustic Laboratory	3
Hospitals, etc.	5
Total	704

CHILD HEALTH CENTRE, EASTERN SUBURBS

S. E. PHILLIPS, M.B., B.S., D.C.H.

The Eastern Suburbs Child Health Centre started work in February, 1965. In the area there were forty-seven departmental schools with an enrolment of 25,075 children. Of the private and parochial schools sixty with an approximate enrolment of 15,780 requested medical inspection and 35 departmental and 42 private schools were visited and 16,271 children seen.

The medical officers carried out the following examinations and interviews:

	Boys	Girls	Total	Parent Interviews
Full examinations	1,893	1,301	3,194	1,232
Reviews	1,607	1,129	2,736	

The school nurses carried out reviews as follows:

	Boys	Girls	Total
In primary schools children not seen by medical officer	2,732	2,506	5,238
In secondary schools children not seen by medical officer	2,930	2,173	5,103
Total number of children seen	9,162	7,109	16,271

In the course of follow-up procedures for notifiable defects, the nurses interviewed 772 boys and 669 girls and carried out 451 home visits. In addition to this follow-up work the school nurses made numerous school and home visits about the treatment of children attending the Centre for child guidance and speech therapy.

Other schools were visited by medical officers as follows:

Name	No. of Visits	No. of Full Exam.	No. of Reviews	Notifiable Defects
"Windgap" Coogee	8	32	24	13
Yarra Bay House, Department of Child Welfare	3	50	10	9
Brougham House, Department of Child Welfare	2	21	1	5
5 Nursery Schools	10	166	13	24
Total	23	269	48	51

Medical officers also examined 2,577 boys admitted to the Department of Child Welfare Shelters at Albion Street and Yasmar, Haberfield.

In November a medical officer from the Forest Lodge Child Health Centre took over the examination of the boys at Yasmar.

School Nurses Work in High Schools

	1st Form	2nd Form	3rd Form	4th Form	5th Form	Total
No. of Reviews—						
Boys	19	2089	32	1256	15	3411
Girls	44	1560	67	982	17	2670
Total	63	3649	99	2238	32	6081
Referred to Medical Officer—						
Boys	12	281	11	173	4	481
Girls	29	291	26	146	5	497
Total	41	572	37	319	9	978
Notifiable Defects Found—						
Vision—						
Boys	1	79	1	51	..	132
Girls	4	94	4	52	3	157
Total	5	173	5	103	3	289
Hearing—						
Boys	1	30	1	9	..	41
Girls	1	11	..	5	..	17
Total	2	41	1	14	..	58
Skin—						
Boys .. .. .	..	5	..	1	..	1
Girls .. .. .	..	..	..	7	..	12
Total .. .. .	..	5	..	8	..	13
Hair—						
Boys .. .. .	..	6	..	..	..	8
Girls	2	..	..	..	..	..
Total	2	6	..	..	..	8

	1st Form	2nd Form	3rd Form	4th Form	5th Form	Total
Emotional—						
Boys	2	8	1	3	..	14
Girls	1	3	..	2	..	6
Total	3	11	1	5	..	20
Others—						
Boys	2	9	..	4	..	15
Girls .. .. .	..	19	..	23	..	42
Total	2	28	..	27	..	57

Medical Officers' Consultations at the Centre

	Boys	Girls	Total
New Cases	243	131	374
Reviews	175	58	233
			607

Sources of Referral

Parent Applications	113
Child Health Centre Staff	139
Principals of Schools	33
Division of Guidance and Adjustment	32
School Counsellors	21
Medical Practitioners	20
Department of Child Welfare	4
Catholic Family Welfare Bureau	7
Vocational Guidance	3
Other Sources	2
	374

Reasons for Referral

Emotional Problems	251	67.1 per cent
Mental Retardation	41	10.9 per cent
Specific Learning Disabilities	35	9.4 per cent
Speech Disorders	10	2.7 per cent
Physical Defects	37	9.9 per cent
	374	100.0 per cent

Following weekly case conferences between the psychiatrist and the medical officers, 159 of the new cases were referred to the child guidance team. In many cases the medical officers continued to take part in the treatment.

Monthly conferences were held including all members of the child health centre.

CHILD HEALTH CENTRE, FOREST LODGE

C. D. CHALMERS, M.B., B.S.

The activities of the Centre were expanded during 1965 to include eight additional schools, one private pre-school kindergarten, two Department of Child Welfare institutions, the partially-seeing unit at Tempe, a survey at Tamworth and, for a trial period, an evening clinic.

The problem of accommodation was relieved by the building of a new amenities room, situated at the rear of and harmonising with the architectural style of the main building which will be a hundred years old in 1966.

Staff shortage prevented the completion of routine medical examinations in three of the schools in the area, but all children who were referred by teachers were seen. Full examinations were carried out on 6,293 children and 4,866 were reviewed. 2,178 parents were interviewed at the schools by medical officers.

Following the changed procedure in secondary schools, 6,864 children were screened by the school nurse and referred when necessary to the medical officers.

	1st Form	2nd Form	3rd Form	4th Form	5th Form	Total
Reviewed by Sisters—						
Boys	47	2201	135	1503	65	3951
Girls	108	1787	164	782	72	2913
Total	155	3988	299	2285	137	6864
Referred to Medical Officers—						
Boys	45	254	120	164	60	643
Girls	48	342	125	148	64	727
Total	93	596	245	312	124	1370
Notifiable Defects—						
Vision—						
Boys	8	101	24	53	24	210
Girls	5	71	7	23	4	110
Total	13	172	31	76	28	320
Other eye defects—						
Boys .. .. .	..	2	..	..	..	2
Girls	1	2	..	..	..	3
Total	1	4	..	..	..	5
Hearing—						
Boys	1	33	10	21	9	74
Girls	7	27	..	7	1	42
Total	8	60	10	28	10	116
Other ear defects—						
Boys .. .. .	..	2	..	..	..	2
Girls .. .. .	..	..	..	..	..	..
Total .. .. .	..	2	..	..	..	2
Skin—						
Boys .. .. .	..	1	1	..	..	2
Girls .. .. .	..	2	1	1	1	5
Total .. .. .	..	3	2	1	1	7
Hair—						
Boys .. .. .	..	..	..	..	..	..
Girls	6	19	..	..	..	25
Total	6	19	..	..	..	25
Teeth—						
Boys .. .. .	..	8	..	..	..	8
Girls	1	4	..	..	..	5
Total	1	12	..	..	..	13
Emotional—						
Boys .. .. .	..	2	1	..	1	4
Girls	4	5	1	1	..	11
Total	4	7	2	1	1	15
Speech—						
Boys .. .. .	..	1	1	..	..	2
Girls .. .. .	..	2	..	..	..	2
Total .. .. .	..	3	1	..	..	4
Nutrition—						
Boys .. .. .	..	..	..	..	..	..
Girls .. .. .	..	8	..	..	..	8
Total .. .. .	..	8	..	..	..	8
Thyroid—						
Boys .. .. .	..	1	1	..	..	2
Girls .. .. .	..	..	..	..	..	..
Total .. .. .	..	1	1	..	..	2
General Health—						
Boys .. .. .	..	2	..	..	..	2
Girls	4	13	1	3	..	21
Total	4	15	1	3	..	23

In following up notified defects the school nurses interviewed 2,574 children at the schools and made 838 home visits. 74.3 per cent of the children followed up were receiving adequate treatment, 90 per cent of these had commenced treatment within three months of notification, 20.4 per cent and not been treated and 5.3 per cent had resolved without medical treatment.

Consultations by medical officers at the Centre increased to 742 of which 543 were new cases.

New cases seen by medical officers at the Centre:

Boys	..	..	..	..	..	..	..	..	..	306
Girls	..	..	..	..	..	..	..	..	..	237
Total	..	..	..	..	..	..	..	..	..	543

Source of Referral

Parent or School medical officer after discussion with parent	School principal	Division of Guidance and Adjustment or school counsellor	Other doctors	Department of Child Welfare and other agencies	Speech therapists
219 40.3 per cent	148 27.3 per cent	44 8.1 per cent	38 7 per cent	33 6.1 per cent	61 11.2 per cent

School

Preschool	..	..	..	..	..	..	42	7.7 per cent
Private	..	..	..	..	..	..	8	1.4 per cent
State	..	..	..	..	..	..	379	70 per cent
Parochial	..	..	..	..	..	..	114	20.9 per cent

Reason for Referral

Primarily Emotional	..	..	..	..	..	349	64.2 per cent
Primarily Educational	..	..	..	..	..	97	17 per cent
Primarily Physical	..	..	..	..	..	14	3.8 per cent
Symptoms of Mixed Origin	..	..	..	..	..	83	15 per cent

Seven secondary school pupils were assessed regarding their suitability on medical grounds for entrance to Teachers' College.

One of the nursery schools in the area was closed this year. Twenty visits were paid by the medical officers to the remaining five and children attending one private preschool kindergarten were examined.

Nursery Schools

No. of children examined—

Boys	..	..	..	..	..	..	..	..	..	128
Girls	..	..	..	..	..	..	..	..	..	103
Total	..	..	..	..	..	..	..	..	..	231

No. of review examinations—

Boys	..	..	..	..	..	..	..	..	..	97
Girls	..	..	..	..	..	..	..	..	..	63
Total	..	..	..	..	..	..	..	..	..	160

No. of parents interviewed 149

No. of visits 20

Notifiable Defects

										Not under treatment	Under treatment
Vision—											
Boys	..	..	..	..	..	..	..	..	..	1	2
Girls	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	1	2
Hearing—											
Boys	..	..	..	..	..	..	..	..	..	2	
Girls	..	..	..	..	..	..	..	..	..	4	1
Total	..	..	..	..	..	..	..	..	..	6	1
Respiratory—											
Boys	..	..	..	..	..	..	..	..	..	11	3
Girls	..	..	..	..	..	..	..	..	..	8	8
Total	..	..	..	..	..	..	..	..	..	19	11
Skin—											
Boys	..	..	..	..	..	..	..	..	..	5	..
Girls	..	..	..	..	..	..	..	..	..	3	..
Total	..	..	..	..	..	..	..	..	..	8	..
Developmental—											
Boys	..	..	..	..	..	..	..	..	..	3	..
Girls	..	..	..	..	..	..	..	..	..	2	..
Total	..	..	..	..	..	..	..	..	..	5	..
Cardiovascular—											
Boys	..	..	..	..	..	..	..	..	..	..	1
Girls	..	..	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	..	..	..	..	1
Orthopaedic—											
Boys	..	..	..	..	..	..	..	..	..	5	6
Girls	..	..	..	..	..	..	..	..	..	3	3
Total	..	..	..	..	..	..	..	..	..	8	9
Speech—											
Boys	..	..	..	..	..	..	..	..	..	..	1
Girls	..	..	..	..	..	..	..	..	..	1	..
Total	..	..	..	..	..	..	..	..	..	1	1
Emotional—											
Boys	..	..	..	..	..	..	..	..	..	7	2
Girls	..	..	..	..	..	..	..	..	..	4	1
Total	..	..	..	..	..	..	..	..	..	11	3

Preschool Kindergarten

No. of children examined—

Boys	..	..	..	..	..	..	..	..	..	20
Girls	..	..	..	..	..	..	..	..	..	16
Total	..	..	..	..	..	..	..	..	..	36

No. of parents interviewed 30

[illegible]

Children who required special placement and who already attended schools within the area were assessed at the Centre this year. Regular follow-up visits have been made to the partially-sighted unit at Tempe. Term visits were made to Corelli Department of Child Welfare home and from November when this task was taken over from the Eastern Suburbs Child Health Centre, children admitted to Yasmir Shelter were examined by a medical officer.

Medical officers from the Centre attended three baby health centres to examine preschool children. From 26th July the service was extended to include "well babies".

Baby Health Centres

									Glebe	Newtown	Dulwich Hill
New Cases—											
Boys	..	..	..	..	..	..	..	..	22	24	48
Girls	..	..	..	..	..	..	..	..	12	35	62
Total	..	..	..	..	..	..	..	..	34	59	110
Reviews—											
Boys	..	..	..	..	..	..	..	..	3	8	7
Girls	..	..	..	..	..	..	..	..	1	5	7
Total	..	..	..	..	..	..	..	..	4	13	14
Number of Sessions	..	..	..	..	..	..	..	..	11	32	31
Number failed to attend	..	..	..	..	..	..	..	..	10	24	45

Defects

	Glebe		Newtown		Dulwich Hill	
	Not under treatment	Under treatment	Not under treatment	Under treatment	Not under treatment	Under treatment
Vision	2	..	4	..	5	1
Hearing .. .. .	..	..	2	..	4	..
Skin .. .. .	..	3	2	3	6	3
Respiratory .. .. .	..	2	..	5	12	1
Developmental .. .. .	..	..	2	..	..	2
Orthopaedic	1	2	5	2	5	10
General health	1	..	2	1	8	..
Heart .. .. .	..	..	..	..	2	1
Teeth .. .. .	..	..	2	..	4	..
Speech	1	..	2	..	..	..
Mental Health—						
Minor Problems	4	..	12	..	16	..
Referred to Child Health Centre	2	..	6	..	5	..

The In-service Training Course for Public Health Nurses was again conducted at the Centre. Diploma of Psychological Medicine and fifth year medical students of the University of Sydney attended the Centre for tutorials in psychiatry.

The functions and working of the Child Health Centre were explained to groups of students in the Diploma of Public Health Course, trainee teachers and consellers, trainees in social work and vocational guidance and psychology students, as well as to interstate and overseas visitors. Talks were given to parent groups and principals in schools within the area.

Regular discussion groups were held by the combined Centre staff throughout the year. School counsellors and Baby Health Centre nurses attended a number of these meetings.

The friendly co-operation of the officers of the Department of Education, Department of Child Welfare, social service agencies, hospital staffs and the general practitioners in the area has again done much to assist the Centre staff in their work.

CHILD HEALTH CENTRE, PARRAMATTA

P. M. O'FLYNN, M.B., B.S., D.P.H.

The work of this centre proceeded satisfactorily during 1965.

During school medical inspections 6,381 children were fully examined and 21,762 were reviewed. In secondary schools the figures were as follows:

										2nd Form	4th Form	Total
<i>No. of Reviews</i>												
Boys	..	..	..	..	..	..	..	..	..	1,901	946	2,847
Girls	..	..	..	..	..	..	..	..	..	1,530	594	2,124
Total	..	..	..	..	..	..	..	..	..	3,431	1,540	4,971

Referred following Reviews (to medical officers)

Boys	..	..	..	..	..	..	..	..	..	77	33	110
Girls	..	..	..	..	..	..	..	..	..	75	23	98
Total	..	..	..	..	..	..	..	..	..	152	56	208

Notifiable Defects

<i>Vision—</i>												
Boys	..	..	..	..	..	..	..	..	..	32	14	46
Girls	..	..	..	..	..	..	..	..	..	30	11	41
Total	..	..	..	..	..	..	..	..	..	62	25	87
<i>Hearing—</i>												
Boys	..	..	..	..	..	..	..	..	..	13	9	22
Girls	..	..	..	..	..	..	..	..	..	12	3	15
Total	..	..	..	..	..	..	..	..	..	25	12	37
<i>Emotional—</i>												
Boys	..	..	..	..	..	..	..	..	..	2	..	2
Girls	..	..	..	..	..	..	..	..	..	7	1	8
Total	..	..	..	..	..	..	..	..	..	9	1	10
Skin	..	..	..	..	..	..	..	..	..	Nil	..	..
Hair	..	..	..	..	..	..	..	..	..	Nil	..	..
<i>Others—</i>												
Boys	..	..	..	..	..	..	..	..	..	1	2	3
Girls	..	..	..	..	..	..	..	..	..	2	1	3
Total	..	..	..	..	..	..	..	..	..	3	3	6

In schools medical officers interviewed 2,393 parents and 2,050 teachers interviews were carried out. School nurses made 1,052 home visits and followed up 757 children with notifiable defects; of these 80 per cent had been treated within three months of notification.

One preschool kindergarten was inspected in December and 22 boys and 14 girls were fully examined; one notifiable defect (vision) was found and 11 parents were interviewed.

At the Centre 58 children had their vision tested at the request of their teachers or parents, or ophthalmic surgeons who referred some preschool children because vision tests in the consulting room had proved to be difficult.

At the Centre 1,128 appointments were kept with the medical officers, and of these 622 were new cases for initial interview. An analysis of the cases showed that 433 were male and 189 were female; 442 attended public schools, 125 attended private schools and 55 were preschool children.

Referring agencies were as follows:

Specialists, general practitioners	164
Personal applications	151
Headmasters and Infants' Mistresses	82
School Medical Officer	77
Department of Education (Western Area)	44
School Counsellors	37
Social Agencies, Department of Child Welfare etc.	26
Baby Health Centres	22
Speech Therapists	19
	<hr/>
	622

Disposal of new cases was as follows:

Referred for review by medical officers	302
Referred for psychiatric evaluation	220
One interview only	100
	<hr/>
	622

In the case of the 100 children where one interview only was undertaken at the Centre by the medical officers referral to speech therapists or to the Department of Education for further necessary action was effected in many cases. Of the 302 cases referred for review appointments a percentage were later channelled for psychiatric assessment following investigations such as electroencephalograms or psychological testing.

During the year, 506 cases were seen at review appointment by the medical officers.

Comments

Owing to illness the Centre was without a fourth medical officer for about four months during the year, and this is shown by the reduction in the amount of work done by medical officers in the schools. However, the figures for cases seen by medical officers at the Centre were slightly greater than for those of 1964.

CHILD HEALTH CENTRE, RYDE

M. GOLOMB, M.B., B.S.

The Child Health Centre at Ryde was occupied on 24th May, 1965, and patients attended from 7th June. In February, before the opening of the Centre, the medical officers and sisters started work in the schools.

Because the work done by the Centre staff between February and June, has been recorded elsewhere, the statistics which follow constitute a record of the work done by the Centre from June to December.

The number of schools covered by the Centre was 96; in addition 11 special schools including Department of Child Welfare homes and schools for handicapped children were visited. The total population of the 96 schools was 48,484, comprised of 33,836 children attending departmental schools, 12,815 attending parochial schools and 1,833 attending private schools.

A routine medical inspection was carried out in 75 of the 96 schools, 40 schools being examined after June, and 35 before. The remainder of the schools were not examined because, throughout the year, only two medical officers were available. However, visits to these schools were paid by the nurses and children known to have problems were referred to the Centre.

The special schools were visited by the Medical Officer-in-Charge and routine examinations and special evaluations were carried out. On one afternoon each fortnight one medical officer managed the Ryde Baby Health Centre Well-Baby Clinic.

The medical officers in the schools carried out full medical examinations on 3,089 children and review examinations on 2,073 children; parent interviews numbered 1,089 and teacher interviews 122, and the nurses examined or interviewed 7,532 children. In the follow-up of notified defects or in special visits requested by a medical officer or other Centre staff, the nurses paid 169 visits to schools, where 1,312 children were interviewed, as well as making 801 home visits. In a survey of 27 schools the number of notified defects was 606, and of these 317 had been treated within three months of the medical inspection, 191 had not received attention, 48 had resolved or did not require further action, and in 31 cases the results were not known.

The appointment system for medical officer consultation for parent and child was used on 481 occasions. This total included 446 new cases and 35 review consultations and the new cases comprised 302 boys and 144 girls, and the reviews 19 boys and 16 girls.

The age distribution was as follows:

Preschool	..	..	..	..	..	..	..	..	..	64
Infants	..	..	..	..	..	..	..	..	..	175
Primary	..	..	..	..	..	..	..	..	..	157
High school	..	..	..	..	..	..	..	..	..	50

The referring agencies of new cases were:

Centre Staff	..	..	..	..	..	..	..	..	..	191
Parents	..	..	..	..	..	..	..	..	..	105
Teaching Staff	..	..	..	..	..	..	..	..	..	63
Medical Practitioners	..	..	..	..	..	..	..	..	..	31
Division of Guidance and Adjustment and school counsellors	..	..	..	..	..	..	..	..	..	37
Others, including, for example, Sections of Maternal and Infant Care and Special Services, Department of Child Welfare	..	..	..	..	..	..	..	..	..	19
Catholic Family Welfare Bureau	..	..	..	..	..	..	..	..	..

The reasons for referral of new cases is given below:

Physical defects	..	..	..	..	..	..	..	..	..	49
Emotional problems	..	..	..	..	..	..	..	..	..	182
Mental retardation	..	..	..	..	..	..	..	..	..	55
Educational problems including specific learning disabilities	..	..	..	..	..	..	..	..	..	52
Speech defects	..	..	..	..	..	..	..	..	..	64
Others including nocturnal enuresis	..	..	..	..	..	..	..	..	..	25
Mixed origin	..	..	..	..	..	..	..	..	..	19

CHILD HEALTH CENTRE, YAGOONA

J. STEPHENSON, M.B., B.S., M.R.C.S., L.R.C.P.

The Yagoona Child Health Centre, the sixth centre to be established in the metropolitan area, was officially opened by the Minister for Health, The Hon. W. F. Sheahan, Q.C., LL.B., M.L.A. on 5th April, 1965. The building was handed over to the Bureau of Maternal and Child Health on 25th January, and after a short period of preparation was opened to patients on February 8th. In the schools medical officers and nurses began work on 2nd February.

The Centre provided a service for preschool and school children in an area with a school population of 47,000. Including both departmental and private schools, a total of 73 schools was covered by the Centre.

Annual medical inspections were carried out in 62 schools, but eleven schools were not visited. In part this was due to unpredictable changes in medical staffing; for example, two medical officers resigned and their successors had to be trained. To a larger extent it was because many schools in the area had never been examined by staff from a child health centre and therefore there were a large number of special referrals. At the end of the year the Centre was staffed by only three, instead of four, medical officers.

A total of 21,543 children were examined in schools; full examinations were carried out on 7,659 children and 13,584 children were reviewed or partially examined. Parents were interviewed in 3,496 cases and 834 teacher interviews were carried out by medical officers.

Follow-up work by school nurses was carried out in the schools and by home visits. 1,821 cases were followed up in the schools and 1,080 home visits were made. School nurses carried out 2,048 teacher interviews and spent 602 hours in school preparation. Of 1,013 children with notifiable defects followed up in 50 schools, 67 per cent had been treated within three months.

A new Well-Baby clinic was started at Campsie Baby Health Centre in September, and was conducted by medical officers from the Centre on one afternoon each fortnight. Figures for this are recorded in the report of the Section of Maternal and Infant Care.

Each of two special schools for retarded and handicapped children was visited by a medical officer three times during the year.

School	Number of Visits	Number of Full Exams	Number of Review Exams	Number of Notifiable Defects	Number of Parent Interviews
Sydenham-Bankstown Branch S.C.W.A. . .	3	12	12	5	14
Bankstown Handicapped Children's Centre	3	105	4	26	60

At the Centre appointments were given for parent and child on 770 occasions. A total of 579 new cases was investigated and 191 review consultations were made. Of the 579 new cases, where the ratio of boys to girls was 2:1, there were 52 preschool children and 7 children not attending school. There were 425 children referred from departmental schools and 95 from private schools.

The referring agencies of new cases were:

School Medical Officers	105
Other Medical Practitioners and Hospitals	76
Parents (direct to Centre or via school medical officers)	152
School principals and teachers (direct or via school medical officers)	119
Department of Education	31
Speech Therapy	31
Department of Child Welfare	12
Baby Health Centres	5
Miscellaneous (social agencies, solicitors, police, etc.)	8
	<hr/> 579 <hr/>

Some parents making direct approach to the Centre are often advised to do so by school principals and local practitioners, and therefore these two important groups are using the Centre to a larger extent than it might appear from the figures. Many speech therapy referrals are recorded under their original referring agents.

These 579 new cases were managed in the following way:

Referred to child guidance clinic	108
Managed by medical officers (parent counselling and special school placement)	231
Referred to family practitioner for treatment	17
Referred for further investigation (e.g. I.Q. E.E.G.)	57
Discharged after one counselling interview	111
Referred to speech therapy for treatment	55
	<hr/> 579 <hr/>

Of the 191 cases referred for review appointments, following investigation, a percentage was later channelled for psychiatric assessment. Others were discharged after a period of counselling by medical officers or when special placement had been arranged.

For each case a full written report was forwarded to the family physician, contact was made with the referring agency, and, when considered necessary to the school principal, teacher, school counsellor or other agency.

During the year audiometric and vision testing was carried out on request by local practitioners on many occasions.

Training of the Centre staff in the field of mental health was conducted at weekly case conferences throughout the year. The training has proved to be of great value to medical officers in the handling and assessment of cases at the Centre as well as at parent interviews at schools. Lectures have been given to parent groups by medical officers on various aspects of child health.

The co-operation and interest of the Department of Education through its Division of Guidance and Adjustment, district Guidance Officer, School Counsellors and School Principals was much appreciated by the staff and was of great benefit to pupils attending the Centre.

General practitioners, social agencies and parents made considerable use of the services provided by the Centre, and active and friendly co-operation has been maintained with all groups.

CHILD HEALTH CENTRE, NEWCASTLE

The report of the Centre will be found in the Annual Report of the Medical Officer of Health, Newcastle Health District.

THE COUNTRY COUNCILS' SCHEME FOR THE MEDICAL EXAMINATION BY LOCAL MEDICAL PRACTITIONERS OF SCHOOL CHILDREN IN COUNTRY MUNICIPALITIES AND SHIRES

This scheme increased during 1965 and by the end of the year was functioning in 115 country municipalities and shires. (112 in 1964).

In ten local government areas the authorities declined or deferred acceptance of the scheme (14 in 1964) and it was still being considered in 28 areas (11 in 1964).

During the year children in 866 schools were examined (727 in 1964): 28,936 were fully examined (43,557 in 1964): 27,177 were reviewed (21,894 in 1964) and 1,995 parents were interviewed by the examining doctors (2,119 in 1964).

Because of the alteration in the procedure of examination a greater number of schools was covered during the year, more children were subjected to a review examination and as intended fewer children were fully examined as the normal ones are only fully examined once during their school life.

The medical practitioners who made the examinations and the nurses who assisted were paid as formerly by the respective municipal or shire councils according to a fixed scale and reimbursement was made to them by the Department of Public Health.

SCHOOL SANITATION

In health districts sanitary inspections of schools are the responsibility of the medical officers of Health.

In the Sydney metropolitan area and, following the establishment of the Riverina Health District, in the small amount of country directly administered from the Section; 441 departmental schools were visited and inspected by medical officers. Accommodation for pupils was considered unsatisfactory in 0.7 per cent (3 schools); sanitation was found to be unsatisfactory in 3.4 per cent (15 schools); buildings and grounds were unsatisfactory in 2 per cent (9 schools); and lighting was considered unsatisfactory in 0.9 per cent (4 schools).

The figures quoted above are somewhat lower than in previous years. In part this is due to a new system of notification.

On receipt of the reports from medical officers, the Department of Education is notified of the conditions found, requested to take steps to correct the defects and report what action has been taken.

ASTHMA CLINIC

The Asthma Clinic continued to function during the year, the treatment being continued along the same lines as in the past. The total number of appointments for consultation with children already under treatment numbered 743, of which number 609 appointments were kept.

In addition to the ordinary routine work of the clinic, the general survey of results of treatment which was begun in 1954 was continued and completed for those children who undertook treatment in 1963. Surveys of those children who began treatment in 1964 and 1965 were begun but could not be completed fully as each survey is based on a two-year period of review.

The total number of appointments for initial consultation (that is, new patients) was 101, of which 80 were kept and consultations held. Thirty-one children subsequently undertook treatment.

The results obtained in the survey of 62 children who commenced treatment in 1963 is as follows: 32 children remained under treatment for a period of two years or more, 22 gave it up within a period of three months to two years and 8 gave it up within three months.

Results obtained in the 32 children who remained under treatment for two years or more:

Excellent	..	..	..	..	..	..	15	47 per cent	} 72 per cent
Very much improved	..	..	..	..	..	..	8	25 per cent	
Much improved	..	..	..	..	..	..	7	22 per cent	
Improved	..	..	..	..	..	..	2	6 per cent	
No improvement	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	32	100 per cent	

Results obtained in 22 children who remained under treatment for periods of from three months to two years:

Excellent	..	..	..	..	..	..	..	(None classified as such as not under treatment for the full period of two years).
Very much improved	..	..	..	..	..	..	9	41 per cent
Much improved	..	..	..	..	..	..	2	9 per cent
Improved	..	..	..	..	..	..	11	50 per cent
No improvement	..	..	..	..	..	..	..	..
Total	..	..	..	..	..	..	22	100 per cent

Results obtained in 8 children who gave treatment up within three months:

Excellent	..	..	..	..	..	..	..	None classified as such as not under treatment for two years.
Very much improved	..	..	..	..	..	..	..
Much improved	..	..	..	..	..	..	..
Improved	..	..	..	..	..	..	7	
No improvement	..	..	..	..	..	..	1	12.5 per cent
Total	..	..	..	..	..	..	8	100 per cent

CONTROL OF TUBERCULOSIS IN SCHOOLS

There was close liaison with the Division of Tuberculosis so that cases of tuberculosis in school children and teachers were managed and followed up.

During the year eight cases of tuberculosis were notified among school children (six pulmonary and two extra-pulmonary). One case of tuberculosis occurred in a teacher. The comparative figures for 1964 were eleven cases in school children and two in teachers.

Second and fourth form pupils in secondary schools were routinely tuberculin skin tested (Mantoux). So also were pupils in some residential schools, schools where a case had occurred and various other people "at risk"—such as servicemen and civilians proceeding overseas, medical, dental and agricultural undergraduates and relatives of active cases. The total number tested in 1965 was 53,684 (42,368 in 1964). All school children who were positive reactors were referred to a chest clinic for a chest X-ray and massive reactors (greater than 15 mm skin induration) were referred to their general practitioner or to a chest clinic for the advisability of starting chemoprophylaxis.

The results of the epidemiological tuberculin test programme (Mantoux) are given in the table on page 92.

NURSERY SCHOOLS

During 1965 children attending 22 nursery schools in the metropolitan area were examined by medical officers. Ninety-five visits were made to these schools and 1,461 examinations were conducted.

As an example, in ten of these schools 1,048 children were examined and the following defects of a notifiable standard were found:

	Boys	Girls
Vision	11	8
Squint	9	7
Hearing	18	7
Nose and throat	30	20
Skin	5	6
Heart	4	4
Lungs	9	6
Asthma	8	7
Development—Hernia	25	11
Orthopaedic	72	31
Nervous system	5	1
Maladjustment and behaviour problems	52	37
Speech	22	12

RESULTS OF THE EPIDEMIOLOGICAL TEST PROGRAMME (MANTOUX) IN SCHOOLS

Health District, (In brackets—number of schools).	Age Group	Total Number Read	Positive				Negative	
			Not previously vaccinated with B.C.G. (In brackets—Induration greater than 15 mm).		Previously vaccinated with B.C.G. (In brackets—Induration greater than 15 mm).		Number	Per cent*
			Number	Per cent*	Number	Per cent†		
Metropolitan— (245)	0-4 5-9 2nd year 4th year Miscellaneous	190 887 27,582 13,023 1,885	1 16 2,737 1,649 585	0.5 1.8 9.95 12.7 32.2	(1,553) (35.3) (234) (40.0)	.. 3 89 38 71	0.34 0.32 0.29 3.77 (47.9)	189 868 24,756 11,336 1,229
Total		42,490	4,971	11.75		198	0.47	37,321
North Western (11)	2nd year 4th year Miscellaneous	463 299 326	43 35 61	9.3 11.7 18.7		1	0.2	419 264 265
Total		1,088	139	12.8		1	0.09	948
Newcastle (16)	2nd year 4th year	2,198 849	68 27	3.1 3.2		19 14	0.9 1.6	2,111 808
Total		3,047	95	3.15		33	1.1	2,919
South Coast (21)	2nd year 4th year	2,490 770	176 72	7.1 9.5		18 9	0.7 1.2	2,296 689
Total		3,260	248	8.0		27	0.8	2,985
North Coast (23)	2nd year 4th year	1,782 940	126 89	7.1 9.5		2 2	0.1 0.2	1,654 849
Total		2,722	215	7.9		4	0.1	2,503
Total for State (316)	2nd year 4th year All ages	34,515 15,881 53,684	3,150 1,872 5,685	9.2 11.8 10.6		129 63 266	0.37 0.4 0.5	31,236 13,946 47,733

NOTE:

1. A total of 54,961 were tested and 53,684 of these reported for reading.
2. *This is a percentage of the number of persons tested less the number of those persons tested who were previously vaccinated with B.C.G.
3. †This percentage relates to the number tested.

MEDICAL EXAMINATION OF SPECIAL GROUPS

The Sections of Child Health and Special Services arranged for the examination of certain groups of children at 86-88 George Street North.

These were referred for evaluation and/or advice by medical practitioners, teachers and parents because of psychological and physical problems and by the Department of Education because of intellectual, mental or physical handicaps.

Similar investigations were made in each Child Health Centre and the details of these appear in their respective reports.

Likewise requests for examination were received from the Department of Child Welfare, the Dalwood Homes, the Aborigines' Welfare Board, the Far West Children's Health Scheme, the Big Brother Movement (British Youth Migration) and the Public Schools Amateur Athletic Association.

Pupils, in the upper forms of high schools, who proposed to apply for Teachers' College scholarships were, if they desired, medically examined regarding their suitability.

Also, all children admitted to Stewart House Preventorium were inspected by school medical officers.

The following are the figures for some of these examinations:

(1) "Little Brothers" sponsored by the Big Brother Movement	..	..	250
(2) Suitability examinations for entry to Teachers' Colleges	..	..	38
(3) Examination of children for P.S.A.A.A.	..	..	30
(4) Special cases	..	..	442
(5) Examination for exemption from attending school	..	..	2

TEACHERS' COLLEGES

Ten medical officers were seconded to teachers' colleges in New South Wales, of whom eight were full-time and two part-time.

At all colleges lectures were given on health, health education and first aid, undergraduate students receiving rather more lectures than graduates. As many as 25 lectures were given in some colleges. Between colleges there was considerable variation in the timing of the course, in some it took place in first year and in others in second year. The medical officers in their individual annual reports have continued to stress the need for several different courses. This is not only because the students are of different backgrounds, of different stages of education, some being undergraduate and other graduate but also because health education is now taught to school children of all age groups who have therefore different needs.

In many colleges students were given a course in first aid by the St John Ambulance Association. The courses at the various colleges are under constant review, e.g. mouth-to-mouth resuscitation was introduced some time ago. From many colleges, visits were arranged to special schools—such as for the subnormal, physically handicapped and partially sighted. There were more specially invited lectures at all the colleges; for example, although similar lectures have been given at the Sydney college for many years lectures on oral hygiene will be introduced next year at one of the country colleges.

Lecture aids and teaching aids were made or obtained and practice teaching was supervised. For all students examinations were set and at each college a prize awarded to the most proficient. All students on scholarships were kept under medical supervision and, for the most part, were interviewed during their first year in college. Students who returned from sick leave were interviewed and examined as necessary, and students with illnesses or injuries were examined and referred to a private doctor or to a hospital.

For many years at all colleges there has been a steady increase in the number of students who present for counselling—for personal, study or domestic reasons. This part of the work of the college medical officers is becoming more and more demanding and time-consuming, but it is always regarded as important. At the Sydney colleges it is considered that the principal reason for the increase in this part of the work is because such excellent health facilities are now offered to university undergraduates, and college students expect similar facilities.

A new system was introduced for carrying out the medical screening of "incoming" students. All students who are offered scholarships are sent a medical questionnaire to complete, and then on entering college, for the majority all that is necessary are simple checks of vision and hearing, a urine examination and chest X-ray.

It has already been indicated under "Policy Alterations" that "incoming", "fitness to continue" and "outgoing" examinations are carried out by the college medical officers, under the guidance of the Physician-in-Charge, Medical Examination Centre, and with the assistance of school medical officers and nurses.

College	Enrolment	Incoming Students Screened—Some Also Examined	Outgoing Students Examined	Establishment of Medical Officers
Sydney	3,749	1,244	960	3 full time.
Balmain and Orange Grove	338	180	165	1 full time.
Alexander Mackie	668	306	210	1 full time.
Armidale	1,098	381	259	1 full time.
Bathurst	344	189	164	1 part time.
Newcastle	1,102	460	420	1 full time.
Wagga Wagga	390	190	190	1 part time.
Wollongong	461	293	139	1 full time.

NATIONAL FITNESS CAMPS

There are three nurses from the Section who are seconded to the Department of Physical Education for duty at National Fitness Camps. The camps concerned are at Broken Bay, Myuna Bay and Point Wolstoncroft. The nurses supervise the health of children attending the camp, mostly for 10 days at a time, attend to all cases of injury and sickness, for which the assistance of a private practitioner or hospital is obtained as necessary. They give talks on hygiene and, with the teaching staff, fully enter into the corporate spirit of the camp life.

At the end of each camp a report is forwarded to the Assistant Director, giving details of all injuries and sickness treated and of the sanitation and hygiene.

Before the end of the year the Section applied for the establishment of a new position for a nurse at the National Fitness Camp, Narrabeen.

SECTION OF SPECIAL SERVICES

Assistant Director: W. S. HEMPHILL M.B., B.S., D.C.H.

Location: 86-88 George Street, North Sydney

FUNCTIONS

The Section of Special Services was created in April, 1965, when the Bureau of Maternal and Child Health was formed. The function of the section is to provide diagnostic, advisory and supportive services to atypical children in the age range from birth to school-leaving age. As can be seen from the list of the staff of the Section, there is a pool of specialists from which advice about children with various emotional, developmental and educational problems can be obtained. The resources of the Section are available to the Section of Maternal and Infant Care, the Section of Child Health, to medical practitioners in the community, to the Department of Education, the Department of Child Welfare and Social Welfare, and to the various voluntary bodies concerned with the care of children. The Section supervises in-service training of nurses in the Bureau and provides in-service training for other staff members. Research within the Bureau, by other Departments and by other authorities concerned in the problems of development in children, is conducted through the Section.

STAFF

The staff of the Section was obtained from various sources. From the School Medical Services all personnel working in Child Guidance Clinics and in Speech Therapy Clinics were transferred to Special Services, together with one senior medical officer and one medical officer. One position of senior medical officer was created by upgrading the school medical officer post and one senior medical officer was transferred from the ex-Division of Maternal and Baby Welfare.

3 senior medical officers, 1 medical officer; 1 senior psychiatrist, 7 psychiatrists, 8 part-time psychiatrists, 4 trainee psychiatrists; 1 senior psychologist, 16 psychologists, trainee psychologists; 1 senior social worker, 15 social workers, trainee social workers; 1 senior speech therapist, 21 speech therapists, 11 trainee speech therapists; 10 ear, nose and throat specialists (part-time); 1 ophthalmologist (part-time).

SPEECH THERAPY

Medical assessments, with dual interviews by a medical officer and speech therapists, were held regularly during 1965 at each of the seven speech clinics. A total of 130 visits was made to evaluate 454 children, including 331 boys and 123 girls. In addition, 111 children, 75 boys and 36 girls, previously assessed, were reviewed.

Referrals to the Clinics were made by paediatricians, general practitioners, dentists, school medical officers and sisters and education authorities. Personal application was made by many parents.

SPEECH THERAPY CLINICS

	Newcastle	Parramatta	Bexley	Brisbane St.	Forest Lodge	Beauty Point	Wollongong	Yagoona	Chatswood	Ryde	Glenfield	Tamworth	Total
No. under treatment 1-1-65 (current) ..	44	38	61	21	44	24	44	0	62	0	12	0	350
No. under follow-up treatment 1-1-65 ..	145	210	215	55	86	35	38	0	131	0	0	0	915
No. of first interviews and assessments ..	177	320	360	209	158	84	176	330	457	199	5	93	2,568
No. admitted and readmitted current ..	52	124	65	111	59	38	93	113	122	93	5	32	907
Admitted follow-up only ..	151	192	220	161	150	61	75	262	173	82	0	53	1,580
Number of current cases as at 31-12-65 ..	33	28	21	61	5	13	24	57	53	64	13	23	395
No. of follow-up cases as at 31-12-65 ..	200	173	227	181	31	42	59	203	132	56	0	49	1,353
Total cases treated 1965 ..	392	564	561	348	339	158	250	375	488	175	17	85	3,752
No. of Reviews ..	464	614	404	200	206	173	95	299	394	148	4	12	3,013
Total No. of attendances 1965 ..	1,924	3,685	2,895	2,596	1,990	1,351	2,297	2,770	2,918	2,512	397	328	25,654
Failed or unable to continue treatment ..	5	18	10	11	11	5	43	4	11	4	0	0	122
Transferred to other clinics ..	9	37	13	7	49	1	2	2	52	2	0	5	179
Discharged under observation and relieved ..	49	79	82	53	38	43	68	50	68	23	4	4	561
Discharged follow-up ..	96	229	208	35	205	54	54	59	172	26	0	4	1,142
Awaiting first interview (P.A.) at 31-12-65 ..	22	37	38	30	5	3	8	27	34	55	0	70	329
Awaiting urgent treatment ..	42	97	18	3	9	3	28	32	8	9	0	1	250

Referrals for Further Investigation—

Child Guidance	..	..	..	..	..	..	..	..	118
Hearing	..	..	..	..	..	..	..	..	86
Psychologist	..	..	..	..	..	..	..	..	112
Division of Guidance and Adjustment	..	..	..	..	..	..	..	..	67

IN-SERVICE TRAINING FOR PUBLIC HEALTH NURSES

The in-service training course for Public Health nurses was again conducted and 15 nurses from the Department and one from the Anti-Tuberculosis Association graduated and received a diploma. Five nurses resigned during the course and one was unable to complete it because of ill-health. The course continued to contribute to understanding of the problems of preventive medicine in the community and was regarded as being eminently worthwhile. As in previous years the lecturers were drawn from medical practitioners in the community, the Department of Education, the Departments of Health (Commonwealth and State of New South Wales) and representatives of voluntary bodies.

VISITS TO COUNTRY CENTRES

In keeping with the policy of providing services to children residing in other than metropolitan areas during 1965 three visits were made to country centres by teams from Child Health Centres which usually operate solely in the capital city. Each team comprised a physician, a social worker, a psychologist, and a speech therapist and was derived from the staff of a Metropolitan Child Health Centre. Each team evaluated approximately 30 children during one week spent in a Medical Officer of Health base city (Lismore, Bathurst, Tamworth) and made appropriate recommendations on management to the parent, the family physician, or the Education authority. The children were selected because of developmental or educational problems and were referred for evaluation by the parent, the family doctor, or the education authorities. A visit was made to Albury by a physician and a speech therapist to evaluate atypical children attending schools in the area—the children were selected by the local physicians and by the school authorities.

SPECIAL HOMES 1965

Dalwood Health Home, Seaforth, was visited once each school term during the year.

Thirty-seven full medical examinations and 24 reviews were made. There were few parents available for interview, because the particular function of the home made such interviews difficult to obtain.

Discussions were held with the nursing staff at each visit and contact was made with the children's teachers regarding some learning and behaviour problems.

SPECIAL SCHOOLS ATTENDED DURING 1965

Schools and classes which cater for intellectually handicapped children are visited more frequently than those with solely normal children as students. The special schools and classes are conducted by the Department of Education and by voluntary bodies and, in addition to a comprehensive pre-entrance medical examination provided for the children before entering some of the schools, the medical officer visits each school at least once each term for the purpose of providing follow-up advice and advice on new problems which may develop, and for the examination of children who have not been subjected to a full examination previously.

Total Number of Visits	Full Examination	Review Examination	Defects Notified	Parents Interviewed
102	1,406	652	285	104

Total Examinations—2,058.

Percentage of Defects—13.8 per cent.

Special Schools for Atypical Children, 1965

	Number of Visits	Full Exam-inations	Review Exam-inations	Number of cases Notified	Parents Interviewed
Stewart House Preventorium	37	1,002	13	161	..
Glenfield Park Public School	11	1	312	19	1
Minerva Street Public School	11	120	43	20	27
Thorndale Handicapped Children's Centre	8	31	43	6	17
Dunrossil H.C.C.	7	26	35	11	26
Sutherland H.C.C.	7	25	22	8	16
Hoxton Park H.C.C.	4	10	27	5	3
Sunnyfield H.C.C.	5	28	41	12	4
Cooinda H.C.C.	6	17	31	6	10
Mater Dei Convent	5	21	56	7	..
Rainbow Lodge H.C.C.	2	11	23	4	..
"Lark Hill" (Child Welfare Department) ..	5	26	4	3	..
"Werrington" Park Child Welfare ..	4	88	2	23	..
Totals	102	1,406	652	285	104

CHILD GUIDANCE CLINICS

The Child Guidance Clinics continued to be decentralized and in 1965 one clinic was transferred to the Eastern Suburbs Child Health Centre and the Camperdown Clinic was closed. One psychologist and one social worker was transferred to each of the new Child Health Centres which was opened at Yagoona and Ryde. These latter centres were without a psychiatrist until late in 1965 when a part-time psychiatrist was appointed to each of them.

Full-time psychiatrists controlled guidance teams at Forest Lodge, Bexley, Yasmarr, Newcastle and Brisbane Street. The team located at Forest Lodge Child Health Centre continued the close relationship with the Bridge Road School which caters for emotionally disturbed children who are able to attend on a daily basis.

During 1965 four graduates in medicine were employed as trainees in psychiatry.

The table showing the work of Child Guidance Clinics in 1965 does not indicate the work of psychologists and social workers at Yagoona and Ryde Child Health Centres because, due to the fact that a psychiatrist was appointed on a part-time basis only late in the year, the clinics were not regarded as fully established clinics.

There was an increase in referrals of emotionally disturbed children by follow-up nurses. Follow-up nurses working in schools not serviced by Child Health Centres visit schools in a random fashion, or on request by the principal, and are able to identify children who appear to have organic or emotional problems which require investigation. The nurse after ascertaining the nature of the problem, may consult a doctor or a social worker and then refer the problem to the appropriate diagnostic resource. It has been found that a nurse working in this fashion can help educators with diagnostic and therapeutic problems which otherwise may be neglected and the technique has been productive and satisfying.

During 1965 there were 3,425 new cases accepting appointments to be evaluated by Child Guidance Teams working in either Child Health Centres or in a Child Guidance Clinic. This number is quite deceptive in view of the fact that an incalculable number of children were referred by various agencies because of emotional or developmental problems to Child Health Centres and their problems were dealt with by the professional personnel of the Child Health Centre with or without consultation with a psychiatrist. These latter children would have been previously the subject of a routine referral to a Child Guidance Clinic team.

STATISTICS RELATING TO WORK OF CHILD GUIDANCE CLINICS, 1965

	Forest Lodge	Bexley	Parramatta	Chatswood	Eastern Suburbs	Brisbane St.	Yasmarr	Newcastle	Grand Total
New Cases 1965	297	125	477	344	240	870	625	447	3425
Continued from 1964	96	42	231	205	0	343	0	118	1035
Old Cases Re-opened	0	9	21	0	0	19	0	79	128
Total Caseload 1965	393	176	729	549	240	1,232	625	644	4588
Closed 1965	225	97	467	297	40	808	0	399	2333
Attending and Continuing in 1966 ..	136	73	230	180	200	308	0	165	1292
Referring Agencies—									
Personal Application (parents) ..	49	4	108	113	28	216	0	83	501
Children's Court or Police	4	5	0	0	90	252	625	17	988
Department of Child Welfare	7	0	5	4	0	14	0	22	48
Department of Education	81	2	129	87	8	105	0	70	402
Social Agencies	19	5	11	13	5	46	0	78	176
Private Practitioners	26	8	111	60	10	68	0	122	305
School Medical Service	102	96	85	50	83	161	0	34	511
Speech Therapists	9	5	28	17	16	8	0	21	106
	297	125	477	344	240	870	625	447	3425

Division of Dental Services

Director: W. B. HAYMET, B.D.S.

Location: 86-88 George Street North, Sydney

STAFF

C. S. White, B.D.S., Senior Supervisory Dentist; 41 Dental Officers (full-time); 5 Dental Officers (part-time); 30 Dental Assistants; 2 clerical officers.

FUNCTION

The year 1965 was one of consolidation of the benefits arising from the new dental legislation of 1964, which amended the Dentists Act to permit the use of New Zealand type school dental nurses and the employment of overseas dentists graduating from specified universities. Also plans were prepared to proceed with the expansion of the School Dental Service by the establishment of training schools for dental nurses.

This is the first State in Australia to employ the New Zealand trained school dental nurse in its school dental service. The acceptance, after early opposition, by the Australian Dental Association, New South Wales Branch, of the principle of using this additional clinical aid together with the support of the National Health and Medical Research Council have emphasized the importance of this approach to the problems confronting adequate staffing for dental treatment of school children.

During the year Dr G. H. Leslie, Director of the Division of Dental Health, New Zealand, visited New South Wales and his comments, helpful and encouraging, stressed the need for the development of a training school. With the assistance of the Government Architect's Branch, plans for a training school have been drawn up, also plans for a new type of base dental clinic and school dental clinics. The proposed visit to New Zealand by the Minister for Health and the Under Secretary is of great importance to the realization of the setting up training facilities for school dental nurses in New South Wales, thus assuring an adequate and continuing supply of personnel.

Six New Zealand trained School Dental Nurses were employed by the Division of Dental Services, and commenced clinical duties, as under:

Mrs J. K. Brunton	...	..	..	..	7th June, 1965.
Miss P. M. Clark	..	..	..	..	7th June, 1965.
Miss C. A. Driberg	..	..	..	..	7th June, 1965.
Miss H. McIver	..	..	..	..	3rd August, 1965.
Miss T. P. Mills	..	..	..	..	7th June, 1965.
Mrs B. G. Winkelhan	..	..	..	..	12th July, 1965.

They have shown their ability and value in the field of pedodontia by a consistent output of work and high standards of competence which reflect credit on their training schools.

GENERAL ACTIVITIES

The School Dental Service has again been disturbed by a shortage of Dental Officers. At the end of the year there were actually five vacancies for Dental Officers, two positions being filled by School Dental Nurses, one officer was on long service leave and one other officer on extended sick leave. Also the expected increase in the number of School Dental Nurses, approved by the Public Service Board, was not realised due to lack of funds from the Treasury.

These vacancies as in previous years have prevented the optimum usage of facilities. Nevertheless, the improved quality of equipment and working conditions resulted in the highest number of fillings in teeth in the history of the Service.

Previous surveys at the request of the Director of Tuberculosis (N.S.W.) have resulted in the supply of new dental surgeries and equipment for the Royal North Shore and Royal Prince Alfred Hospitals.

During the year increased use was made of the specialist anaesthetist team from Lidcombe State Hospital. In addition to those in the Institutions, 36 general anaesthetics were performed in the School Dental Service.

All clinics were provided with Air-Viva Resuscitator Units during the year, to help cope with any cases of respiratory failure.

The availability of these life-saving accessories has been greatly appreciated by the operators

SCHOOL DENTAL NURSES

For the portion of the year they were employed on clinical duties, the School Dental Nurses performed the following work:

New Cases	..	..	..	..	..	..	..	..	1,235
Total Cases	..	..	..	..	..	..	..	..	6,237
Extractions	..	..	..	..	..	..	..	..	1,912
Fillings	..	..	..	..	..	..	..	..	8,514
Treatments	..	..	..	..	..	..	..	..	9,972

The total work accomplished by the School Dental Service was:

Examined	..	..	..	..	..	..	..	..	115,038
Notifications	..	..	..	..	..	..	..	..	59,489
New Cases	..	..	..	..	..	..	..	..	15,718
Total Visits	..	..	..	..	..	..	..	..	68,243
Fillings	..	..	..	..	..	..	..	..	72,090
Extractions	..	..	..	..	..	..	..	..	24,788
Other Treatments	..	..	..	..	..	..	..	..	73,348
Dentures	..	..	..	..	..	..	..	..	74
General Anaesthetics	..	..	..	..	..	..	..	..	36
Orthodontic Appliances	..	..	..	..	..	..	..	..	206

INSTITUTION DENTAL SERVICE

The dental service to Government Institutions was continued without interruption. A new dental clinic was completed at Glen Innes Prison Camp and the work on a new dental suite at Long Bay State Penitentiary is slowly proceeding in the new medical block. Early completion of this work is becoming important due to the increased demand for dental attention to inmates. Provision has been made for new dental clinics at Brush Farm and Kurri Kurri Institutions in the Department of Child Welfare and a new dental clinic has been planned and equipment ordered for Grosvenor Hospital.

PSYCHIATRIC HOSPITALS

The main responsibility of the Institution Dental Officers is still in the Psychiatric Hospitals. Work done was:

Examined	..	..	..	..	..	..	..	..	8,688
New Cases	..	..	..	..	..	..	..	..	1,951
Total Cases	..	..	..	..	..	..	..	..	9,623
Extractions	..	..	..	..	..	..	..	..	5,200
Fillings	..	..	..	..	..	..	..	..	2,596
Other Treatments	..	..	..	..	..	..	..	..	4,862
Dentures	..	..	..	..	..	..	..	..	424
Repairs to Dentures	..	..	..	..	..	..	..	..	402
General Anaesthetics	..	..	..	..	..	..	..	..	64

STATE HOSPITALS AND HOMES

The dental service continued satisfactorily. Strickland House, Vaucluse received regular visits from the Dental Officer who also treats Randwick Chest Hospital.

Examined	..	..	..	..	..	..	..	..	2,097
New Cases	..	..	..	..	..	..	..	..	689
Total Cases	..	..	..	..	..	..	..	..	2,544
Extractions	..	..	..	..	..	..	..	..	2,094
Fillings	..	..	..	..	..	..	..	..	439
Other Treatments	..	..	..	..	..	..	..	..	1,928
Dentures	..	..	..	..	..	..	..	..	219
Repairs to Dentures	..	..	..	..	..	..	..	..	56
General Anaesthetics	..	..	..	..	..	..	..	..	58
Orthodontic Appliances	..	..	..	..	..	..	..	..	4

PRISONS DEPARTMENT

Mr R. B. McFadyen was appointed Dental Officer to the Prisons Department following the retirement of Mr W. M. Byrne.

Regular visits have been made to penal establishments. Mr B. O'Neill of Glen Innes was appointed as visiting Dental Officer, part-time to the Mt Mitchell Prison Camp.

A mobile clinic has been giving dental treatment to inmates of the Kirkconnell Prison Camp, Bathurst during school vacation periods.

Examined	..	..	..	..	..	..	..	..	3,178
New Cases	..	..	..	..	..	..	..	..	2,050
Total Cases	..	..	..	..	..	..	..	..	4,651
Extractions	..	..	..	..	..	..	..	..	3,156
Fillings	..	..	..	..	..	..	..	..	703
Other Treatments	..	..	..	..	..	..	..	..	2,313
Dentures	..	..	..	..	..	..	..	..	194
Repairs to dentures	..	..	..	..	..	..	..	..	64

CHILD WELFARE DEPARTMENT

Regular visits have continued and the amount of work has been sustained.

Examined	..	..	..	..	..	..	..	..	3,276
New Cases	..	..	..	..	..	..	..	..	1,911
Total Cases	..	..	..	..	..	..	..	..	7,470
Extractions	..	..	..	..	..	..	..	..	3,742
Fillings	..	..	..	..	..	..	..	..	4,651
Other Treatments	..	..	..	..	..	..	..	..	4,232
Dentures	..	..	..	..	..	..	..	..	269
Repairs to dentures	..	..	..	..	..	..	..	..	42

CONCLUSIONS

Although staff shortages were a constant difficulty, the prospects for the coming year of improving the dental health of children appear favourable.

Enquiries from overseas dentists for employment are heartening, but the future prospects of successfully providing an adequate and increasing treatment service will depend upon the establishment of a training school for School Dental Nurses.

A comprehensive report has been made to the Minister for Health who has indicated his intention to visit New Zealand and examine the School Dental Health Scheme in all details. A suitable building site at Parramatta could possibly be available and other locations are being considered.

Several interested enquiries regarding the position of Director in Training have been received.

The successful implementation of this plan will also be a step closer to decentralization of dental services—this would call for a principal dental officer working in liaison with the Medical Officer of Health in each of the Health Districts, responsible for the administration of dental services in the particular area.

STATISTICAL REPORT 1965

	School Dental Service	Institution Service			Total
		Health Department	Prisons Department	Child Welfare Department	
Examinations	115,038	10,785	3,178	3,276	132,277
Notifications	59,489	.. .. .	.. .. .	.. .. .	59,489
New Cases	15,718	2,640	2,050	1,911	22,319
Visits (No. Cases)	68,243	12,167	4,651	7,470	92,531
Extractions	24,788	7,294	3,156	3,742	38,980
Fillings	72,090	3,035	703	4,651	80,479
Other Treatments including Prophylaxis	73,348	6,790	2,313	4,232	86,683
General Anaesthetics	36	122	.. .. .	.. .. .	158
Dentures	74	643	194	269	1,180
Denture Repairs .. .. .	.. .. .	458	64	42	564
Orthodontic Appliances	206	4	.. .. .	.. .. .	210

HEALTH DISTRICTS

Metropolitan Health District

Metropolitan Medical Officer of Health: Dr A. DOUGLAS, LL.B., M.B., Ch.B., D.P.H., D.T.M., & H.

Location: 52 Bridge Street, Sydney

The District covers an area of 982,042 acres and comprises thirty five municipalities, including the Cities of Sydney, Parramatta, Liverpool and Penrith; four shires (Hornsby, Warringah, Sutherland and Baulkham Hills); and the Harbour of Port Jackson.

The Metropolitan Health District differs from other Health Districts in its intimate relationship to Central Administration. Within the Metropolitan Health District the Chief Health Inspector and the Deputy Chief Food Inspector are responsible to the Metropolitan Medical Officer of Health for all work carried out in the Metropolitan Area.

In addition, the Metropolitan Medical Officer of Health is responsible for the control of infectious disease including leprosy and acts as a Senior Medical Officer in Central Administration and takes part in graduate and undergraduate training in public health and in in-training programmes for technical and professional officers in Central Administration.

VITAL STATISTICS

The population of the District at 30th June, 1965 was 2,488,680, an increase of 54,340 over the figures for 1964.

There were 44,604 live births equal to a rate of 17.91 per 1,000 mean population. Deaths numbered 23,763, equal to a rate of 9.54 per 1,000 of mean population. Maternal deaths numbered 9, equal to a rate of 0.18 per 1,000 live births. Deaths under one year of age totalled 814, equivalent to a rate of 18.25 per 1,000 live births.

TABLE I—COMMUNICABLE DISEASE NOTIFICATIONS WITH DEATHS, 1964-65

Disease	1964		1965	
	Cases	Deaths	Cases	Deaths
Acute Anterior Poliomyelitis .. .. .	..	..	2	..
Ancylostomiasis .. .. .	..	..	..	..
Ascariasis	14	..	..	..
Brucellosis	2	..	3	..
Rheumatic Chorea	1	..	..	..
Dengue Fever .. .. .	..	..	..	..
Diphtheria	6	1	7	1
Infectious Hepatitis	1,508	9	1,771	11
Infantile Diarrhoea	449	20	409	19
Leptospirosis .. .. .	..	..	..	..
Meningococcal Infection	35	5	19	6
Ornithosis	1	..	2	..
Paratyphoid Fever	3	..	..	..
Typhoid Fever	4	..	3	..
Puerperal Fever	43	4	30	9
Rheumatic Fever	12	3	13	2
Scarlet Fever	252	..	306	..
Typhus Fever	1	..	2	..
Tuberculosis	871	111	642	57
Virus Encephalitis	73	4	41	5
Staphylococcal Mastitis .. .. .	..	..	..	..
Staphylococcal Pneumonia	19	13	19	19
Staphylococcal Infection in Infants under 4 weeks of age	523	..	533	..
Total	3,817	170	3,802	129

COMMUNICABLE DISEASES

Diphtheria

Seven unrelated cases were reported in the Metropolitan Health District during the year. One death occurred in an elderly patient. In Local Council areas where the cases occurred immunization programmes were intensified and unprotected contacts were immunized. All these cases were wholly or partly immunized.

Infectious Hepatitis

There were 1769 cases notified in the Metropolitan area. Cases were evenly distributed in Local Authority areas. Nine deaths occurred.

TABLE II—CASES AND DEATHS—INFECTIOUS HEPATITIS, 1959-1965

Year	Cases	Deaths
1959	1,040	12
1960	2,123	8
1961	2,424	14
1962	1,697	12
1963	1,921	12
1964	1,508	9
1965	1,769	9

Typhoid Fever

Three cases of Typhoid Fever were notified. Routine precautions were taken to prevent the spread of the disease by isolation of cases in hospital and examination and surveillance of contacts.

ENVIRONMENTAL SANITATION

General

Mr D. H. Way, Chief Health Inspector, retired on the 8th August, 1965, and Mr H. K. Evans was appointed Chief Health Inspector with Mr K. W. Bagnall as Deputy Chief Health Inspector. To provide adequate staff supervision it has been found necessary to increase the number of Senior Health Inspectors from two to four; however two of these positions have not yet been filled.

A sanitary survey of Liverpool Municipality was carried out to ascertain the general standard of sanitation. As a result of this extensive survey, Council was requested to implement remedial measures designed to improve the standard of environmental sanitation within the Municipality, particularly in regard to such matters as watercourse pollution, disposal of trade waste and garbage, noxious trades supervision and septic tank effluent disposal.

Disposal of garbage from developed areas continues to be a problem due to the scarcity of suitable sites, necessitating garbage having to be conveyed considerable distances for disposal. As a result at least two Councils have applied for approval to dispose of garbage by destruction in a municipal incinerator.

Several investigations are being carried out in an attempt to reduce stream pollution in the Cooks, Georges and Parramatta Rivers as well as sewage pollution along beaches between Sydney Heads and the entrance to Botany Bay. A survey of pollution being caused by the discharge of chemical wastes into Botany Bay resulted in this trade waste being pumped to the Metropolitan Water, Sewerage and Drainage Board's sewers.

Public, semi-public and private swimming pools received increased supervision by Departmental Inspectors and numerous samples from harbour and riverside pools as well as fully recirculated pools were collected and submitted for examination. Suitable testing equipment has been provided for carrying out on the spot checking and where necessary assistance and advice given pool operators.

Increased numbers of packaged sewage treatment plants are being installed. All are of the extended aeration principle and are regularly inspected and samples of effluent submitted for examination. These units appear to be filling a need for treating wastes from institutions, clubs, etc., where sewerage is unavailable or where a septic tank would be unsuitable.

Staff Training

Considerable time and effort was expended by Mr H. K. Evans in preparing a training manual to be issued to Health Inspectors. The Training Manual is in the process of being printed and will be available early in 1966. It is proposed to create a position of Training Officer in this Branch and with the aid of the above Manual and lectures by senior staff to implement a training programme. This proposed procedure has become increasingly necessary due to the accelerated rate of staff turnover and the high percentage of inexperienced personnel.

New Developments

A form for the submission of septic tank applications designed by this Branch is proving highly successful. This form is in triplicate and is completed by the applicant. The introduction of this form has standardized applications from all local authorities and has had the effect of reducing the time necessary for processing applications. It has also eliminated entirely the necessity of any typing. As approximately 9,000 septic tank applications are dealt with annually, the relative saving in labour can be appreciated.

Tests were carried out into an alternative method of storing household garbage pending its removal. "Garbag" paper sack containers were tested in the Municipality of Willoughby for a period of six months. The bags were of two ply high wet strength kraft paper of 2 cubic feet capacity. Subsequent to the test the Department of Local Government was informed that no objection would be offered to their use.

Decentralization

The establishment of the Riverina Health District in August 1965 and the reversion of the Kosciusko State Park Trust area to the South Coast Health District in September 1965 will result in less country work being carried out by Health Inspectors from the Metropolitan Health District and is releasing staff for local matters requiring attention.

TABLE III—WORK PERFORMED BY HEALTH INSPECTORS IN METROPOLITAN AREA

	1964	1965
Sanitary Surveys	2	1
Shops and Buildings Inspected	836	735
Hospitals		24
Institutions	226	71
Schools		20
Hotels and Boarding Houses		35
Public Halls and Theatres	133	5
Swimming Pools	44	40
Slaughtering premises and abattoirs	29	6
Pet food shops and Knackeries	61	34
Flock and Beddings—		
(a) Inspection of Premises	38	8
(b) Samples Collected	11	10
Camps, Showgrounds and Cemeteries	21	10
Saleyards	4	....
Sanitary Depots—		
(a) Proposed	54	49
(b) Existing	290	161
Scavenging Districts Proposed .. .. .	....	5
Approval Disposal Nightsoil into Furrows	3	1
Septic Applications Dealt with	9,925	8,535
Septic Applications Refusals	1,239	1,166
Testing of Bores for Effluent Disposal	11	7
Inspections of Bores .. .. .	....	15
Septic Tank Installation Inspected	342	254
Septic Tank Manufacturers Design Plans Examined	73	24
Inspection of Manufacturers Premises .. .. .	....	4
Sewage Treatment Works Inspected	55	70
Water Supplies Inspected—		
(a) Public	8	6
(b) Private	20	10
Swimming Pool Water .. .. .	....	104
Infectious Disease Investigations	4	2
Nuisance Investigations	831	1,604
Samples—		
(a) Water	793	409
(b) Other	89	306
Inspection of Dairies	5	....
Visits to Offices of Local Authorities .. .. .	....	378
Assisting Councils, Licencing Court, Land Court	2	8
Inspection of Noxious Trades Premises	1,051	1,083
River and Beach Pollution	66	186
Legal Proceedings for Department	24	8
Fines	\$444.00	\$270.00
Costs	\$56.00	\$12.00
Personal and Telephone Complaints Received	790	1,059
Barber Shops .. .. .	....	1
Pig and Poultry Keepers .. .. .	....	38
Interviews with Architects, Engineers, etc. .. .. .	....	147

TABLE IV—WORK PERFORMED BY FOOD INSPECTORS IN METROPOLITAN AREA

	1964	1965
Adulteration of Food and Drugs—		
Samples Taken—		
Milk	2,605	3,192
Meat and Smallgoods	2,439	3,093
Other	816	775
Total Samples	5,860	7,060
Warning Letters	101	113
Prosecutions	449	424
Meat Samples field tested (malachite green)	5,716	8,647
Food and Drugs Seized as Unfit—		
Fruit (dried)	126 tons	..
Fish	16 tons	3 tons
Coffee Beans	10 tons	..
Cheese	7 tons	..
Groceries (assorted) .. .. .	..	5 tons
Vegetables .. .. .	..	5 tons
Other	13 tons	5 tons
Total	172 tons	18 tons
Poultry	17,619 head	24,358 head
Inspections—		
Total premises inspected	8,448	11,963
Unclean Premises—		
Warning Letters	213	287
Prosecutions, mainly—		
Insects, exposure food, smoking on premises	16	32
Other Breaches	158	159
Complaints	1,441	1,425
Inspections of State Department Institutions	44	30

Newcastle Health District

Location: Government Insurance Office Building, 2 Market Street, Newcastle

STAFF

Medical Officer of Health: H. R. DUGDALE, M.B., Ch.B., D.P.H.

Deputy Medical Officer of Health: T. J. WOOLARD, M.B., B.S., D.P.H.

One psychiatrist; one psychologist; one social worker; two speech therapists (one part-time); two school medical officers; one part-time ear, nose and throat specialist; six school nurses; one senior health inspector; three health inspectors; one senior food inspector; one food inspector; one assistant nurse inspector; five tuberculosis nurses; one chief clerk; three office assistants.

EXTENT OF THE DISTRICT

The Newcastle Health District comprises nine municipalities of which Newcastle City is by far the largest and fourteen shires. It extends from the Hawkesbury River in the south to the northern boundary of the Macleay shire, where it meets the North Coast Health District. The Western and North Western Health Districts form the inland boundary.

VITAL STATISTICS—1965

The populations at 30th June, 1964 was 489,410, and increased to 496,730 by 30th June, 1965.

There were 4,657 live births in 1965, giving a rate of 18.18 per thousand.

There were 105 still births, giving a rate of 0.21 per thousand.

Deaths in 1965 numbered 2,959, giving a rate of 10.21 per thousand.

ENVIRONMENTAL SANITATION

Sanitary Surveys

Because of staff shortage in the early part of the year then consolidation of transferred and new staff, it has not been possible to arrange any full scale surveys.

Camping Areas

Many Camping and Recreation Areas are poorly maintained with few or no amenities and pan closets provided. Financial commitments and cost of replacements due to vandalism are the usual reasons advanced by Local Authorities for their lack of interest in this field. The trend appears towards construction of large camping areas in popular resorts. During the holiday season inspections were made at several camp and caravan areas and action taken to rectify unsatisfactory conditions where found.

Noxious Trades

Improvement in the general standard of Noxious Trade premises was seen during the year. It is becoming evident that as greater control is applied to Central Abattoirs, the industry of pig keeping combined with local slaughter yards is in the decline. The whole of the District is now under the requirements of the Noxious Trades Act.

Fluoridation of Water Supplies

At its meeting on 12th December as had been expected the Hunter District Water Board rescinded its previous decision to fluoridate the water supply.

Instead it resolved to seek the views of its Constituent Councils.

Meanwhile the Wyong Shire Council expressed itself in favour of fluoridation and will probably refuse to be influenced by adverse propaganda.

Septic Tanks

	1963	1964	1965
Applications approved	1,898	2,015	2,244
Applications not approved	59	48	52

The main reasons for disapproval were unsatisfactory sites comprising either unsuitable or insufficient area of ground available for safe disposal of effluent.

The area of Woy Woy in Gosford Shire is being prepared for town water supply. When this occurs it may be possible to permit septic tank installations providing for ground disposal of effluent.

Sewerage Schemes

Preliminary investigations have been made to provide the coastal holiday and residential resort, The Entrance, with a reticulated sewerage system. Offshore disposal of chlorinated effluent is proposed.

Scavenging Areas—Depots

Due to upsurge of residential development in Gosford Shire existing nightsoil scavenging districts are being amended to include new areas. Additional districts are proposed throughout the shire where required.

Port Stephens Shire propose creating nightsoil scavenging districts for those parts of the shire where development is increasing.

Regular inspection of nightsoil and garbage depots was maintained throughout the year.

Infectious Diseases

TABLE I—COMMUNICABLE DISEASES WITH DEATHS 1964-1965

Disease	1964 Cases	Deaths	1965 Cases	Deaths
Acute Anterior Poliomyelitis	4	..	..	..
Ancylostomiasis	20	..	36	..
Ascariasis	46	..	..	..
Brucellosis .. .. .	..	..	4	..
Chorea (Rheumatic) .. .. .	..	..	..	..
Dengue Fever .. .. .	..	..	..	..
Diphtheria	11	1	7	1
Hepatitis (Infectious)	158	..	421	1
Infantile Diarrhoea	25	1	64	9
Leptospirosis	7	..	..	..
Meningococcal Infection	6	..	4	3
Ornithosis .. .. .	..	..	..	..
Paratyphoid .. .. .	..	..	..	..
Puerperal Fever	10	..	8	2
Rheumatic Fever	10	..	11	1
Scarlet Fever	33	..	26	..
Tuberculosis	121	27	143	11
Typhoid Fever .. .. .	..	..	..	..
Virus Encephalitis	3	..	10	1
Cholera, Leprosy, Smallpox, and Yellow Fever .. .. .	..	..	..	..
Staphylococcal Mastitis	13	..	5	3
Staphylococcal Pneumonia	19	..	182	..
Staph. Diseases in Infants under 4 weeks of Age .. .. .	..	..	..	..
Typhus Fever .. .. .	..	..	..	..
Total	486	29	921	32

Diphtheria

SCHOOL MEDICAL SERVICE

Shire Scheme

TABLE II

Child Guidance Clinic

TABLE III

Case Load	1964	1965
New cases referred	482	447
Cases from previous year	169	118
Old cases reopened	30	79
Total case load	681	644
Cases closed	367	399
Cases attending and continuing to next year	118	165
Waiting list (new cases referred but not seen)	196	80
Results of treatment (Closed Cases only)	1964	1965
Diagnostic only: treatment not required or not offered	145	194
Treatment offered but declined	38	36
Treatment given but results unsatisfactory	33	42
Treatment given, symptomatic improvement	125	109
Treatment satisfactory, good readjustment	26	18
	367	399

Regional Committee on Mental Retardation

Several meetings of representatives of the Welfare, Education and Health Departments have taken place but until more information has been obtained voluntary agencies will not be approached.

It is hoped to enlist the aid of the Department of Psychology of the University of Newcastle for this purpose.

Speech Therapy Clinics

TABLE IV

	1964	1965
Number of attendances	2,870	1,924

Speech Therapists made assessments at Telarah Public School, East Maitland Public School, Gosford Primary School, East Gosford Primary School and St Josephs School, Gosford.

Term visits were made to Delando Crescent, Maiwell and Lakeside Subnormal Schools.

PRIVATE HOSPITALS ACT

Five new premises were opened and extensions made to four Rest Homes and one Private Hospital. One Rest Home surrendered its license. There are now 19 Private Hospitals with 346 beds and 16 cots and 24 Rest Homes with 480 beds in the Newcastle Health District.

Persistent inspection of these establishments has so improved them that written notices of defects are less frequently necessary. Failure to employ sufficient domestic staff and a tendency to defer maintenance work are the main causes of complaint.

TABLE V

	1964	1965
Inspection of Private Hospitals	68	68
Inspection of Rest Homes	82	97
Inspection of Proposed sites	19	14

MATERNAL AND BABY WELFARE

Two new Centres were opened, one a replacement and a Centre where attendances had fallen to none was closed. There are now 60 Centres in the Newcastle Health District.

TABLE VI—ATTENDANCE AT BABY HEALTH CENTRES

Year	Total	Hospital Visits	Home Visits	Individual Attendances
1964	105,264	824	1,684	12,789
1965	102,627	904	1,535	13,853

Attendances at Prenatal Clinics

1964	3,231
1965	2,810

Premature Babies and Feeding Difficulties

1964	Number notified	53	Number of home visits	125
1965	Number notified	71	Number of home visits	251

TABLE VII

Assistant Nurse Inspector

	1964	1965
Inspection of Baby Health Centres	111	132
Sites for proposed Centres	5	9
Interviews with Committees	15	6

TUBERCULOSIS CONTROL

The Anti-Tuberculosis Association's Survey of the Health District was completed in the early part of the year in the area South of Newcastle. Follow-up of doubtful cases was made more difficult by extensions to the Gosford Hospital which encroached for a time on the clinic area.

A second case of pulmonary tuberculosis at a large residential college after a lapse of two years caused another unsuccessful search for an 'open' case. It has been agreed that in future a satisfactory medical examination and chest X-ray will be required of all new Staff and Students.

Favourable discussions were held at Muswellbrook with the Chairman and Secretary of the Hospital as to the possibility of establishing a Chest Clinic there to serve the upper part of the Hunter Valley.

TABLE VIII

Attendances						1964	1965
Clinic Sessions	..	..	..	..	..	505	531
Total Attendances	..	..	..	..	..	10,843	11,640
Home Visits	..	..	..	..	..	3,903	3,663

PURE FOOD ADMINISTRATION

This report is submitted in the absence of Senior Inspector Murray, at present on leave overseas. His absence during December, 1965 had a noticeable effect on work performed during the month, as more time was spent in the office answering enquiries from the Trade, members of the public and from Local Authorities.

During the year work was continued in regard to poulterers' establishments and to abattoirs. An enquiry was received regarding dyes for stamping meat at Gloucester and a suitable supply was arranged.

Inspections were made throughout the year at Showgrounds and Racecourses regarding the sale of ready made foods. A total of 10 shows and 4 race meetings were attended and further improvement noted at most of the grounds.

A wider range of foodstuffs were sampled during the year, with the easing of conditions at the Government Analyst's Branch.

Talks were given during the year to various Rotary and Apex Clubs and also to Nurses and Dietitians at the Newcastle Hospitals.

Throughout the year inspections were made of the Departmental Hospitals and other Institutions in the District.

As a result of visits to bakeries early in the mornings throughout the District, 6 prosecutions were taken for smoking in places where food was stored ready for sale, and 2 prosecutions for the exposure of bread to contamination during delivery. As a result of inspections and testing and sampling in a large number of butcher shops on a Saturday morning, 6 butchers who, on inspection and testing during the week on many previous occasions were found to be satisfactory, were found to have added preservatives to minced meat. These butchers all appeared to have had the impression that no Health Inspector worked on Saturday mornings. All were subsequently proceeded against and fines imposed by the Court.

During the year action was taken to prevent the packaging of phenyle and kerosene in bottles which could be mistaken for food containers. Three firms emptied out all such packaged goods and are now packing in plain bottles.

TABLE IX

						1964	1965
Food Samples	..	..	..	..	..	1,089	1,106
Inspections	..	..	..	..	..	2,083	1,769
Notices	..	..	..	..	..	377	241
Complaints	..	..	..	..	..	105	94
Food Seized and Destroyed	..	..	..	..	..	15,553 lb	3,731 lb
Prosecutions	..	..	..	..	..	68	69
Fines and Costs	..	..	..	..	..	£674	£668

CLEAN AIR ACT

In the early part of the year a number of Conferences between the Chief Health Inspectors of Newcastle City and Lake Macquarie Shire took place with Dr Sullivan and the Medical Officer of Health. With the appointment of an Officer to Newcastle in October these meetings became unnecessary. There is a possibility that the Chest Clinic at Royal Newcastle Hospital will become interested in a survey to determine the association of chest disease with atmospheric pollution.

South Coast Health District

Location: A.M.P. Building, 96 Keira Street, Wollongong

STAFF

Medical Officer of Health: EDGAR CHARLES MORELAND WALLACE, M.B., B.S., D.P.H.

Deputy Medical Officer of Health: BERNARD MICHAEL NOLAN, L.R.C.P.I., L.R.C.S.I., D.P.H.

1 school medical officer; 1 senior pure food inspector; 1 pure food inspector; 2 school nurses; 3 health inspectors; 3 tuberculosis sisters; 1 assistant nurse inspector; 1 speech therapist; 17 permanent baby health centre sisters; 4 temporary baby health centre sisters; 1 clerk; 4 office assistants.

There were the following changes in staff during the year:

Transfers—

Mr K. Bagnall, Senior Health Inspector, to Head Office.

Mr R. Tyrrell, Senior Clerk, to Strickland House.

Resignations—

Dr Ann Evans—School Medical Officer.

Mrs G. Ogden—Part-time Speech Therapist.

Additions—

Mr Ross West—Food Inspector.

Mr L. Fowler—Health Inspector.

Mr P. Bolton—Senior Clerk.

Retirements—Sister E. Roach—Tuberculosis Sister.

An additional position of full-time speech therapist is to be filled in January, 1966.

The vacant positions for School Medical Officer, and Senior Health Inspector have not yet been filled.

VITAL STATISTICS, 1965

Population—The population of the district at 30th June, 1965 was estimated at 321,810.

Live Births—There were 6,546 live births equal to a rate of 20.34 per 1,000 of population. Of these 3,465 were males and 3,081 females.

Deaths—Deaths numbered 2,443, equivalent to a rate of 7.59 per 1,000 of population. Of these 1,416 were males and 1,027 females.

Infantile mortality—Deaths under one year of age numbered 130 equivalent to a rate of 19.86 per 1,000 live births.

Of the total number of deaths of infants under one year of age 89 or 68.46 per cent occurred within one week of birth and 98 or 75.38 per cent within the first month. The corresponding rates per 1,000 live births for the two-age groups were 13.60 and 14.97 respectively.

Still births—There were 87 still births equal to a rate of 0.27 per 1,000 of population and representing 1.31 per cent of all births (live and still).

STAFF TRAINING

School Medical Officer, Dr E. A. Evans attended a month's training in psychiatric counselling at the Forest Lodge Child Health Centre.

The Senior Health Inspector and all health inspectors attended a week's training course for operators of fluoridation plants, and an in-service training course in the correct operation of swimming pools.

TABLE I—COMMUNICABLE DISEASES

Notification of Communicable Diseases and Deaths—South Coast Health District—1964-1965

Disease	1964		1965	
	Cases	Deaths	Cases	Deaths
Virus Encephalitis	2	..	..	..
Diphtheria .. .. .	..	..	..	..
Infantile Diarrhoea	8	..	43	11
Staphylococcal pneumonia .. .. .	..	..	4	3
Staphylococcal infection (in Infants under 4 weeks)	362	..	..	..
Scarlet fever	12	..	127	..
Rheumatic fever	4	..	13	..
Puerperal infection	7	..	1	..
Meningococcal infection	4	..	8	4
Infectious Hepatitis	248	..	494	..
Brucellosis	1	..	1	..
Paratyphoid Fever	2	..	..	..
Tuberculosis	61	1	N.A.	N.A.
Syphilis	N.A.	N.A.	20	..
Gonorrhoea	N.A.	N.A.	16	..

Comments

There has been a marked increase in the notifications of infectious hepatitis, scarlet fever and gastro enteritis in infants under two years of age this year.

The figure of 494 notifications of infectious hepatitis is more than double the figure for 1964 (248). The age group most affected has been the 5 to 12 years (infant and primary schoolchildren).

There were two outbreaks of scarlet fever, the first in Delegate with 38 cases, the second at Inverloch Agricultural College, near Goulburn with 40 cases. Investigations revealed no definite source of infection in either of these outbreaks. Defects in milk and water hygiene were found in association with both outbreaks.

The statewide outbreak of gastro enteritis in infants in June also affected Wollongong with about 30 cases receiving treatment at the local hospital.

ENVIRONMENTAL HYGIENE

TABLE II—ROUTINE INSPECTIONS AND INVESTIGATIONS

South Coast Health District—1964-1965

Routine Inspections and Investigations	1964	1965
Noxious Trades	147	140
Premises (Public Health Act)	15	18
Water samples collected	744	60
Inspection of fluoridation plants .. .. .	..	4
Inspection of proposed septic tank sites	1915	1504
Inspection of existing septic tank sites	262	150
Number of septic tank applications received	1911	1754
Inspection of sanitary depots (proposed)	7	7
Inspection of sanitary depots (existing)	141	150
Investigation of complaints	115	73
Inspection of public amenities, camping grounds, parks, reserves, swimming pools	418	440
Investigation of infectious diseases .. .. .	..	10
Private Schools .. .. .	..	5
Government Institutions and Aboriginal Reserves .. .. .	..	14
Unhealthy Building Land .. .. .	..	19

Most of the Government Institutions were re-inspected during the year. Most major defects had been remedied, but certain work still required attention. Disposal of septic tank effluent and other waste water was a major problem in some cases.

The Department of Mines co-operated in surveys of underground water supplies in some areas on the South Coast. This was to determine what areas were suitable for disposal of septic tank effluent by ground absorption.

Inspection of camping grounds and caravan parks revealed that improvements were being made. However, where defects were noted, suitable recommendations were made to the various local authorities for their attention.

Legal proceedings were instituted against two noxious traders who failed to maintain their premises in a cleanly condition. Two nightsoil contractors were also prosecuted for failing to cover nightsoil. The latter cases were taken where full-time health inspectors were not employed by the local authority.

A conference of health inspectors was held at Moruya in March. It was well attended and lectures given on health matters were received with interest.

At the request of a Shire Council, the Director General of Public Health visited Goulburn to discuss matters of dissension which existed between the Council and this Department. The Council is still recalcitrant regarding some matters but relations have improved.

PURE FOOD ADMINISTRATION

The appointment of an additional food inspector enabled an increase in food inspection supervision during 1965. When this officer is completely trained greater effectiveness can be expected. Increased supervision has disclosed more extensive breaches and disregard for the law in regard to hygiene and food adulteration.

TABLE III—PURE FOOD WORK IN SOUTH COAST HEALTH DISTRICT 1964-1965

	1964	1965
Milk Samples—		
Number of samples taken	46	221
Number below standard	5	12
Warnings issued	2	1
Prosecutions undertaken	3	10
Fines and Costs imposed		£88
Food and Drug Samples—		
Number of samples taken	303	497
Number below standard	77	75
Warnings issued	19	22
Prosecutions undertaken	77	67
Fines and Costs imposed	£971	£877
Seizure of Food—		
Quantity	345 lb	268 lb 273 bottles 18 tins
Premises—		
Number of inspections	801	1140
Number of notices	42	144
Prosecutions undertaken	4	5
Fines and Costs imposed	£64	£82
General Breaches—		
Prosecutions undertaken	15	20
Fines and Costs imposed	£127	£165
General—		
Complaints investigated	33	46
Interviews, advisings	143	139
Government Institutions inspected	6	10
Total prosecutions undertaken	96	102
Total Fines and Costs	£1,162	£1,222

TUBERCULOSIS

Chest Clinic, Wollongong

There were two additions to the medical staff of this Chest Clinic during the year: Professor Brian Gandevia, Chest Physician on a one-session-a-week basis and Dr John Wright, Chest Surgeon on a one-session-a-month basis, bringing the total to 4 chest physicians and 1 chest surgeon.

TABLE IV—SUMMARY OF WORK CARRIED OUT AT CLINICS DURING 1965

	Wollongong	Shoalhaven	Goulburn	Moruya	Batemans Bay	Bega
Total Attendances	11,283	762	96	167	28	495
Proven Pulmonary T.B.	836	62	10	12	2	30
Proven Extra-Pulmonary T.B.	49	0	0	2	0	1
Inactive T.B. (all forms)	1,024	59	0	25	1	68
Newly Notified Cases	73	0	1	1	0	4
Contacts	5,201	521	50	84	23	320
Others	3,523	88	35	43	7	54
Number of X-rays	6,231	412	78	138	31	455
Bacteriological Investigations	3,069	0	10	15	1	38
Other Services	820	0	0	36	21	90
Cases Notified by Clinic	84	0	1	1	0	3
Visits	1,677	103	0	5	1	3

MATERNAL AND CHILD HEALTH

1. Child Health

At the beginning of the year the following new procedures were introduced:

- (a) Full examination of all Kindergarten and 1st Class pupils in primary school by Medical Officers each year.
- (b) Review examination of 4th class primary and 2nd and 4th year secondary school pupils by nurses, with the referral of defect cases to a medical officer.

WORK DONE IN THE GREATER WOLLONGONG, SHELLHARBOUR AND KIAMA REGION

by a staff of two departmental medical officers and two departmental nurses

The school population of the region was 37,620.

1. Primary Schools

Of the 76 schools in the region, 52 were visited.

The following table shows work performed.

V—SUMMARY OF WORK PERFORMED IN PRIMARY SCHOOLS IN THE GREATER WOLLONGONG, SHELLHARBOUR AND KIAMA REGION—1965

Schools Examined	Full Examinations	Review Examinations	Parent Interviews	Defects Notified
52	5,608	4,914	995	1,707

Types and numbers of defects notified were as follows.

VI—CLASSIFICATION OF DEFECTS NOTIFIED IN PRIMARY SCHOOLS IN THE GREATER WOLLONGONG, SHELLHARBOUR AND KIAMA REGION—1965

Type	Number
Eyes	464
Hearing	408
Enuresis	273
Speech	96
Heart and Circulation	66
Psychological	51
Skin	47
Orthopaedic	37
Lungs	18
Thyroid	2
Others	221
Total	1,707

Approximately one child in every six children examined had a notifiable defect.

2. Secondary Schools

The two nurses visited all 18 schools in the area. They carried out a review examination of pupils of which 323 had defects, which were referred to medical officers and subsequently treated (approximately 1 pupil in every 14 examined).

B. WORK DONE IN MUNICIPALITIES AND SHIRES

During the year there were eight general practitioners and six nurses carrying out the work. Unfortunately no service was provided in Bega Municipality and Eurobodalla Shire owing to the unavailability of medical personnel.

TABLE VII—WORK PERFORMED IN MUNICIPALITIES AND SHIRES—1964-1965

Schools Examined	Full Examinations	Review Examinations	Defects Notified
1964— 157	8,215	5,926	1,994
1965— 129	3,587	6,199	1,093

TABLE VIII—TYPES OF DEFECTS NOTIFIED IN MUNICIPALITIES AND SHIRES—1965

Type	Number
Eyes	405
Hearing	133
Skin	35
Orthopaedic	15
Heart and Circulation	11
Lungs	6
Thyroid	5
Psychological	2
Others (Enuresis etc.)	481
Total	1,093

approximately one child in every 9 seen had a notifiable defect.

Generally the Shire Scheme has continued to function satisfactorily throughout the year.

2. Special Services

TABLE IX—SPEECH THERAPY CLINIC—WOLLONGONG

	1964	1965
Total number of cases seen	161	118
New cases admitted	132	76
Number of cases discharged or transferred elsewhere	54	49
Number of follow-up cases discharged	96	27

TABLE X—HEARING CLINIC—WOLLONGONG

Number of fortnightly 3-hour sessions by visiting specialist	New Cases Seen		
	Boys	Girls	Total
30	55	45	100

Atypical Children

Year medical officers commenced special examinations of atypical children at the District.
A total of 216 children were examined.

3. Maternal and Infant Care

A new Baby Health Centre opened during the year at Milton.
Routine inspections were carried out at 41 Baby Health Centres.
The attendance at the various centres, and visits made are as follows.

TABLE XI—ATTENDANCES AT BABY HEALTH CENTRES AND VISITS TO HOSPITALS AND HOMES

No. of Centres	Total Attendance at Centres	Individual Attendances at Centres	Hospital Visits	Home Visiting (Hrs)
1964— 53 ..	95,744	11,428	527	1,334
1965— 54 ..	121,934	11,460	596	1,261½

PRIVATE HOSPITALS

Routine inspections of private hospitals and Rest Homes—28.
Discussions and inspections on proposed Rest Homes—4.

MEDICAL EXAMINATIONS

The total number of medical examinations made at the office for public services such as the Education Department, Maritime Services Board, Rural Bank, Housing Commission etc. are as follows:

TABLE XII

Year	Number Examined
1964	172
1965	153

OCCUPATIONAL HEALTH

Advice was given on a number of occasions concerning health matters aboard ships at Port Kembla Harbour.

An investigation was carried out when two employees at Unanderra Sheltered Workshop developed a severe dermatitis. The cause was due to an Epoxy Resin. Advice was given on the handling of resins and no further trouble has been reported.

MISCELLANEOUS

(1) *Smallpox vaccinations*: Police at Wollongong, Nowra, Bowral, Goulburn and Cootamundra were vaccinated against Smallpox, a total of 180 vaccinations being performed.

(2) *Civil Defence*: Attendance at conferences at Nowra and Sydney.

SOCIAL HEALTH

Mental Health

A psychiatric service for the public was provided at this office, commencing in June, the arrangement being for a psychiatrist and a social worker to visit one day a week from Gladesville Hospital. Later the service was moved to the Outpatient's Department, Port Kembla Hospital, Warrawong.

The Medical Officer of Health promoted the formation of a small Mental Rehabilitation Association, with the object of helping the mentally ill and their families in a practical way.

Intellectually Handicapped

The Medical Officer of Health formed a local committee for the Intellectually Handicapped at the request of Dr Alan Jennings. It was agreed that the committee's first task was to compile a list of known cases of intellectually handicapped.

Health and Social Service Directory

The Medical Officer of Health compiled a comprehensive directory of Health, Safety and Welfare organizations in the Wollongong Area, for printing and distribution to interested agencies.

Miscellaneous

This office is assisting and guiding community efforts to alleviate many other social health problems such as care of the aged, criminal offenders, alcoholics, problem families.

HEALTH EDUCATION

Addresses to various service clubs, health inspectors' conferences, church groups, para-medical associations etc. were given throughout the year by members of the staff.

Western Health District

Location: Webbs Chambers, George Street, Bathurst

STAFF

Medical Officer of Health—Dr T. F. RENNIE, M.B., Ch.B., D.P.H.

Deputy Medical Officer of Health—Dr H. B. GIBSON, M.B., B.S., D.T.M. & H., D.P.H.

One school medical officer; one senior health inspector; one senior food inspector; one health inspector; one food inspector; one assistant nurse inspector; one clerk-grade 1; one short-handwriter-typist; one office Assistant.

DECENTRALIZATION

There has been no further decentralization of administration during the year.

VITAL STATISTICS

Population—The population of the District at 30th June, 1965 was estimated at 277,920.

Live Births—There were 5,928 live births equivalent to a rate of 21.33 per 1,000 of population. of these 3,059 were males and 2,869 females.

Deaths—Deaths numbered 2,700 equivalent to a rate of 9.72 per 1,000 of population. Of these 1,598 were males and 1,102 females.

Infantile Mortality—Deaths under one year of age numbered 140 equivalent to a rate of 23.62 per 1,000 live births.

Of the total number of deaths of infants under one year of age, 84 or 60.00 per cent occurred within one week of birth and 91 or 65.00 per cent within the first month.

The corresponding rates per 1,000 live births for the two age groups were 14.17 and 15.35 respectively.

Still births—There were 75 still births, equal to a rate of 0.27 per 1,000 of population and representing 1.25 per cent of all births (live and still).

TABLE I—ENVIRONMENTAL HYGIENE INSPECTIONS, 1964-1965

Inspections Carried out	1964	1965
Septic tanks and closets	1,191	928
Sewerage Treatment Works	28	26
Garbage and Sanitary Depots	168	163
Noxious Trades	187	134
Abattoirs	11	10
Complaints and Nuisances	42	53
Water Supplies	31	19
Swimming Pools	57	33
Inspection of Premises, Halls and Hotels	13	12
Aborigine Stations and Institutions	11	26
Infectious Disease Investigations	1	..
Miscellaneous Activities	81	105

COURSES IN SWIMMING POOL MANAGEMENT

Three (3) courses of two days duration each were held at Parkes, Dubbo and Lithgow for Health Inspectors and Pool Operators in the Western Health District. Seven (7) Health Inspectors and twenty-nine (29) pool operators attended.

Lectures were given by the Medical Officer of Health, Senior Health Inspector and Health Inspectors, Western Health District.

COMMUNICABLE DISEASES

TABLE II—NOTIFIED COMMUNICABLE DISEASES AND DEATHS, 1964-1965

Disease	1964		1965	
	Cases	Deaths	Cases	Deaths
Brucellosis	4	..	1	..
Hepatitis (Infectious)	312	..	250	1
Infantile Diarrhoea	34	1	94	14
Meningococcal Meningitis	7	..	7	1
Paratyphoid Fever	2	..	..	..
Puerperal Infection	7	1	7	..
Rheumatic Fever	5	..	10	2
Scarlet Fever	56	..	73	..
Tuberculosis	87	1	60	..
Virus Encephalitis	8	..	41	5
Staphylococcal Pneumonia	1	..	5	5
Disease in Infants under 4 weeks of age .. .. .	..	..	65	..
Poliomyelitis .. .. .	..	..	1	..
Ascariasis .. .. .	..	..	1	..
Ophthalmia Gonorrhoeal .. .. .	..	..	1	..
Gonorrhoea .. .. .	..	..	85	..
Syphilis .. .. .	..	..	81	..
Total	523	3	557	18

INFECTIOUS DISEASES

Several outbreaks of communicable disease were investigated. They included:

Anthrax

In February a large outbreak of anthrax occurred amongst cattle in the Macquarie Coonamble Shire. Many cattle died. No human cases were reported. Consignments of skins and carcasses held in cold storage in the area were examined. No bacteriological anthrax was found and the consignments were allowed to proceed to Sydney.

Food poisoning

A large outbreak of food poisoning occurred amongst guests at a wedding in November 1965. Over 100 guests were affected. Onset of symptoms was from 8-24 hours. Symptoms were abdominal pains, vomiting and diarrhoea. Some of the more severely affected were disorientated and hallucinated. Recovery in the more severe cases took up to ten (10) days.

It was unfortunate that several days had elapsed before this outbreak came to the attention of the Medical Officer of Health, Western Health District.

A retrospective investigation by the Medical Officer of Health and Senior Food Inspector suggested strongly that the infected food had been cold turkey which had been prepared and transported in a most unsatisfactory manner.

The causative organism was believed to be of the salmonella group.

Virus Encephalitis—Wellington

An outbreak of viral encephalitis occurred in Wellington in March. The first case was reported as meningitis but subsequent laboratory investigations of blood, faeces and throat swabs isolated a virus ECHO 9, from five cases. In one month 37 cases were notified.

The main symptoms were nausea, vomiting and severe frontal headaches and drowsiness in some cases. The headache was accompanied by a rise in temperature and the patient was ill for 2-3 days after which the symptoms and temperature subsided. Kernig's sign was present and there was some neck rigidity in the early stages. There was no rash. The illness lasted 1 week. There were no deaths and no sequelae as far as can be ascertained.

Venereal disease

The incidence of syphilis and gonorrhoea has increased in the North Western Health District. The increased incidence is mostly accounted for by the increase in notifications of syphilis. Numbers of cases in the areas affected were:

Coonamble—Syphilis 44; Gonorrhoea 28.

Walgett—Syphilis 8; Gonorrhoea 30.

Bourke—Syphilis 18; Gonorrhoea 8.

Control of this epidemic is difficult as many of those involved are itinerant or migrate and have vague addresses. The follow up of contacts where known is difficult.

[Prosecution under the Venereal Diseases Act

At Coonamble Court of Petty Sessions on 9th November, 1965, a woman was sentenced to two months imprisonment for an offence under Sec. 9 (2) Venereal Diseases Act.

She had been named as a contact by several patients suffering from primary syphilis. Several letters from the Medical Officer of Health, Western Health District and an order from the Director-General of Public Health she had failed to present herself for medical examination.

Medical examination at the State Reformatory for Women, Malabar, revealed that she was suffering from syphilis.

Measles and Gastro-enteritis, Wellington

On 22nd December, 1965, it was reported that three Aborigine children in Wellington died of the complications of measles, two of gastro-enteritis and one of pneumonia. The children were under 18 months old.

The Medical Officer of Health visited Wellington and prophylactic gamma globulin immunization was given to 57 pre-school children at Nanima Reserve and Common.

Towards the end of December it became apparent that the cases of gastro-enteritis admitted were not connected with the measles outbreak. There were 23 admissions in total. Numerous specimens were sent to the Laboratory at Lidcombe. An ECHO virus has been isolated.

Cases were scattered around Wellington, mostly in Aborigine or part Aborigine families in all cases standards of hygiene were low.

Steps were taken to improve general standards of hygiene in the dwellings concerned.

SCHOOL MEDICAL SERVICE

TABLE III—SCHOOL MEDICAL EXAMINATIONS 1964-1965

	Departmental		Shires	
	1964	1965	1964	1965
Full examination	196	....	9756	..
Review	179	....	2440	..
Total children examined	375	....	12,196	11
Parent interviews .. .. .	..	....	139	..

CHILD HEALTH

A team from Parramatta Child Health Centre comprising a medical officer, a psychologist, a social worker and a speech therapist visited Bathurst during the week beginning 20th September 1965. Working in collaboration with officers of the Department of Education (Western Area) saw about 40 children from the Bathurst, Lithgow and Orange District. Some of these are followed up.

The visit of this team confirmed the fact that there are a large number of schoolchildren in country areas whose educational and personal problems are not being adequately catered for.

SCHOOL MEDICAL OFFICER

Dr R. F. Matthews was appointed School Medical Officer, Western Health District, on 18th October, 1965. Dr Matthews will combine the functions of School Medical Officer and Physician, Orange Chest Clinic. Dr Matthews will initially examine children in the Melbourne-Wellington-Dubbo area.

PURE FOOD ADMINISTRATION

TABLE IV—PURE FOOD INSPECTIONS, SEIZURES, PROSECUTIONS AND FINES 1964-1965

Category of work carried out	1964	1965
Milk Samples—		
No. of milk samples taken for analysis	106	4
No. of samples below standard	29	..
No. of warnings issued	1	..
No. of Prosecutions	35	..
Amount of fines and costs	£207 15s. 0d.	£525 19s. 0d.
Food and Drugs (other than milk)—		
No. of samples taken for analysis	235	3
No. of samples below standard	34	..
No. of warnings issued	10	..
No. of prosecutions	39	..
Amount of fines and costs	£284	£1
Seizures—		
Quantity of food and drugs unfit for human consumption seized and destroyed	1105 lb	4
Premises—		
No. of inspections of premises (food and drugs)	1813	19
No. of notices issued	372	2
No. of prosecutions for unclean premises	6	..
Amount of fines and costs	£78	£190 13s. 0d.
General Breaches of the Act and Regulations—		
No. of prosecutions	55	..
Amount of fines and costs	£309 15s. 0d.	£291 5s. 0d.
Other matters—		
Liquor examined (bottles)	719	10
Meat examined	540	10
Inspections of Departmental Hospitals	1	..
Inspections of Child Welfare Institutions and Prisons .. .. .	....	..
Complaints and Enquiries	175	..
Shows etc. .. .. .	....	..
Prosecutions recommended	115	1

Figures for 1964 being for 6 months only, statistics for July to December recorded on new report form.

A survey of milk processing, transportation and handling in the Western Health District is being carried out. This survey is confined mostly to areas outside the control of the Milk Board. In some areas there are no large co-operative societies and it has been found in these areas that standards of milk handling vary considerably.

The inspection of food handling facilities at country shows, race meetings etc. continues. Attempts are made to raise standards of accommodation and food handling as the occasion arises. Many shows and meetings in the Western Health District cater for large numbers of people in a short space of time and it is important that facilities for food handling and sanitary facilities should be of a reasonable standard.

TABLE V—TUBERCULOSIS CONTROL WORK, 1964-1965

	1964	1965
1. Attendances—		
Proven Pul. T.B.	521	374
Proven Extra Pul. T.B.	38	9
Inactive T.B. (all forms)	1079	1012
Newly notified T.B. cases	39	34
Contacts	1970	2511
Others	1404	725
Total attendances	5051	4665
2. No. of x-rays during year—		
(a) Tuberculosis	1520	1477
(b) Non-Tuberculosis	1723	1488
3. Total No. of Bact. Investigations	782	556
4. Other Services	428	304
5. No. of cases notified by Clinic	18	24
6. Visits	1303	1807

CHEST X-RAY SURVEYS

Chest X-ray surveys were carried out in the following local authorities in 1965: Colo, Dubbo, Lachlan, Narromine, Parkes, Peak Hill, Talbragar, Wellington.

MATERNAL AND INFANT CARE

TABLE VI—ATTENDANCES AT BABY HEALTH CENTRES, HOSPITALS AND HOME VISITS, 1964-1965

Category	1964	1965
Attendances at Centres	78,034	72,416
Hospital visits	1,066	1,128
Home visits	667	885
Public Hospitals (Obstetric Units)	22	....

URINE TESTING IN BABY HEALTH CENTRES

During 1965 the routine testing of urine of infants (Turner Test) was introduced to all Baby Health Centres in the Western Health District.

Several children have had further investigations as a result of abnormalities detected in their urine. So far no serious abnormalities have been discovered.

PRIVATE HOSPITALS AND REST HOMES

TABLE VII—INSPECTIONS UNDER PRIVATE HOSPITALS ACT

Inspections	1964	1965
Private Hospitals	32	22
Rest Homes	28	17

The standard of many Private Hospitals and Rest Homes in parts of the Western Health District is still not satisfactory. Continuous efforts are being made to raise the standards of all Private Hospitals and Rest Homes until they comply fully with the provisions of the Private Hospitals Act.

Progress in many cases is slow.

TABLE VIII—MISCELLANEOUS—MEDICAL EXAMINATIONS

Type of Examination	1964	1965
Permanent appointment	20	21
Teachers—casual	5	2
Ex-servicemen	3	4
Fitness for duty	4	5

TABLE IX—TRAVELLING—MILEAGE

	1964	1965
Departmental Vehicles (2)	34,446	31,119
Officers private cars (8)	46,735	47,681
TOTAL	81,181	78,800

PUBLIC HEALTH NURSE

Following the Health Survey of Walgett in 1964, a Public Health Nurse has been appointed to the Staff of the Western Health District. It is expected that the Public Health Nurse will take up duties in Walgett early in 1966.

CIVIL DEFENCE

The Medical Officer of Health, Western Health District has been appointed Medical Officer in Charge of Medical and Health Section, Mitchell Region, Civil Defence.

North Coast Health District

Location: 188 Molesworth Street, Lismore

STAFF

Medical Officer of Health: DR I. K. HAY, M.B., Ch.B., D.P.H., D.T.M. & H.

Deputy Medical Officer of Health: DR J. R. WHITFIELD, M.B., B.S., D.P.H.

2 school medical officers; 2 school nurses; 2 tuberculosis nurses; 1 senior health inspector; 2 health inspectors; 1 senior food inspector; 1 food inspector; 1 assistant nurse inspector; 8 baby health centre sisters; 1 clerk; 1 shorthand writer/typiste; 1 office assistant.

DISTRICT

The North Coast Health District comprises the following local authority areas:

Municipalities—Ballina, Casino, City of Grafton, City of Lismore, Mullumbimby.

Shires—Bellingen, Byron, Coff's Harbour, Copmanhurst, Gundurimba, Kyogle, Maclean, Nambucca, Nymboida, Terania, Tintenbar, Tomki, Tweed, Ulmarra, Woodburn.

VITAL STATISTICS 1965

Population—The population of the district at 30th June, 1965 was estimated at 153,270.

Live births—There were 2,712 live births in the district, equivalent to a rate of 17.69 per 1,000 of population. Of these 1,354 were males and 1,358 females.

Deaths—Deaths numbered 1,331, equivalent to a rate of 8.68 per 1,000 of population. Of these 773 were males and 558 females.

Infantile Mortality—Deaths under one year of age numbered 41 equivalent to a rate of 15.12 per 1,000 live births.

Of the total number of deaths of infants under one year of age 31 or 75.61 per cent occurred within one week of birth, and 33 or 80.49 per cent within the first month. The corresponding rates per 1,000 live births for the two age groups were 11.43 and 12.17 respectively.

Stillbirths—There were 31 stillbirths in the district equal to a rate of 0.20 per 1,000 of the population and representing 1.13 per cent of all births (live and still).

ENVIRONMENTAL HYGIENE

The summary of the year's work indicates an increase of approximately 8 per cent of routine duties, despite the resignation, in June, of one Health Inspector, who was not replaced until early December.

In addition to routine work the Senior Health Inspector co-operated with other members of the Department and various other Government Departments in carrying out special inspections and surveys. Assistance was given the School of Public Health and Tropical Medicine, University of Sydney, by the collection of stool specimens from Aborigines for research purposes. Inspections and investigations were carried out with officers of the Department of Public Works in relation to the selection of sites for proposed sewage treatment works, existing sewage treatment works, septic tanks at schools, water supplies, and other projects. Closer liaison with other departments and local authorities was promoted, and architects, engineers, building surveyors and sub-dividers were interviewed and advised on various matters. Lectures on Environmental Hygiene were given to nurses attending the Regional Training School in Lismore. Advice was given to local authorities on proposed water supplies, sewage treatment works, effluent disposal, and proposed and existing water supplies, mass septic tank installations and on many other matters relating to environmental sanitation. Some of the topics on which advice was given to the public were dairy water supplies, disposal of piggery wastes, fly infestation, and the keeping of poultry.

TABLE I—INSPECTION WORK CARRIED OUT IN 1965, WITH COMPARATIVE FIGURES FOR 1964

Inspection	1964
Septic tanks (proposed and existing)	906
Noxious Trades	273
Sanitary Depots	42
Business Premises	37
Water Supplies and Samples	120
Sewage Treatment Works (proposed and existing)	13
Camping Reserves	23
Aboriginal Reserves	4
Scavenging Districts	3
Complaints	39
Food Premises, Factories and shops	15
Other Inspections	107
Total	1,582

Installation of Septic Tanks

There was only a slight increase in the number of applications received for the installation of septic tanks. Three local authorities promoted schemes for the mass installation of septic tanks in small towns within their areas where there is little likelihood of sewerage being installed. These towns are Bangalow in Byron Shire, Nimbin in Terania Shire and Tyalgum in Tweed Shire. Discussions were held with other Councils who requested advice, and one Council is carrying out a scheme for the installation of septic tanks in all areas of the Shire. Inspections of existing septic tanks were carried out and where those were found to be in an unsatisfactory condition or where effluent disposal was creating a nuisance the owners were requested to carry out the work to bring them up to the required standard. Re-inspection revealed that the public had co-operated well.

Water Supplies

There was considerable activity in this field as local authorities became more active in the collection and submission of samples. Recent drought conditions have brought the importance of adequate and suitable water supplies more directly to the notice of the public. Consequently, public demand has resulted in local authorities becoming more conscious of the need for and their responsibility for the provision of such supplies.

The Rous County Council and the Lower Clarence County Council experienced difficulty in maintaining supplies to some areas during the drought as the carrying mains were of insufficient capacity to cope with the demand. Although the Rocky Creek water supply remained in good condition, a four-stage fifteen year plan for augmentation and improvement of the scheme was completed by the Council in December. The first stage is to include treatment. Several small water supply schemes were inaugurated and work on the Wooli supply almost completed. A number of projects were investigated and it is understood that finance was allocated for their construction. Both the Ballina City Council and Nambucca Shire Council continued to fluoridate their supplies, but no other Councils became actively interested in this measure during the year.

Sewage Treatment

Inspection of existing sewage treatment works was carried out at Lismore, Casino, Murwillumbah, Bellingen, Coff's Harbour, and Mullumbimby. Sites for proposed treatment works were also inspected with Public Works Department and local authority officers at Ballina, Nambucca, and Dorrigo, and suitable sites selected. Periodic inspections were made of the treatment works at Tweed Heads and Bellingen, under construction and nearing completion.

Interest was shown by local authorities and subdividers in the provision of "packaged" sewerage treatment works, in areas unsuitable for septic tank installations, and where it was unlikely that conventional sewerage treatment works would be installed. For example, Copmanhurst Shire Council was preparing a scheme for Carr's Creek Junction, four miles north of Grafton, with a population of some 300, occupying about 100 houses. Coff's Harbour Shire Council was approached by subdividers of two estates for approval of a similar scheme. It is hoped that these projects, should they eventuate, will set the pattern and serve as a guide for future installations for large house estates, villages, and small towns. All such schemes would have to be controlled by the appropriate local authority to enable rates to be charged to provide for the cost of satisfactory operation and maintenance.

Sub-divisions and Housing Projects

Inspections of sub-divisions were carried out in several areas where it was found that land was unsuitable for building in its natural state. Councils co-operated with Departmental inspectors and in most cases required the filling and grading recommended, to be carried out.

Early in the year the Housing Commission started work on a housing project in Goonella, a residential suburb of Lismore. In August it was announced that septic tanks would not be installed and that a sewer service would be provided, and sullage disposed of separately. This resulted in an adverse comment in the local press, as it was considered to be a retrograde step and it was inevitable that the proposed system of sullage disposal would result in pollution of a natural watercourse. Intervention by this office resulted in a joint meeting and inspection by officers of the Housing Commission, the Lismore City Council and the North Coast Health District. As a direct outcome of this, septic tanks will now be installed. In addition the Commission's Chief Technical Officer who visited Lismore, indicated that sewerage plans of all future development schemes in the North Coast Health District would be forwarded to the Medical Officer of Health for approval.

Disposal of Abattoir Wastes

There was a marked improvement in the method of waste disposal at the Grafton abattoir and at the Casino Meat Works. Midco abattoir in the Nambucca Shire was requested to cease discharging effluent into the river and to provide an alternative satisfactory method of disposal. A suitable method was recommended which was both hygienic and profitable.

Noxious Trades

The standards of Noxious trades premises improved steadily throughout the year, as a result of constant attention and education by departmental inspectors. Local authorities were in several instances requested to serve notices on owners to carry out certain works, before licences were issued.

Health Inspectors' Conference

The Annual Conference of Local Authority and Departmental Health Officers of the North Coast Health District was held at Murwillumbah on the 25th and 26th March.

The Conference was opened by the Tweed Shire President, Councillor C. H. Hall. Guest speakers were: Mr E. S. Ogg, Government Analyst, New South Wales; Mr J. Cantello, Veterinary Officer, Pastures Protection Board; Mr C. B. Gilmore, I.C.I.A.N.Z., Ltd, and Mr Pope, Australian Water and Waste Water Association, Queensland Branch. The subjects dealt with by these speakers included "Food Additives"; "The Zoonoses"; "The Maintenance and Operation of Swimming Pools"; and "The Training of Water Operatives and Supervisors".

It was arranged to hold the 1966 Conference at Nambucca Heads.

COMMUNICABLE DISEASES

TABLE II—NOTIFIED COMMUNICABLE DISEASES AND DEATHS, 1964-65, EXCLUDING VENEREAL DISEASES

Disease	1964		1965	
	Cases	Deaths	Cases	Deaths
Ancylostomiasis	211	..	16	..
Ascariasis	60	..	16	..
Brucellosis	3	..	2	..
Diphtheria .. .. .	..	..	1	..
Infectious Hepatitis	57	1	36	..
Infantile Diarrhoea	3	..	12	..
Leptospirosis	12	..	10	..
Meningococcal Infection	2	..	2	..
Puerperal Infection	5	..	3	..
Rheumatic Fever	5	2	4	..
Rheumatic Chorea	1	..	..	..
Scarlet Fever	13	..	23	..
Staphylococcal Diseases in Infants under 4 weeks of age	2	..	98	..
Tuberculosis .. .. .	..	..	..	..
Typhus Fever	2	..	..	..
Virus Encephalitis	1	..	..	..

Venereal Disease

The new procedures under the Venereal Diseases (Amendment) Act, 1963, resulted in a vastly improved notification of cases and a consequently much more effective follow-up of sources of infection.

TABLE III—NOTIFICATION OF VENEREAL DISEASE, ACCORDING TO SEX AND AGE, 1965

Age	Gonorrhoea			Syphilis		
	Male	Female	Total	Male	Female	Total
15-19 years	15	6	21	1	2	3
20 years and over	37	7	44	3	6	9
All ages	52	13	65	4	8	12

Approximately one third of all cases of gonorrhoea and one quarter of all cases of syphilis occurred in the age-group 15 to 19 years. Of the 13 notified cases of gonorrhoea in females, 10 were unmarried girls.

MATERNAL AND INFANT CARE

A new Baby Health Centre was opened at South Lismore on 18th February, by the Minister for Health. The Sister based here operates clinics at South Lismore, Ballina, Byron Bay and Cabbage Tree Island Aborigines' Station.

At Coff's Harbour a replacement Baby Health Centre was nearing completion by the end of the year. This will replace the present centre in the C.W.A. building, which is substandard and inadequate to cope with the needs of the most rapidly growing town in the North Coast Health District.

TABLE IV—ATTENDANCES AND HOME VISITS, BABY HEALTH CENTRES, 1964-1965

Year	Individual attendances	Home Visits (in hours)
1964	4,372	736
1965	4,540	627

The second annual week-end conference of North Coast Health District Baby Health Centre Sisters was held in Grafton in February. The guest speaker was Dr G. Angel-Lord, Senior Medical Officer, who talked on "Modern Patterns of Infant Feeding" and "Management of Certain Behavioural Variations". The conference was also addressed by the Medical Officer of Health and the Deputy Medical Officer of Health. Subjects discussed included Internal Parasites, Coeliac Disease and Home Visiting.

It was generally agreed that these conferences were most beneficial in making Sisters more aware of changing concepts of child care, of affording an opportunity for discussions of internal problems, and of establishing contact with other members of the health team in the District.

In an endeavour to stimulate Sisters to carry out more home visiting and to highlight the importance of the Nurse-family relationship a survey of Home Visiting was started in September. This survey will be continued indefinitely and reported on separately.

The survey of facilities and standards of ante-natal and post-natal care of aboriginal mothers, and of the neo-natal histories of their babies was continued. During the 12 months ending 30th June, 1965, a total of 80 aboriginal births was notified to this office and all these were investigated.

Thirty mothers (37.4 per cent) received no ante-natal care; 3 mothers (3.74 per cent) paid one visit only to the doctor; 29 mothers (36.25 per cent) paid 2 to 5 ante-natal visits, and 18 mothers (22.5 per cent) visited the doctor on 6 or more occasions. Of the 30 mothers who received no ante-natal care three were unmarried. The survey will be the subject of a Special report.

CHILD HEALTH

Preschool Clinics

It became obvious at the end of 1964 that while all these clinics were working satisfactorily, there was a waiting period of 18 months at the Grafton clinic, before a child could be seen by the Medical Officer. To rectify this the School Medical Officer from Lismore conducted two clinics daily for varying periods during March and April, and since then two clinics morning and afternoon, every second week have been held. Before the end of the year the waiting list was eliminated and time became available for reviews as well as new examinations.

TABLE V—PRESCHOOL CLINICS 1964 AND 1965

Place	Number Clinics held		Number children seen		Number defects found	
	1964	1965	1964	1965	1964	1965
Lismore	21	44	194	399	139	243
Casino	11	20	101	184	89	116
Murwillumbah	11	15	85	138	81	87
Grafton	10	51	82	377	56	179
Coff's Harbour	13	18	131	171	71	131
Total	66	148	593	1,269	436	756

* Defects include children not fully immunised.

Routine School Medical Examinations

Due to staff shortage the routine medical examinations were curtailed during the first half of the year, and it was necessary to revert to the Country Councils' scheme in some areas between April and September, when a newly-appointed School Medical Officer assumed duty in the Grafton Coff's Harbour-Nambucca Shire area. This acute staff shortage which existed for much of the year resulted from the transfer of a Medical Officer to Newcastle in January, the resignation of a School nurse about the same time, and the absence of the other Medical Officer while undergoing training in the management and disposal of atypical children. In spite of these difficulties a reasonable service was rendered and by the third term things were more or less back to normal.

TABLE VI—ROUTINE SCHOOL MEDICAL EXAMINATIONS, 1965

Data	Central Area	Southern Area	Northern Area	Total (All areas)
School Population	13,014	13,181	9,972	36,167
Schools Examined	54	25	42	121
Full Examinations	1,279	1,543	1,159	3,981
Review Examinations	3,370	3,308	2,566	9,244
Total Pupils Examined	4,649	4,851	3,725	13,225
Defects Notified	689	835	600	2,124
Defects as per cent of Number Examined ..	14.82	17.21	16.10	14.04

Atypical Children

In September a diagnostic team from the Bureau of Maternal and Child Health visited Lismore for the evaluation of selected atypical children. The team consisted of a Medical Officer, Psychologist, Speech Therapist and Social Worker. The demand for interview was great and the team interviewed 51 children during the week spent in Lismore. There can be little doubt that this visit highlighted the need for permanent facilities in this field in the North Coast Health District.

During the year the School Medical Officer in Lismore investigated 133 atypical children

TUBERCULOSIS CONTROL

The mantoux testing of school children began in the northern part of the District in February. Owing to shortage of staff it was not possible to arrange for coverage of the southern schools until later in the year.

TABLE VII—MANTOUX TESTING, HIGH SCHOOLS, 1965

Data	Volume of work and results
Number of schools tested	23
Number of children tested	1,743
Number of tests read	2,664
Positive	221
Negative	2,443
Over 15 mm diameter	33
Positive Reactor Rate	8.3 per cent

There was a decrease in attendance at all Clinics and Sub-clinics with the exception of Kyogle. This is explained by the fact that the figures for 1964 were boosted by the visit of the Mass Miniature Liography team to the North Coast.

TABLE VIII—ATTENDANCES AT CHEST CLINICS, 1964 AND 1965

Clinic	1964	1965
Lismore	1,734	1,528
Casino	529	506
Murwillumbah	1,242	747
Kyogle	318	430
Total—Northern Area	3,823	3,211
Grafton	708	683
Coff's Harbour	304	250
Maclean	207	131
Macksville	380	362
Total—Southern Area	1,599	1,426
Grand Total—North Coast Health District ..	5,422	4,637

Attendances for 1965 represented a fall of 14·3 per cent from 1964.

PURE FOOD ADMINISTRATION

It has become increasingly evident throughout the year that liaison between our Food Inspectors and local authority health officers had greatly improved. There were frequent requests from local authorities for advice in such matters as structural design and suitability of materials for premises. Our officers were also consulted on legal problems prior to prosecutions. Almost all inspections carried out were upon request for assistance by the local authority.

TABLE IX—INSPECTIONS, NOTICES, SAMPLES INVESTIGATED, PROSECUTIONS AND FOOD PLACED UNDER SEIZURE, 1964 AND 1965

Work carried out	1964	1965
Premises inspected	586	525
Warning notices issued	88	74
Samples purchased	236	153
Prosecutions completed	24	7
Food placed under seizure in lbs	1,280	19,291

In addition to the 525 inspections of wholesale and retail premises and food factories, inspections were carried out of catering facilities at all agricultural shows and certain race meetings in the District. Several inspections of flood-inundated food premises were carried out after the July floods.

On 74 occasions warnings were issued in the form of notices requesting compliance with regulations. The 153 food samples submitted for analysis included meat, small goods, milk, milk products, bread, beer, spirits, and fruit drinks.

The value of the 19,291 lb of food placed under seizure, was approximately £1,550. Items included liquor, dressed poultry and various groceries. The 7 prosecutions completed yielded fines and costs totalling £101.

A survey was begun on bread quality. Findings to date indicate that certain bread is below standard in respect of protein content, despite the fact that the flour used is milled from wheat grown in the high nitrogen wheat belt. The survey will be the subject to a special report.

ABORIGINES' WELFARE

Following the 1963-64 worm infestation survey, a trial was made of the Anthelmintic, bephenium hydroxide ("Alcopar") in the control of hookworm amongst North Coast Aborigines. This drug unfortunately, produced such a degree of vomiting that it rapidly became unacceptable to the people. An ad hoc Committee on Vermicides met in January and April, 1965. This Committee consisted of:

Dr A. Douglas, Medical Representative, Aborigines Welfare Board.

Dr B. McMillan, Senior Lecturer in Medical Parasitology, School of Public Health and Tropical Medicine, University of Sydney.

Professor R. H. Thorpe, Professor of Pharmacology, University of Sydney.

Dr I. K. Hay, Medical Officer of Health, North Coast Health District.

final recommendation of this committee was that a trial of the broad-spectrum Thiabendazole, be carried out on the North Coast with a view to formulating policy for more effective control of worm infestation in aborigines, with particular reference to hookworm, and *Strongyloides*.

was approved in principle by the Aborigines' Welfare Board. It was not possible to proceed during 1965 but it is hoped to do so early in 1966.

immunization status of aboriginal children on the North Coast is dangerously low. It is early in the year that the responsibility for maintaining the protection rate against Diphtheria, Whooping Cough, and Tetanus should rest with the North Coast Health

November, with the enthusiastic co-operation of the Aborigines' Welfare Officer from the protection rate against these diseases at the Bowraville and Bellwood (Nambucca) areas was as near as possible to 100 per cent. Immunizations will be kept up to date by the Medical Officer, Grafton. Arrangements were made to continue the programme at various places, in particular, Cabbage Tree Island, Woodenbong, and Tabulam.

HEALTH EDUCATION AND PUBLICITY

radio and television releases on local and topical matters affecting the Public Health throughout the year.

radio programme "You and Your Baby" featuring the Deputy Medical Officer of Health and the Health Centre Sisters at Lismore and Murwillumbah remained a popular well-established programme on the radio networks covering the Richmond-Tweed area. Early in the year this programme moved to the commercial station broadcasting from Grafton, 2GF. This means that "You and Your Baby" can now be heard by all listeners in the North Coast Health District. This programme became the responsibility of the School Medical Officer in Lismore and its scope has been widened to include all aspects of child health.

In March, a television programme entitled "Family Health Guide" was combined as a segment of a time programme directed towards housewives and mothers, on the local commercial station, 2NS. This programme has featured various members of the North Coast Health District including the Medical Officer of Health, the Deputy Medical Officer of Health, the Assistant Medical Officer and the Lismore Baby Health Centre Sister. Subjects covered so far have included, infant feeding and management, the preschool child, child health generally, the Department of Public Health, and subjects of topical interest as they arise. The programme has a wide viewing public, and our segment, judging by the letters received, has been very popular.

MISCELLANEOUS

Poliomyelitis Vaccine Supply

During the year 7,062 single doses of poliomyelitis vaccine were distributed to medical practitioners and local authorities on request.

Lectures to Nurses

The Medical Officer of Health and the Deputy Medical Officer of Health gave some 82 lectures on Personal and Community Health, The Social Aspects of Disease, and Psychology to nurses at the Regional Training School in Lismore. They also prepared all examinations for nurses and corrected all examination papers.

Geriatrics

By an Old People's Welfare Committee was formed in Lismore, with the Medical Officer of Health as an ex-officio member. Later in the year this was followed by the establishment of an Old People's Club. The Home Aid and Housekeepers Emergency Service started, at the instigation of the Medical Officer of Health in July, 1964, continued to expand throughout the year, and by the end of the year 19 Home Aids were employed and some 95 people had been assisted, the great majority of whom were elderly and requiring long term care.

A weekend seminar on "Ageing in Australia Today" organized by the Grafton Adult Education Branch of the University of New England was held in Grafton from 14th-16th May. A panel of lecturers were Dr Andrew Bennett, Medical Superintendent, Rydalmere Hospital and the assembly on "The Ageing Process; Physiological, Health, and Emotional Changes with Age", and Dr I. K. Hay, Medical Officer of Health, North Coast Health District, whose paper was "The Community and the Aged: Developing Community Support for Programmes to Age". Some eighty delegates took part from as far afield as Adelaide and Cairns.

In September, the Medical Officer of Health addressed a public meeting convened by the City of Grafton. The purpose of the meeting was to discuss the appointment of a Health Officer, and to launch a Meals on Wheels Service. Following the meeting, which was the

best-attended public meeting in Grafton for many years, the Meals on Wheels Service was formed, recommendations were made in respect of the Social Worker, and the Committee of the Grafton and District Home Nursing Service resolved to investigate the possibility of inaugurating a Home Aid and Housekeepers Emergency Service in the Grafton district.

Civil Defence

The Medical Officer of Health, in his capacity of Regional Medical and Health Officer, Richmond-Tweed Civil Defence Region, attended a Control and Staff course at the Commonwealth Civil Defence School, Mount Macedon, Victoria, in March.

Lismore and the Richmond Valley suffered a major flood from the 19th-22nd July. No public health hazard arose during or after the flood, and Lismore suffered no significant damage to stocks or property, but livestock losses on the lower Richmond were considerable.

In December a full-time Staff Officer was appointed to the Richmond-Tweed Civil Defence Region, and it is hoped that this will, in due course, facilitate the development of the medical and health plan.

Private Hospitals

One new rest home, in Murwillumbah, was licensed during the year and one rest home in Lismore submitted plans for extensive alterations and additions.

North Western Health District

Location: Marius Street, Tamworth

STAFF

Medical Officer of Health: Dr J. HENSON, B.A., M.B., Ch.B., D.P.H., D.T.M.&H.

Deputy Medical Officer of Health: Dr J. R. WHITFIELD, M.B., B.S., D.P.H.

1 school medical officer; 1 senior health inspector; 1 senior food inspector; 2 health inspectors; 1 assistant nurse inspector; 1 tuberculosis clinic sister; 1 school sister; one speech therapist; 1 clerk; 1 shorthand-typist; 1 office assistant.

THE DISTRICT

There have been no changes in the boundaries of Local Government Authorities, consisting of nine municipalities and twenty-one shires. All Councils except Liverpool Plains, Nundle and Dumaresq Shires, are now served by fully-qualified, full-time Health Inspectors. Councils are now vying with one another, and are anxious to improve and expand their health services.

VITAL STATISTICS

(The figures in parentheses are those for 1964)

Population—The estimated population of the District at 30th June, 1965, was 157,380 (155,590).

Live Births—There were 3,239 (3,486) live births in this District, equivalent to a rate of 20.54 (22.41) per 1,000 population. Of these, 1,656 (1,806) were males; and 1,583 (1,680) females.

Deaths—Deaths numbered 1,313 (1,349) equivalent to a rate of 8.34 (8.67) per 1,000 population. Of these, 781 (777) were males and 532 (572) females.

Infantile Mortality—Deaths under one year of age numbered 74 (82), equivalent to a rate of 22.85 (23.52) per 1,000 live births. Of the total number of deaths of infants under one year of age, 50 (54) or 67.57 (65.85) per cent occurred within one week of birth; and 57 (56) or 77.03 (68.29) per cent within one month. The corresponding rates per 1,000 live births for the two age groups were 15.44 (15.49) and 17.60 (16.06) respectively.

Still Births—There were 41 (43) still births in the District, equal to a rate of 0.26 (0.28) per 1,000 of the population, and representing 1.25 (1.22) per cent of all births (live and still).

There has been a fall in the birth rate.

The death rate has fallen.

TABLE I—ENVIRONMENTAL HYGIENE INSPECTIONS

	1964	1965
Aboriginal Stations and Reserves	3	11
Public amenities	19	22
Dwellings and houses	39	57
Public institutions	19	36
Licensed premises	13	51
Meat supplies	38	41
Noxious trades	109	174
Complaints investigated	31	39
River pollution	10	10
Refuse disposal	75	172
Samples for investigation	23	71
Sanitary surveys	7	8
Septic tanks	357	636
Sewage treatment works	35	36
Water supplies	20	36
Other inspections	246	58

The annual sanitary inspections of Aboriginal Stations and Reserves are continuing. During November and December a special health survey was also undertaken of residents at the Boggabilla, Moree and Tabulam Stations, and at the Carroona and Armidale Reserves.

Councils are showing greater interest in the elimination of sub-standard buildings, and the Department has been able to assist the Cockburn Shire Council at Oxley Vale, and the local Council in Narrabri. In Moree, the Department has taken the necessary steps itself to have certain premises demolished. House-to-house inspections are being carried out by Councils, as in Inverell, and regulations are being more rigidly enforced. Squatting is taking place on the fringes of towns, as at Narrabri, Wee Waa, Ashford and Moree, mainly by Aborigines.

Overcrowding and unhygienic conditions were found at some pony camps and similar gatherings of children. The organizers were asked to seek the advice of local Health Inspectors.

The routine inspections of public institutions such as prisons, hospitals and schools have continued. Most of the requirements have been attended to, with great improvements in hygiene.

The ponding of abattoir wastes has had encouraging results. Samples are regularly taken and tested. One of the main defects is the access of undue amounts of salt to the ponds. The opening of the regional abattoirs at Moree and Guyra has led to the closing down of most of the smaller unhygienic slaughter-houses in these areas. Inspected, safe meat supplies are now freely obtainable.

The strict supervision of noxious trades has led to great improvements and fewer complaints by the public. Unfortunately, this does not always apply in areas where there are no health inspectors.

Pollution studies of the Namoi River and Commissioners Waters near Armidale are in hand. The disposal of "tailwaters" from the cotton-fields at Wee Waa is being investigated for excessive amounts of insecticides.

Nightsoil and garbage depots are receiving better attention by Councils, and strict measures are being taken against littering. An incinerator, the second of its kind in the Health District, is being erected at Werris Creek. Councils were advised to start bi-weekly garbage collections.

Sanitary surveys were resumed and completed in the Dumaresq Shire. Re-inspections were carried out in Quirindi, and in the Murrurundi and Tamarang Shires. Surveys will be undertaken in the Liverpool Plains and Severn Shires and in Wee Waa.

Sites for sewerage treatment works were inspected at Uralla, Guyra and Wialda. Chlorination and the final ponding of effluents were recommended. Difficulties at Armidale, Tenterfield and Inverell with disposal problems are receiving attention.

The prolonged drought has led to the imposition of water restrictions in almost all centres except Tamworth. Advice was given to eliminate tastes and odours in stagnant waters. Inadequate water reserves is a real problem.

Tamworth is still the only centre to fluoridate its water; but Walcha, Manilla and Glen Innes have all declared themselves in favour of this necessary provision. The issue of fluoride tablets by six Councils met with a poor response, except at Wialda.

PURE FOOD ADMINISTRATION

TABLE II—FOOD INSPECTIONS

							1964	1965
Food—								
Premises inspected	..	..	..	..	..	..	981	985
Notices issued	..	..	..	..	..	..	60	25
Samples taken—								
Meat and smallgoods	..	..	..	..	..	..	189	259
Milk and cream	..	..	..	..	..	..	206	274
Spirits tested	..	..	..	..	..	..	433	353
Seizures of foodstuffs	..	..	..	..	..	..	8,145	2,203
Prosecutions	..	..	..	..	..	..	28	52
Fines	..	..	..	..	..	..	£238	£348
Costs	..	..	..	..	..	..	£32	£53

Milk production fell by a third in many areas of the Health District on account of the drought. There was also a decrease in the solids-not-fat contents. This was brought to the notice of the Department of Agriculture.

The advantages of using pasteurized milk were explained to hospitals and other institutions. Deterioration of foodstuffs due to careless storage methods is a serious problem and vendors were advised accordingly.

PERSONAL HEALTH SERVICES

TABLE III—COMMUNICABLE DISEASES

Diseases notified	1964		1965	
	Cases	Deaths	Cases	Deaths
Ascariasis	1	..	1	..
Brucellosis	3	..	3	..
Infective Hepatitis	187	..	156	1
Infantile Diarrhoea	9	..	42	7
Meningococcal Infection	3	1	2	..
Puerperal Fever	9	..	3	..
Rheumatic Fever	..	..	11	3
Scarlet Fever	7	..	25	..
Staphylococcal Pneumonia	1	..	..	..
Staphylococcal Diseases in infants under 4 months	..	..	63	..
Tuberculosis	43	5	18	1
Virus Encephalitis	2	1	4	..
Totals	265	7	328	12

Infectious hepatitis is still far too prevalent. A few villages in the Macintyre Shire were badly affected. Detailed instructions were issued to Councils on prevention and methods of dealing with outbreaks.

A severe epidemic of diarrhoeal disease occurred in Narrabri in May. No causal organism could be detected. At the time, Narrabri drew part of its water supplies raw from the Namoi River. This is now being chlorinated.

There were outbreaks of scarlet fever in Armidale, Emmaville, Werris Creek, Nemingha and Gunnedah. An epidemic of measles struck Armidale and was said to have affected a big number of Aboriginal children in particular.

An outbreak of influenza occurred in Ashford and Inverell, and seriously affected school attendances.

Q fever was reported in six workers at the Moree Regional Abattoirs.

The number of cases of venereal disease is increasing especially in Wee Waa and Moree. Probable sources of infection were followed up and advised.

TABLE IV—ATTENDANCES AT TUBERCULOSIS CLINICS

Proven pulmonary tuberculosis	..	..	..	..	..	249
Inactive cases (all types)	..	..	..	..	..	334
Contacts	..	..	..	..	..	1,768
Other chest conditions etc.	..	..	..	..	..	1,064

There are six sub-clinics in the Health District with the main clinic situated in the Tuberculosis Block at the Base Hospital, where cases are reviewed for the whole District. Tuberculosis is not a serious condition in this region.

MATERNAL AND CHILD HEALTH

Child Health

TABLE V—SCHOOL MEDICAL SERVICES—EXAMINATIONS

Type	Number of Schools	Examinations	Reviews	Parent Interviews
Full-time service	51	2,137	4,667	638
Shire Scheme	78	2,481	1,659	53
Totals	129	4,618	6,326	691

The Shire/Council schemes operate in nine municipalities and shires. The other schools in the Health District are being attended to by the Departmental School Medical Officer and Nurse.

Out of 980 schoolchildren who were mantoux tested, 140 proved to be positive.

Maternal and Infant Welfare

With the opening of the new Baby Health Centre for South Tamworth by the Hon. W. Chaffey, Minister for Agriculture, on 27th November, 1965 there are now nineteen Centres in this Health District. The total attendances were 34,222 by 4,810 babies. The emphasis is now on more home-visiting and health education.

Special Services

A Diagnostic Team from Sydney examined forty-one children with defects in Tamworth in September. Parents were advised accordingly, but eight children had to be referred to Sydney for special investigation.

The newly-appointed Speech Therapist commenced duties in September. There have been 266 attendances by 41 patients.

PRIVATE HOSPITALS AND REST HOMES

There are four Private Hospitals with forty beds, and three Rest Homes with forty-seven beds in the Health District. They have all been routinely inspected and most of them were found to be satisfactory. An effort is being made to up-grade them. A number of psychotic cases are being cared for in a Private Hospital in Tamworth where there is now a Psychiatrist in private practice.

VACCINATION MEASURES

A total number of 3,663 doses of polio vaccine were issued, mainly to doctors. The number of doctors approved as B.C.G. vaccinators are now 18.

Persons at risk, such as the Police, Public Health Staff, Baby Health Centre Sisters, and others were vaccinated against smallpox.

MEDICAL EXAMINATION OF CANDIDATES FOR THE PUBLIC SERVICE: 51

HEALTH EDUCATION AND PUBLIC RELATIONS

Numerous releases of general and topical interest were made to the Press, Radio and Television. Talks to local organisations included:

"A Community Mental Health Programme."

"Water Supplies—Public Health Aspects."

"The Value of Immunisations."

Talks and film shows were arranged by the Senior Food Inspector for food handlers. Circulars on foodstuffs were distributed during the warmer season.

The Namoi Regional Development Committee appointed a Health Advisory Subcommittee, with the Medical Officer of Health as a member, to advise quarterly on health matters within its region.

SURVEYS

Investigations are proceeding into:

Ornithosis in poultry processors;

Salmonellosis in processed poultry;

Health of Aborigines on Stations and Reserves.

Riverina Health District

Location: State Government Office Block, Cooper Street, Cootamundra

STAFF

Medical Officer of Health: DAVID JOHN LAW, M.B., B.S., D.P.H.

1 senior food inspector, 1 senior health inspector, 1 senior clerk, 1 office assistant.

The accommodation provided in the New South Wales Government Offices, Cootamundra, for the District office became available on August 2, 1965. The Riverina Health District commenced to function on this date.

EXTENT OF THE DISTRICT

The Murray River forms the southern boundary. The South Coast and Western Health Districts adjoin the eastern and northern limits respectively, while to the west lie the Central Darling and Wentworth Shires.

The Health District comprises ten municipalities and thirty-four shires. Two of the former, the cities of Albury and Wagga Wagga, have populations in excess of 20,000 persons.

Municipalities—City of Albury, Cootamundra, Deniliquin, Grenfell, Junee, Murrumburrah, Temora, City of Wagga Wagga, Yass, Young.

Shires—Balranald, Berrigan, Bland, Boorowa, Burrangong, Carrathool, Conargo, Coolamon, Corowa, Culcairn, Demondrille, Goodradigbee, Gundagai, Hay, Holbrook, Hume, Illabo, Jerilderie, Jindalee, Kyeamba, Leeton, Lockhart, Mitchell, Murray, Murrumbidgee, Narraburra, Narrandera, Tumbarumba, Tumut, Urana, Wade, Wakool, Weddin, Windouran.

The health inspection services provided by the local authorities vary considerably. Five Councils have two or more health inspectors on their staffs, 18 have one each and 14 have made joint appointments. The other seven local authorities have not yet appointed health inspectors.

VITAL STATISTICS

The population of the district at June 30, 1965 was estimated at 242,770.

There were 5,249 live births, equal to a rate of 21.62 per 1,000 of population. Of these 2,675 were males and 2,574 females.

Deaths numbered 2,018, equal to a rate of 8.31 per 1,000 of population. Of these, 1,191 were males and 827 females.

Deaths under one year of age numbered 115, equal to a rate of 21.91 per 1,000 live births. Of these 72 or 62.61 per cent occurred within one week of birth, and 80 or 69.57 percent within the first month. The corresponding rates per 1,000 live births for the two age groups were 13.72 and 15.24 respectively.

There were 75 stillbirths, equal to a rate of 0.31 per 1,000 of the population and representing 1.41 per cent of all births (live and still).

COMMUNICABLE DISEASES

TABLE I—NOTIFICATIONS OF CASES AND DEATHS, 1965

Disease	Cases	Deaths
Brucellosis	6	..
Diphtheria	1	..
Gonorrhoea	12	..
Infectious Hepatitis	179	..
Infantile Diarrhoea	18	4
Meningococcal Infection	3	..
Puerperal Fever	2	..
Rheumatic Fever	6	2
Scarlet Fever	39	..
Staphylococcal Pneumonia	3	3
Syphilis	2	..
Tuberculosis	34	4
Typhoid Fever	1	..

Infectious Hepatitis

Of the 179 reported cases of infectious hepatitis, 55 occurred in residents of Cootamundra during the last four months of the year. The highest incidence was in children between the ages of five and nine years and of this group 33 were pupils attending one particular school and eating their lunches at school. There were no cases amongst children returning home for lunch. The epidemic continued unabated until the end of the school year, despite repeated admonitions to parents and pupils about the primary importance of personal hygiene in the prevention of transmission of the causative virus.

Scarlet Fever

The detection, within one period of seven days, of eight cases of Scarlatina in pupils attending two neighbouring one-teacher schools was sensationally and serially reported in a leading local daily newspaper, causing considerable disquiet amongst the populace. Fortunately, the outbreak was rapidly controlled by routine measures.

Tuberculosis

The Tuberculosis control programme is conducted from base clinics at Albury and Wagga, to which are attached one and four sub-clinics respectively. The establishment of a third base clinic would facilitate the provision of an improved service to the northern and western parts of the District which are geographically rather remote from the existing clinics.

The total number of attendances (patients and contacts) during the year at all clinics was 4,696, while Clinic Sisters made 740 home visits. As a result of investigations at clinics, 9 new cases of pulmonary tuberculosis were discovered.

In October, the Tuberculosis Division conducted a mass X-ray survey in the north-eastern part of the District, during which some 18,556 persons were examined.

ENVIRONMENTAL HYGIENE

Sanitary surveys were carried out in the Municipalities of Junee, Murrumburrah and Young, and in the Shires of Demondrille, Murray and Hay.

Although it is evident from these surveys and from routine inspections and investigations that most local authorities have been commendably active in this field, much remains to be done before a satisfactory standard of environmental hygiene, in all its aspects, becomes general throughout the Health District. Existing problems include: generally unsatisfactory conditions at noxious trades and slaughtering premises; water supplies derived from doubtful sources and reticulated in an untreated state; water sampling programmes inadequate or even non-existent; inadequate refuse disposal in smaller towns; quality of sewage treatment works effluent unsatisfactory and its disposal inexpedient.

Water Supply Authorities have been encouraged to place water sampling on a regular, systematic basis.

TABLE II—ROUTINE INSPECTIONS AND INVESTIGATIONS—1965

Septic Tanks—								
Applications dealt with	..	..	..	..	..	..	..	302
Inspections—								
sites and existing	..	..	..	..	..	..	..	32
mass installations	..	..	..	..	..	..	..	3
Sanitary depots	..	..	..	..	..	..	..	27
Sewage Treatment Works	..	..	..	..	..	..	..	13
Water Supplies	..	..	..	..	..	..	..	5
Noxious Trades	..	..	..	..	..	..	..	39
Other inspections	..	..	..	..	..	..	..	17

Fluoridation of Water Supplies

The public water supply of the Municipality of Yass has been fluoridated for 12 years. Two towns, Hay and Griffith, achieved fluoridation during the year.

PURE FOOD ADMINISTRATION

In the large majority of premises inspected the standards of hygiene and housekeeping found were satisfactory. Although in the more isolated areas the results of a lack of previous regular inspections were apparent, the effects of periodic visits by Departmental inspectors from Head Office were manifest in the more populous regions.

TABLE III—INSPECTIONS, SAMPLES AND PROSECUTIONS—1965

Premises inspected	306
Warning notices issued	20
Complaints investigated	10
Samples purchased	161
Samples below standard	42
Prosecutions completed	4
Fines and costs imposed	£64

The 306 premises inspected included hotels, motels, clubs, abattoirs, dairies, restaurants, pharmacies, bakeries, child welfare institutions and milk, butter and cordial factories.

In addition to the samples submitted for analysis, which included meat, milk, cream, butter, cordials and ice cream, 57 malachite green tests for the presence of sulphites in minced meat were carried out.

One local authority, namely Wagga City, is particularly active in this field. The interest in this work which has been expressed by the health inspectors of several other councils was fostered by the senior food inspector.

Council officers have sought advice regarding the construction of food premises and the interpretation of several of the regulations made under the Pure Food Act.

An episode of bacterial food poisoning affecting five schoolchildren was investigated in collaboration with the local authority health inspector. The offending micro-organism was shown to be a staphylococcus.

MATERNAL AND CHILD HEALTH

Maternal and Infant Care

Pending the appointment of an assistant nurse inspector, the administration of Baby Health Centres, of which there are 67 in this district, has not been decentralized.

The structural condition and facilities provided in those centres so far visited by the Medical Officer of Health were good on the whole, except in some of the smaller centres. As has been the experience elsewhere, it is those who could profit most by the sisters' advice who fail to come or attend irregularly. Although home visiting presents difficulties in rural areas, with increased attention to this aspect, it is hoped to reach this group.

Child Health

Since there is no departmental school medical officer in this health district, the programme of medical examinations of schoolchildren was conducted entirely through the country councils scheme, in which twenty three local authorities participated during the year.

Introduction of the scheme has been approved by the other twenty one councils and awaits only the availability of medical practitioners. It is most unlikely that a complete coverage of schools in the district will be possible until such time as a departmental medical officer is obtained.

TABLE IV—MEDICAL EXAMINATIONS OF SCHOOLCHILDREN—1965

Schools examined	86
Full examinations	3,739
Review examinations	3,415
Parent Interviews	297

ABORIGINES WELFARE

There are no aboriginal stations or aborigines' reserves under supervision within the district—although there are six unsupervised reserves accommodating some 450 persons—nor are there any area welfare officers of the Aborigines Welfare Board.

At the request of Wade Shire Council, the medical officer of health investigated an epidemic of conjunctivitis amongst the aboriginal children at the Three Way Bridge Reserve, Griffith. The causative organisms were identified and effective treatment arranged.

MISCELLANEOUS

Lectures to Nurses

The course of lectures on personal and communal health for first year trainee nurses attending the Regional Training School in Cootamundra was taken over by the Medical Officer of Health.

Relations with Medical Profession

The Medical Officer of Health took every opportunity to meet his colleagues. He attended the annual post-graduate weekend of the College of General Practitioners at Wagga, and a two day course organized by the Young Medical Group which was devoted to the medical and other aspects of civil defence.

Broken Hill Health District

Medical Officer of Health: J. T. CULLEN, M.B., B.S.

Location: Bureau of Medical Inspection, Department of Labour and Industry, Bromide Street, Broken Hill

The Broken Hill Health District is confined to the County of Yancowinna. The county is within the Shire of Central Darling, which lies mainly to the west of the Darling River. The county covers an area of 16,000 square miles, within the Municipality of Broken Hill at the centre of the county.

The South Australian border forms the western boundary. The Broken Hill Health District is a centre of metal mining and pastoral industries.

STAFF

In addition to the Medical Officer of Health the staff consists of 1 Radiographer and 2 Clerical Officers.

VITAL STATISTICS

(The figures in parentheses are for 1964)

Population

The population of the district at 30th June, 1965, was estimated at 29,890 (29,810).

Live Births

There were 651 (644) live births in this district, equivalent to a rate of 21.7 (21.4) per 1,000 population.

Deaths

Deaths numbered 271 (251), equivalent to a rate of 9.00 (8.3) per 1,000 population.

Infantile Mortality

Deaths under one year of age numbered 9 (17), equivalent to a rate of 13.8 (26.4) per 1,000 live births. Of the total number of deaths of infants under one year of age 8 (15) or 88 (82) per cent occurred within one month of birth.

Still Births

There were 11 (5) still births in the district equal to a rate of 16.9 (7.7) per 1,000 of the population and representing 1.6 (.77) of all births (live and still).

HEALTH EDUCATION

Dr C. M. Fletcher of the Post Graduate Medical School in London, visited Broken Hill during the year and arrangements were made for a lecture on smoking and lung cancer to be given to Rotary, and a lecture on Pneumoconiosis to the Institute of Mining and Metallurgy.

BABY HEALTH CENTRE

The construction of a further Baby Health Centre in the Railway Town area has been approved. A suitable site was selected and the centre should be completed and in operation by 1967.

INDUSTRIAL MEDICINE

An Ischemic heart disease survey in conjunction with a Chronic Bronchitis survey is in progress. Dr C. M. Fletcher, London, is assisting with this survey and is providing the questionnaire. It is proposed to introduce blood lead estimations during 1966.

MATERNAL AND BABY WELFARE

4 Baby Health Centres are serviced by 3 sisters. These centres have all been routinely inspected by the nurse inspector. Total attendances showed very little alteration compared with the previous twelve months. There is a general tendency for the mothers to attend the centre in the main shopping centre, rather than the suburban centres.

ATTENDANCES DURING 1965

Centre	Individual	New Babies	Total	Increase or decrease
Central	621	296	5,704	390 decrease
North	196	84	1,988	22 increase
South	278	117	2,984	287 increase
Railway Town	143	57	1,854	605 increase
	1,238	554	12,530	524 increase

GERIATRICS

During the year a Geriatrics Ward was opened at the Broken Hill and District Hospital.

VACCINATIONS

In December, 1965, 30 members of the Police Force were given vaccination against smallpox.

INFECTIOUS DISEASES

There were 34 cases of infectious hepatitis during the period under review. This represents an increase over the previous 12 months. The attack rate indicated an incidence closely parallel to that of the state of New South Wales. The cases were all reported as being of a mild nature. Although this represents a mild epidemic, it has now subsided.

SCHOOL MEDICAL SERVICE

Examinations of school children have been maintained and provision has been made for a local practitioner to undertake examination of each of the major primary schools. The co-operation of the local practitioners has been obtained.

TUBERCULOSIS SURVEY

The facilities at the Bureau of Medical Inspection were made available to the Tuberculosis Division during the survey held in November, 1965.

Considerable assistance has been given to the chest clinic at the Broken Hill and District Hospital in the interpretation of X-ray films. Liaison has been maintained with the tuberculosis nurse.

	Chest Clinic Broken Hill Hospital	Bureau of Medical Inspection
Chest x-rays taken were as follows:		
Normal	2,177	1,095
Active Tuberculosis	12	2
Suspect Active T.B.	5	5
Inactive T.B.	52	10
Other conditions requiring investigation	924	100
Total	3,170	1,212

REHABILITATION

A close liaison has been maintained with the superintendent of the Broken Hill and District Hospital. During the year, a mine employee who had been compensated under the Broken Hill Workers' Compensation Act for Pulmonary Tuberculosis, and cured, was re-employed on the surface of one of the Broken Hill Mines.

WATER SUPPLY

Bacteriological examination of the water supply has been carried out. Examinations are made at the local laboratory and from time to time they are compared with examinations from Sydney. Tests have proved satisfactory.

LEGAL SECTION

Autopsies are performed by the Medical Officer of Health upon all bodies coming under the jurisdiction of the Broken Hill Coroner. During the year under review, 4 deaths from suicide, 3 from barbiturate poisoning and 1 from hanging were recorded. The suicide rate is equal to the incidence throughout Australia. The major cause of sudden death was coronary occlusion. 10 out of 30 sudden deaths were due to coronary occlusion.

Evidence in court was necessary following a number of the autopsies. Evidence in a murder trial was given in Sydney in its relation to an autopsy performed in 1959.

The Medical Officer of Health undertakes the examination of cases of criminal assault for the Police Department and evidence in court in connection with this work has been given. During the year five such examinations were made, and the above services are available day and night and during weekends.

SCIENTIFIC SERVICES

Government Analyst's Branch

Location: 93 Macquarie Street, Sydney

STAFF

Government Analyst: Mr E. S. OGG, B.Sc.(Hons.), A.R.A.C.I.

Deputy Government Analyst: Mr W. F. FISHER, A.S.T.C., A.R.A.C.I.

The establishment comprised 21 analysts, 3 microbiologists, 6 laboratory assistants, 7 laboratory assistants in training, 6 laboratory attendants, 1 laboratory cleaner and 4 office assistants.

The work carried out during the year is tabulated below, together with the comparable figures for 1964.

Authority	Samples Examined	
	1964	1965
Pure Food Act—		
Milk	10,230	11,556
Meat	4,164	4,977
Smallgoods	180	273
Other Foods	1,184	1,312
Drugs, etc.	114	23
	<hr/> 15,872	<hr/> 18,141
Food (Bacteriological)	338	517
Government Stores Department	670	292
Police Authorities	147 cases	132 cases
Coronial Enquiries	1,033 cases	1,201 cases
Division of Occupational Health	142	348
Miscellaneous authorities (Institutions, Hospitals, Medical Practitioners, etc.)	510	1,082
Water Pollution Laboratory—		
Water samples (chemical)	906	803
Sewerage samples	470	441
Water and Sewage samples (Bacteriological)	6,873	4,681
Miscellaneous Bacteriological Examinations	1,548	1,256

MILKS

The number of milk samples examined this year showed an increase of 13 per cent over those examined the previous year. The proportion of adulterated samples showed a marked increase, those showing a deficiency in milk fat being 23 per cent greater, whilst those showing added water were 75 per cent greater. As regards fat deficiency the increase was entirely in country areas and may have been due to the prolonged drought conditions. The startling increase in proportion of samples showing added water however appeared mainly in the metropolitan area. Twenty-one samples, eighteen in the metropolitan area were found to be insufficiently pasteurised.

Particulars of samples taken and adulterations are shown in Appendix (i) together with comparable figures for 1964.

MILK PRODUCTS

One sample of cream out of 411 examined was found deficient in fat content. Two cream mixtures contained peroxide and were low in fat content.

Of 39 butters examined 4 contained excess water and 10 contained foreign fat. The majority of these were being used in sandwich-making.

Six margarines were examined and one showed excess water content. Only one of these contained antioxidant.

Eight ice creams out of 41 tested were deficient in fat content.

MEAT

The number of meat samples examined increased by 20 per cent over those examined in 1964.

The continued use of the malachite green field test by Inspectors in butchers' shops is beginning to take effect. Only 275 samples of minced meat were found to contain Sulphur Dioxide this year as against 392 for the previous year. In country areas it still appears that insufficient use is being made of this test.

There has been a further slight decrease in the percentage of sausage and sausage meat samples adulterated (4.2 per cent excessive in fat content and 7.2 per cent containing excess preservative).

There was a marked improvement in the quality of meat submitted in connection with supplies under contract in Government Institutions. There is still room for further improvement as approximately 15 per cent of samples contained excess fat, 1 per cent excess starch, and 5 per cent were deficient in meat content.

There was an increase of over 50 per cent in the number of smallgoods examined and of these 6 per cent contained added preservative.

Five out of ten canned meat products proved to be deficient in meat content.

A number of samples of finely chopped meat were examined and found to contain up to 40 per cent bone. Though ostensibly sold as "pets' food" there is a distinct possibility that this type of product would be sold for human consumption. One such product containing 40 per cent bone was labelled "Meat mash vitamised", highly suggestive that the product had been Vitamin-enriched. In fact the derivation of the name was that the meat and bones had been finely minced or pulverised in a homogeniser known as a Vitamiser.

GENERAL FOODS

Shortage of staff again restricted the work of this section. In all 791 samples were examined, made up as follows:

Soft Drinks	..	..	..	..	..	..	..	..	118
Breads	..	..	..	..	..	..	..	..	133
Alcoholic Liquors	..	..	..	..	..	..	..	..	103
Tomato Sauces	..	..	..	..	..	..	..	..	8
Foreign matter in food	..	..	..	..	..	..	..	..	148
Food in connection with alleged illness	..	..	..	..	..	..	..	..	71
Canned Foods (swollen)	..	..	..	..	..	..	..	..	24
Foods (for added colour)	..	..	..	..	..	..	..	..	46
Vanilla Essences	..	..	..	..	..	..	..	..	15
Miscellaneous	..	..	..	..	..	..	..	..	125

FOREIGN MATTER

Samples with regard to foreign matter in food are in the main the result of a weekly radio session by the Chief Food Inspector, in which publicity is given to the findings. There is no doubt that this publicity greatly assists the public image of both the Branches concerned and the Department.

INSECT INFESTATION

Samples of a shipment of dried root ginger were found to be free of insects, but insect holes were quite prevalent, indicating a previous infestation arrested by fumigation. It was recommended that only bags showing an incidence of less than 15 per cent affected pieces should be released for sale.

A shipment of broad beans from Portugal showed gross insect infestation. A large number of live larvae and flies were present, of a species not previously encountered in this country. The beans had been fumigated for 72 hours with methyl bromide, but the penetration of the thick skin of the beans had apparently been insufficient.

MOULD COUNTS ON TOMATO PRODUCTS

It is often claimed by industry, both here and abroad that Mould Counts are inconsistent. Three junior analysts with no previous experience in this work were trained in mould counting techniques. At the end of a week they were obtaining consistent results on a collaborative basis. This supports the contention of this Branch that where analysts are trained on uniform technique they will produce consistent results, not only in their own work, but with the work of analysts using similar techniques.

FISH PRODUCTS

Salmon rissoles were found to consist mainly of bread crumbs with less than 20 per cent of fish. There is no regulation for this type of product but canned fish rissoles are required to contain not less than 51 per cent fish.

Several batches of frozen fish were examined. This examination is solely on sensory evaluation and physical condition, and requires a certain amount of experience. Though a number of analytical tests have been put forward as criteria of decomposition or break-down, none are regarded as completely satisfactory. It would be desirable to devote some time to the search for a reliable chemical method to supplement the present sensory evaluation.

Two shipments of frozen shrimps and one of frozen hake had amine-like odours and showed certain areas where decomposition had set in. A batch of whiting fillets were of poor quality, but deterioration was not sufficiently marked to render them unfit for human consumption.

A large proportion of "soft-cured" fish examined contained synthetic dyestuffs. The only colouring matter allowed in fish is the vegetable colouring matter, annatto.

VANILLA ESSENCE

An investigation over a period of several months was carried out into methods of checking the authenticity of vanilla essences on the market. As a result of this work it is possible to state that at least one essence and the oleoresin from which it is made were grossly deficient in the natural constituents of vanilla. Indications were that the samples had been adulterated with added vanillin and an organic acid. During the course of the investigation it was revealed that the majority of essences and oleoresins on the market were made from the species *Vanilla tahitensis*, not *vanilla planifolia* as laid down in the Pure Food Regulations.

It is most desirable that the regulation be altered to cover this species and it would be also advisable to lay down a regulation for oleoresin of vanilla.

LOW-CALORIE FOODS

The sale of low-calorie foods and so-called Dietetic foods has got out of hand, and must be controlled. Steps have been taken in this direction and proposed regulations are under review. An instance of this was the advent on the market of a product described as Lower-calorie beer. It was suggested that this product was lower in calories than normal beer and as such of value in controlling weight. Analyses of several samples of this lower-calorie beer showed that the calorie content ranged from 9.6-10.9 calories per fluid ounce. So that the saving of calories as between this beer and other local beer was approximately 20 calories per bottle. This difference was insignificant when related to the overall daily requirements of approximately 3,000 calories. Claims of this nature for individual foodstuffs completely ignore the fact that it is the total calorific intake that is important, not the calories contributed to the diet by single constituent foods. How absurd are these claims is evident when it is pointed out that 4 glasses of this beer contain as many calories as 3½ glasses of average Sydney beer.

A brandy was labelled "sugar-free" and stated to have "a special appeal for a sugar-free diet". This brandy contained no sugars or dextrins, but other brandies contain only 0.3 per cent sugars. This type of advertising is misleading as it tends to conceal the calorie content of brandy (60 calories per fluid ounce of which the sugar contributes only 0.3 calorie). Persons on a sugar-free diet are very often on a limited calorie diet.

POISONOUS SUBSTANCES IN FOOD

A sample of soft drink was found to contain a lethal quantity of arsenic. Investigations indicated that this was yet another case of a food bottle used for storing weedicide and the arsenic being deposited on the sides and bottom of the bottle on standing. Subsequent cleaning in the bottle washing plant has failed to completely remove this deposit, and the uncleaned bottle has escaped detection when it passed through the 'sighting' section of the bottle washing plant.

Arsenic in lethal quantity was also found in wine submitted following on the illness of a patient treated for gastro-enteritis. In this case also the evidence suggested that the arsenic was derived from a weedkiller.

Barley samples which on boiling in water turned the water pink were found to contain mercury up to 300 parts per million. This contamination was brought about by the resale of "seed" barley which had been treated by a fungicide, methyl mercury dicyandiamide coloured with a red marker dye.

A beer bottle, complete with label, was used for the sale of a phenolic disinfectant. This is contrary to the Pure Food Regulations and is highly dangerous.

Several precooked frozen meals and packets of frozen peas were found to have a distinct odour of pyridine. This was due to contamination with commercial methylated spirits, arising from a malfunction of the deep-freeze display unit in which they were stored.

FOOD BACTERIOLOGY

There was a sharp rise in the work in this section, which is now working up to its full capacity, subject to the room and staff available.

Survey of Kangaroo Meat

The survey of the incidence of salmonellae in kangaroo meat was continued during the year. Out of a total of 50 samples tested 33 (66 per cent) were found to contain salmonellae. A variety of serotypes were identified and many samples contained multiple serotypes. The most prevalent were *S. adelaide* and *S. saint paul*, *S. san diego* and *S. typhi-murium*. Swabbings taken from fixtures and utensils in three shops from which positive samples of kangaroo meat had been obtained, were all negative for salmonellae.

Survey of Minced Meat

A further survey on the incidence of salmonella in butchers minced meat was carried out. 100 samples each from a different shop were examined, and of these 23 showed the presence of salmonellae. The examination included preincubation in selenite broth at both 37° C and 43° C. The investigation into kangaroo meat mentioned above only covered incubation at 37° C. As an indication of the variation in results from the different incubation temperatures, salmonellae were recovered from 20 samples at 43° C only, one from 37° C only and 2 were positive by both methods. 27 different serotypes were obtained, *S. derby* being most prevalent, the others being: *S. typhi-murium*, *S. adelaide*, *S. give*, *S. newport* and *S. san diego*.

Anthrax

24 samples of kangaroo meat were tested for the presence of anthrax. All were negative.

Prepacked Unsterile Food

A number of prepared sandwiches, packed in plastic bags were examined. A count of over 20 million organisms per gram was obtained from one of these packs before it had left the factory. The growth in the sale of this type of unsterile prepacked food is a distinct health hazard, and the preparation, handling and storage should be rigidly supervised.

Penicillin in Milk

46 milk samples from depots in the metropolitan area were tested for penicillin. 27 samples were positive, ranging from 0.004 to 0.04 International Units per millilitre.

Imported "Ice Coolers"

Plastic novelties used for cooling drinks and imported from Hong Kong were found to contain heavily contaminated liquid. Owing to the highly contaminated fluid in the novelties and the presence of pin holes and other weaknesses in their construction, these were considered a definite health risk.

WATER LABORATORY

This laboratory was beset with staff problems throughout the year, and submission of samples had to be restricted. The numbers of analyses and examinations were considerably less than those of the previous year. The position of officer-in-charge of this section was vacant throughout the year and the officer-in-charge of fluoridation acted in this position in addition to his other duties.

In the normal course of events the work in this section would have increased considerably, as Local Government authorities and the people in general are becoming more pollution conscious, due to some extent to the activities of the Health Districts. As the State becomes more populated and more industrialized the quantity and range of pollutants become greater. This results in a demand on the laboratory for more specific and non-routine examinations, which are of necessity more time-consuming. The continual drought has also resulted in search for new sources of water which have to be thoroughly investigated and tested as possible health hazards. The drought has also placed undue loading on sewage treatment works, as the organic load is no less, but the dilution volume has been reduced. Local Government authorities rely on the laboratory for advice in these abnormal conditions.

Taste and odour complaints have multiplied, associated in the main with increased algal growth in low level reservoirs and impounded waters. Apart from the adverse climatic conditions there appears to be some connection between the increased algal growth and the more intensive use of catchment areas, particularly as regards aerial top-dressing with fertilizers. This will be a continuing problem.

Pollution of watercourses is on the increase, and imposes a problem as there are more and more requests for standards which factory effluents and sewage effluents must meet before discharge into various watercourses. It is not possible to formulate general requirements and each case must be considered on its merits, in regard to the particular watercourse into which the effluent is to be discharged, taking into account the seasonal rates of flow and the subsequent use of the water from the watercourse.

Work has been done and is being done in connection with the Island Reclamation Scheme at Newcastle, in which it is foreseen that a vast volume of sewage and industrial effluent will increasingly present a problem in disposal. To prevent serious pollution rigid standards would need to be laid down, in which case the situation could develop where industry will be required to discharge plant treatment water in a purer condition than that in which it is drawn from the river to be used in the factory.

The Branch is at present giving attention to this question of Standards, but it is clear that policing of any such standards would be well beyond the resources of the present laboratory staff.

Abattoirs

The Branch undertook to carry out on behalf of the Department of Primary Industry monthly checks on the bacteriological quality of water used in abattoirs throughout New South Wales. This is a fairly extensive project and is an interim measure pending the establishment and staffing by the Commonwealth of a suitable laboratory at the Customs House in Sydney.

FLUORIDATION LABORATORY

As the fluoridation of waters programme gathers impetus throughout the State, so does the work of this section increase. The officer-in-charge has of necessity to spend a large proportion of his time in field work, and it is clear additional staff is needed.

Five additional fluoridation plants were commissioned during the year at Bega, Parkes, Forbes, Hay and Griffith, bringing the total number of towns fluoridating to 13, and the population being served with fluoridated water in New South Wales to approximately 153,000. This figure includes the residents of Queanbeyan, which is served from the Australian Capital Territory.

Additional plants at 8 other localities have been approved and should commence operation during 1966. Considerable preliminary work has been done in connection with proposals to fluoridate the Sydney and Newcastle supplies.

Twenty-three centres were visited in connection with fluoridation of their water supplies.

The section is working on the preparation of suitable standards for chemicals used in fluoridation.

Three courses for training operatives and others associated with the running of fluoridation plants were held in 1965. 45 candidates attended the courses, bringing the total number of persons trained to operate fluoridation plants in New South Wales to 126.

DRUG LABORATORY

225 samples of drugs were examined for the Government Stores Department. Of these only 4 merited outright rejection. A sample of ergometrine maleate injection showed signs of decomposition, a sample of sodium nitrite was contaminated with sodium carbonate, whilst samples of ferric chloride and sodium nitrite were low in assay. Five other samples showed minor deviations from standards.

The Food Inspection Branch submitted 23 samples, including such diverse articles as old and deteriorated medicines, garments made of polyvinyl chloride fibre claiming to cure rheumatism, etc., tablets liable to cause harm taken from rubbish dumps and certain medicines alleged to have caused illness but which were quite normal.

One so-called family remedy was labelled with a rather illogical formulation, its sale and the claims made for it almost amounting to false pretences. It is most difficult to frame legislation to adequately cover cases such as this preparation.

Samples of marking ink were examined following upon a fatal case of nitrobenzene poisoning. Nitrobenzene is a Schedule Two Poison, and proper cautionary labelling is required on preparations containing it, such as these marking inks.

A brand of "geriatric multi-vitamin" tablets was checked for disintegration following upon a complaint that the tablets were passing through the body undissolved. They failed to pass the test, though tablets containing single vitamins from the same firm passed the prescribed disintegration tests.

Drugs of Addiction

27 samples submitted by the Police Department were checked for addiction drugs. 10 cases involved cannabis, a number of which followed on the finding of this plant growing wild on the banks of the Hunter River. Other drugs detected were heroin, pethidine, morphine, and several other non-addicting drugs.

Considerable time was spent in endeavouring to establish the presence of cocaine in Dr Tucker's Asthma Cure. This is an alkaline preparation purporting to contain cocaine. No cocaine was recovered and it would appear that any cocaine originally present had hydrolysed to benzoylecgonine which is not covered by the Police Offences (Amendment) Act.

Three cases of suspected cases of tampering with addiction drugs in hospitals were investigated, and in two cases the suspicions were proved correct.

Slimming Tablets

A sample of slimming tablets forwarded by the New Zealand Police, said to have been obtained by mail order from New South Wales, was found to contain diethyl propion and ascorbic acid. No mention of diethyl propion was made on the label.

A dilute injection of adrenaline which by clinical indications showed a considerable loss of potency, was satisfactory by chemical tests.

A sample of thiopentone sodium injection was submitted after adverse reactions followed upon its use on two patients (one of whom subsequently died). Exhaustive tests, both chemical and by rabbit injection, showed nothing abnormal beyond traces of ether and possibly alcohol. There was nothing to indicate how these traces occurred.

Tablet Museum

With the co-operation of the pharmaceutical manufacturers and distributors the section has been able to amass a comprehensive collection of all drugs in tablet and capsule form available in Australia. At present close on 2,000 tablet types and 200 capsules are included in this collection.

Physical characteristics (colour, shape, etc.) have been reduced to a numerical code and cards made out and kept in proper order to aid in identifying unknown tablets and capsules. The reference samples are stored away for use in comparison test when required by the drug and toxicology sections of the laboratory. It is hoped that in time reference ultraviolet and infrared absorption spectra from most of these samples will be added to our already considerable collection.

GOVERNMENT STORES LABORATORY

This has been a comparatively quiet year in this section. This is brought about by the fact that the majority of Government Stores Contracts extend over a period of two years so that the greater part of the testing of tender samples takes place only every second year.

The work carried out in this section is most varied, including analyses of lubricating oils, cleansers, floor polishes, deodorants, vinyl sheetings, rubber sheetings, soaps, ball point pens, detergents, ink powders, and disinfectants.

TOXICOLOGICAL LABORATORY

Analyses of human viscera and related exhibits were carried out in connection with 745 cases submitted by City and Country Coroners and the Police Department, an increase of 30 per cent over those examined in 1964. During the period May to August, 291 cases were received by the Branch. This is normally the busiest period of the year in this section, and it is some time before the lag brought about by the numbers is overcome.

No poisons were found in 30 per cent of cases (somewhat higher than usual). The barbiturate group of drugs was again the main contributor to the list of drugs and poisons found, being present in 80 per cent of positive cases, and pentobarbitone, often in combination with carbromal, accounted for two-thirds of these barbiturate findings.

During the year there was an upsurge in the finding of traditional poisons. Arsenic was found in 14 cases, strychnine in 8 cases (5 of these were associated with the consumption by children of Q.E.S. tablets) cyanides in 2 cases, cresols and nicotine in 1 case each.

It is pleasing to record that no single case of organic phosphorus poisoning occurred during the year.

Details of drugs and poisons found are included in Appendix (ii).

During the year there were two cases of alleged toad fish poisoning. Though a great deal of work was put into this investigation the results were unsatisfactory. The Institute of Clinical Pathology at Lidcombe co-operated with the Branch in testing extracts isolated from these cases for toxic effects. The unsatisfactory results obtained are due mainly to the small quantity of toxin present in this type of fish, only 11 milligrams having been reported as being recovered by Japanese workers from 19 kilograms of fish ovaries.

The steep increase in cases examined confined the section entirely to routine work and all investigational work had to be stopped indefinitely. The staff situation will have to be examined.

BIOCHEMICAL LABORATORY

Blood Alcohol

A total of 1,170 determinations of alcohol in blood were carried out during the year, an increase of 20 per cent on those determined in the previous year. Of these 22 were in connection with charges of Driving under the Influence, and 587 were in connection with visceral exhibits submitted by Coroners.

Blood Cholinesterase

This test is now carried out as a routine determination on all blood specimens submitted to the Branch in association with visceral exhibits.

Blood (Miscellaneous)

56 Bloods were submitted in connection with carbon monoxide poisoning, and 20 in connection with cases of drowning.

Trace Elements

1,189 determination of trace elements were carried out in 1965, over 30 per cent more than the number for the previous year. The distribution was as follows, with the figures for 1964 and 1963 respectively, in brackets:

Lead	..	..	..	..	..	..	..	630	(394,410)
Arsenic	..	..	..	..	..	..	..	272	(195,175)
Mercury	..	..	..	..	..	..	..	50	(75, 65)
Thallium	..	..	..	..	..	..	..	102	(51, 19)
Chromium	..	..	..	..	..	..	..	37	} (148,108)
Manganese	..	..	..	..	..	..	..	62	
Other elements	..	..	..	..	..	..	..	46	

57 of the thallium tests were periodic urine excretion tests from one case of accidental poisoning. Concentrations ranged from 2.5 milligrams per litre at the beginning of testing down to 0.6 towards the end of the period. The figures obtained were influenced by the treatment of the patient and the volume of urine progressively obtained. A new method of determination was evolved by the section, the final determination being carried out on the Polarograph. Further work has now been completed making use of the Atomic Absorption instrument.

Biochemical

Hospitals and medical practitioners submitted 164 specimens for estimation of drugs, etc., much the same number as in the previous year.

CRIMINAL INVESTIGATIONS

110 investigations were carried out in connection with criminal offences. 92 of these cases involving approximately 290 exhibits were examined in the new section devoted to this work. 129 of these exhibits were paint and duco fragments in connection with hit-run accidents, and charges of manslaughter, safe robbery and of break, enter, and steal. 82 were inflammable liquids relating to arson and charges of false pretences and apprehended violence. The remaining exhibits included clothing, fibres, bullet pieces, glass fragments and metal pieces in connection with charges of indecent assault, manslaughter and break, enter, and steal.

Other investigations were in connection with charges of committing abortion, poisoning pigeons with chlordane, rape and attempted poisoning (by means of strychnine in a bottle of cocktail).

MISCELLANEOUS BACTERIOLOGICAL EXAMINATIONS

Over 1,200 miscellaneous examinations were carried out by the Branch as follows:

Prostatic smears for gonorrhea	..	..	..	..	..	..	..	1,011
Cultures for gonorrhea and antibiotic sensitivity	..	..	..	..	..	..	..	172
Cultures for organisms	..	..	..	..	..	..	..	9
Rats for plague	..	..	..	..	..	..	..	62

The examination of rats for plague ceased in the early part of the year.

The examinations of smears and cultures is on the increase. This type of examination is outside the scope of the Branch, and now that the Serology laboratory is located with the Institute of Pathology at Lidcombe, these examinations would well be carried out there.

STAFF

Staff maintenance was again a problem during 1965. Resignations included the officer-in-charge of the Water section of the laboratory and two analysts from the Toxicology section, one a Senior Analyst.

With two exceptions all Laboratory Assistants-in-Training succeeded in their annual examinations. Excellent examination results were obtained by the majority of the full-time trainees, only one student failing to complete his year's examinations.

EQUIPMENT

The following major items of equipment were acquired by the Branch last year: Stereoscopic Zoom microscope, Atomic Absorption Spectrophotometer, Aerograph Gas Chromatograph, and a large size high speed Waring Blendor. All these instruments have been put into use and are proving their value.

APPENDIX (i)

District of Collection	Number of milk Samples Collected	Deficiency in Milk Fat		Containing added Water		Deficiency in Pasteurization Phosphatase Test	Total Adulteration	
		No.	per cent	No.	per cent	No.	No.	per cent
Metropolitan area—								
1964	3658	33	0.90	50	1.37	....	83	2.27
1965	4130	40	0.97	110	2.66	1	151	3.66
Country Districts—								
1964	980	64	6.51	63	6.44	....	127	12.95
1965	1430	113	7.95	107	7.55	2	222	15.65
Milk Board—								
1964	5592	56	1.00	90	1.61	....	146	2.61
1965	6006	60	1.00	187	3.11	18	265	4.41
Total—								
1964	10230	153	1.50	203	1.99	....	356	3.49
1965	11556	213	1.85	404	3.50	21	638	5.52

APPENDIX (ii)

Type of Drug	Drug	Number of cases in which found
No. poisons		219
Alcohol	0 per cent	242
	0.001-0.049 per cent	70
	0.050-0.149 per cent	100
	0.150-0.299 per cent	105
	0.300-0.499 per cent	18
	Over 0.5 per cent	3
Alkaloids and related compounds	Amphetamine	1
	Chloroquine	1
	Emetine	1
	Morphine	1
	Nicotine	1
	Pethidine	1
	Strychnine and Quinine (Q.E.S.)	5
	Strychnine	3
	Theophylline	1
Barbiturates and hypnotics	Amylobarbitone	82
	Amylobarbitone and Quinalbarbitone	12
	Barbitone	2
	Butabarbitalone	3
	Butobarbitone	12
	Pentobarbitone	176
	Carbromal and Pentobarbitone	107
	Phenobarbitone	10
	Quinalbarbitone	29
	Glutethemide	5
	Bromvaletone and Carbromal	34
	Chloral	14
Antispasmodics	Primidone	2
	Phenytoin	5
Analgesics	Phenacetin	24
	Salicylic acid	28
Tranquilizers, etc.	Amitriptyline	5
	d-Chlorpheniramine	1
	Chlorpromazine	6
	Imipramine	3
	Methamiodiazepoxide	1
	Methapyrilene	1
	Methaqualone	1
	Meprobamate	1
	Paraldehyde	1
	Prochlorperazine	1
	Trifluoperazine	1
	Thioridazine	3
Metals	Arsenic	14
	Lead	13
Miscellaneous	Cresols	1
	Cyanide	2
	Carbon monoxide	5
	Blood chlorides	9
	Dieldrin	1
	Phosphorus	2
	Aniline and Nitrobenzene	1
	Chloramphenicol	1

Division of Forensic Medicine—Government Medical Officer for Sydney

Location: 102 George Street, Sydney

STAFF

Director, Division of Forensic Medicine and Government Medical Officer: Dr JOHN LAING,
M.B., B.S., M.C.P.A.

Medico-Legal Section: 4 medical officers, 6 permanent morgue assistants, 1 casual morgue assistant.

Medico-Legal Laboratory: 1 medical officer, 1 microbiologist, 2 laboratory assistants-in-training, 1 office assistant, 1 office assistant part-time.

ACTIVITIES

1. Medico-Legal Section

This section performs autopsies upon all bodies coming under the jurisdiction of the City Coroner. It works in close co-operation with Metropolitan Police Force and is available to visit scenes of crime when requested. It undertakes post-graduate training and demonstrations in forensic matters to interested medical practitioners. The section undertakes the medical investigation of all aircraft fatalities in New South Wales on behalf of the Department of Civil Aviation and the Royal Australian Air Force, visiting the scene of the accident wherever it may be and performing the requisite autopsies. It gives advice and assistance to Country Coroners and Medical Practitioners throughout the State. The section also undertakes the examination of criminal assault for the Police Department. The Medical Staff is required to give evidence in various courts in connection with this work. Following the recruitment of two overseas forensic pathologists (see later) the Medical Officers performing necropsies are now examining the histopathological material taken from their own cases.

The above services are available day and night all the year round.

Table I. gives a comparison of the activities for the years 1965 and 1966.

TABLE I

	Year ending 31st December, 1964	Year ending 31st December, 1965
Autopsies for City and Country Coroners (including week-ends)	2,337	2,446
Examination of Criminal Assault Cases	128	140

The number of necropsies shows the same gradual increase that is experienced annually. The number of criminal assault cases remains within comparable limits.

2. Medico-Legal Laboratory

The laboratory provides pathological and biological services to assist in the investigation of crimes and in the determination of causes of death in cases for various Coroners. The work included histopathology, the grouping of blood and secretions, the investigation of blood stains and seminal stains and the examination of hairs and fibres. These services are available for both Metropolitan and Country cases.

A detailed analysis of the specimens submitted and the number of examinations performed is given in Table II. The number and types of investigations are intimately linked with the crime rate in the community and show corresponding variations. However the figures for the processing of histopathological specimens are not strictly comparable with those of last year. The number of specimens submitted has increased greatly, saturating the processing facilities of the Medico-Legal Laboratory resulting in some delay in completing the examinations. Consequently, although the necropsies were performed in 1965, approximately 200 cases remained to be completed as at 31st December, 1965.

SPECIAL FEATURES OF THE YEAR'S ACTIVITIES

The year commenced with numerous acts of violence, the outstanding case being the discovery of the mutilated bodies of two girls buried in the sandhills at Wanda Beach in the Sydney suburb of Cronulla. This occasioned considerable work on the part of the Division at the time and scientific investigation is continuing. To date the assailant has not yet been discovered.

During the year three aircraft accidents were investigated in conjunction with the Department of Civil Aviation resulting in the performance of three autopsies at various country centres. This service has now been extended to include the investigation of Royal Australian Air Force fatalities within the State.

Towards the end of the year the Division played a part in a highly publicized alleged baby kidnapping case following the discovery of an infant's body in the scrublands of an outer Sydney suburb. During the search for this body, a second infant's body was discovered but this proved to be that of an abandoned newborn baby quite unconnected with the main case.

The aspect of public relations continues to be cultivated in the form of lectures to Hospital staffs, Universities, and other professional bodies, including lectures in forensic pathology at the University of Sydney, given by the Director, to post-graduate students proceeding to the Diploma of Clinical Pathology (D.C.P.). The staff of various Hospitals continue to attend autopsies of special interest to them.

Also in the latter part of the year the Division was fortunate in recruiting the services of two qualified forensic pathologists namely, Dr E. B. La'Brooy from Singapore and Dr C. Corby from the United Kingdom. Their experience and knowledge is proving a valuable asset to the Division and the increase in staff has enabled the Division to provide greater assistance to Coroners and Police beyond the immediate metropolitan area.

A pleasing innovation during December was the seconding of a Medical Officer (Dr Frack) from the Institute of Clinical Pathology and Medical Research to the Division for a month's training in forensic medicine. It is hoped that this measure can be repeated as it will serve to introduce clinical pathologists to the particular requirements of Medico-Legal necropsies and will also form a growing pool of Medical Officers with experience in forensic pathology.

At the same time, a Colombo Plan Fellow from Malaysia (THENG Chye Yam) was attached to the Medico-Legal Laboratory for training in certain aspects of the laboratory investigation of crime.

Finally, during the year, a block of land was acquired in Camperdown opposite the University of Sydney and preliminary meetings with architects from the Public Works Department have been held with a view to planning a new building to house the Division and certain Coroners' Courts.

TABLE II—ACTIVITIES OF THE MEDICO-LEGAL LABORATORY TO 31ST DECEMBER, 1965

	Number of specimens submitted						Number of tests performed					
	Police	Morgue	Analyst	Misc.	Year ending 31-12-64	Year ending 31-12-65	Police	Morgue	Analyst	Misc.	Year ending 31-12-64	Year ending 31-12-65
Whole blood for grouping..	128	23	..	1	46	152	346	82	..	2	175	430
Garments, weapons etc. for grouping of blood stains and determination of origin of blood ..	253	84	..	3	288	340	480	5	..	3	606	488
Vaginal Smears for Spermatozoa ..	40	37	..	..	75	77	35	37	..	..	74	72
Garments etc. for the detection of seminal stains ..	287	2	..	..	387	289	267	4	..	..	447	271
Specimens of hair ..	68	28	..	..	77	96	662	36	..	..	605	698
Post mortem tissues for histopathological examination ..	538	2,890	..	8	3,345	3,436	765	3,676	..	8	5,000	4,449
Total ..	1,314	3,064	..	12	4,218	4,390	2,555	3,840	..	13	6,907	6,408

Division of Occupational Health

Director: Dr ALAN BELL, M.B., B.S., D.I.H.

Location: 86-88 George Street North, Sydney

Apart from its medical activities, the Division of Occupational Health now comprises 3 branches—namely, Radiation, Air Pollution Control and Industrial Hygiene. Although the Division was established about 35 years ago primarily to investigate working conditions in factories, the last named branch was only formed towards the end of 1965. Its activities are varied and include toxicology, implant evaluations, noise control, agricultural health, ergonomics and the evaluation of items of personal protective equipment. Mr A. T. Jones is the Officer-in-Charge.

Apart from their advisory and investigational activities, the respective main function of the first two named branches is to administer the N.S.W. Radioactive Substances Act, 1959, and the 1961 Clean Air Act and their associated Regulations. The Branches receive the assistance and guidance of the Radiological Advisory Committee and the Air Pollution Advisory Committee.

The Division actively encourages industrial personnel and organizations to seek its advice and guidance, preferably at the planning stage of new processes.

In order to improve health, safety and welfare a close liaison is maintained with various Associations, Societies and Organizations. Close working relationships have been developed with representatives of certain other Government Departments, and in particular the N.S.W. Department of Labour and Industry.

GENERAL REVIEW

The construction of the new offices and laboratories has been commenced; these will be finalized early in 1967. The two-half storeyed air-conditioned building (Figure 1) will be jointly occupied by the Government Analyst and the Division. Opportunity has been taken to increase the amount of space available for existing Divisional activities and to incorporate several new features such as instrumental calibration facilities, a mechanical workshop, electronic workshop, and separate laboratories for ergonomics, low level counting, chromatography and agricultural health.

During the year, considerable progress was made towards cleaner air. From discussions with managements it is clear that an increasing number are becoming more and more aware of the need for air pollution control and, when technically possible are anxious to accept their community and legislative responsibilities. It was ascertained that control equipment valued at approximately £30,000,000 had either been recently installed or had been ordered. Every effort was made to develop further the existing cordial relationships with industry. Early in the year the "Maximum standards of concentration and rates of emission of air impurities" for scheduled premises became effective. Large numbers of stack tests have been carried out to determine if industries are operating within these limits. The number of licensed scheduled premises is approximately 700.

Discussions were held to ascertain to what extent automatic data processing could be utilized in order to make more effective use of our air pollution field data; it should be possible to introduce a satisfactory programme next year.

In August the second Clean Air Conference was successfully held, being jointly organized by the University of N.S.W. and the Department. This was ensured by a Treasury grant to £5,000. By invitation five overseas authorities, two from Great Britain, two from the United States of America and one from World Health Organization, participated. The conference attendance numbered approximately 360, including representatives from other States in addition to New Zealand. A resolution was passed recommending the formation of an Australasian Air Pollution Control Association.

In general the activities of the radiation branch paralleled those of previous years. The number of licences issued increased by approximately 10 per cent; much of this occurred in country districts which are now being visited regularly. The appointment of a chemist to the Radiation Branch has enabled a start to be made on work involving radiochemistry, particularly in regard to environment monitoring, and the problems of waste disposal. This latter is assuming greater importance as the use of unsealed radioisotopes increases in the universities, hospitals and industry.

Reference has already been made to the formation of the Industrial Hygiene Branch. The year has seen a considerable extension in the Division's activities connected with the evaluation of items of personal protective equipment. Industry and manufacturers are appreciative of the technical help and assistance which they now receive. In recent years the Division has become increasingly involved in several aspects of Ergonomics. During the period under review it was possible to arrange for a three months appointment to the staff of Mr R. S. Easterby, B.E.E., A.L.C., A.M.I.E.E., lecturer in ergonomics laboratory of the Department of Production at Cranfield College, Bedford, U.K. A report was prepared concerning the future development of this section of the Division. To some extent it has been possible to extend our agricultural health activities, by working in conjunction with area Medical Officers of Health; the State's severe drought prevented certain field work.

The Division has devoted a considerable proportion of its overall activities to educational activities; requests are repeatedly received for lectures and addresses on technical matters.

STAFF

The authorized staff is 63, including four trainees; the corresponding total in 1964 was 62. The new appointment was a scientific officer who will be mainly concerned with the evaluation of conditions of work at tunnels and at the construction sites of projects undertaken by the Metropolitan Water, Sewerage and Drainage Board.

With the appointment of a field engineer to the Newcastle area, all vacancies in the Air Pollution Control Branch were filled.

Temporary clerical assistance was obtained in order to enable the Air Pollution Control and Radiation Branches to convert to the punch card for purposes of the licensing systems.

Dr Cleary was awarded his doctorate at the University of N.S.W., his thesis being "The Separation, Identification and Evaluation of Polynuclear Hydrocarbons in Urban Atmospheres". As a result of the resignation of Dr F. Kafka in May, this officer was appointed to the position of Chemical Engineer, Air Pollution Control Branch.

As a result of a financial grant from the United States Public Health Service, it was possible for Dr J. L. Sullivan to attend the Annual Meeting of the Air Pollution Control Association, held in Toronto. During his four weeks' absence he also visited certain industries in America and made additional enquiries into control and scientific activities in the U.K. Dr Sullivan was invited to accept a short term position of WHO Consultant on Air Pollution in Formosa.

As a result of a grant from the N.S.W. Joint Coal Board, Mr A. T. Jones was able to attend the 2nd International Conference in Inhaled Particles and Vapours, held at Cambridge. Visits were also made to a number of institutes whose principal interests lay in the field of pneumoconiosis and dust control, particularly in coal mining.

REPRESENTATION ON COMMITTEES

The Division represents the Department on numerous technical and advisory committees. These are:

Air Pollution—

- Air Pollution Advisory Committee.
- Clay Products Subcommittee.
- Emission and Equipment Standards Subcommittee.
- Publicity and Educational Subcommittee.
- Leichhardt, Wollongong and Newcastle Air Pollution Advisory Committees.
- Organizing Committee of 1965 Clean Air Conference.
- Steering Committee Australasian Air Pollution Control Association.

Australian Standards Association—

- Air Conditioners.
- Bioacoustics.
- Chemical Barriers for Termites.
- Co-ordinating Committee.
- Eye Protection.
- Human Factors.
- Industrial Safety Helmets.
- Refrigeration.

Interdepartmental Committees—

- Occupational Noise Committee.
- Occupational Safety and Occupational Health.
- Personal Protective Equipment.
- Pesticides Residues in Food.
- Rural Disease Committee.
- Rural and Farm Safety.

Occupational Health and Medical Research Council—

- Occupational Health Committee.
- Pesticides Subcommittee.
- Radiation Technical Subcommittee.

Occupational Health Nursing—

- N.S.W. College of Nursing's advisory panel for Occupational Health Nursing certificate course.

Radiation—

- Commonwealth State Committee on Nuclear Ships.
- Conjoint Committee Radiographers Course.
- Radiography Course Advisory Committee.

Miscellaneous—

- Examining Committee for Licenses for Fumigators.
- Joint Coal Board Committee on Dust and Ventilation Research.
- Sydney Technical College's Advisory Committee on Noise for Health Inspectors Post Certificate Course.
- World Health Organizations Expert Committee on Occupational Health.

STATISTICAL DATA

Type of Activity	1963	1964	1965
1. Medical—			
Number of employees examined	1,124	1,148	1,096
Blood slides examined for evidence of lead poisoning—			
(a) Slides made by medical officers working in factories where a lead process is carried out and examined either by a private pathologist or by the Division	8,256	8,222	8,798
(b) Slides of men examined at the Division	451	349	381
Number of other pathological tests carried out by the Division	4,128	3,075	3,769
2. Scientific—			
Number of "Occupational Health" visits	1,203	1,329	1,348
Number of "Radiation" visits	425	733	927
Number of "Air Pollution" visits	566	2,573	3,456
Number of Theatres and Halls inspected	4	9	6

EDUCATIONAL ACTIVITIES

(a) Articles Published

Thirty articles have been published, including:

- (1) 'Exposure to Guthion during Formulation'. *Archives of Environmental Health*, January. Mr G. R. Simpson.
- (2) 'Industry gets lessons in lifting'. *Australian Factory*, January. Mr S. Himbury.
- (3) 'The Occupational Health Sister'. *The Australian Nurses Journal*, January. Miss E. G. Roach.
- (4) 'Cholinesterase Testing and Organic Phosphate Pesticides'. *Australian Medical Journal*, February. Mr G. R. Simpson.
- (5) 'Strains and sprains can be prevented'. *N.S.W. Agricultural Gazette*, April. Mr S. Himbury.
- (6) 'A mass postal survey of dental X-ray units in N.S.W.'. *Australian Dental Journal*, April. Mr W. E. Foskett.
- (7) 'Pollution by polycyclic aromatic hydrocarbons in the city of Sydney'. *Medical Journal of Australia*, May. Dr G. J. Cleary and Dr J. L. Sullivan.
- (8) 'N.S.W. Clean Air Act: Early experience and future prospects'. *Journal of Australian Refrigeration, Air Conditioning and Heating*, June. Dr J. L. Sullivan.
- (9) 'Exposure to orchard pesticides'. *Archives of Environmental Health*, June. Mr G. R. Simpson.
- (10) 'Methyl Bromide Poisoning in Man'. *Industrial Medicine and Surgery*, June. Dr E. O. Longley and Mr A. T. Jones.
- (11) 'Air Pollution: Guest Editorial'. *Australian Refrigeration, Air Conditioning and Heating*, June. Dr A. Bell.
- (12) 'Radiation incidents in N.S.W.'. *British Journal of Industrial Safety*, July. Mr A. Fleischman.
- (13) 'The influence of combustion rate, coal characteristics and soot blowing on the admission of particulars from industrial boiler plants'. *Australian Engineer*, August. Mr P. Murphy.
- (14) 'Progress towards Clean Air in N.S.W.'. *The Australasian Engineer*. Dr J. L. Sullivan.
- (15) 'Australian Air Pollution Legislation'. *Journal Air Pollution Control Association*, September. Dr J. L. Sullivan.
- (16) 'Visual problems in Welding'. *Welding Fabrication and Design*, November. Mr J. Allen.
- (17) 'An Evaluation of Catalytic and direct fired afterburners for coffee and chicory roasting'. *Journal Air Pollution Control Association*. Drs J. L. Sullivan, F. L. Kafka and Mr L. M. Ferrari.
- (18) 'Exposure to Parathion'. *Archives of Environmental Health*, December. Mr G. R. Simpson.

- (19) 'Two incidents involving exposure to dentists to ionizing radiation'. *Australian Dental Journal*, December. Mr A. Fleischman.
- (20) 'Health hazards at Subnormal Temperatures'. *Proceedings of N.S.W. Industrial Safety Convention*. Dr E. O. Longley.
- (21) 'Ergonomic Considerations in the Provision of Safe Working Conditions'. *Proceedings of N.S.W. Safety Convention*. Dr A. Bell.

(b) Accepted for Publication

- (1) Air Pollution by Metallurgical Industries at Port Kembla: Medical Considerations.
- (2) Relative Contributions of Air Pollution and Ocean Spray to Water Soluble Deposited Matter.
- (3) A simple Cholinesterase Testing Method for suspected Organic Phosphate Pesticide Poisoning.
- (4) Performance of a core oven afterburner.
- (5) Design of Circular Dials.
- (6) Dust Deposition rates in Sydney.
- (7) Characteristics of Particulate Emissions from Industrial Boiler Plants.
- (8) Headaches in Explosive Magazine Workers.
- (9) Aerobic Capacity and Physiological Fitness of Australian Men.
- (10) The Problem of Particulate Emissions from brass foundries.
- (11) The design of Indicators and Controls.
- (12) Mercury exposure in the Jewellery Moulding Industry.
- (13) The use of ratios of polycyclic sequence of combustion in hand fired intermittent brick kilns.
- (14) Radium alpha activity of coal, ash and particulate emission at a Sydney Power Station.
- (15) Toluol exposure in a ship's hold.
- (16) Selective tests for Contaminants in Welding; fumes from Electric arc Welding. An Environmental Assessment.

Dr Trainor's *Handbook of Industrial Toxicology* will be published commercially in March, 1966.

The International Labour Office requested Mr Himbury to prepare a paper on "Kinetic Methods of Manual Handling in Industry" for inclusion in one of that Organization's future publications.

The Director's Public Health Report, *Noise: An Occupational Hazard and Public Nuisance*, prepared at the request of the World Health Organization, was finalized and will be published early in 1966.

(c) Departmental Publications

A booklet *Industrial Dermatitis* has been prepared.

The book *Atomic Radiation and its Effects on Health* has been re-edited and partly re-written prior to reprinting.

The leaflet "Dermatitis caused by Epoxy Resins" was reprinted.

(d) Lectures

250 lectures were given. This total includes several on ergonomics, given in Sydney and Melbourne, on behalf of the Industrial Design Council of Australia. Addresses were also delivered at the second Australian Ergonomics Conference; at the fifth annual meeting of Physics in Medicine and Biology; at the N.S.W. Industrial Safety Convention and Exhibition; at the Clean Air Conference; at the Annual Convention of Veterinary Inspectors; at the 2nd biannual symposium on analytical chemistry; at the Department's Refresher Sessions for Occupational Health Sisters; for the Department's course on "Preparation for Retirement" and at safety training courses organized by the National Safety Council. Under and post graduate lectures were given at several faculties of the Universities of New South Wales and Sydney. Lectures on noise were given in the post certificate course for health inspectors and on radiation protection in the Radiography Course at the Sydney Technical College. Several were given to the students taking the Occupational Health Nursing Certificate Course at the N.S.W. College of Nursing.

The Division continued to participate in the training of factory inspectors.

I. MEDICAL ACTIVITIES

As there is a close working relationship between divisional, medical and scientific staff, in most instances the results of medical investigations are given in the description of specialized investigations.

In addition to medically examining employees occupationally exposed to various toxic chemicals, divisional staff are frequently consulted by medical practitioners and specialists on specific problems.

Bladder Cancer

Early in 1965 an English newspaper prominently reported the death from bladder cancer of a man who had been exposed to carcinogens of the aromatic amine class and raised the question as to whether adequate attention was being paid to the supervision of the health of those so exposed. The rubber industry was the one most involved.

Local enquiries were instituted and it was found that such materials have, in the manufacture of rubber, been little used in New South Wales since 1950 and that their use ceased about 1955.

With the co-operation of the firms involved it has been arranged to examine employees, who might have been exposed, by means of (a) a medical questionnaire, (b) examination of the urine for blood, and (c) urinary cytological examination.

This method of early detection of cancer is generally acknowledged to be the most effective and the tests will be inaugurated early in 1966.

Dermatitis

Of the 100 cases notified to the Division, the commonest occupational causes were oil and solvents; the respective numbers were 19 and 17. The division saw several cases from fibreglass. At one factory various sized electric cables were cut into bundles and their ends stripped of covering. One female employee developed conjunctivitis and keratitis; fibreglass fibres were found on the cornea which became ulcerated with subsequent abscess formation. The latter had to be drained surgically.

Lead

The following table shows the results of stipple cell counts undertaken either by industry itself or by the Division.

Industry	Number of Slides Submitted			Number of Slides with Stipple Cell Counts of—					
	1963	1964	1965	3,000—5,000			5,000 or more		
				1963	1964	1965	1963	1964	1965
Battery Works	2,483	1,989	2,904	145	102	272	35	31	69
Manufacture of lead compounds ..	3,582	4,172	3,241	399	253	220	200	65	67
Miscellaneous other users of lead ..	2,191	2,056	2,653	106	125	173	27	58	55
Totals	8,256	8,217	8,798	650	480	665	262	154	191

Lung Cancer

Several cases of asbestosis were seen. In view of the known association between this disease and cancer of the lung, preliminary discussions with several organizations on the matter of medical examinations incorporating sputum cytology have been held. It is hoped that such screening will commence next year.

Occupational Health Nursing Advisory Service

The main functions of this service are to stimulate and assist in the further development of occupational health nursing, to give advice on day to day problems and to advise sisters, and their managements, working in industry on the many aspects of this speciality.

As in previous years three refresher sessions were held, including one to which management were invited; a wide range of topics, such as industrial toxicology, back injuries, cancer detection in women, were discussed. A series of 6 lectures on "Preparation for Retirement" was organized in conjunction with the Director of Geriatrics. Sisters from 22 companies participated; it was agreed that these lectures not only served a useful purpose but also illustrated the widening scope of activities for such nurses.

For the first time in Australia a 3-month full time course on Occupational Health Nursing was held; the Division was actively associated with this post graduate training. Four sisters successfully completed the course.

Advice was given on the planning of new medical centres and several others previously planned were visited. 73 visits, including educational, liaison and 23 to factories, were made. Thirteen separate one-day visits to the Division were also arranged for New South Wales Bush Nurses; it is considered important that new members of this organization should have some knowledge of occupational health problems which they may meet in their areas.

Investigation of First Aid Facilities at the Port of Newcastle

This was carried out as part of larger surveys undertaken by the National Health and Medical Research Council's Occupational Health Committee. The Merewether and Lee Wharves are easily accessible to the well-equipped radio-controlled mobile ambulance; the B.H.P. wharf is close to the elaborately equipped B.H.P. Medical Centre. It was felt that these wharves were adequately served from the first aid and medical points of view.

II. INDUSTRIAL HYGIENE BRANCH

Officer-in-Charge: Mr A. T. JONES

Mr A. T. Jones attended the 2nd International Conference on Inhaled Particles and Vapours, held at Cambridge University. The meeting dealt with research into the toxicological aspects of tissue response to various dusts, rates of clearance from lungs of exposed animals under experimental conditions, dust retention in humans, compositional analyses and particle size by post mortem and in animals by inhalation experiments.

Perhaps the most vital findings over the past five years have been the relationship of lung retention to mass exposure under five microns and the instrumental developments to sample airborne dust clouds on this basis.

The impression was gained that in Europe there has been a gradual transition towards uniformity in dust sampling methods on the basis of sampling gravimetrically. It is likely that this trend will continue. An international meeting held immediately after the conference, partially agreed to institute uniform surveys, particularly in the United States and Britain, with mass sampling as a basis. The division will purchase such instrumentation and make comparisons of the obtained results with those of existing instrumentation. To date no standard of exposure for gravimetric sampling has been suggested.

Subsequent to the meeting Mr Jones visited several dust research institutes in Great Britain and in Germany. Enquiries into such matters as dust measurement and control in mines, and the relationship between dust exposure and chest disease were made.

Analytical Processes

As a result of discussions during the 1964 overseas visit by Mr Jones, under the sponsorship of the World Health Organization, a number of new or modified methods of analyses for air contaminants have been introduced. These include silica, manganese, chromium, fluorides and the use of infra red and ultra violet spectrophotometry for gases and solvents in addition to various gas chromatographic techniques.

Visits to Department of Labour and Industry District Offices

Visits were made to district offices at North Sydney, Bondi Junction, Burwood, Campsie, Bankstown, Daceyville, Balmain, Parramatta, Stanmore and Redfern. Discussions were held on recently introduced industrial processes which involved potential health hazards. A number of joint factory inspections were made to see processes which were causing concern to individual inspectors; where necessary follow up investigations were carried out.

The branch carried out the following field visits:

Agricultural Health—							72
Formulation of Pesticides	..	..	..	..	..	..	34
Farm Visits	..	..	..	..	..	..	32
Ergonomics—							541
Work physiology	..	..	..	..	..	..	151
Manual Handling	..	..	..	..	..	..	123
Tenosynovitis	..	..	..	..	..	..	85
Visual problems	..	..	..	..	..	..	55
Somatotyping	..	..	..	..	..	..	37
Excessive Temperature	..	..	..	..	..	..	34
Ventilation	..	..	..	..	..	..	27

In-plant Toxicology—	307
Dusts	123
Gases	84
Solvents	63
Local Exhaust Ventilation	37
Noise—	209
Industrial	111
Residential	98
Personal Protective Equipment—	46

(A) Clinical Poisonings, Toxicological Investigations and In-plant Assessments

The following are of interest:

BEACH MINING MINERAL PROCESSES

A survey was conducted into the exposure to siliceous dusts in the beach sand mining industry. A case of silicosis, after 20 years employment, was reported in 1964. All processes in the refining of beach minerals, were examined at nine plants; there were very few differences in working conditions. Atmospheric dust concentrations were assessed and samples collected for free silica analyses.

With the exception of one plant, which utilized air blown tables for final silica separation from the minerals, airborne dust contained less than 10 per cent of free silica. Average dust concentrations ranged 20-270 particles per cubic centimetre. In the particular case mentioned the silica content was 19 per cent, the average dust concentration being 480 particles per cubic centimetre. Dust concentrations in each plant were less, without exception, than the tentative standard adopted, of 400 particles per cubic centimetre, though in some instances particular operations of short duration exceeded this figure. Modifications made to the dry separation of minerals in recent years has probably decreased dust exposures.

Possible sources of exposure to ionizing radiation during the processing of monazite were also investigated with the following results. Internal exposures may occur (a) from the inhalation of airborne dust in the general working area, and in particular adjacent to the monazite discharge or bagging point and (b) from contamination of body clothing and food. External exposures result from the accumulations of monazite in bags at the bagging point or in the store, from "dumps" close to the treatment plant and from concentrates in storage bins.

Tests of airborne radioactivity and measurement of external radiation dose-rates were made in all of the plants. In no case did the former exceed 50 per cent of the maximum permissible concentration; the findings were generally considerably lower than this figure. Significant dose-rates (up to 10 millirad per hour) were found in the immediate vicinity of bagged stockpiles. In certain cases recommendations were made for the shielding of stockpiles with non radioactive bags of zircon or rutile and to have some dumps relocated. Advice was given as to the need for a high standard of personal hygiene to reduce the risk from ingestion of monazite particles. Film badge monitoring will be arranged in one plant where a special problem exists from the use of low grade monazite rejects for "filling" over a period of more than twenty years.

CADMIUM

A factory employee spent up to two hours per day silver soldering articles in an open workroom. A wall set exhaust fan was drawing fumes past his breathing zone; detected concentrations of contaminants inside his head shield were: Cadmium 3.8 mg/m³, silver 0.12 mg/m³ and copper 0.12 mg/m³. As the first named is thirty eight times the accepted standard there was thus a potential hazard. Medical examination showed little ill effects; this was due to short exposure. Effective exhaust ventilation has now been installed.

Other investigations were carried out to evaluate the manufacture of cadmium copper alloys.

CARBON MONOXIDE

Tests were performed to determine employee exposure in a motor car assembly plant where the 'roller' test is carried out. Another investigation was carried out because it had been alleged that there was a hazard in foundries, where furnaces had been fitted with cone and spray grit arrestors, on days when the ambient atmosphere was 'heavy'. Fears that the resistance of the wet arrestor would cause carbon monoxide containing gases to escape into the foundry were groundless.

LEAD

Some of the processes assessed were the assembly of various types of batteries, the binding of components with rubber to produce a leak proof seal, the compounding of colours, the grinding of stearate, and the loading of scrap into furnaces. Because of the intermittency of exposure some situations, despite high breathing zone concentrations, were not considered hazardous.

MINERAL DUSTS

1. *Silica*

Of the comparatively large numbers of tests performed many were in connection with civil construction projects. It is not unusual to detect high breathing zone concentrations of siliceous dusts in confined spaces such as pier holes. Whilst it is realized that on certain sites it is not always easy to provide effective dust control, in some instances contractors do not make sufficient effort to provide safe working conditions.

Several cases of silicosis have been seen including some in which the exposure was not very long; one man employed for approximately two years in the processing of silica flour developed silicosis. River sand, after initial washing and drying, was ground in a ball mill to a very fine size. The main exposure was at the bagging point, concentrations of up to 500 particles per cc of air being detected. Improved handling techniques and the installation of an efficient exhaust ventilation have overcome the problem.

As part of a project undertaken by the Dust and Ventilation Research Committee of the Joint Coal Board, investigations were instituted into particle size distribution of airborne dust in the various coalfields in an endeavour to relate local dust standards to those in Great Britain, where particles from 1.5 microns only are considered; in New South Wales all up to 5 microns are included. This work has been completed and consideration is presently being given to standards of exposure based on 1.5 micron particle range. This is becoming of greater importance now that diesel equipment is being introduced into coal mines, and with it the associated difficulties in dust assessment, particularly in the finer particle range.

Correlation work with the Owens' Dust Counter and Long Running Thermal Precipitator was continued in South Coast Mines. Sufficient samples have been obtained and a correlation figure of 0.35 calculated. This is being held in abeyance until further figures are obtained from the Northern Coalfields.

2. *Asbestos*

Several processes were investigated consequent to the notification of specific lung pathology in asbestos textile manufacture, laboratory testing, fibre crushing and the blending of various asbestos minerals.

With the exception of textile manufacture, where concentrations of 2.0 and 1.0 millions particles per cubic foot were considerably less than the recommended limit, exposures were excessive being 38.5, 28.75, 6.5 and 18.1 millions particles per cubic foot respectively. Corrective measures, based on recommendations put forward as the result of these investigations, have now reduced these exposures to acceptable levels.

3. *Mica*

The exposure to mica was investigated in the manufacture of water-proofing sheet. Although high concentrations of dust larger than 5 microns were detected, the amount under this size was small and there was no hazard to personnel.

NITROGLYCERINE

While investigating complaints of 'dynamite headache' amongst workers in an explosives magazine, the division made certain objective tests to ascertain at what concentrations of nitroglycerine and ethylene glycol dinitrate, physiological response occurred. By laying out varying amounts of explosives in a closed magazine it was possible to produce varying atmospheric concentrations; volunteers remained in the room until headaches developed. Absorption was entirely by inhalation. At the currently accepted maximum allowable concentration of 2 mg cubic meter, all the volunteers, except one, suffered from severe headache and a fall in blood pressure. By assessing the medical responses at different concentrations it was found that the minimum causing symptoms was 0.5 mg per cu.m. The division concluded that a figure of 0.7 mg per cu.m. might be a more acceptable M.A.C. than the currently accepted one and that the M.A.C. should be based on minimum physiological response rather than on the amount which an employee can tolerate. Details of this investigation have been accepted for publication.

OIL FUMES

An operator developed a complicating pneumonitis allegedly due to the inhalation of mist from the use of a straight mineral lubricating oil, and fume from the profile cutting of aluminium. Oil mist in air concentrations in the work atmosphere up to 14.4 mg/m³ were detected; a tentative standard of 5.0 mg/m³ was suggested.

PHOSPHINE

A request was received from a coroner to investigate working conditions at a country railway siding. The deceased had worked as a "spout man" loading wheat into rail trucks. The grain had been treated several months earlier with aluminium phosphide tablets to produce phosphine in situ to control weevil. Extensive tests in several situations only detected phosphine in air concentrations up to 0.04 part per million. With a standard of 0.3 part per million it was stated that no health problem could be attributed to this gas.

SPRAYING

In one factory the insides of large iron pipes were sprayed with a coal tar enamel and on the outside with a coal tar epoxy. The former was heated to 400° C and applied together with crushed blue metal; breathing zone estimations showed that there was a hazard both from the dust and tar fumes. Respiratory protection was recommended pending the installation of exhaust ventilation equipment. The coal tar epoxy with amine hardeners were sprayed at room temperature and considerable drift detected in the work atmosphere; pending the installation of a tunnel booth, or satisfactory isolation of the process, it was necessary to safeguard the men by respirators and by the issue of protective clothing.

TOLUOL

As a result of several seamen and ship's officers being overcome in the hold of a ship being treated with an insecticide formulation containing 80 per cent toluene as solvent, an inspection was made shortly after the incident. Due to insufficient instruction, the formulation was sprayed without dilution and with no respiratory protection being worn. The initial collapse was that of the sprayer, followed by a number of others who attempted rescue. The only source of ventilation was the open hatch.

Some two hours after the event, during which time mechanical ventilation had been applied, liquid formulation was still present in the bottom of the hold; toluol in air concentrations were too high to be effectively measured by available apparatus and were certainly in excess of 10,000 parts per million. Obviously the exposures were sufficient to produce rapid narcosis, particularly when rescuers were bending low to the floor. All involved were taken to hospital and recovered.

TRICHLORETHYLENE

Several trichlorethylene tanks were inspected and in many instances high concentrations detected. Despite the availability of control technical advice from the suppliers, Department of Labour and Industry and ourselves, it is surprising that one repeatedly finds situations where acceptable limits are exceeded. Such exposures can often be confirmed by high trichloroacetic acid urinary concentrations. A very common defect is the use of a hoist for drawing parts from the tank at too fast a rate; solvent losses often occur because the tank is located in a drafty situation. Instances have also been seen where workers have been overcome whilst cleaning out tanks. Undue risks are taken; in many instances adequate respiratory protection is not provided and in some cases the work is carried out by a sole operator.

WELDING

Several situations have been investigated where either manufacturers, management or unions considered there was a health hazard. These included carbon dioxide welding, argon arc welding and the use of an inner Squirt Welding Machine; the latter utilizes a continuous electrode feed containing an internal flux of low boiling point metal and other constituents such as iron, silicon and manganese. A shield of vapourized metal is produced by the arc. Tests were also carried out, under standardized conditions, to evaluate exposures from the fumes given off by several new types of rods.

Following representations from the Boilermakers' Society of Australia, various manufacturers and users, a survey of the fume evolution from metal surfaces coated with primer paints during welding procedures was carried out. Nine coatings based on a variety of resins, including epoxys and alkyds, and with pigments of iron oxide, zinc chromate, zinc and aluminium powder were tested, standardized welding techniques being used throughout. With the exception of one primer coating, heavily loaded with zinc powder, most fume contribution was from the welding rods themselves. With this one exception there was no indication of a health hazard due to the primer coatings used. Least fume was contributed by alkyd resin base paints containing iron oxide-zinc chromate pigment.

CARBON ARC GOUGING OF STEEL FABRICATION

A process utilizing Arcair Copper Clad electrodes, was investigated following a dispute. Work was being done in a large grinding mill and involved the gouging out of temporary welds. Tests were carried out inside the mill and in the open workshop downwind of gouging flat plates. The process utilizes high temperature from the arc enhanced by air blown into it. Sampling for iron oxide, from the mild steel being treated, in addition to carbon monoxide and nitrogen dioxide, from vapourization of the carbon arc and conisation of the air surrounding the arc, were carried out.

Exposures from the former exceeded the threshold limit value of 15 milligrammes per cubic metre of air, both without 18.3 milligrammes per cubic metre and with, 15.8 milligrammes per cubic metre, local exhaust ventilation applied. Control recommendations were made. The respective carbon monoxide concentrations were 40 and 25 parts per million. Under similar circumstances the concentrations of nitrogen dioxide were of 1 and zero part per million. Because the noise levels were high effective ear protection for the operators were also recommended.

(B) Evaluation of Personal Protective Equipment and other Devices

There was a considerable increase, both in quantity and scope, of work undertaken. This was partly possible by the receipt of additional laboratory apparatus.

Description	Types	Makes	Items Tested	Items Complying with Australian Standard	Departmental Approvals
Self-contained Breathing Apparatus ..	7	3	7	4	4 units approved by D.L.I.* and Board of Health.
Airline Respirators and Hoods	7	4	8	4	4 units approved by D.L.I.*
Canister Respirators	9	3	39	29	5 units approved by D.L.I.*
Cartridge Respirators	8	5	12	8	4 types approved by D.L.I.*
Chemical Cartridges	22	6	205	112	2 types approved by D.L.I.*
Combined Particulate Chemical Cartridges	8	3	68	48	4 types approved by D.L.I.*
Dust Cartridges	6	5	126	52	2 types approved by D.L.I.*
Outlet Valves .. .. .	..	5	114	99	4 types approved by D.L.I.*
Safety Helmets	10	3	62	59	
Safety Goggles, Welding Helmets, Filters etc.	8	5	25	25	
Totals	85	42	766	440	23

*New South Wales Department of Labour and Industry.

Manufacturers and suppliers are actively encouraged to submit their equipment for test. Of late, and possibly as a result of the Division's activities, some manufacturers have made commendable efforts to upgrade the quality of their products. Three of the five Australian firms producing respiratory equipment have now installed apparatus to carry out control tests on their products; a fourth intends to do likewise in the near future. Subsequent to our criticism of the construction of outlet valves used in some half face respirators, an improvement, both in design and quality of materials used, was noted.

In order to obtain basic information on the sizes and facial fit of respirators, an anthropometric survey of 500 men has been carried out. The results are currently being analysed; preliminary findings suggest that in length of face from bridge of nose to point of chin, the Australian born male is slightly smaller than non-Australian born men. This dimension is the one of vital importance in the accurate fitting of half face respirators and confirms the Division's qualitative impression that many of those sold locally are too big. Manufacturers will be later informed of our findings.

The Interdepartmental Committee on Personal Protective Equipment has considered test reports supplied by the Division on items for which the Department of Labour's statutory approval has been sought; registers are now kept. The Committee has also prepared draft regulations pursuant to the Factories, Shops and Industries Act relating to the provision and use of certain protective equipment. It is considered that where for any reason fumes in the work space may cause either irritation, temporary, chronic or irreversible tissue damage or partial narcosis, thus impairing general alertness, thereby increasing the possibility of accident, the occupier should provide suitable personal protective equipment.

It is felt that not only is the Division now able to carry out testing on behalf of the various Government Departments and instrumentalities, as well as industry, but that the quality of the advice and help given on the use of items of personal protective equipment, has been upgraded to a marked extent over the past few years. There are still many situations where satisfactory engineering control of hazards is not possible. The knowledge gained by extensive testing, and by assisting in the development of a better standard of protective equipment, has put the Division on a similar level of competence to that already held in the other fields of Occupational Health. It will also enable the Division to take an active part in the revision of the Australian Standard on Respiratory Protective Devices, scheduled for 1966.

An investigation is proceeding into the service life and behaviour of outlet valves in conditions simulating those encountered in industry. It is also planned to measure the field of vision of goggles and respirators; apparatus has been assembled for this purpose.

(C) Noise

Interest in noise, and hearing conservation programmes, has increased further; many enquiries and requests for assistance are received from management, engineers, safety officers, unions and insurance companies. The Australian Standards Association is currently preparing several draft standards on various aspects of this public health hazard, including methods of measuring noise and the characteristics of meters.

(1) OCCUPATIONAL

The Division has seen many instances where excessive, and often potentially harmful, sound can be reduced to safe levels by good engineering practices. On some occasions control can only be achieved as part of a comparatively long term programme. In other instances reliance must be placed on the use of suitable ear protectors. Frequently, the excess noise results from the simultaneous use of several machines, less commonly from individual plants.

Specific investigations carried out include:

- (a) The use of *rock picks*; without silencers excess exposures of 20/25 db have been found. Although these levels can be reduced, there are many practical difficulties, such as back pressures, reduced efficiency and increased weight, preventing completely satisfactory control.
- (b) *Timber Mills and Woodworking Shops*. Depending upon factory construction, and types of machines used, excess noise exposures can be as high as 35 db, as for example with docking saws. Exposures from the use of chain saws, are such that those using them continuously are exposed to a potential hearing risk.
- (c) *Quarries*. Stone crushing equipment is often responsible for very high levels. In some instances it is possible to protect the men by enclosing control rooms etc.
- (d) *Plumbing and Panel Beating Classes in Technical Colleges*. In the former, the levels are high but the exposure is generally short enough to nullify this; this is not so with the latter.

Other situations investigated include the testing of diesel engines, the use of air compressors and certain types of office equipment.

In several industrial investigations, frequencies above the audible range have been measured; however, in all instances the readings in the audible range have been higher and any hazard is therefore more likely to be due to the latter. In addition the much smaller wave length in the inaudible range would reduce the propagation.

The recent acquisition of a statistical analyser permits a more detailed exposure assessment in relation to time and consequently a more accurate determination as to the extent of occupational hazards.

(2) RESIDENTIAL

The Division is increasingly involved in such problems, often at the request of the Council officers. Many such problems could be prevented by early consideration of plant siting, design and layout. It is pleasing to report that some industries, and in particular the larger ones, undertake residential noise surveys before commencing extensive building programmes.

A frequent cause for justifiable complaint is boiler noise; there is need for further investigation on the part of the manufacturing and design engineers. Annoyance to those living in the vicinity of country repair depots and commercial premises selling chain saws was also looked into.

(D) Agricultural Health

A close liaison exists with several Divisions of the N.S.W. Department of Agriculture, with Agricultural Colleges, with Junior Farmer's Clubs, with Agricultural Bureaux and with the Medical Officers of Health in Health Districts. The help and assistance which we have received has been invaluable.

The Pesticides Sub-Committee of the Occupational Health Committee of the National Health and Medical Research Council, has had further meetings to draw up "model legislation" for the control of hazards resulting from the use of certain anti-cholinesterase compounds. Detailed consideration has been given to such matters as toxicity, licensing and registration, methods of use including aerial spraying, use of protective clothing, medical examinations, suspension of employment in certain circumstances, washing facilities, safe disposal of containers, the maintenance of equipment and the storage of concentrates.

Due to the severe drought in N.S.W. much less field work and cholinesterase tests were conducted than in previous years. Several planned investigations had to be cancelled because of poor harvests and low crop yields.

CHOLINESTERASE ESTIMATIONS

280 tests were performed on specimens sent by private practitioners from country areas, on blood from operators of pesticide formulating plants and on specimens collected in field investigations. 12 results were below 40 per cent. Surveys were conducted on market gardeners in addition to tomato and cotton growers.

Possibly because of a change over from the use, on vegetable crops, of dilute boom sprays to concentrate type misting machines, 50 per cent of operators were found to have lowered cholinesterase readings after using parathion and mevinphos.

Further laboratory investigations were carried out into the suitability of available cholinesterase test methods; in particular the field use of reagents in stoppered tubes was studied.

Unfortunately the Division continues to receive specimens from practitioners of either serums only or blood sent in such a way to be unsuitable for testing.

FACTORIES FORMULATING PESTICIDES

47 inspections were made; periodic cholinesterase tests were commenced, for the first time, in two of these. In one factory almost all the operators had low levels; atmospheric breathing zone concentrations of Azinphos were in the order of 0.6 mg/cm. The degree of surface contamination was approximately 20 mg per square foot.

AERIAL SPRAYING

Increasing use is being made of this technique in the control of crop pests, including the cotton growing areas, although some individual acreages are too small and therefore unsuitable. The method has recently changed; in many instances the pilot now has under his direct supervision, and control, the flaggers, loaders and swamper. In many localities farmers are now not keen to flag or mark as they consider the hazard too great.

In collaboration with the Department of Civil Aviation, tests were carried out with an experimental spray aircraft. Of the team, the loader had the highest exposure, then the marker and the pilot least, even though the latter deliberately flew through half a mile of spray draft. It was found that one third of the drift continued for 100 ft from the cut off point towards the marker. Therefore, within such distances this person needs protective clothing.

High surface contamination of the lower levels of the plane was found; due to the high position of the air intake there was very little internal contamination of the cockpit.

Partly because of the Division's previous educational activities, fewer cases of poisoning by organic phosphates occurred in the cotton areas. There is now greater use of protective clothing and marking techniques have been improved.

ASSESSMENT OF EXPOSURES FROM SPRAYING

Dermal and inhalation exposures from parathion were estimated during the spraying of tomatoes with a knap sack mister; both were high and warranted the use of personal protective devices. Dermal exposures up to 60 per cent of an estimated fatal dose per day were detected; the inhalation exposure was about 4 per cent of the estimated MLD₅₀. Because parathion does not penetrate the skin readily, the cholinesterase figures were not correspondingly reduced.

The following results were obtained during the spraying of orchards in the Orange area, mainly using air blast units at triple concentrations.

Position	Number Samples	Spray Material	Results ug/100 cm ² /Hr		
			Minimum	Maximum	Average
<i>(a) Dermal Tests.</i>					
Arm	9	Azinphos ..	40	400	112
Wrist	10	Azinphos ..	40	1,700	337
Back	10	Azinphos ..	40	1,140	254
Chest	10	Azinphos ..	25	400	154
Shoulder	8	Azinphos ..	40	360	177
Hat	7	Azinphos ..	75	1,220	401
Thigh	10	Azinphos ..	45	640	216
Arm	11	Carbaryl ..	90	6,400	1,134
Wrist	10	Carbaryl ..	90	3,100	734
Back	16	Carbaryl ..	15	5,000	774
Chest	15	Carbaryl ..	160	6,600	1,122
Shoulder	14	Carbaryl ..	160	7,400	957
Hat	12	Carbaryl ..	130	3,900	1,150
Thigh	8	Carbaryl ..	245	1,100	587
<i>(b) Inhalation Tests.</i>					
Respirator	8	Azinphos ..	45	150	102
Respirator	6	Carbaryl ..	10	1,080	482

It may thus be seen that the dermal exposure is the greater of the two. Such exposures to Azinphos were considered sufficient to warrant protective measures; inhalation is potentially hazardous only in the case of heavy spray drift.

FUMIGATION

Due to the increased use of methyl bromide, investigations were carried out whilst fumigating; concentrations up to 300 ppm were recorded whilst desheeting a bowling green and up to 1,200 in a house on uncovering; inside concentrations of 1,200 ppm were detected indicating aeration of at least 24 hours' duration is needed to clear the gas.

In the revision of the regulations, it is proposed to revoke the existing general exemptions for agriculture and horticulture. Fumigation techniques in several small chambers were observed. Tests indicated that one was leaky and it did not possess the necessary exhaust ventilation. Respirators were seldom worn. Concentrations of up to 200 ppm were detected. It was thought that the health of some employees had been temporarily adversely affected.

Members of a family suffered eye irritation from chloropicrin used to fumigate a greenhouse in the near vicinity of their home.

DDVP

Because of its volatility, this insecticide is gaining popularity as a space disinfecting agent. Domestic units, if correctly used, generate between 80-120 micrograms/cm in a 10 x 10 room. Its use in glasshouses and in warehouses has been investigated. In confined spaces, such as on board ship, respiratory protection is necessary; air concentrations in the order of 7 mg/cm have been found.

AMMONIA

The health hazards associated with the injection of anhydrous ammonia direct with the ground, as a fertilizer, were investigated. There is potential danger with its transport and transfer, apart from the accidental bursting of hoses.

OTHER INVESTIGATIONS

Others of interest included the use of dichlorovos in a large glasshouse for pest control purposes and the use of carbon tetrachloride and dieldrin for the moth proofing of blankets.

CASES OF POISONING AND ILL HEALTH

Many individual medical practitioners sought the advice of the Division on the diagnosis and treatment of patients. Cases included pilot crop dusting, markers and employees formulating insecticides. The dieldrin content of a fat biopsy was determined to see if a case of pancreatitis might have been due to absorption of the chlorinated hydrocarbon. Several people complained of eye irritation whilst spraying with 2-4-D weedicide. Others were similarly affected by the use of paradichlorobenzene. One employee developed severe burns of the forearms as a result of cleaning up a large spillage of phenyl mercuric acetate.

(E) Ergonomics

THE DEVELOPMENT OF THE GROUP

As already stated Mr R. Easterby accepted a three-month appointment to work with the group. He visited many factories, large and small, to discuss the importance of ergonomics in relation to Australian industry.

His report, whilst acknowledging the work already carried out, recommended the appointment of an applied experimental psychologist, the use of consultants, the appointment of an instrument engineer, the provision of separate laboratory facilities and the use of experimental subjects therein. When the new laboratories at Lidcombe are completed, it will be possible to implement many of these recommendations. He stressed that the Division's activities should be related to production ergonomics, as opposed to product ergonomics. A short visit by Dr Wyndham, Director, Human Sciences Laboratory, South Africa, was most stimulating.

During the year the Division received numerous requests for lectures, including several from Universities; developing interest in this speciality was also apparent at the 2nd National Conference held in Melbourne. The September issue of *Industrial Engineer* was almost exclusively devoted to human engineering; the Division contributed five articles. A number of one-day symposia were held in various factories; these increase industrial awareness of the contributions ergonomics can make to occupational safety and health.

PHYSICAL FITNESS

Studies into the aerobic capacity and physiological fitness of Australian males were finalized; these will be reported in the literature. Preliminary investigations were also carried out to determine the possibility of using a bicycle ergometer test to quantitate physical fatigue.

VISUAL PROBLEMS IN INDUSTRY

The visual requirements in the fine assembly work of certain electric lamps, several problems of lighting and glare, the suitability of inspection tasks and certain welding problems, including the prevention of arc flash, were investigated. Many difficulties resulted from poor illumination, glare, insufficient contrast or inadequate eyesight. Less common causes included movements within the task, insufficient time to see and an unsatisfactory choice of colours. In such investigations illumination levels are measured, sources of troublesome glare, direct and reflected, eliminated, and if the task is considered visually satisfactory, but the worker finds it difficult, adopts abnormal viewing distances or complains of eyestrain, vision is tested to evaluate acuity, phoria, fusion, stereopsis, near-points of accommodation and convergence.

WORK PHYSIOLOGY

Further work has been done on the ergonomic evaluation of self-contained mine rescue breathing apparatus. A foundry investigation was carried out to determine the suitability of the one man ladle method used in the pouring of iron castings; carrying presents problems as the further the hand is placed on the bar from the molten metal the greater the effort required.

HEAT AND VENTILATION PROBLEMS

Evaluation of alleged excessive temperatures took place in a plating shop, a heat treatment room, a foundry and a clothing factory. Many unfavourable situations resulted from lack of knowledge of basic principles of radiation and heat transfer. In, as in most situations, relocation of the sources of heat was not practical, advice was given on the installation of additional insulation and thermal screening.

Most complaints about poor ventilation resulted from localized areas of low air movement.

TENOSYNOVITIS

Comparatively large numbers were investigated. In many instances industry has little understanding of correct work place design, good seating, human engineering of hand tools and the need for work methods within the operator's abilities. Incapacity has resulted from the use of blunt cutting tools, high speed repetitive wire cutting, from the use of tools which were too heavy for female workers; from the manipulation of very stiff levers placed too high; from poor seating causing awkward postures and from inexperienced operators being required to work too fast too soon or before adequate job training had been received.

ERGONOMICS FACTORY SURVEYS

Three comprehensive surveys were finalized. It is clear that industry does not make full use of existing and easily available data on ergonomics.

BURSITIS

Several people were seen with prepatellar bursitis as a result of laying carpets. In many instances kneeling could be avoided by the use of a stretching bar.

SEATING

Measurements of 250 female office workers were made in one large organization. The most suitable desk height was 23 in.; this is lower than most of the existing desks. Chairs should have seats of adjustable heights; with the customary limitation of 4 in. vertical adjustment, the best range of heights would be 13-17 in. Even with such seats, 50 per cent of workers would still need a footrest, ranging in height from 1 in. to 3 inches.

MANUAL HANDLING

Ninety-one courses of various types were conducted at 47 factories to more than 2,600 workers; in addition large numbers of "on the job" demonstrations have been given. Many joint factory inspections, with members of management, have been carried out; in order to eliminate several hazards at source, engineering modifications and recommendations for existing job procedures have been made. Instruction was given to 670 apprentices at a metropolitan technical college; it is hoped to extend this work. Several courses have been given to trainee physiotherapists and rehabilitation workers.

A number of hospitals have been visited in order to instruct nurses in correct manual handling techniques. On such occasions, the Division stresses the need for medical considerations, and possible modifications to basic principles of human kinetics; this is necessary because the patient may have a medical disability.

SOMATOTYPING

Two hundred new employees entering a large engineering workshop were somatotyped in order to see if there were any trends in body types. To date approximately 500 have been somatotyped; the results are being analysed. From preliminary findings there appears to be a bias towards ectomorphic mesomorphs and to a lesser extent endomorphic mesomorphs. In 1966, it is hoped to measure a number of workers injured at work.

NEW INVESTIGATIONS

Several were commenced including a study of the design of crane controls, the vision of crane drivers and the arrangement of on/off switches.

For several reasons it is important that the levers and pedals in crane cabins be standardized in position and direction of movement. This principle also applies to the relative positions and directions of movement of controls for stopping and starting machines, and for switching power on and off. In one medium sized factory more than 30 variations were found in a total of 200 controls.

Subsequent to the construction of a suitable 'chair', an anthropometric survey has been started.

SAFETY IN GOVERNMENT HOSPITALS

A survey showed that during a period of three months 397 notifiable injuries to patients, staff and visitors occurred in 15 of the Department's hospitals; these included 158 lost time accidents. The causes were numerous and closely paralleled those commonly found in industrial situations. The importance of such accidents is becoming increasingly recognized and in some countries preventive measures include the appointment of safety officers and the setting up of accident prevention committees.

III. RADIATION BRANCH

Officer-in-Charge: Mr H. M. WHAITE

N.S.W. Radioactive Substances Act, 1959 as amended, and Regulations

The N.S.W. Act and Regulations were based on models drawn up by a joint Commonwealth-State 1950 Committee. It has been found necessary to modify the legislation in order to remove anomalies and to improve procedures particularly in regard to the issue or re-issue of licences. Pending a review of the model legislation, by the Radiation Technical Subcommittee of the Occupational Health Committee of the National Health and Medical Research Council, no legislative changes of any significance are being made.

RADIOLOGICAL ADVISORY COUNCIL

The Council is the statutory body constituted under the Act to initiate and refer to the Minister recommendations relating to regulations, to the administration of the Act, and to the prevention or minimizing of the dangers arising from radioactive substances or irradiating apparatus. Conversely, it advised the Minister, and the Department, upon such matters as referred to it. During the year, it held eleven meetings at which it reviewed all applications for new licences, renewals of licences and extensions of licences, and considered the divers problems brought to its attention. Its help and advice is gratefully acknowledged.

LICENSING UNDER THE ACT

Two types of licence may be held under the Act—one to possess, use or sell radioactive substances, and one to possess or use irradiating apparatus. In the following table, these are designated respectively by "R" or "X". The table compares the current number of licences with the corresponding number at the end of the previous year. The increase is about 4 per cent.

LICENSES UNDER THE RADIOACTIVE SUBSTANCES ACT 1964-65

Category	X-Ray or Radioisotope	Licenses at 31-12-64	Licenses at 31-12-65	Approx. Percentage Increase
Medical	X	302	324	X 9 per cent R 27 per cent
Hospital	R	85	61	
Medical	X	X109 R 24	120	
Hospital	R		58	
Scientific	X		3	
Dental	R	897	877	— 3 per cent
Veterinary	X	33	50	52 per cent
	R	2	2	0 per cent
Chiropractic	X	33	43	30 per cent
General	X	36	38	5 per cent
Scientific	R	120	121	1 per cent
Industrial	X	38	49	29 per cent
	R	108	100	— 9 per cent
Commercial	R	28	22	—21 per cent
Total	X	1448	1504	4 per cent
	R	367	384	4 per cent
Grand Total	X & R	1815	1888	4 per cent

Because of change in the definitions of the medical and hospital categories, a number of licensees have been transferred from the former to the latter. Therefore only a combined percentage increase over the year has been shown for these categories.

Most of the year's decrease in licenses in the dental category has been due to a Radiological Advisory Council decision that a registered dentist, if an employee, can be considered as working under the direction and supervision of his employer, and that the latter only need hold a license under the Act. The decreases in the industrial and commercial categories have generally been due to a consolidation under a single person, or organization, of a number of activities involving the use of ionising radiations.

215 new licenses were granted, two refused and 142 allowed to lapse. The latter usually resulted from its transfer to some other job, but in many cases, retirement or death was the reason.

Field Inspections

The majority of inspections were carried out in the metropolitan area, where most sources of ionising radiation are located. Six visits were made to nearby areas, including Newcastle and Wollongong-Port Kembla; twelve to country areas. The areas covered included Broken Hill, the Central West, the Riverina, the Murray Valley, the Southern Tablelands, the South Coast, the Northern Tablelands and the North Coast. Two of the three trips to the last-named were in connection with the beachsands mining industry survey.

Details of these inspections are as follows:

FIELD INSPECTIONS CARRIED OUT BY RADIATION BRANCH STAFF DURING 1965

Category	Radioisotope or X-Ray	License Inspections	Non-License Inspections	Category Total	
				1965	1964
Medical	X	60	105	177	118
	R	1	11		
Hospital	X	7	71	89	152
	R	4	7		
Dental	X	376	36	412	274
Veterinary	X	4	17	21	35
	R	0	0		
Chiropractic	X	15	6	21	6
Scientific & Research	X	5	8	85	54
	R	14	58		
Industrial	X	7	10	115	91
	R	23	75		
Commercial	R	1	1	2	2
Transport	R	....	5	5	1
Totals	X	474	253	727	588
	R	43	157	200	145
Grand Total	X & R	517	410	927	733

Marked increases, about 50 per cent in each case, have occurred in the number of medical, dental and scientific inspections. The sharpest decreases, to about 60 per cent of the 1964 totals, have occurred in the hospital and veterinary categories. However, the overall increase has been about 26 per cent.

Faults in X-Ray Units

The Branch is continuing its routine inspections of medical X-ray equipment. The following table summarises the findings arising from the 720 inspections made during the year.

In 1965, 139 X-ray units out of 707 (20 per cent) had defects; the corresponding percentage in 1964 was 23 per cent. As in previous years, the commonest faults were inadequate filtration (44 per cent), defective shield or no shield (17 per cent) and defective protective clothing (20 per cent). The relatively small improvement is not unexpected at this stage. Most of these plants had never been previously inspected, and the full effect of our examinations and recommendations will only be apparent when re-inspection is carried out after a year or two.

Film-Badge Service

The Branch operates the major film-badge service in New South Wales covering the majority of users of irradiating apparatus and radio-active substances; it does not cover radiation workers in Commonwealth Departments, and instrumentalities, nor in the various departments of the University of Sydney. Most of these persons subscribe to a service operated by the Industrial Hygiene Unit in the School of Public Health and Tropical Medicine; the Australian Atomic Energy Commission operates its own service at the Research Establishment at Lucas Heights.

The number of organisations and individuals covered by our film-badge service is shown in the following table; during the year increases have occurred in all categories.

FILM BADGE DISTRIBUTION: AMONGST OCCUPATIONAL CATEGORIES

Category	No. Organisations		No. Individuals		Individuals per organisation
	1964	1965	1964	1965	1965
Medical	123	126	321	326	2.6
Hospital	161	173	761	790	4.6
Dental	307	324	831	873	2.7
Veterinary	15	19	41	53	2.8
Chiropractic	20	26	27	37	1.4
Scientific & Research	28	36	99	120	3.3
Industrial (Transport)	45	53	251	277	5.2
Total	699	757	2331	2476	3.4

Radiation dosages received by industrial radiographers still continue to cause some concern even though approximately 80 per cent only receive annual dosages less than one rem, 90 per cent less than $2\frac{1}{2}$ rems; a few receive dosages in excess of the permitted 5 rems, as shown below.

DOSAGE DISTRIBUTION AMONGST INDUSTRIAL RADIOGRAPHERS, 1964-65

Year	Dosage (rems)	0-1	1-2	2-3	3-4	4-5	Over 5	Total
1964	No. persons	57	7	4	2	3	1	74
	Percentage	77	10	5	3	4	1	100
1965	No. persons	61	7	2	3	1	4	78
	Percentage	78	9	3	4	1	5	100

FAULTS IN MEDICAL AND ALLIED X-RAY PLANTS

Category	Hospitals		Radiologists		Cardiologists		General Practitioners		Veterinary Surgeons		Dentists		Chiropractors		Total
	Radiography Only	Radiography and Fluoroscopy	Fluoroscopy and Radiography	Fluoroscopy	Radiography Only	Radiography and Fluoroscopy	Radiography Only	Radiography and Fluoroscopy	Radiography Only	Radiography and Fluoroscopy	Radiography Only	Radiography Only	Radiography Only		
Plants Inspected	131	60	24	31	0	48	2	13	2	2	384	14	707		
Plants with no Faults	95	21	14	14	0	38	0	6	2	2	370	8	568		
Plants with Faults	36	39	10	17	0	10	2	7	0	0	14	6	139		
Types of Faults—															
1. Inadequate Filtration	22	11	6	9	..	10	..	5	0	0	7	5	75		
2. Lack of Collimation	4	1	..	0	..	3	..	0	0	0	5	3	16		
3. Screen Overlap	..	1	..	1	..	..	..	..	..	..	..	..	2	
4. No shield or defective shield	10	8	3	6	..	..	..	..	0	0	..	1	28	
5. Defective Timer	0	0	0	0	..	0	0	0	0	0	1	0	1		
6. Defective Protective Clothing	..	17	..	11	..	..	..	3	0	0	..	3	34	
7. Unsuitability	..	..	..	0	..	..	2	..	0	0	..	..	2	
8. Miscellaneous other Faults	3	3	0	2	..	2	..	0	0	0	1	0	11		
Total Faults	39	41	9	29	..	15	2	8	..	..	14	12	169	

In recent years, with the expansion of this method of non-destructive testing, the tendency has been to use larger-activity sources in order to reduce exposure times. The risk of over dosage is therefore increased but, in compensation, more elaborate remote handling equipment has been brought into service. If properly used, these devices should result in overall reduction of exposure, except in the case of unanticipated "incidents". During 1966, the Radiation Branch hopes to conduct a course aimed at increasing the operator's knowledge of radiation effects, and the techniques of protection.

Field Tracer Tests

The organizations most active in this work have been the Australian Atomic Energy Commission's Industrial Applications Group and Unisearch Ltd. Scientific Officers of the Branch were present during some tests.

The most important investigation was a continuation of the sand-tracing tests on the floor of Botany Bay, which were commenced in 1954, using gold-198 labelled sand. These were undertaken on behalf of the Maritime Services Board and have been outlined in my 1964 Report. In the 1965 "long term" tests, 100 pounds of sand labelled with 40 curies of chromium-51 were deposited on the floor of Botany Bay at each of six points and the movements subsequently traced by scintillation probes suspended on cables from boats. This tracking is still being continued. Just prior to the deposition, quantities of fluorescent sand were placed on the bottom at corresponding points about 80 yards south of the radioisotope-labelled points, and these are being sampled by coring in order to determine the extent of mixing in depth.

The movement of the labelled sand has been found negligible at five of the six points, and small at the sixth. A rough correlation has been found between the horizontal and vertical movements of the sea bed, as respectively determined by the movements of radioisotope-tagged and fluorescent sands. All safety precautions have been taken to ensure that skin divers collecting fluorescent sand cores are not exposed to contamination by the chromium-51 sand, and all equipment is monitored.

The Industrial Applications Group also carried out further development work on the "total count" method of determining water flow in rivers. The basic technique is to immerse a scintillation probe in the stream and to observe the total increase in counts above background due to the passage of a known amount of a radioisotope released upstream. The probe is calibrated by immersion in a solution of known activity. Other means of sampling were investigated e.g. continuous pumping of a portion of the river through a 44-gallon drum holding the probe and out again to the stream; continuous collection of a small sample of the water so that the drum is just filled by the end of the test; and collection of a drum of water over the period of test by small samples ($\frac{1}{2}$ to 1 gallon) added to regular intervals of time (e.g. 1 minute). The Group hopes to extend this work to other streams.

An officer of the Branch was present at tests carried out by Unisearch Ltd, to determine loss of salt from a salt pile used to make caustic soda at a Sydney chemical factory. The tracer was sodium-24, as sodium chloride, and the loss was found to occur by leaching to a nearby creek, probably through minor cracks in the concrete slab on which the salt was piled.

Another study was to determine voids in part of the sail structure of the Sydney Opera House. Channels in the concrete, which contain stressing cables, are ultimately filled with cement grout from the bottom. Sodium-24 in solution was used to determine the efficiency of filling, voids being detected by a scintillation probe held outside the beam. The radioisotope was allowed to decay in situ. An alternative method of determining these voids, currently being used by the construction engineers, is to use a 10-millicurie caesium-137 source on one side of the beam, and to measure the variation in transmission of the gamma radiation through to the other side.

Teletherapy Source Replacements

The replacement of two cobalt-60 teletherapy sources at major Sydney Hospitals were witnessed by the Branch. These transfers were carried out at periods when the minimum number of persons would be exposed to radiation. In each case, the source was a 34 Rmm (roentgens per minute at one metre) one, with activity 2500 to 3000 curies. The operation was carried out by one man. In the first case, his cumulative dosage was 440 millirems, in the second 1800 millirems. Most of this dosage would have been obtained during the source transfer across the small gap between the transport container and the teletherapy head, when the dosage rate in the direct beam at two feet would have been of the order of 2500-3000 milliroentgens per second. As a result of these dosages, changes in procedures were instituted, and their efficacy will be checked by subsequent film-badge results.

Radioactive Contamination at Hunter's Hill

In September, information was received relating to high radiation background counts in a dwelling in the Harbourside suburb of Hunter's Hill. Investigation showed that four adjacent allotments were affected, with radiation dosages over limited areas exceeding one milliroentgen per hour on the surface. Three of these lots had occupied houses on them; the fourth was being cleared prior to building.

A search at the Department of Mines finally established the cause of the activity. A factory for the extraction of radium from uranium concentrates has operated on these lots from 1912 to 1916, by which latter date the progress of the First World War had destroyed the European market for radium and rendered the company insolvent. Over its lifetime, 500 to 600 tons of concentrate had been treated with a yield of about 2000 milligrams of radium, as radium bromide. The concentrate had been shipped to a wharf below the works from Olary (Radium Hill) in South Australia. No details are known of the method of treatment, but smelting of the concentrate was followed by chemical treatment. At the peak operating period, about 10 tons of concentrate were handled per week, from which 35-40 milligrams of radium bromide were extracted.

In those days, there was virtually no appreciation of the toxicity, radioactive or chemical, of most industrial substances. Therefore, it is probable that no special measures were taken to protect personnel from any generated fume or dust, and waste material was deposited without any regard for the possibility of a hazard. The site is consequently almost uniformly contaminated with uranium ore, with occasional areas of higher activity. Underwater, an area of slight activity outlines the side of the old wharf. This latter would probably represent spillage from the drums in which the concentrate was shipped.

Boreholes were sunk in areas of maximum activity, and profiles determined. Vegetables were grown in contaminated soil and, together with controls grown in normal soil, were checked for radium content. No significant uptake of radium was found in the former samples, so the internal dosage hazard was considered negligible. The external dosage on the surface of the ground averaged 0.05 milliroentgens per hour, but was virtually down to background in the dwellings. It was estimated that the increase in external dosage due to contamination was equal roughly to background, i.e. the total dosage rate was roughly double background.

It is proposed to carry out further analyses, for radium and uranium, on vegetables grown in both contaminated and "clean" soils. Recommendations have been made concerning removal of the areas of greatest contamination, and their burial at an appropriate tip.

Losses of Sources

The loss of three sources was reported during the year. One was a 10-milligram gynaecological radium tube, which had been discarded with soiled dressings, and was found to be missing when an inventory was being made prior to the return of tubes to the State Bureau of Physical Services. It was found undamaged in the hospital's incinerator.

In a second incident, a 1-millicurie thallium-204 beta source for a coating machine, along with platinum ware, were stolen from a locked safe at a Sydney glassworks. The former was subsequently found by a gardener in a suburban park and handed to the police. It was intact in its lead container, and was ultimately restored to the owner by this Branch. The park was carefully searched for the other source, but this has never been recovered.

Radiation Exposures in the Beach Mining Industry

These have been described under a similar heading.

IV. AIR POLLUTION CONTROL BRANCH

Principal Air Pollution Control Engineer: Dr J. L. SULLIVAN

New South Wales Clean Air Act, 1961-1964 and Regulations

The major event of importance was the coming into operation of the Emission Standards Regulations on the 1st January; these were gazetted 2 years earlier. The initial set of limits applied only to Scheduled Premises. The absence of limits for non-scheduled premises do not mean that these industries are exempt from the provisions of the Act; in such circumstances sub-section 2 of section 19 requires that all occupiers shall use the best practicable means of controlling air pollution. Although the Department interprets "best practicable means" as being equivalent to compliance with the limits laid down for scheduled premises, it considered the establishment of separate, but identical, limits for non-scheduled premises desirable; these were drafted by the Air Pollution Advisory Committee and submitted before the end of the year.

Consideration was also given to amendment of the schedule under the Clean Air Act; several minor changes were recommended. These provide a more equitable distribution of the scale of fees, chiefly for the benefit of certain smaller manufacturers.

Operation of the Legislation

The generally co-operative attitude by industry, which first became noticeable during 1964, continued and assured that the Clean Air Act, and Regulations, would come into operation smoothly. Most firms causing significant air pollution problems had taken some action effecting control by the time the emission standards come into effect; in some instances the limits were being achieved by the 1st January. However, as made clear in announcements by the Department, due regard was given to problems associated with the design and installation of complicated equipment. Compliance

with all of the emission standards by the due date was not possible and it would have been unrealistic to have taken legal proceedings immediately in those cases where they were still being exceeded. However, it was expected of industry that initial steps, such as ordering equipment, would have been taken; in most instances this was so. In some instances comparatively lengthy periods for compliance had to be allowed. Accordingly, although certain plans had been prepared in 1964 and equipment ordered during 1965, in many instances the full effect of these steps will not be apparent until 1967 or later. Delays often result from technological considerations; in many instances the design and installation of control equipment is very elaborate and often expensive. In individual applications the cost of control ranged from a few hundred pounds, in cases of small installations like iron foundries, up to many millions of pounds in large plants, such as steelworks. The Department is convinced that nothing would have been achieved by recourse to the punitive provisions of the Clean Air Act. To the contrary, it is more likely that less progress would have been made if a purely administrative legislative type of approach had been made. Although in many instances control attempts have been very successful, in some cases it must be admitted that because of inherent technological difficulties, the results have been disappointing. One example is the clay industry; despite a considerable, and commendable, collective amount of work the problem is still far from solved. A serious smoke and soot problem still exists in certain localities; understandably many nearby residents resent that they are still being subjected to the ill-effects such as property damage. However, in view of the efforts which are being made towards reaching satisfactory control of pollution, the Department has not felt justified in commencing prosecutions.

Air Pollution Advisory Committee

The Air Pollution Advisory Committee continued to assist the Department; the latter was appreciative of the fact that all of the members who retired at the end of the statutory period in May were available to continue their efforts for the next three years. Although some of the work of the Committee was partly routine, many problems arose for which the technical assistance of the members proved invaluable. Whilst drafting of new Regulations, and making recommendations with relation to the schedule were important functions, the Committee's most useful purpose was probably in advising on the establishment of new industry in the State. N.S.W., like many other parts of the world, is undergoing rapid industrial development; unless care is taken the benefits to the community may be nullified by certain considerations, of which air pollution is possibly one of the most important. This is why section 16 of the Act provides the power to regulate the siting of new industries, as well as the methods which must be incorporated to control pollution.

Decisions concerning the siting of new industries, and the conditions imposed, often present difficulties of considerable magnitude. Usually when proposals reach the Committee they are already well advanced and are the result of considerable time and effort. Often decisions cannot be unduly delayed. On the other hand for the Committee to consider all aspects of complex manufacturing processes involves a great deal of thought; the expert assistance of officers of the Air Pollution Control Branch is essential. The accumulation of experience and the application of expert knowledge is the only possible safeguard ensuring the safest development, from the air pollution point of view, of industry.

Work of the Air Pollution Control Branch

The staff and responsibilities of the Air Pollution Control Branch have been described in previous Annual Reports; although these embrace all forms of air pollution and their control, the Branch's first responsibility is in connection with Scheduled Premises. Included in the latter are many of the major air pollution control problems. Although a considerable amount of the work of the Branch relates to non-scheduled premises, most of these problems are of a minor nature, such as small boilers and incinerators, for which local authorities have primary responsibility. The specialized equipment of the Branch, and the advice of engineers, is frequently requested. The co-operation between local authorities and the Department has proved of great mutual advantage; this has been of great value in the operation of the monitoring network which plays an important part in the overall pollution control programme.

The Branch has two stack testing teams; one for chemical emissions and the other for particulates. Three hundred and fifty determinations were carried out at 81 separate industries; in a few instances comparatively large numbers of tests may be required and one works may take several days to finalize.

When the results of the tests show emissions to be in excess of specified limits, discussions are held between the management, Departmental field engineers and other Divisional specialized staff.

Before certain tests could be carried out accurately a number of sampling techniques and analytical procedures had to be perfected. For instance atmospheric sampling of pollutants, for analysis in the long path infrared spectrophotometer, necessitated evacuating an air-tight box containing a deflated plastic-type sample bag; the collected sample thus did not become contaminated with any fumes originating from the oil in the evacuating pump, thereby eliminating numerous peaks on the spectra. Also a colorimetric test, which is specific for SO_2 , has been perfected thus enabling very small concentrations to be determined accurately.

Scheduled Premises

Cement Works	5
Ceramic Works (Brick, pottery, glass etc.)	100
Chemical Works (Classes 1 and 2)	123
Coke Works	5
Ferrous and Non-Ferrous Works	273
Gas Works	14
Grinding and Milling Works	108
Oil Refineries	4
Primary Metallurgical Works	7
Scrap Metal Recovery Works	23
Works containing Boilers and other Furnaces consuming 1 ton or more of fuel per hour not included in any of the foregoing works	16
Railway Department Workshops	19
Government Transport Department Workshops	3
	<hr/> 700 <hr/>

Cement Works

The production of cement at the five works is increasing; between 1959 and 1965 output rose by 408,000 tons, largely as a result of the installation of additional plant. Developing markets both from new and conventional uses, have resulted in a compounding increase at the rate of 7 per cent per annum; this can best be met by the installation of modern plant which, for economic reasons, will be of large unit capacity. To prevent any increase in emissions of dust from cement works it will be a requirement that companies install highly efficient dust control equipment on all new kilns and at the same time either retire old kilns or equip them with similar control equipment.

The investigation of emissions from cement works was intensified; stack emission tests were carried out at two works in the western and southern districts. The concentration of dust in the exhaust gases was found to range from 3 to 6 grains per cubic foot. These results were in agreement with the high level of deposition recorded in the vicinity of these works.

Investigations have also shown that the type of process used has a marked influence on the emissions which occur. At one works where the dry process is employed, electrostatic precipitators were fitted to the two largest kilns some 18 months ago, but major operating troubles are still being experienced. On the other hand at another works, which utilises the wet manufacturing process, the new kiln electrostatic precipitator operated at a high level of efficiency. It is considered that the moisture content of the exhaust gases affects the electrical characteristics of the dust particles. To determine the influence of water conditioning of dry exhaust gases on precipitator performance, officers of the Department have collaborated on precipitator performance in the works using the dry process.

In another factory, where plans for major development have been announced, a new large wet process kiln is proposed. This will be fitted with electrostatic precipitators with sufficient efficiency to produce an outlet dust concentration of 0.1 grains per cubic foot which is half the regulation limit. The company is also to fit to two existing kilns control equipment which will reduce emissions to the required standard.

Ceramic Works

It is pleasing to report that there are developments within the heavy clay section of the ceramic industry towards the control of smoke and soot emissions from intermittent kilns. Out of approximately 450 intermittent kilns in 25 works in the proclaimed areas, 86 have now been converted to oil firing and 42 to mechanical stokers for coal. These methods have been shown to result in virtual removal of smoke emissions which is almost impossible to achieve by traditional hand firing procedures.

The most important development during 1965 has been the introduction of mechanical firing for the production of dry press face bricks. For many years the industry had maintained that the reducing atmosphere necessary for the production of banks of satisfactory quality required traditional hand firing methods. However, it has now been shown that both oil firing and mechanical coal stokers can be used. All kilns at four brickworks have now been satisfactorily equipped with mechanical firing equipment and installations on one or more kilns have been made at five other factories. In addition other companies have indicated that conversion will be started soon. The Department will only approve the erection of new kilns on condition that they are mechanically fired. Where the installation of mechanical firing equipment has not yet begun efforts are being made by officers of the Branch to ensure that improved hand firing methods are adopted.

The problem of soot emission from intermittent kilns has been further investigated during the past year. With hand fired kilns the use of low volatile coal provides a virtual solution to this problem; this is now used at two refractory works and one brickworks in the Sydney area. Unfortunately, supplies are limited. Complaints of solid particle emissions from works where oil firing has been installed have also been investigated; it has been found that these do not originate from the oil fired kilns and further studies to determine their source are continuing.

In the past five years there has been a 20 per cent increase in the output of bricks in New South Wales. Almost all of this has come from the new works erected in the Blacktown area which employ tunnel kilns for firing the ware; these operate without either smoke or soot emission and as they use low sulphur oil fuel, sulphur dioxide emissions are also at a low level. Complete conversion of the industry to this means of brick burning cannot be expected in the immediate future, but in the long term this appears to be a logical development.

Tests to determine exhaust gas concentration of sulphur oxides, fluorides and chlorides have been carried out at 5 ceramic works manufacturing different products. At one emission of significance occurred; this was where salt glazing was carried out. In general the use of low sulphur fuels by the ceramic industry prevents high emissions of the sulphur oxides and the clays at present in use are either low in fluoride content or alternatively only a small proportion is converted into the volatile state. The control of emissions from salt glazing presents great difficulties and, as in England, it appears likely that high stacks must, for the time being, be accepted as the most practicable method. However, developments which are now occurring may enable a more satisfactory approach to the problem in the next few years.

Chemical Works

A number of significant developments have taken place in the fertilizer industry during the past year.

The No. 3 Contact Acid Plant, rated capacity 630 tons, commenced operation at Australian Fertilizers Ltd, Port Kembla works in March. Some complaints were received of sulphuric acid mist in the first week after start-up but the plant has since settled down and the emissions have been at an acceptable level. Building is now under way on a new superphosphate plant at this site, programmed for commissioning in March 1966. The new plant contains rock milling equipment and a continuous Broadfield Den to manufacture 600,000 tons a year of single superphosphate. This represents a 200 per cent increase in the present works output of superphosphate.

Construction is well under way on a new Sulphuric Acid-Fertilizer complex at Walsh Island, Newcastle. Initially a 540 ton/day capacity sulphuric acid plant and a 200 ton/day phosphoric acid plant together with ancillary phosphate rock crushing equipment will be installed.

A 35 ton/day sulphuric acid plant in the inner suburbs of Sydney ceased production in May 1965. A number of complaints of acid gas emissions had previously been made; these were partly due to the close proximity of residential houses on somewhat higher ground than the works.

By modifying a process step, a major reduction was effected in the emission of hydrogen sulphide from a works manufacturing tartaric acid. This involved the addition of 45 pounds barium sulphide to the hot acidic solution to precipitate heavy metal sulphides; because of the small volume of gases, emissions of 25,800 ppm caused no trouble. Following discussions with officers of the Branch various modifications were tried and the procedure finally adopted involved the controlled addition of 5 lb barium sulphide to the cold solution and a further 5 lb at a later stage to the hot solution. The emissions of hydrogen sulphide were then reduced to 2 ppm during the cold stage and 3/7 ppm during the hot stage.

Cokeworks

The four works, situated in the South Coast area, manufacture metallurgical coke in beehive coke ovens. The coke produced is of large size and has certain properties demanded by the foundry and non-ferrous melting industries for melting and refining processes.

In the carbonization of the coal charged into the ovens, the volatile constituents are driven off. These are partly burned in the ovens and in the exhaust flues to provide the heat required to raise the charge to the required temperature. However a large proportion of the volatiles are unconsumed and are exhausted from the ovens as smoke. During charging, and also during the pushing and quenching of the hot coke, emissions of smoke and fly ash occur. Furthermore, wind blown dust from coal and coke stockpiles and from unsealed roads has also been observed.

Investigation of the various emissions was intensified during the past year and as a result significant improvement has occurred at two works. Tests on the coke quench tower at one works showed that further improvement in the efficiency of the dust collector installed during 1964, was necessary. The company took prompt action and also increased the height of the quench tower exhaust. At another works the company has tar sealed all internal roadways and largely enclosed the coal stockpiles within a storage shed.

Ferrous and non-ferrous works

The bag filter installation, used to collect the fume from two direct arc steel melting furnaces at Australian Iron and Steel Pty Ltd, Port Kembla, was modified because of failure of the fibre glass bags. The failure was thought to be partly due to the high temperature of the gases at the entry to the bag house and partly possibly to the concomitant action of fluorides in the exhaust fume on the material. Secondary air was introduced to cool the gases from 500° F to 260° F at their point of entry; in addition, Dacron was substituted as the bag material. This installation is now working satisfactorily.

A similar installation to treat the fume from one melting furnace, of 50 ton capacity, at the Commonwealth Steel Company Limited, Newcastle will be commissioned in May, 1966.

A series of tests were carried out on a direct fired afterburner, designed by officers of the Branch, which treated the products of combustion from an electric oven in which linseed oil bonded cores were being baked. The acrid odours were due to acrolein and other unsaturated aldehydes. A temperature of 800-1,000° C at a residence time of 0.5 second enabled a decrease of the odours to an acceptable level to be achieved. The increasing use of urea formaldehyde furfuryl alcohol bonded cores precludes the use of core baking ovens.

The use of core and spray type wet arresters on cupola melting furnaces has become more widespread particularly in those foundries where a fallout problem existed because of the close proximity to residences.

Mains frequency induction heating furnaces have been installed recently in two new medium sized mechanized foundries in Sydney; this will be watched with interest. The fallout from these furnaces is very small although a fine fume emission may occur under certain heating conditions and particularly if oxygen lancing is employed.

Gas Works

The emission of solid particles from boilers and other fuel plants, and dust blown from heaps of coal and coke continue to be causes of complaint around Gas Works. Some of the Branch's investigations have resulted in improvements; however, the removal of all such problems does not appear completely feasible at this stage. As time advances the prospects of natural gas becoming available appear to be more likely but in the meantime some works are either carrying out certain improvements or considering producing alternative supply gas.

Grinding and Milling Works

In the majority of instances dust emissions have been satisfactorily controlled; control action has often been stimulated by the desire to retain products of commercial value. Although it is not the intention of the legislation to restrict industry it was the cause of some satisfaction when one particularly dust producing grinding plant, located in a thickly populated area, decided, for technical reasons, to terminate its operation at that site thus providing a permanent solution. Other works which produce dust are largely in isolated areas and do not cause pollution affecting persons outside of their own boundaries.

Oil Refineries

Basic problems associated with the operation of oil refineries were described in the 1964 Annual Report; in general conditions have not altered appreciably since then except that some improvements have been made at certain installations. Flares, which as the result of the introduction of additional steam injection equipment at two works, have not been as troublesome during the past year; when excessive smoke has been emitted the cause has been beyond the control of the occupiers. Nevertheless, it is hoped to reduce the number of such occurrences in future. One works has installed closed circuit television as a means of monitoring the behaviour of its flares.

Primary Metallurgical Works

1. STEELWORKS

Most of the developments which have been planned for the control of air pollution from the two large steelworks in N.S.W. were described in my previous Report; in addition certain major new developments occurred during the past year. A decision was made to install electrostatic precipitation on open hearth furnaces at the Port Kembla steelworks operated by Australian Iron and Steel; it is expected that this will be completed by 1968. Progressive conversion of the boiler plant from pulverised coal to oil firing has been carried out during the year; it is expected that this will be finalized by the end of 1966. This section of the works has been responsible for heavy dust emissions over a period of years.

At the Newcastle works a decision was made that the pulverized fuel burner plant would also be replaced by new coal fired equipment. This boiler plant will be fitted with electrostatic precipitators, which have been site tested on a pilot scale. It is also intended that these will be fitted to all existing boiler plant which will be in use after 1968. Control of emissions from other sections of the plant, such as the ferro-alloy section, have also been commenced.

2. NON FERROUS METALLURGICAL WORKS

The erection at Port Kembla of a 667 foot tall stack was completed on schedule. This is probably the tallest stack on any copper smelter in the world; its installation was necessary because of a longstanding sulphur dioxide problem. Observations and tests made during the summer period have shown it to be completely effective and complaints appear to have ceased altogether. There are a few other works in this category; with few exceptions it was found from frequent testing that satisfactory levels of air pollution control had been achieved.

Scrap Metal Recovery Works

The major problems which have received attention have been aluminium dross recovery, the incineration of motor car bodies and insulated cable burning. The solutions although difficult are not intractable; a number of companies are installing the necessary equipment.

In the recovery of aluminium dross a large quantity of salt is charged into the furnace during each heat to act as a flux. This results in the emission of salt fume in excess of the regulation limit. Three works are investigating the use of bag filters or high energy scrubbers to control fume emission and installation of either is awaited. As an interim measure one company made a substantial increase in chimney height so as to achieve better dispersal.

The incineration of motor car bodies has been performed by burning in the open, causing very heavy smoke. One company, after consultation with Departmental officers, has decided to erect an incinerator complete with afterburner to carry out the burning smokelessly.

The burning of insulated copper wire for the recovery of copper is carried out in significant quantities at three factories. This is done in batch charged incinerators equipped with oil burners; due to improper design a satisfactory performance has not been achieved. One series of tests showed that the emission of solid particles and acid gases were in excess of the required standard; this factory is now improving the design of their existing incinerator while another is investigating mechanical stripping instead of incineration. The third is considering the construction of a new incinerator equipped with a primary ignition burner and a checker brick packed afterburner. The provision of a wet scrubber to control emissions of solid particles and acid gases is also being investigated.

Works Containing Boilers and other Furnaces consuming one ton or more of fuel per hour

Boilers, incinerators and furnaces are a significant source of pollution but the number which consume more than one ton of fuel per hour are, in the main, operated by either Government concerns or by large industries which are scheduled because of other processes carried out within the curtilage of the works.

Numerous tests have been carried out on boiler plants to determine the concentration of fly ash or other solid particles in the exhaust gases. These have showed that many coal boiler plants emit solid particles in concentrations which were above the Regulation limits. In the case of coal fired boilers equipped with chain grate stokers, it was found that it is sometimes possible to maintain emissions at a satisfactory level by the sizing and conditioning of the coal and by accurate control of the undergrate air supply. With boilers consuming fuel oil having a specific gravity of 0.94 or less, very low emissions occurred as long as the burner and plant were properly matched and maintained.

On a number of large boilers, dust control equipment was installed before the gazetting of the regulations; unfortunately tests showed that emissions were often above the required level. In two instances this was caused by a deterioration of the control equipment, thus emphasizing the need for regular maintenance. With spreader stoker and pulverized fuel fixed plant the control equipment installed was often inadequate.

As a result of our findings most works have taken, or are planning to take, action to reduce emissions to the required level either by installing new equipment or by improving operating techniques and fuel characteristics. The N.S.W. Electricity Commission, a major consumer of boiler fuel, is faced with many problems in its existing stations.

A lengthy investigation carried out by the Commission into the improvement of dust collector performance has now been successfully completed and significant improvement in emission levels is expected during the next two years.

At major existing stations, such as Tallawarra, Wangi, Wallerawang and Pyrmont it is expected to achieve this by conditioning the exhaust gases with ammonia or sulphuric acid; pilot plant tests have shown favourable results. With stations only used for peak load duty, there will be a progressive reduction in fuel consumption so that by 1970 they will only be operating for one per cent of the total time in each year. In regard to large new power stations, which will come into operation during the next decade, they will be equipped with the most modern dust control equipment to ensure emissions well below the prescribed limits.

The emission of dark smoke from boiler plant has received considerable attention during the past year. Accordingly the installation of mechanical firing equipment, and secondary air jets as smoke control methods, has been accelerated. Companies have been made aware of the need to improve operating procedures with existing plant.

Department of Railways

During the past year there has been a progressive reduction in the number of steam locomotives in operation. This has been particularly marked in the city areas; it has been predicted by the Commissioner that no steam locomotives will be working on the railway system east of the mountains by 1970. Conversion from steam to diesel or electric traction will greatly reduce emissions. However, some emissions of smoke and carbon particles do still occur from diesel locomotives and efforts are being made to bring these under control.

Railway workshops continue to be a major source of smoke emission. The Railway Department has commenced conversion or replacement of hand fired stationary boilers with oil fired boilers; unless progress is accelerated it will be a long time before this is complete. As an interim measure steam-air injectors were installed on two boilers at one workshop and although there was an improvement a completely satisfactory performance was not achieved.

The Railway Department has been advised of this Department's concern about the continued emission of smoke from their workshops and have been requested to prepare a programme of plant improvements to control pollution. This applies not only to hand-fired stationary boilers but also to forging and foundry furnaces.

Department of Government Transport

The operation of the Department of Government Transport vehicles on public roads is controlled by the Motor Traffic Act; the Clean Air Act only applies to stationary premises. Inspections of the latter have shown few, if any, problems.

Although the Health Department has no legislative responsibility for the control of emissions from motor vehicles whilst on public roads, the overall problem is one which is of direct interest. Accordingly some research work has been carried out to evaluate certain aspects of this form of pollution. This will continue as it appears that Sydney, like other large cities throughout the world, will become increasingly aware of the problem as the number of vehicles increases.

In New South Wales most criticism has been directed at diesel vehicles; this is because of the smoke and acrid fumes which they sometimes discharge. In the United States, where motor vehicle pollution has already reached severe proportions in some cities, attention is almost exclusively directed towards the petrol burning motor car. In some areas the exhaust gas has produced problems resulting in marked haze, eye irritation and effects on property. Atmospheric ozone is one index of motor vehicle pollution; the Department has carried out such measurements, as part of its monitoring programme, during the past four years. So far the concentrations recorded have been low and it has been concluded that a significant motor car pollution problem does not exist as yet. Consequently, it is not as yet considered necessary that recommendations for the fitting of devices to motor cars should be made; the position is being watched closely and recommendations may be made later.

Monitoring Stations

The results of all monitoring stations for dust fall, smoke density and sulphur dioxide are shown in the accompanying tables. The "stations" listed are those considered representative of general areas; as far as possible they are located so as to be unaffected by specific sources of pollution.

As previously reported, ten standard stations which have been in use in the metropolitan area for the measurement of dust fall since 1953 are analysed each year for any apparent trends. This is also done for stations in the Newcastle and Port Kembla areas. The results of the mean readings are graphed.

For the past three to four years there has been no significant change at any of the three locations although certain trends occurred at different times. In Sydney the main feature was a rapid reduction in dust fall between 1954 and 1961; it now appears that the overall trend downwards will be slower.

It is hoped that an average figure of 10 tons per square mile will ultimately be achieved.

The 1965 readings for many areas of Sydney were affected by severe dust storms during November and December; it is believed that if these had not occurred a small reduction in the overall dust fall in the city area would have been recorded during the year as a whole.

Clean Air Conference

In August a four day Clean Air Conference was held at the University of New South Wales under the joint sponsorship of the New South Wales Department of Public Health and the University of New South Wales. This was the second such conference. The first, held in February 1962, was such an outstanding success that many people expressed the view that another conference should be held in the not-too-distant future. A feature of the conference was the presence of five overseas guest speakers each of whom is regarded as an authority in his field. They were:

Professor R. S. Scorer, Imperial College, London.

Mr F. E. Ireland, Chief Alkali Inspector, Ministry of Housing and Local Government, England and Wales.

Mr J. Fairweather, President, Air Pollution Control Association, United States of America.

Mr S. Smith Griswold, Air Pollution Control Officer, Los Angeles Air Pollution Control District.

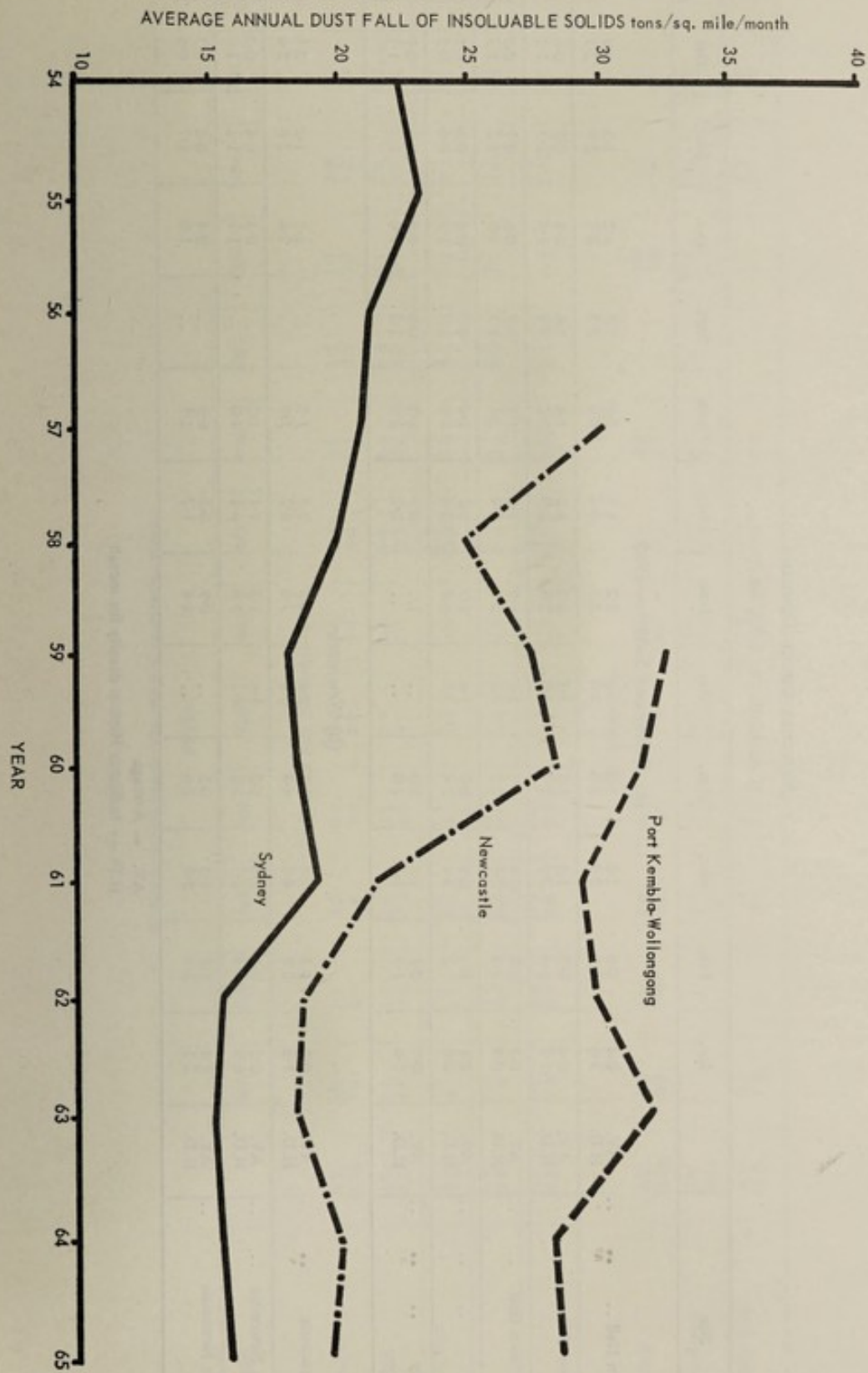
Dr J. Goldsmith, President, Air Pollution Control Association, United States of America.

The Conference was officially opened by the Minister for Health, the Hon. A. H. Jago. The remainder of the first day was set aside for three papers on the progress in Air Pollution Control in New South Wales, in England and in the United States of America. Technical sessions were held on each of the remaining three days. The first session was concerned with Effects, Research and Meteorology; the second with Control of Air Pollution and the third with Social and Legislative Aspects. In all, 29 technical papers were presented.

The Conference was attended by 360 people who expressed great interest in the activities. The papers presented were of a uniformly high standard and were well received. Good use was made of the discussion periods to promote an informative and at times lively exchange of ideas.

At the conclusion of the Conference it was resolved by the delegates present that moves should be initiated to form an Australasian Air Pollution Control Association and a Steering Committee was set up for this purpose. The inaugural meeting of this proposed Association will take place in March, 1966.

DUST FALL READINGS IN NEW SOUTH WALES CITIES



MONTHLY SMOKE DENSITIES
(Coh Units per 1,000 lin ft)

Site	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Average
(a) Sydney and Suburbs—1965													
Sydney Town Hall ..	0.4 1.4	0.6 1.6	1.0 2.4	1.3 3.0	2.0 4.4	2.2 3.5	1.7 4.3	2.8 16.6	1.5 5.3	1.2 2.7	1.3 2.9	0.9 2.3	1.4 ..
Redfern Town Hall	0.4 1.2	0.5 1.4	1.3 2.3	1.3 2.7	1.7 4.0	1.7 2.8	1.5 2.9	1.6 3.2	1.6 4.8	0.8 1.8	0.7 2.3	0.6 2.2	1.1 ..
Paddington Town Hall	0.2 0.9	0.4 1.4	0.9 2.0	1.1 2.3	1.0 3.2	1.0 2.9	1.1 2.4	1.4 3.3	0.7 1.9	0.6 1.6	0.7 1.2	0.5 1.3	0.8 ..
Matraville ..	0.1 0.6	0.4 1.2	0.8 3.1	0.7 2.4	1.4 3.8	1.7 6.8	1.1 2.6	1.4 3.6	0.7 1.7	0.4 1.1	0.3 0.6	0.1 0.5	0.8 ..
North Sydney ..	0.5 1.0	0.8 1.8	1.1 1.8	1.0 2.0	.. ..	.. ..	0.9 2.7	1.3 2.9	0.9 1.6	0.6 1.0	0.6 1.5	0.7 1.1	0.8 ..
(b) Newcastle													
City Hall Newcastle	0.8 1.6	1.3 2.9	1.8 4.3	2.1 4.8	2.5 5.0	2.7 7.6	2.4 6.2	1.5 3.9	.. ..	1.1 2.8	1.2 2.8	0.6 2.0	1.6 ..
Bolton Street Newcastle	0.2 0.9	0.2 1.4	1.0 2.7	1.2 5.8	1.6 4.3	1.3 5.6	1.1 4.8	1.2 4.0	.. ..	0.3 1.1	0.4 1.2	0.0 1.0	0.8 ..
Mayfield East Newcastle	1.4 2.5	1.4 2.3	1.3 3.5	0.5 2.6	.. ..	0.9 4.4	0.5 1.7	0.9 2.5	.. ..	0.4 1.0	0.8 1.7	0.3 0.6	0.9 ..

AV. = Average

H.D. = Indicates Highest density for month

MONTHLY SULPHUR DIOXIDE CONCENTRATIONS
PPHM

Site	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Average
(a) <i>Sydney and Suburbs—1965</i>													
Sydney Town Hall ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	AV. H.D.	1.0 2.7	1.5 2.6	0.9 3.4	0.8 2.4	2.4 4.9	3.4 5.4	2.6 6.0	4.1 29.1	1.5 2.5	1.7 3.7	2.9 9.2	2.5 5.3
Redfern Town Hall ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	AV. H.D.	2.8 4.8	3.0 4.6	2.6 4.3	2.1 4.3	2.7 3.7	2.6 3.7	1.8 2.5	1.6 3.2	1.8 4.0	1.1 1.7	2.2 5.3	2.5 3.2
Paddington Town Hall ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	AV. H.D.	5.9 9.7	5.8 8.2	3.0 8.6	1.1 4.0	1.6 4.0	1.1 3.8	1.5 2.9	1.5 2.0	1.1 2.4	0.8 1.2	2.1 4.7	1.5 2.5
Matraville ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	AV. H.D.	1.8 2.6	2.1 4.4	2.3 5.6	2.1 4.0	2.3 5.4	1.7 4.0	1.3 2.6	1.4 2.3	1.4 3.0	1.0 1.9	1.2 2.6	1.2 2.6
North Sydney ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	AV. H.D.	0.8 1.2	0.8 2.7	0.9 1.6	1.2 2.3	..	..	0.4 0.9	1.2 2.1	0.7 1.2	0.7 1.5	1.0 2.1	0.7 1.0
(b) <i>Newcastle</i>													
Newcastle City Hall ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	AV. H.D.	0.0 0.0	0.0 0.0	0.0 0.0	0.7 2.8	0.0 0.9	0.4 1.6	0.5 2.2	0.8 2.2	..	Nil Nil	Nil Nil	Nil Nil
Newcastle Bolton Street ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	AV. H.D.	..	..	1.4 3.3	3.0 9.6	3.4 7.4	2.7 7.0	2.9 15.8	4.5 9.9	..	2.3 5.3	1.4 4.7	0.4 2.3
Newcastle Mayfield East ..	..	..	..	..	..	..	..	..	..	..	..	..	..
	AV. H.D.	0.5 1.8	1.4 2.2	1.5 2.6	1.3 2.6	..	0.9 2.8	0.2 1.0	1.0 2.4	..	1.6 3.4	0.8 2.9	0.8 3.0

DEPARTMENT OF PUBLIC HEALTH—DIVISION OF OCCUPATIONAL HEALTH—ATMOSPHERIC
POLLUTION MEASUREMENTS

DEPOSIT GAUGES—SYDNEY AREA—MEAN DEPOSIT GAUGE RESULTS, 1965

Location of Gauge	Insoluble Solids Dust-fall	Combustible Matter	Ash	Soluble Matter
(a) City of Sydney				
City, Art Gallery	16.5	4.8	11.7	6.4
Central Railway (Railway Square)	20.7	5.3	13.4	5.0
City, George Street North	13.4	4.0	9.4	6.6
City, Martin Place	21.7	5.6	16.1	6.1
City, Town Hall	13.4	3.8	9.6	5.4
Darlington	10.2	3.0	7.2	5.7
Paddington	11.9	3.3	8.6	7.4
Potts Point	15.4	5.2	10.2	5.0
Pyrmont	32.6	10.2	22.4	7.3
Redfern	13.9	3.3	10.6	4.0
Ultimo	18.8	5.2	13.6	9.0
Darling Point	7.6	2.5	5.1	5.6
Auburn, Asquith Street	18.5	4.1	14.4	3.2
Auburn, Mona Street	9.6	3.1	6.5	3.6
Auburn, Parramatta Road	14.6	4.0	10.6	4.8
Bankstown, Calidore Street	10.1	3.3	6.8	4.5
Bankstown, Civic Centre	7.0	1.9	5.1	4.8
Chester Hill, Banool Street	12.6	3.8	8.8	4.6
Georges Hall, Birdwood Avenue	7.9	2.2	5.7	2.8
Greenacre, Noble Avenue	12.4	2.5	9.9	3.2
Padstow, Stewart Street	10.9	3.2	7.7	3.6
North Rocks, Lawndale Avenue	7.2	2.0	5.2	3.1
Blacktown, First Avenue	16.7	2.6	14.1	4.7
Botany, Banksia Street	14.7	5.3	9.4	6.3
Botany Council Chambers	9.6	2.6	7.0	6.2
Botany East, Denison Street	15.8	4.7	11.1	7.1
Botany East, Dudley Street	11.4	3.7	7.7	4.2
Botany, Stephen Road	18.0	5.7	12.3	7.4
Burwood, Lucas Road	9.0	3.2	5.8	5.6
Burwood, Sherars Avenue	9.7	3.1	6.6	3.5
Enfield, Mitchell Street	12.0	3.1	8.9	4.4
Belfield, Linclon Street	11.4	3.1	8.3	4.0
Punchbowl, Leigh Avenue	13.9	3.6	10.3	3.7
Cabarita Baths	14.1	7.0	7.1	7.5
Concord, Leigh Avenue	11.1	3.4	7.7	3.8
Mortlake, Turner Avenue	10.8	4.0	6.8	3.7
Drummoyle, Cary Street	14.4	4.2	10.2	5.3
Fivedock, Duke Avenue	8.0	2.7	5.3	3.7
Fivedock, Fairlight Street	7.5	2.1	5.4	3.8
Abbotsford, Montrose Road	13.8	4.8	9.0	5.2
Fairfield, Civic Centre	14.5	2.7	11.8	3.1
Smithfield Shopping Centre	17.4	2.9	14.5	3.8
Guildford, Byron Road	9.2	2.7	6.5	4.3
Merrylands, Birmingham Street	11.5	3.0	8.5	3.0
Hornsby Heights, Rofe Crescent	6.1	1.7	4.4	3.2
Pennant Hills, Vaughan Avenue	13.4	4.0	9.4	4.0
Thornleigh, Sefton Road	12.2	3.4	8.8	4.2
Hurstville, Council Chambers	9.7	2.6	7.1	5.3
Gordon, Darnley Street	9.3	2.6	6.7	4.0
West Pymble, Lofberg Road	7.9	2.7	5.2	3.6
Annandale, Johnston Street	13.2	4.9	8.3	5.0
Balmain, Birchgrove Road	14.4	7.8	6.6	14.3
Balmain, Johnston Street	16.3	4.5	11.8	8.0
Leichhardt, Macaulay Street	8.3	2.6	5.7	4.1
Rozelle, Callan Park	19.1	5.7	13.4	7.2
Rozelle, Quirk Street	12.1	4.1	8.0	4.2
Camberay, Carter Street	7.4	2.1	5.3	4.5
Crow's Nest, Pacific Highway	7.6	2.7	4.9	7.0
Chifley, Carnegie Circ.	18.0	5.4	12.6	7.3
Little Bay, Prince Henry Hospital	14.8	4.6	10.2	20.1
Maroubra Junction, Cobham Avenue	12.3	5.5	6.8	11.1
Matraville, Baird Avenue	11.8	4.7	7.1	7.7
Matraville, Jersey Road	19.9	4.1	15.8	4.8
Randwick, Avoca Street	8.4	2.3	6.1	11.0
Woolooware, Gannons Road	14.3	3.4	10.9	5.3
North Cronulla, M.W.S.D.B. Treatment Works	15.4	2.3	13.1	8.6
Brookvale, Consul Road	6.3	1.5	4.8	3.7
Dee Why, Thew Parade	8.4	2.3	6.1	5.4
Naremburn, Dallys Road	11.5	3.4	8.1	5.0
Naremburn, William Street	6.1	2.1	4.0	4.3
Double Bay, New South Head Road	7.6	2.5	5.1	5.6
Watson Bay, Cliffe Street	4.9	1.5	3.4	8.0

DEPARTEMENT OF PUBLIC HEALTH—DIVISION OF OCCUPATIONAL HEALTH—ATMOSPHERIC
POLLUTION MEASUREMENT—*Continued*

DEPOSIT GAUGES—SYDNEY AREA—MEAN DEPOSIT GAUGE RESULTS, 1965—*Continued*

Location of Gauge	Insoluble Solids Dust-fall	Combustible Matter	Ash	Soluble Matter
<i>(b) City of Parramatta</i>				
Dundas, Wyuna Place	11.8	3.8	8.0	4.7
Guildford, Macarthur Street	15.3	3.2	12.1	2.6
Harris Park, Alice Street	11.1	3.6	7.5	3.2
Northmead, Frances Street	7.0	2.1	4.9	2.8
Parramatta North, Iron Street	12.3	3.3	9.0	3.3
<i>(c) City of Lithgow</i>				
Lithgow, Macauley Street	11.8	3.1	8.7	2.0
Lithgow, Georgie Street	22.8	4.4	18.4	3.5
Lithgow, Martin Parade	16.8	3.9	12.9	2.1
Lithgow, Mort Street	23.6	5.6	18.0	2.5
<i>(d) City of Wollongong</i>				
Cringila, Shellharbour Road	46.7	13.9	32.8	8.6
Wollongong, New Dapto Road	18.7	4.2	14.5	4.4
Wollongong, Stewart Street	17.2	4.7	12.5	13.2
Unanderra, Farmborough Road	12.8	3.1	9.7	4.6
Port Kembla, Military Road	30.5	6.5	24.0	10.9
Port Kembla, Wentworth Street	21.7	5.1	16.6	8.8
Port Kembla, Jubilee Street	28.1	6.9	21.2	8.0
Port Kembla, Somme Street	21.3	4.9	16.4	14.4
Cringila, Monteith Street	38.3	10.7	27.6	5.3
Cringila, Sheffield Street	20.3	5.4	14.9	5.0
Warrawong, 217 Flagstaff Road	20.2	4.7	15.5	6.6
Warrawong, 149 Flagstaff Road	70.5	21.8	48.7	7.4
Warrawong, Taurus Avenue	43.8	10.9	32.9	7.5
Lake Heights, Northcliff Drive	36.4	8.8	27.6	6.2
Primbee, Korrongulla Crescent	20.8	5.1	15.7	6.7
Dapto, Yorkshire Road	13.0	2.6	10.4	3.1
Dapto, Princes Highway	13.0	4.6	9.4	3.8
Coniston, Bridge Street	45.8	7.1	38.7	6.3
North Wollongong, Kiera Street	14.7	3.6	11.1	5.1
<i>(e) Shellharbour</i>				
Albion Park, Princes Highway	12.8	2.9	9.9	4.0
Albion Park, O'Keefe Crescent	10.3	2.5	7.8	3.0
Albion Park, Calderwood Road	8.7	2.4	6.3	3.9
Shellharbour, Wentworth Street	10.0	3.4	6.6	7.4
<i>(f) City of Newcastle</i>				
Adamstown, Brisbane Water Road	10.2	3.6	6.6	7.2
Carrington, Public Works Department	9.4	4.8	4.6	7.6
Broadmeadow, Broadmeadow Road	15.8	6.0	9.8	9.4
Kotara, Gregory Parade	12.5	5.5	7.0	6.8
Kotara, Woodlands Avenue	13.2	5.5	7.7	9.6
Mayfield West, Shell S. Street	21.0	6.0	15.0	10.3
Mayfield, Fitzroy Street	21.0	6.3	14.7	8.4
Mayfield, Carrington Street	30.2	8.3	21.9	10.5
Mayfield, Ingall Street	24.9	7.8	17.1	13.2
Mayfield, St. Andrews Church	20.5	7.7	12.8	12.3
Mayfield East, Walsh Street	23.8	7.5	16.3	9.5
Newcastle Govt Ins. Bldg	44.7	17.7	27.0	21.6
Newcastle, City Hall	13.1	6.0	7.1	15.9
Newcastle, Hall Street	18.0	8.1	9.9	9.9
Tighes Hill, Kings Road	30.1	9.3	20.8	9.4
Stockton, Pembroke Street	24.5	7.3	17.2	16.5
Waratah, Lorna Street	12.9	3.7	9.2	9.6
Jesmond, Crest Street	11.2	4.3	6.9	5.5
Kotara, Park Avenue	19.4	7.0	12.5	9.1
Kotara, Seaview Street	13.4	4.9	8.5	7.1
Stockton, Fullerton Street	18.5	5.5	13.0	9.5
Merewether, Macquarie Street	12.3	4.7	7.6	10.6

The Institute of Clinical Pathology and Medical Research

Director: Dr H. KRAMER, M.B., Ch.B., M.C.P.A.

Location: Joseph Street, Lidcombe

Established in 1959, The Institute of Clinical Pathology and Medical Research provides a comprehensive Clinical Pathology service for the whole of the State of New South Wales available free of charge to all Public and State Hospitals and to medical practitioners attending patients unable to afford the fees of a private Pathologist. Specimens for investigations not otherwise available in the State are accepted without financial restriction, while the Exfoliative Cytology, Venereal Disease Serology and Virology departments also provide a free service which is generally available. The Institute also undertakes the training of Medical Technologists and doctors wishing to specialize in Clinical Pathology and in addition carries out medical research in the various specialized branches of laboratory medicine.

As in the past the various activities of the Institute will be considered under the following headings:

- A. Clinical Pathology Service.
- B. Training of Pathologists and Medical Technologists.
- C. Research.

A. CLINICAL PATHOLOGY SERVICE

Pathology is the study of disease in all its aspects; as such it constitutes the foundation on which the whole practice of medicine is based. For many years it embraced little more than the study of structural damage done to the body by the various disease processes to which mankind is subject and in consequence, was carried out mainly in the post-mortem room and to a lesser extent on tissues removed surgically. Up until the War Pathology consisted of little more than this together with the study of the bacterial causes of disease. Relatively simple examinations of blood and urine were sometimes done by clinicians in the side room of a ward. It was long recognized however that many diseases which produce no recognizable structural damage cause profound disturbances of function but it is really only since the War that the application of refined physical and chemical methods to the study of biological material has made possible the extremely accurate measurements necessary to reveal these disorders of function. Clinical Pathology as it is now called, is a highly developed specialized branch of medicine concerned with the laboratory investigation of all the manifestations of disease processes both structural and functional and its growth has been accompanied by a revolutionary change in the whole practice of medicine.

Formerly, clinical practice was largely an art, with doctors relying on a careful history of symptoms and examination of the patient to elicit physical signs as a guide to diagnosis while treatment was largely empirical, with the gross reactions of the patient the only guide. Today the whole picture is completely altered. Medicine has become a science and the clinician demands precise measurements to ensure accuracy in diagnosis and precision in the control of treatment. In an ever growing number of cases the clinical findings serve now only as a guide to the laboratory investigations which the clinician demands. Diagnosis depends not only on positive laboratory findings, but differential diagnosis demands a great variety of negative findings as well, as an aid to the exclusion of other possible considerations, whilst in many instances the selection and control of treatment is also under laboratory guidance. Whereas in the past this type of medicine was regarded as the prerogative of the larger teaching hospitals, in recent years its practice has widened progressively so that today even the smaller hospitals and general practitioners are constantly clamouring for greater investigational facilities.

While it is no simple matter to meet these demands, they should not be discouraged. Indeed if the quality of medical care is to be improved, with all that means in terms of national economy and social well being, every effort should be made to meet the demand, within reason, as without ready access to investigational facilities the modern doctor is handicapped in caring for his patients. Medical practitioners are by no means the only source of pressure for more laboratory investigations; patients are becoming increasingly aware of the need for proper investigation of their ailments as the mass media of communication publicise medical and scientific topics. It is in this context that the activities of the Institute of Clinical Pathology and Medical Research must be viewed. The range of investigations it undertakes is very broad, embracing as it does practically every test of proved usefulness for which there is a demand. In its short history the Institute has come to occupy a key position, with virtually every hospital in the State dependent to a lesser or greater degree on the service it provides. Many of the smaller country hospitals have either very limited or no laboratory facilities at all and are entirely dependent on the Institute. The larger Base or District

hospitals usually have laboratories staffed by a Medical Technologist with in most cases, no specialist Pathologist in attendance, although some have a visiting Pathologist, while a small proportion enjoy the services of a full-time Pathologist. In any event, the range of work which they undertake is limited and what they cannot do is referred to the Institute. Hospitals from which specimens were received during the year are listed in Appendix A.

The Institute is divided into seven separate departments and an account of their activities follows:

Pathological Anatomy and Histology

This department is concerned with the gross and microscopic study of tissue removed surgically for purposes of diagnosis or during the course of treatment; its function is to establish the nature of the disease process. Of particular importance is the presence or absence of malignant disease because it is only by histological examination that this can be definitely confirmed or excluded.

The past year has seen a further increase in the number of specimens submitted for histological examination; the total number amounted to 11,405 of which 11,001 were removed surgically and referred for microscopic diagnosis, the remainder being autopsy material. 243 post-mortem examinations were carried out for the Lidcombe State Hospital and a further 123 were referred by outside authorities. In all 38,183 sections were cut and examined from these specimens, and it is perhaps of interest to record that in 1,318 instances the diagnosis of cancer was established. By comparison with 1964 there was a 7.6 per cent increase in the number of specimens received and just on 20 per cent increase in the number of sections examined. The Histopathology Department must now rank as one of the busiest if not the busiest in Australia, and it is a matter for no little satisfaction that virtually all the work was accomplished by staff who have received all their training in Histopathology at this Institute.

Haematology

Haematology is concerned with blood diseases and during the year the Haematology Department received 6,569 specimens on which 23,625 investigations were carried out, representing an increase of 7.1 per cent over the corresponding figures for 1964. As in previous years the greater proportion of the increase is accounted for by the more complex investigations, so that the crude figures give little true indication of the increased work load. Microbiological assays of Vitamin B₁₂ and Folic Acid have now become standard investigations and in order that they may be efficiently performed, it is now necessary to apply stricter criteria to the selection of patients. Specimens for these investigations are now accepted only where we are satisfied that the result will be of value to the patient or for clinical research and teaching, where full data are being accumulated. No less than 1,215 serum assays for Vitamin B₁₂ and 571 folic acid assays were undertaken during the year. Because of the complexity of these investigations, they have all to be carried out by senior staff and this has imposed a heavy burden on the department.

Bacteriology

Throughout 1965 the Bacteriology Department laboured under a serious handicap in that it was without the services of a full-time Senior Bacteriologist following the resignation of Dr D. J. Hansman. With the invaluable part-time assistance of Dr E. B. Durie who had recently retired from the position of Senior Bacteriologist at the Royal North Shore Hospital the service was maintained. Dr S. Fisher, at present Senior Bacteriologist at the Royal North Shore Hospital, has accepted an appointment to the Staff of this Institute and is expected to commence duty early in the new year. During 1965, 15,140 specimens were received for bacteriological examination an increase of 4.4 per cent over the 1964 figures. 44,401 investigations were carried out on these specimens an increase of 7.3 per cent for the year. The Bacteriology Department has now almost reached saturation point and the present staff could not handle much more work as the available laboratory facilities are almost fully extended.

Virology

Virology is concerned with study of viruses and the diseases which they produce. During the year 4,120 specimens were received for virological investigation, an increase of 18.2 per cent over the figures for 1964. 8,613 investigations were carried out on these specimens representing an increase of 24.3 per cent over the previous years figures.

The discovery about three years ago of methods for cultivating the rubella virus in the laboratory permitted the investigation and subsequent successful introduction of the technique at the Institute, the main purpose being its application to more precise rubella diagnosis particularly in early pregnancy. A highly effective system for propagating the virus and determining antibody levels was developed during the year and this has already yielded a rich harvest of original findings. These have included the diagnosis of Congenital Rubella Syndrome in three infants, a diagnosis not previously established in New South Wales. Further, the staff of the Virology Department have

been successful in isolating Rubella virus from the lens tissue of infants up to 9 months old with congenital cataracts of the eye; this finding had never before been reported. No less important was the demonstration that human γ Globulin has a far higher antibody content and hence offers better protection than Convalescent Serum previously used in the prophylaxis of maternal rubella. As a result the Red Cross Blood Transfusion Service will in future issue γ Globulin instead of Convalescent Serum for the protection of pregnant women exposed to the risk of Rubella.

During the year Dr R. R. Reid, Medical Officer employed in the Virology Department, was sent to the Department of Microbiology at Monash University to learn from Professor B. Marmion, a world authority, the special techniques for the diagnosis of mycoplasma infections. At present no laboratory in New South Wales is in a position to establish a diagnosis of infection with mycoplasma pneumoniae an important cause of certain types of pneumonia. It is hoped that during the coming year the Institute will be able to offer this service.

Venereal Disease Serology

This department is concerned with carrying out blood tests for the diagnosis of syphilis and it also carries out a smaller number of serological tests relating to gonorrhea and lymphogranuloma venereum infections. During the year 138,808 serological tests were carried out an increase of 34.8 per cent over the corresponding figure for 1964. Much of this increase is made up by the larger number of referrals from the Prisons Department (over 9,000 more than last year); private practitioners 5,500 more than last year and Public Hospitals almost 10,000 more than last year.

When at the request of the National Health and Medical Research Council this Institute assumed reference responsibilities for *Treponema Pallidum* Immobilization (T.P.I.) and Fluorescent Treponemal Antibody (F.T.A.) tests for the whole of Australia, the Health Departments of all States were notified by circular of the availability of the service and many specimens are now being received from other States for these highly specific and sensitive tests. There is every reason to believe that this component of the work will increase rapidly as the availability of these investigations becomes more widely known.

Clinical Biochemistry

During the year 15,714 specimens were received for biochemical analysis, an increase of 25 per cent over the figure for last year. The number of tests carried out on these specimens totalled 32,757, 10.7 per cent more than in 1964.

It is of interest to recall that in 1960 the number of specimens received for clinical biochemical investigation exceeded 5,000 for the first time. In 1963 the 10,000 mark was reached and present indications are that the figure for 1966 will be very close to 20,000. In other words the work load has doubled every three years; a rate of about 25 per cent compound per year. This trend has been quite consistent and shows no sign of slackening. There is no reason to assume therefore that this exponential growth will alter significantly in the immediate future yet if it continues it must precipitate a crisis, as a further doubling of the work load would be quite beyond the capacity of the present laboratories.

As in the other departments the number of more sophisticated or complex investigations is very much higher than pertains in any general hospital laboratory or for that matter in any teaching hospital department. In fact a very high proportion of the work is referred by hospitals which lack the facilities or qualified staff to do these more complex investigations. This means that a higher proportion of the work must be done by the senior staff who, in consequence, have little time to devote to the investigation and introduction of the newer tests which are constantly being added to the diagnostic armamentarium.

Exfoliative Cytology

Exfoliative Cytology is concerned with the microscopic examination of cells which are constantly being shed from body surfaces as a normal event. It is now well established that changes indicative of developing cancer are recognizable in such exfoliated cells long before the disease becomes manifest clinically. Cancer of the cervix of the uterus, one of the commonest cancers of women, is particularly susceptible to early detection by this method and in 1962 a Department of Exfoliative Cytology was established at the Institute in order to provide a state wide service for the early detection of uterine cancer. During the year the work of this Department expanded rapidly with some 1,500 doctors from all over the state submitting specimens. In all 87,828 specimens were received an increase of 55.2 per cent over the figure for 1964. Since the service was inaugurated 903 women have been found to have evidence of unsuspected early cancer of the cervix of the uterus. In 601 cases the disease has been confirmed histologically and appropriate treatment instituted. In a further 302 patients further investigations are proceeding and there is little doubt that in a very high proportion of these histological confirmation will be forthcoming in the near future.

Exfoliative Cytology has also been applied to the diagnosis of cancers in other situations although in these it is applied more to assist in the clinical diagnosis in cases of suspected cancer of stomach, lung, urinary bladder, etc., as mass screening programmes for the detection of cancer in these situations are not practicable. A total of 976 such examinations were carried out during the year an increase of 58.1 per cent over the figure for 1964 when this service was first established.

B. TEACHING

Training of Medical Graduates as Pathologists

The Institute enjoys full recognition by the University of Sydney and the College of Pathologists of Australia as an approved laboratory for the training of Medical Graduates seeking specialist qualifications in Pathology.

Seven Registrars are at present undergoing training in the Institutes' laboratories. While the training offered is, for the most part, on the apprenticeship system, the departments of Bacteriology and Haematology conduct, in addition, rather more formal training programmes. The tenure of the Registrarships is four years during which time the trainees spend fifteen months doing pathological anatomy and Histology and nine months in each of the other major departments, e.g., Haematology, Bacteriology and Clinical Biochemistry, leaving a further six months for general revision.

The post-graduate teaching activities are reinforced by attendance at seminars, scientific meetings, lectures and informal tutorials. For six months, while working in the Haematology Department the Registrar is either in residence or on call for all emergency pathology work at the Lidcombe State Hospital and in this way he is able to gain experience in emergency pathology.

Bearing in mind that it is only six and a half years since the Institute was established and that it took almost a year before effective training programmes were developed and trainees recruited, the results have been most gratifying. Trainee pathologists are required to undergo a minimum of five years, post-graduate training before becoming eligible for membership of the College of Pathologists of Australia and in 1965 the first of our trainees qualified. It is confidently expected that a further three will qualify in 1966. The contribution which this Institute is now making towards overcoming the serious shortage of pathologists in New South Wales is a matter for satisfaction.

Training of Laboratory Assistants and Medical Technologists

The training of Laboratory Assistants and Medical Technologists is conducted on an apprenticeship system combined with part-time formal studies at the Sydney Technical College. Laboratory Assistants-in-training undergo a four year course after which they are eligible to sit for the Biology Certificate at the Sydney Technical College and qualify as Laboratory Assistants. After a further two years of study, i.e., six years in all, they may qualify for the Diploma in Medical Technology. To date eighteen of our trainees have qualified for the Biology Certificate and four have proceeded to the higher qualification the Diploma in Medical Technology.

The technical staff in the Department of Exfoliative Cytology, known as scanners, are all trained at the Institute, which is now in a position not only to offer training to Pathologists and Gynaecologists but also to train cyto-technicians and scanners for outside bodies. Several from New South Wales and other States have already taken advantage of the training facilities offered by the Institute.

Staff Meetings

An important feature of the educational side of the work of the Institute is the programme of weekly staff seminars which are jointly sponsored by the Institute and the Lidcombe State Hospital. These meetings are open to the Medical Profession as a whole and are advertised in the *Medical Journal of Australia*, in the British Medical Association's *Monthly Bulletin*, and by the Post-Graduate Committee in Medicine of the University of Sydney. Approximately 36 such meetings are held each year, spread over three terms in each of which 12 seminars take place; there is a recess of approximately one month between terms. All members of the scientific staff are encouraged to attend and the senior staff, Registrars and Microbiologists are expected to take turns at presenting papers; outside speakers are also invited to lecture. Apart from the fact that these seminars provide a common ground on which the staffs of the Institute and the Lidcombe State Hospital can meet, much valuable clinical, pathological and scientific information is disseminated. One of the most important aspects however, is the opportunity these seminars afford for the junior members of the staff to gain practical experience in lecturing before a critical audience. The programme of weekly staff seminars held during 1964 is attached. See Appendix D.

C. RESEARCH

This aspect of our work has not yet received the attention it deserves, mainly because the heavy commitments for diagnostic investigation have meant that senior members of the staff have had little opportunity to pursue their research interests or to cultivate these activities among their junior staff, who have themselves to carry out much of the routine work under supervision. This is a pity because the interest and ability to pursue useful research is there, the material and facilities are available, and all that is really lacking is time. It is hoped that it will be possible in the near future to provide each of the specialist heads of the departments with an understudy by appointing the best of the registrars to permanent positions on the staff when they complete their training.

This should lighten the load of the routine work at present carried out by the specialist staff and provide the opportunity for collaborative research. At the same time as more technical staff complete their training, it should be possible to enable some of the Science Graduates, at present engaged on technical work, to participate in research activities.

Despite these difficulties, programmes of original work are being pursued in the various departments. Much of this is of a developmental nature aimed at overcoming technical difficulties inherent in some of the more specialized investigations. Some involve epidemiological or other types of survey while a small residue is rather more fundamental in nature.

Biochemistry

In previous annual reports reference was made to the work being done on the development of technical methods for the analyses of steroid hormones and their metabolites excreted in urine. Considerable progress was made during the year and it is now possible to carry through in one continuous process analyses of nearly all the main types of steroid excreted in human urine. This has involved a great deal of painstaking work on the separation of similar groups of steroids in the form of extracts suitable for presentation to the gas chromatograph, so that quantitation of the excreted products may be achieved. Work has proceeded on the study of the urinary steroid patterns found in normal men and women. This will serve in the future as a reference point for similar studies of various endocrine diseases.

In a different field work has progressed on the separation of serum proteins by electrophoresis in gel columns of small dimensions. Once this technique is established and refined it will be applicable to the study of various diseases and of the ageing process.

Haematology

The investigation of the nutritional status of aged males, with particular reference to haematinics, has continued during the year and this had been extended to include estimations of urinary formimino glutamic acid as an index of folic acid deficiency. A great deal of work has been done in developing and standardizing these techniques. Investigations aimed at establishing a method for the assay of intrinsic factor have also proceeded satisfactorily and studies are currently in progress aimed at detecting the presence of auto-antibodies to gastric mucosa in pernicious anaemia. Once these are successfully completed we shall be in a position to conduct very thorough investigation of the macrocytic anaemias. During the year a method was established for the electrophoretic determination of abnormal forms of haemoglobin which are known to cause a group of anaemias to which migrants of Mediterranean origin are particularly prone.

Histopathology

Work has proceeded on the histochemistry of mucins and techniques of immunohistochemistry with particular reference to fluorescence microscopy have recently been under investigation. Equipment for this work is at present on order and when it is received it will be utilized for investigational work on autoimmune disease in collaboration with the Haematology Department. Attempts are also being made to adapt fluorescent labelled antibody methods to hasten the serotyping and identification of certain viruses.

Virology

Research activities in the Virology Department have concentrated on a variety of aspects of the Rubella problem, particularly in pregnancy and in the newborn. These have already been related.

Bacteriology

As the Bacteriology Department was throughout the year without the services of a full-time Bacteriologist research activities have been in abeyance. It is hoped that these will be resumed and actively pursued in the coming year when the new Senior Bacteriologist assumes duty.

Exfoliative Cytology

The Exfoliative Cytology department has already accumulated over 200,000 cervical smears together with well documented information about the women from whom they have come. There can be few centres in the world in which such a wealth of data has been collected in so short a time and, of course, the rate of accumulation is rapidly increasing. A great deal of important statistical information which would throw light on the incidence, age groups, parity, etc., of the women at risk at present lies hidden in this vast amount of material. During the year considerable progress was made in devising a punch card and in writing a programme which would enable this accumulated material to be adapted for computer analysis by the Electronic Data Processing Division of the Public Service Board.

Veneral Disease Serology

There has, as yet, been little opportunity to develop research activities in this field as it was only towards the end of 1964 that the Venereal Disease Serology Laboratory was fully established and organized to carry out T.P.I. and F.T.A. tests. During the year a survey was commenced in collaboration with the Queensland Department of Public Health into Treponemal Diseases in the indigenous population of Papua and New Guinea and plans are at present being developed in collaboration with the Commonwealth Health Authorities to examine a representative sample of the aboriginal population of the Northern Territory.

GENERAL

Administration

The broad administrative structure of the Institute which functioned satisfactorily in the past became progressively strained as the work load grew beyond the levels for which the laboratory and office accommodation was designed. During the year a complete review of existing procedures was undertaken with a view to reducing the amount of clerical work involved and speeding the despatch of reports. It is planned to introduce photocopying procedures during 1966 and thus eliminate much of the typing of reports which at present occupies so much time and space.

Conclusion

This year has seen a further all round expansion in the activities of the Institute of Clinical Pathology and Medical Research. The volume of work done in all departments has continued to increase while the variety of investigations offered has steadily broadened. Many of the investigations now undertaken at the Institute were not previously available in New South Wales or if they were available were restricted to patients attending at a few specialized hospitals. That they are now generally available to the entire population must add materially to the quality of medical practice in this State. The time might now be opportune to consider the future development of the Clinical Pathology Service provided by the Institute. In six years the amount of work has increased phenomenally and if the present trend continues, and there is every reason to believe that it will, it is not difficult to envisage a situation where the available laboratory space can no longer accommodate the volume of work. Indeed this situation has already been reached in the Bacteriology Department and is rapidly approaching in the departments of Exfoliative Cytology, Biochemistry and Venereal Disease Serology. The New South Wales Department of Public Health is now in a position to provide a comprehensive diagnostic laboratory service second to none in this State. That this has come about in so short a period is due in some measure to the excellent facilities provided, but of far greater consequence is the very high quality of the staff which we have been fortunate enough to recruit. They have always reacted with enthusiasm to any proposals aimed at improving the output and quality of the work, and it is to this spirit that the results achieved to date are attributable. That it has been possible to encourage and maintain this enthusiasm is due in no small measure to the co-operation and support which we have enjoyed from the central administration of the New South Wales Department of Public Health and other Government Departments, notably the Public Service Board, the Government Stores Department and the Department of Public Works.

Of the three functions, the service component is now fully operative and flourishing. The far-sighted training programme inaugurated in the early days is now bearing fruit so that the early anxieties over staffing have been dissipated and it now remains to develop the research activities which have perhaps languished a little because of the necessity to ensure that the other two functions were first solidly established. Given continuation of the support which we have enjoyed to date there is now no reason why we should not, in the coming years, make significant contributions of original work which will add further to the reputation which the New South Wales Department of Public Health has built up over the past few years.

THE INSTITUTE OF CLINICAL PATHOLOGY AND MEDICAL RESEARCH

LIST OF HOSPITALS FROM WHICH SPECIMENS ARE RECEIVED

(This list does not include hospitals administered by the New South Wales Department of Public Health)

Hospital	Biochemistry	Bacteriology	Haematology	Histo-pathology	V.D. Serology
Auburn District	+	+	+	+	+
Balmain and District	+	+	+	+	+
Bankstown District	+	+	+	+	+
Benevolent Society of N.S.W.: Royal for Women	+	+	+	+	+
Bethesda, Marrickville	+	+	+	+	+
Blacktown District	+	+	+	+	+
Canterbury District Memorial	+	+	+	+	+
Eastern Suburbs	+	+	+	+	+
Fairfield District	+	+	+	+	+
Hornsby and District	+	+	+	+	+
Lewisham	+	+	+	+	+
Liverpool District	+	+	+	+	+
Manly District	+	+	+	+	+
Marrickville District	+	+	+	+	+
Mater Misericordiae (North Sydney)	+	+	+	+	+
Mona Vale	+	+	+	+	+
Northcott Neurological Centre	+	+	+	+	+
Parramatta District	+	+	+	+	+
Prince Henry	+	+	+	+	+
Prince of Wales	+	+	+	+	+
Queen Victoria for Women and Babies	+	+	+	+	+
Rachel Forster	+	+	+	+	+
Royal Alexandra for Children	+	+	+	+	+
Royal North Shore	+	+	+	+	+
Royal Prince Alfred	+	+	+	+	+
Royal South Sydney	+	+	+	+	+
Ryde District Soldiers' Memorial	+	+	+	+	+
St George	+	+	+	+	+
St Joseph's (Auburn)	+	+	+	+	+
St Margaret's for Women (Sydney)	+	+	+	+	+
St Vincent's (Darlinghurst)	+	+	+	+	+
Sutherland District	+	+	+	+	+
Sydney	+	+	+	+	+
Sydney: Kanematsu Memorial Institute of Pathology	+	+	+	+	+
Sydney Homoeopathic	+	+	+	+	+
United Dental	+	+	+	+	+
Western Suburbs	+	+	+	+	+
Women's (Crown Street)	+	+	+	+	+
<i>Country</i>					
Albury Base	+	+	+	+	+
Armidale and New England	+	+	+	+	+
Australian Red Cross Society: Bodington	+	+	+	+	+
Ballina District	+	+	+	+	+
Batlow District	+	+	+	+	+
Bathurst District	+	+	+	+	+
Bega District	+	+	+	+	+
Bellinger River District	+	+	+	+	+
Berrima District, Bowral	+	+	+	+	+
Blayney District	+	+	+	+	+
Blue Mountains District Anzac Memorial	+	+	+	+	+
Bourke District	+	+	+	+	+
Brentwood, Muswellbrook	+	+	+	+	+
Broken Hill and District	+	+	+	+	+
Bulli	+	+	+	+	+
Camden District	+	+	+	+	+
Carcoar District	+	+	+	+	+
Cessnock District	+	+	+	+	+
Coffs Harbour and District	+	+	+	+	+
Condobolin District	+	+	+	+	+
Coolah District	+	+	+	+	+
Cooma District	+	+	+	+	+
Cootamundra District	+	+	+	+	+
Cowra District	+	+	+	+	+
Crookwell District	+	+	+	+	+
Dubbo Base	+	+	+	+	+
Dungog and District	+	+	+	+	+
Forbes District	+	+	+	+	+
Gilgandra District	+	+	+	+	+
Glen Innes District	+	+	+	+	+
Gosford District	+	+	+	+	+
Goulburn Base	+	+	+	+	+
Grafton Base	+	+	+	+	+
Griffith District	+	+	+	+	+
Gundagai District	+	+	+	+	+

Hospital	Biochemistry	Bacteriology	Haematology	Histo- pathology	V.D. Serology
<i>Country—continued</i>					
Hawkesbury Benevolent Society and Hospital	+	+	+	+	+
Hay	+	+	+	+	+
Hillston	+	+	+	+	+
Inverell District	+	+	+	+	+
Junee District	+	+	+	+	+
Kurri Kurri District	+	+	+	+	+
Lake Cargelligo District	+	+	+	+	+
Leeton District	+	+	+	+	+
Lithgow District	+	+	+	+	+
Macksville and District	+	+	+	+	+
Macleay District, Kempsey	+	+	+	+	+
Maitland	+	+	+	+	+
Manning River District	+	+	+	+	+
Mercy, Cootamundra	+	+	+	+	+
Mudgee District	+	+	+	+	+
Narrandera District	+	+	+	+	+
Narromine District	+	+	+	+	+
Nepean District, Penrith	+	+	+	+	+
Newcastle Mater Misericordiae (Waratah)	+	+	+	+	+
Newcastle Western Suburbs Maternity	+	+	+	+	+
Orange Base	+	+	+	+	+
Pambula District	+	+	+	+	+
Queen Victoria and Picton Lakes Homes, Thirlmere	+	+	+	+	+
Royal Newcastle	+	+	+	+	+
Rylstone District	+	+	+	+	+
St John of God (Goulburn)	+	+	+	+	+
Scott Memorial, Scone	+	+	+	+	+
Shoalhaven District Memorial	+	+	+	+	+
Singleton District	+	+	+	+	+
Tamworth Base	+	+	+	+	+
Temora and District	+	+	+	+	+
Tumut and District	+	+	+	+	+
Wagga Wagga Base	+	+	+	+	+
Walgett District	+	+	+	+	+
Wallsend District	+	+	+	+	+
Wee Waa District	+	+	+	+	+
Wellington District	+	+	+	+	+
Wollongong	+	+	+	+	+
Wyalong and District	+	+	+	+	+
Yeoval	+	+	+	+	+

STATISTICAL SUMMARY OF SPECIMENS RECEIVED AND EXAMINATIONS COMPLETED

1ST JANUARY, 1965-31ST DECEMBER, 1965

								1964	1965
Number of specimens—									
Surgical biopsy	10,097	11,001
Post-mortems (internal)	276	243
Post-mortems (external)	145	123
Miscellaneous	82	38
								10,600	11,405
Examinations completed—									
Paraffin sections	31,442	37,737
Frozen sections	105	165
Post-mortems (internal)	276	243
Miscellaneous	82	38
								31,905	38,183
Chorionic Gonadotrophin Assay (Galli-Mainini)							278	177
Immunology—									
Gastric parietal cell antibodies in serum	2	30
Anti-nuclear factor in serum	10	25
Thyroid antibodies in serum	3	10
Latex flocculation test for rheumatoid factor	3
								15	68

A. Specimens for virus isolation—									
Faeces	346	499
Throat washings	697	917
Cerebrospinal fluid	89	161
Miscellaneous	297	407
B. Blood for antibody estimations—									
Complement fixation tests	1,344	600
Neutralisation tests	103	235
C. Serum for toxoplasmosis investigation									
	599	1,257
D. Smears for inclusion bodies (trachoma)									
	11	10
E. Viruses for identification									
	34
								3,486	4,120
Examinations completed—									
Virus isolation and identification investigations	3,900	4,864
Complement fixation tests	1,975	1,782
Neutralisation tests—									
Polio	21	105
Coxsackie	420	606
E.C.H.O.	2	40
Rubella	67
Vaccinia	15
Herpes	3
Haemagglutination test for toxoplasmosis	599	1,124
Inclusion bodies (trachoma)	11	7
								6,928	8,613

Bacteriology

	1964	1965
Number of specimens	14,502	15,140
Examinations completed—		
Antibiotic sensitivity tests	15,080	16,648
Anti streptolysin "O" titre	572	1,086
Blood culture	27	56
Brucella agglutination test	951	415
C-reactive protein test	39	2
Casoni test	5	8
Cerebrospinal fluid cell count	74	66
Cerebrospinal fluid culture	23	18
Culture, identification	223	511
Dark-ground preparation, spirochaetes .. .. .	..	4
<i>Escherichia coli</i> , serotype identification	4	10
Faeces, microscopic examination	97	124
Faeces, culture	1,051	413
Guinea pig inoculation, <i>M. tuberculosis</i> (other than milk)	376	455
Haemolytic streptococci, Lancefield grouping	183	229
Mantoux test	115	232
Milk, guinea pig inoculation, <i>M. tuberculosis</i>	53	41
Milk, guinea pig inoculation, <i>B. abortus</i>	53	41
Nasal smears, <i>Mycobacterium leprae</i>	57	31
Nasal swabs, culture	126	75
Pus, Gram's stain	628	455
Pus, culture	628	455
Rose-Waaler test	962	1,396
Skin, hair and nail, direct examination	103	189
Skin, hair and nail, culture for fungi	88	183
Sensitivity tests, <i>M. tuberculosis</i>	1,941	1,831
Sputum, Gram's stain	800	899
Sputum, culture	800	899
Sputum, Ziehl-Neelsen stain	3,928	4,402
Sputum, culture	3,928	4,402
<i>Staphylococcus aureus</i> , bacteriophage typing	470	221
Sterility tests	6	..
Throat swab culture	929	727
Urethral smears, Gram's stain	1,684	1,479
Cervical smears, Gram's stain	617	539
Urine, chemical examination	1,510	1,900
Urine, microscopic examination	1,510	1,900
Urine, Gram's stain	506	748
Urine, culture	506	748
Vaccines	13	13
Vaginal discharge, <i>Candida albicans</i>	40	49
Vaginal discharge, Trichomonads	5	5
Weil-Felix reaction	26	75
Widal reaction	100	134
Miscellaneous bacteriology	556	287
	<hr/> 41,393	<hr/> 44,401

Venereal Disease Serology

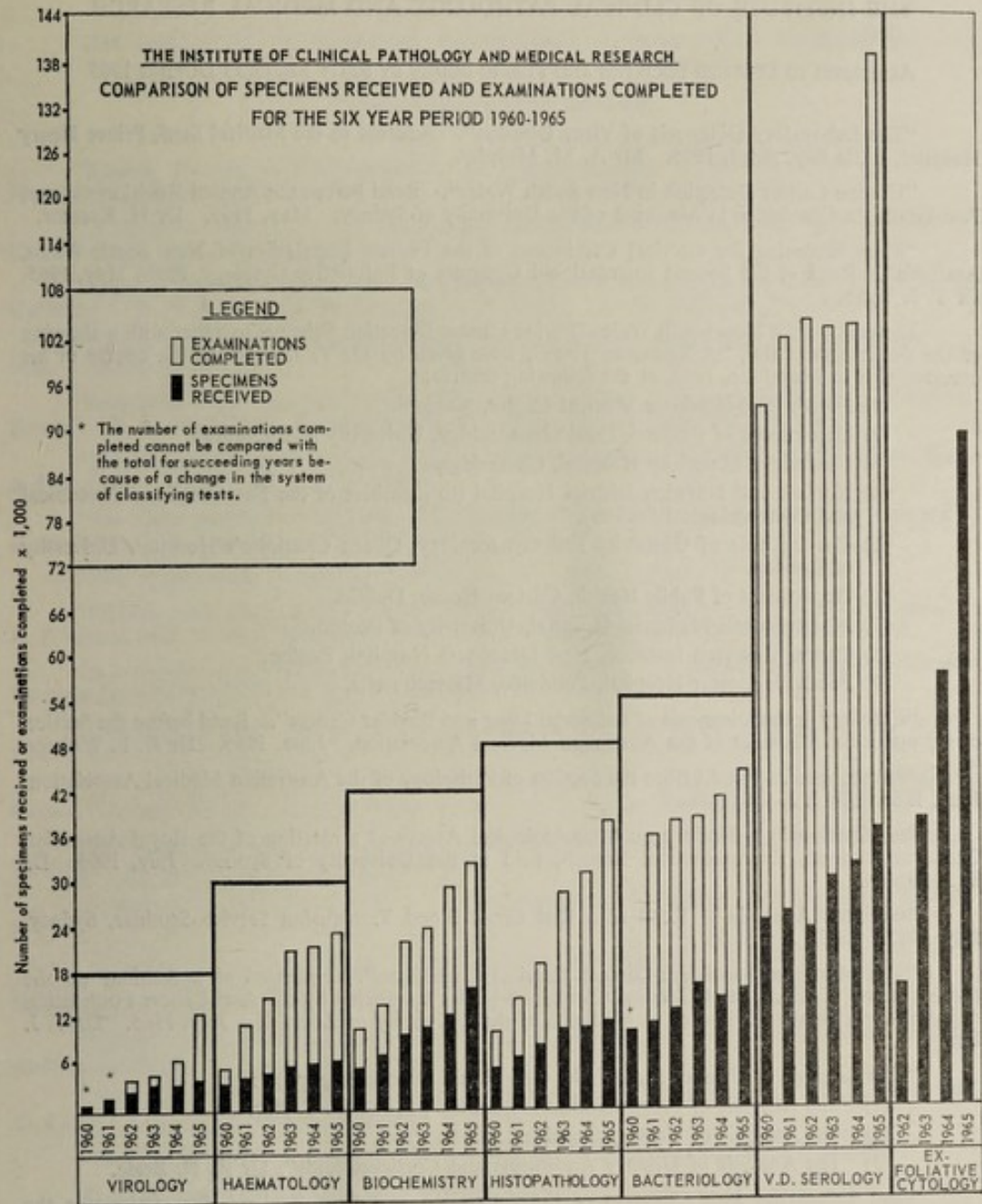
Examinations completed—						
Quantitative Wassermann Reaction	..	..	..	..	1,070	2,042
Wassermann Reaction	..	..	..	..	32,236	43,888
Kahn Test	..	..	..	..	3,859	..
Reiter Protein Complement Fixation Test	..	..	..	..	29,927	40,686
V.D.R.L. Test	..	..	..	..	32,733	40,997
Hydatid Complement Fixation Test	..	..	..	..	120	161
Gonococcal Complement Fixation Test	..	..	..	..	2,566	6,993
L.G.V. Complement Fixation Test	..	..	..	..	8	293
Treponema Pallidum Immobilisation Test	..	..	..	..	463	3,373
Fluorescent Treponemal Antibody Test	..	..	..	..	..	375
					102,982	138,808

Exfoliative Cytology

								1964	1965
Number of specimens received—									
Gynaecological .. .. .	..	..	..	..	..	..	..	56,564	87,828
General .. .. .	..	..	..	..	..	..	..	617	976
								57,181	88,804
Number of smears examined—									
Gynaecological .. .. .	..	..	..	..	..	..	..	56,564	87,828
General .. .. .	..	..	..	..	..	..	..	1,851	2,928
								58,415	90,756

Total Number of Investigations Completed

Histopathology	..	..	..	..	..	..	..	31,905	38,183
Chorionic Gonadotrophin Assay	..	..	..	..	..	..	..	278	177
Immunology	..	..	..	..	..	..	..	15	68
Virology	..	..	..	..	..	..	..	6,928	8,613
Biochemistry	..	..	..	..	..	..	..	29,572	32,757
Bacteriology	..	..	..	..	..	..	..	41,393	44,401
Haematology	..	..	..	..	..	..	..	22,059	23,625
Venereal Disease Serology	..	..	..	..	..	..	..	102,982	138,808
Exfoliative Cytology	..	..	..	..	..	..	..	58,415	90,756
								293,547	377,388



APPENDIX B

THE INSTITUTE OF CLINICAL PATHOLOGY AND MEDICAL RESEARCH

ADDRESSES TO LEARNED SOCIETIES AND PUBLIC BODIES BY STAFF MEMBERS DURING 1965

"The Laboratory Diagnosis of Virus Diseases". Address to the Medical Staff, Prince Henry Hospital, Little Bay. April, 1965. Mr A. M. Murphy.

"Uterine Cancer Detection in New South Wales". Read before the Annual Revision Course, Post-Graduate Committee in Medicine of the University of Sydney. May, 1965. Dr H. Kramer.

"Mass Screening for Cervical Carcinoma of the Female Population of New South Wales, Australia". Read at the Second International Congress of Exfoliative Cytology, Paris. May, 1965. Dr T. J. Ryan.

Lectures on the New South Wales Uterine Cancer Detection Scheme, together with a showing of the documentary film, "A Smear in Time", were given by Dr T. J. Ryan in the course of his overseas visit in May-June, 1965, at the following centres:

- (1) Jinnah Post-Graduate Medical Centre, Karachi.
- (2) Department of Obstetrics and Gynaecology, University of Edinburgh.
- (3) Cambridge Maternity Hospital, Cambridge.
- (4) Norfolk and Norwich District Hospital (to members of the East Anglian Obstetrical and Gynaecological Society).
- (5) The Institute of Obstetrics and Gynaecology, Queen Charlotte's Hospital, University of London.
- (6) Department of Public Health, Custom House, Dublin.
- (7) Massachusetts Memorial Hospital, University of Boston.
- (8) Cancer Research Institute, New Deaconess Hospital, Boston.
- (9) Pondville Cancer Hospital, Pondville, Massachusetts.

"Cytology in the Diagnosis of Industrial Lung and Bladder Cancer". Read before the Section of Occupational Medicine of the Australian Medical Association. June, 1965. Dr K. L. Withers.

"Hibernoma". Read before the Section of Pathology of the Australian Medical Association. June, 1965. Dr J. J. Carter.

Participation in a Seminar on Microbiological Assays at a meeting of the Royal Australian Chemical Institute, Pharmaceutical Branch, held at the University of Sydney. July, 1965. Dr B. J. Arnold.

"Geriatric Anaemia". Read at a Red Cross Blood Transfusion Service Seminar, Sydney. July, 1965. Dr B. J. Arnold.

"The Management of Pre-Clinical Cervical Carcinoma". Presented at a Seminar on the Diagnosis and Significance of Cervical Carcinoma-in-situ conducted by the Anti-Cancer Foundation of the Post-Graduate Committee in Medicine of the University of Adelaide. July, 1965. Dr T. J. Ryan.

"The Analysis of Urinary Steroids by Gas-Liquid Chromatography":

- (1) "The Analysis of Progesterone Metabolites", Mr R. F. Taylor.
- (2) "The Analysis of Urinary Steroids", Mr D. Croft.
- (3) "The Analysis of Urinary Androgens and Corticosteroids", Dr R. N. Beale.

Read before the 38th Congress of the Australian and New Zealand Association for the Advancement of Science held in Hobart in August, 1965.

"Recent Advances in the Serology of Syphilis". Read before the 38th Congress, A.N.Z.A.A.S., Hobart. August, 1965. Dr M. F. Garner.

"Serum Folate Assay in Diagnostic Haematology". Read before the Annual Meeting of the College of Pathologists of Australia, Melbourne. August, 1965. Dr B. J. Arnold.

"Early Cervical Cancer". Address to the Nursing Staff, Division of Occupational Health, Sydney. September, 1965. Dr T. J. Ryan.

"Tissue Cultures and their Use in Biological Research". Read before a meeting of the Australian Institute of Medical Laboratory Technology, New South Wales Branch. October, 1965. Mr A. M. Murphy.

"Geriatric Haematology". Address to the Geriatric Nursing Course, Repatriation General Hospital, Concord. October, 1965. Dr B. J. Arnold.

"The Laboratory Diagnosis of Viral Diseases". Read before a meeting of the Sutherland Branch of the Australian Medical Association. November, 1965. Dr H. Kramer.

APPENDIX C

THE INSTITUTE OF CLINICAL PATHOLOGY AND MEDICAL RESEARCH

PUBLICATIONS BY STAFF MEMBERS

- "Plasma Therapy in Haemophilia"*. B. J. Arnold (with W. R. Pitney, Department of Haematology, Royal Perth Hospital, Perth, W.A.). *Med. J. Aust.* II, 661, 1960.
- "A Sensitive Method for the Colorimetric Determination of Urea". R. N. Beale and D. Croft. *J. clin. Path.*, 14, 418, 1961.
- "Rapid Incremental Methods for the Determination of Serum Iron and Latent Iron Binding Capacity". R. N. Beale, J. O. Bostrom and R. F. Taylor. *J. clin. Path.*, 14, 488, 1961.
- "Herpes simplex of the Fingers". A. M. Murphy (with A. Chancellor, Merrylands, N.S.W.). *Med. J. Aust.*, I, 517, 1961.
- "Improved Rapid Methods for the Determination of Iron Content and Binding Capacity of Serum". R. N. Beale, J. O. Bostrom and R. F. Taylor. *J. clin. Path.*, 15, 156, 1962.
- "The Determination of Cholesterol in Serum by Persulphuric Acid Oxidation". R. N. Beale and D. Croft. *J. clin. Path.*, 15, 221, 1962.
- "The Determination of Urinary 17-ketosteroids by an Improved Zimmermann Reaction". R. N. Beale, J. O. Bostrom and D. Croft. *J. clin. Path.*, 15, 574, 1962.
- "The Megaloblastic Anaemias". B. J. Arnold. *Med. J. Aust.*, II, 698, 1962.
- "Plasma Anti Haemophilic Factor (Factor VIII) Concentrations in Normal Families"*. B. J. Arnold (with W. R. Pitney, R. L. Kirk and N. S. Stenhouse). *Brit. J. Haem.* 8, 421, 1962.
- "A Fatal Case of Listeria Septicaemia and Meningitis". D. Hansman (with J. C. Farrell, Fairfield District Hospital, N.S.W.). *Med. J. Aust.*, II, 62, 1962.
- "Sensitive Methods for the Titrimetric Micro-Determination of Biological Calcium and Magnesium". R. N. Beale and J. O. Bostrom. *J. clin. Path.*, 16, 252, 1963.
- "Q Fever among Abattoir Workers in New South Wales". A. M. Murphy and D. Hansman (with J. Henson, Medical Officer of Health, Tamworth, N.S.W.). *Med. J. Aust.*, I, 343, 1963.
- "Tetracycline-resistant pneumococcus". D. Hansman (with W. Evans, Royal North Shore Hospital). *Lancet*, I, 451, 1963 (correspondence).
- "Poliovirus in an Infants' Home". A. M. Murphy and N. Martin (with H. Walsh, Epping, N.S.W.). *Med. J. Aust.*, 2, 46, 1963.
- "Reaction of the Pentacyanocobaltate (II) Ion with Molecular Oxygen" *. R. N. Beale (with R. H. Bayston, N. Kelso King and M. E. Winfield, Chemical Physics Sections, Division of Industrial Chemistry, C.S.I.R.O., Victoria). *Aust. J. Chem.*, 16, 954, 1963.
- "Coxsackie A10 Virus Infections in Sydney". A. M. Murphy. *Med. J. Aust.*, Jan. 11, 1964 (correspondence).
- "The Microdetermination of Biological Copper with Oxalyldihydrazide". R. N. Beale and D. Croft. *J. clin. Path.*, 17, 260, 1964.
- "N-terminal Residue of Aortic Elastin". K. B. Taylor. *Nature*, 202, 1217, 1964.
- "Leukaemoid Reactions in Disseminated Tuberculosis". K. L. Withers. *Med. J. Aust.* 2, 142, 1964.
- "Coxsackie B4 Virus Infections in New South Wales in 1962". A. M. Murphy and R. Simmul. *Med. J. Aust.*, 2, 443, 1964.
- "The Isolation of an Unclassified Virus from an Outbreak of Infantile Diarrhoea". A. M. Murphy. *J. Hyg., Camb.*, 62, 425, 1964.
- "*Shigella sonnei* Resistant to Sulphadiazine and Antibiotics". D. Hansman. *Med. J. Aust.*, I, 93, 1965 (correspondence).
- "Gas-Liquid Chromatography of Urinary Steroids in the Investigation of Endocrine Function". R. N. Beale, D. Croft and R. F. Taylor. *Proc. Aust. Assoc. Clin. Biochem.* Vol. 1, No. 4, 1964.
- "A Problem in the Diagnosis of Gastric Ulcer". K. L. Withers. *Med. J. Aust.*, Nov. 20, 1965 (correspondence).
- "Serum Folate Assay in Diagnostic Haematology". B. J. Arnold. *Reports of Scientific Meetings No. 5, J. Coll. of Path. Aust.*, 1965.

NOTE: * Work done before joining the staff of the Institute.

APPENDIX C—continued

Publications in Press

- "The Analysis of Urinary Steroids by Gas-Liquid Chromatography".
- "(I) Progesterone Metabolites", R. F. Taylor.
- "(II) Urinary Oestrogens", D. Croft.
- "(III) Urinary Androgens and Corticosteroids", R. N. Beale. Proc. Aust. Assoc. Clin. Biochem.
- "Q Fever, Brucellosis and Leptospirosis among Abattoir Workers in New South Wales". A. M. Murphy (with D. Hansman, J. Wanna, T. J. Woolard and R. F. J. Boger). Med. J. Aust.
- "The Serodiagnosis of Syphilis". M. F. Garner. Med. J. Aust.
- "The Management of Pre-Clinical Cervical Carcinoma". T. J. Ryan. Aust. N.Z. J. Obstet. Gynaec.

Work in Preparation

- "The Determination of Metachromasia with 1 : 9-Dimethyl Methylene Blue". K. B. Taylor.
- "The Isolation of Rubella Virus from Cataracts Removed at Operation". R. R. Reid and A. M. Murphy (with A. Gillespie, M. Menser and J. Harley).
- "Population Screening and the Irrigation Smear Technique". T. J. Ryan and I. Vevers.
- "Investigation of the Acidic Polysaccharides of Salivary Glands". K. B. Taylor.

APPENDIX D

THE INSTITUTE OF CLINICAL PATHOLOGY AND MEDICAL RESEARCH

WEEKLY SEMINARS HELD DURING 1965

(IN CONJUNCTION WITH THE LIDCOMBE STATE HOSPITAL AND HOME)

Date	Subject and Speaker
1st March, 1965.	"The Function of the Eosinophil". Dr G. T. Archer, Assistant Director, Red Cross Blood Transfusion Service.
8th March, 1965.	"Some Physiological and Pharmacological Properties of the Cerebello-Rubro-Thalamic Pathways and Their Possible Clinical Significance". Dr R. Davis, Psychiatric Research Unit, Callan Park Hospital.
15th March, 1965.	Showing of two films: "The Patient and Pathology" and "Man to Man" (the Pill).
22nd March, 1965.	"Diverticulitis". Dr J. E. Moulton, Lidcombe State Hospital.
29th March, 1965.	"Iso-Enzymes in Diagnosis". Dr M. D. Frack, Institute of Clinical Pathology and Medical Research.
	"Laboratory Diagnosis of Urinary Infections". Dr B. J. Way, Institute of Clinical Pathology and Medical Research.
5th April, 1965.	"Non-Gynaecological Exfoliative Cytology". Dr K. L. Withers, Institute of Clinical Pathology and Medical Research.
12th April, 1965.	"Urinary Infections". Professor G. L. Murnaghan, Associate Professor of Surgery (Urology), University of New South Wales.
3rd May, 1965.	"Pathology of the Small Intestine". Dr J. J. Carter, Institute of Clinical Pathology and Medical Research.
10th May, 1965.	"Medicine in a Primitive Community". Dr S. Sax, Director of Geriatrics, and Dr C. R. Deuchar, Lidcombe State Hospital.
17th May, 1965.	"Tests of Respiratory Function". Mr Wayne Chumley, Physiological Laboratories, Randwick Chest Hospital.
28th June, 1965.	"The Deep Mycoses". Dr E. Beatrix Durie, Institute of Clinical Pathology and Medical Research.
5th July, 1965.	"Obstetric Emergencies and Anaesthesia" (with showing of a film, "Resuscitation of the New-Born"). Drs B. E. Sharkey and C. R. Deuchar, Lidcombe State Hospital.
12th July, 1965.	"Toxicological Hazards of Modern Pesticides". Dr D. C. Trainor, Division of Occupational Health.
19th July, 1965.	"Refinements in Treponemal Serology". Dr M. F. Garner, Institute of Clinical Pathology and Medical Research.
26th July, 1965.	Film: "Diagnostic Radiology in Vascular Disease".
9th August, 1965.	"The Investigation of Urinary Steroid Patterns by Gas-Liquid Chromatography". <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> (1) Progesterone metabolites (2) Androgen and corticoid metabolites (3) Oestrogen metabolites </div> <div> .. Mr R. F. Taylor .. Dr R. N. Beale .. Mr D. Croft </div> <div style="font-size: 3em; margin: 0 10px;">}</div> <div> The Institute of Clinical Pathology and Medical Research. </div> </div>
16th August, 1965.	"Serum Folate Assay in Diagnostic Haematology". Dr B. J. Arnold, Institute of Clinical Pathology and Medical Research.
23rd August, 1965.	"Gynaecological Cytology Abroad". Dr T. J. Ryan, Institute of Clinical Pathology and Medical Research.
30th August, 1965.	"Reiter's Disease". Dr B. A. Latham, Frank G. Spurway Fellow in Rheumatic Diseases, Royal North Shore Hospital.
6th September, 1965.	"Medical Emergencies". Dr G. A. Broe, Lidcombe State Hospital.
11th October, 1965.	"The Use of Antibiotics in a General Hospital". Associate Professor D. D. Smith and Dr S. M. Bell, Prince of Wales Hospital.
18th October, 1965.	"Carotid Artery Disease". Dr N. F. R. Fink, Lidcombe State Hospital.
25th October, 1965.	"Antiseptics in the Prevention of Cross-Infection." A film by courtesy of Imperial Chemical Industries of Australia and New Zealand Ltd.
1st November, 1965.	"Contamination of Intravenous Fluids". Dr B. W. Gunner, St Vincent's Hospital, Sydney.
8th November, 1965.	"Early Changes in Whole-Body X-Irradiated Rats". Dr J. W. Harris, Australian Atomic Energy Commission.
15th November, 1965.	"Obstructive Respiratory Disease". A symposium. Bacteriology: Dr R. R. Hollis, Institute of Clinical Pathology and Medical Research. Physiology: Dr B. E. Sharkey, Lidcombe State Hospital. Clinical Management: Dr J. E. Moulton and Dr G. R. Andrews, Lidcombe State Hospital.
22nd November, 1965.	"Amyloid". Dr J. C. Booth, Institute of Clinical Pathology and Medical Research.
29th November, 1965.	"Ultrasonic Echography in Clinical Practice". Dr W. J. Garrett, Royal Hospital for Women.
6th December, 1965.	"Health and Health Schemes". Dr B. J. Lake, Lidcombe State Hospital.
13th December, 1965.	"Clinico-Pathological Conference". Dr H. T. Goodman, Lidcombe State Hospital, and Dr M. D. Frack, Institute of Clinical Pathology and Medical Research.



