

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

### **Contributors**

New South Wales. Department of Public Health.

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1930.

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NEW SOUTH WALES.

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# REPORT

OF THE

DIRECTOR-GENERAL OF PUBLIC HEALTH.

NEW SOUTH WALES,

FOR THE YEAR 1929.

PRESENTED BY THE MINISTER FOR HEALTH  
(THE HON. JAMES MCGIRR, M.L.A.).

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SYDNEY: ALFRED JAMES KENT, I.S.O., GOVERNMENT PRINTER.

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*Presented by*

*The Director General of Public Health*

*March 1930*



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**Office of the Director-General of Public Health, 93 Macquarie-  
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Members of the State Board of Health, 1929.

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Augustus Frederick Robinson, Esq.	...	...	...	Member, Board of Health.		
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G. A. Parkes, Esq. (Chairman, Chamber of Commerce)				do	do	
J. Garlick, Esq. (Chief Civic Commissioner)	...	...		do	do	
The Hon. J. L. Fegan	...	...	...	do	do	
William George Armstrong, M.B., D.P.H.	...	...		do	do	
The Hon. Frank Edgar Wall, M.D., M.L.C.	...	...		do	do	
Mrs. Euphemia Jean Maincke	...	...	...	do	do	
Mrs. Emma Linda Palmer Littlejohn	...	...	...	do	do	

Administrative Staff.

Director-General of Public Health and Commissioner for Venereal Diseases : Robert Dick, M.B., Ch.M., D.P.H.

Senior Medical Officer of Health and Director of Maternal and Baby Welfare : E. Sydney Morris, M.D., Ch.M., D.P.H.

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Secretary : T. H. Neely.

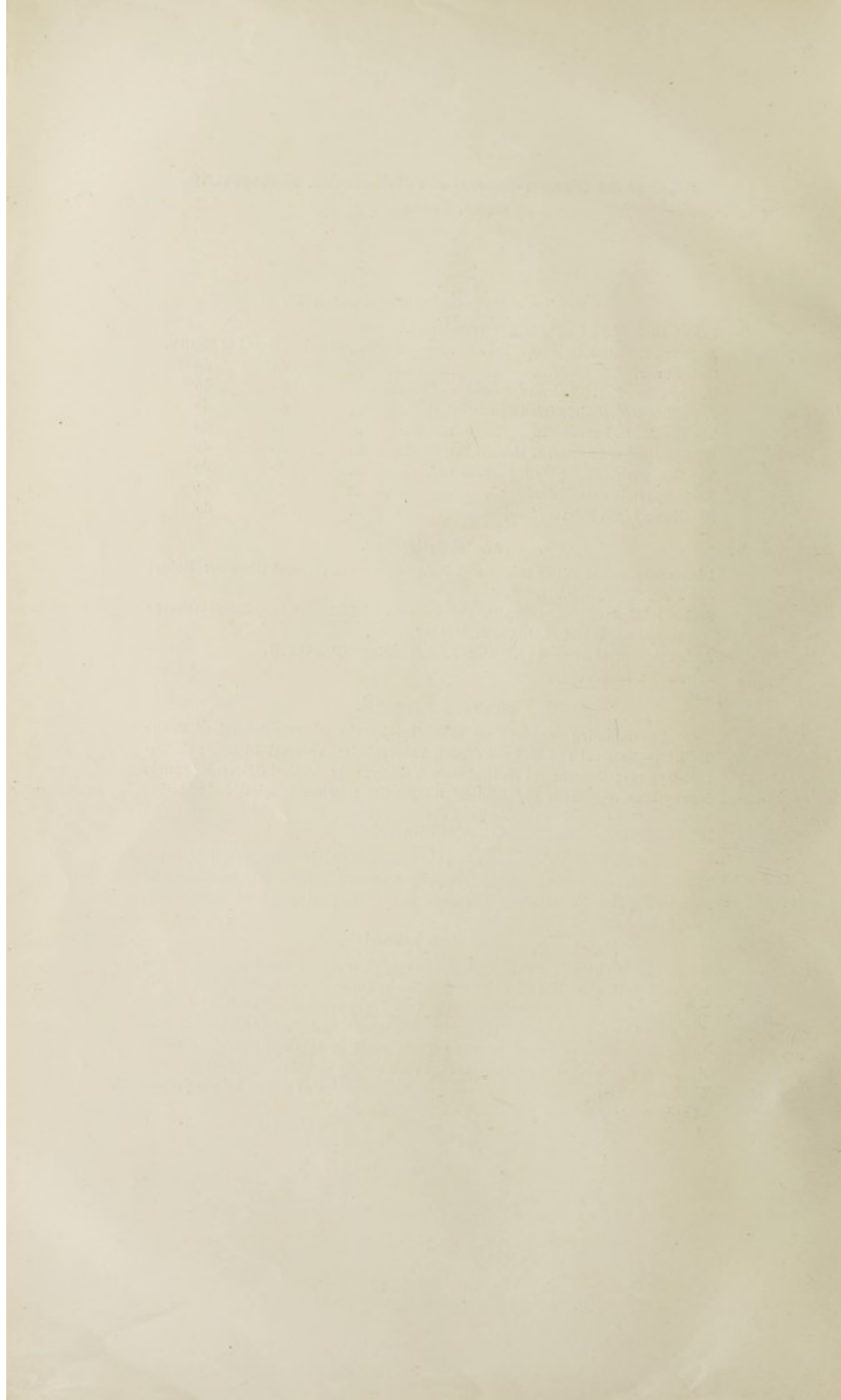
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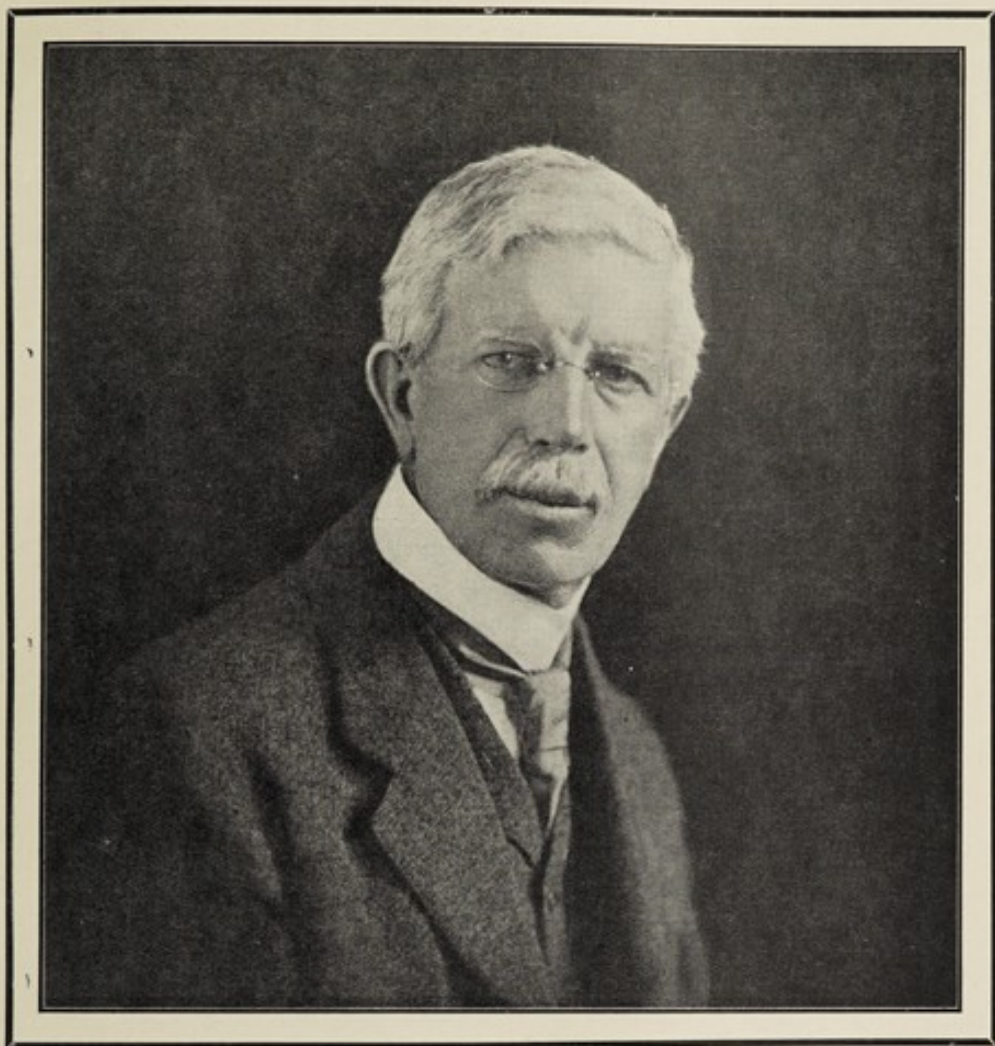
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Dr. Paton held the post of Government Medical Officer for Sydney from 1896 to 1910, when he was appointed as Inspector-General of Hospitals and Charities.

On the expansion of Health Department activities in 1913, Dr. Paton was appointed as the first Director-General of Public Health; he was also President of the Board of Health, and held those positions until his retirement in 1921, on reaching his 65th year. He remained a member of the Board of Health until his death.

Dr. Paton rendered valuable services to the State during his long period of office, and the order of C.M.G. was conferred on him in 1921.



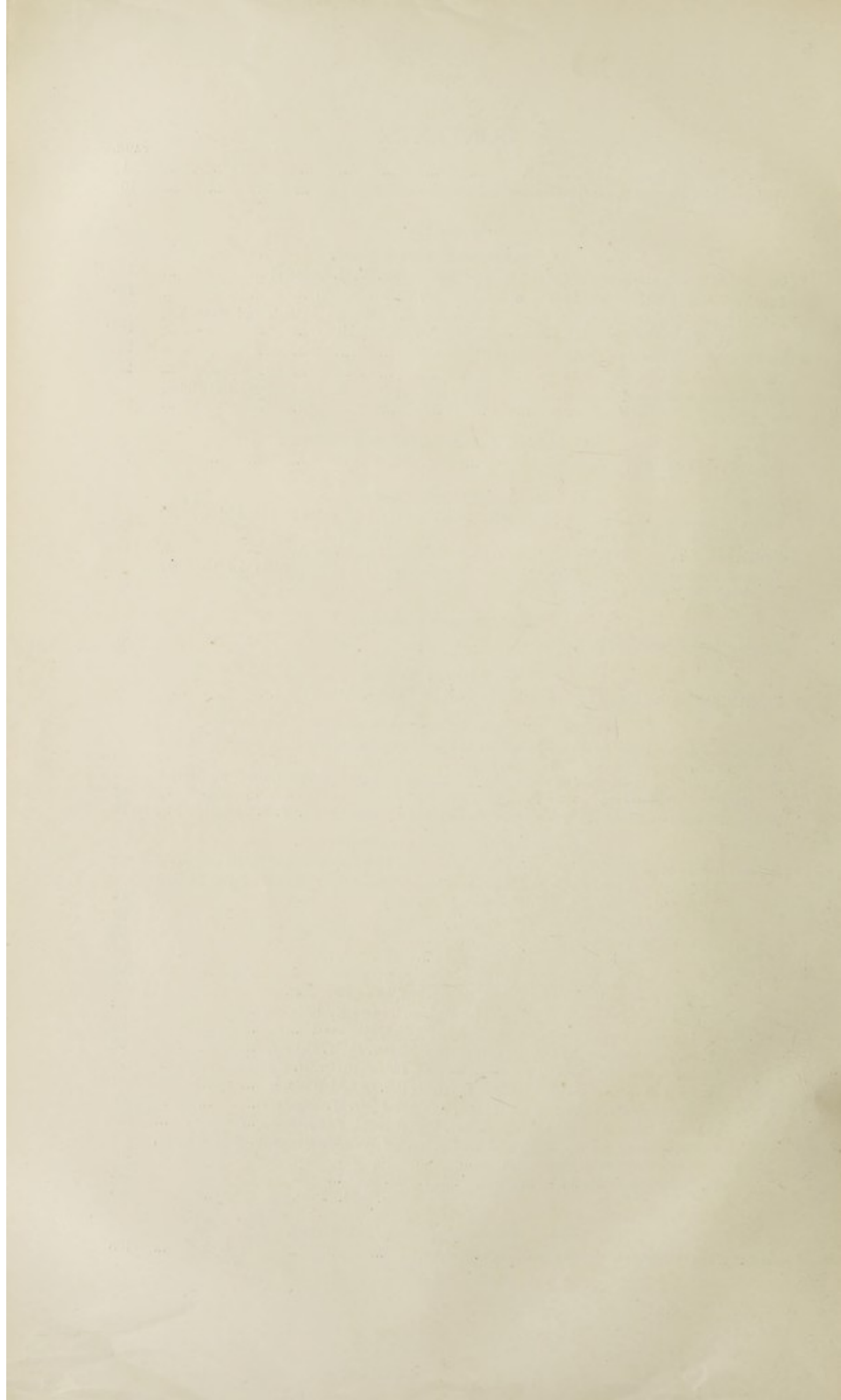


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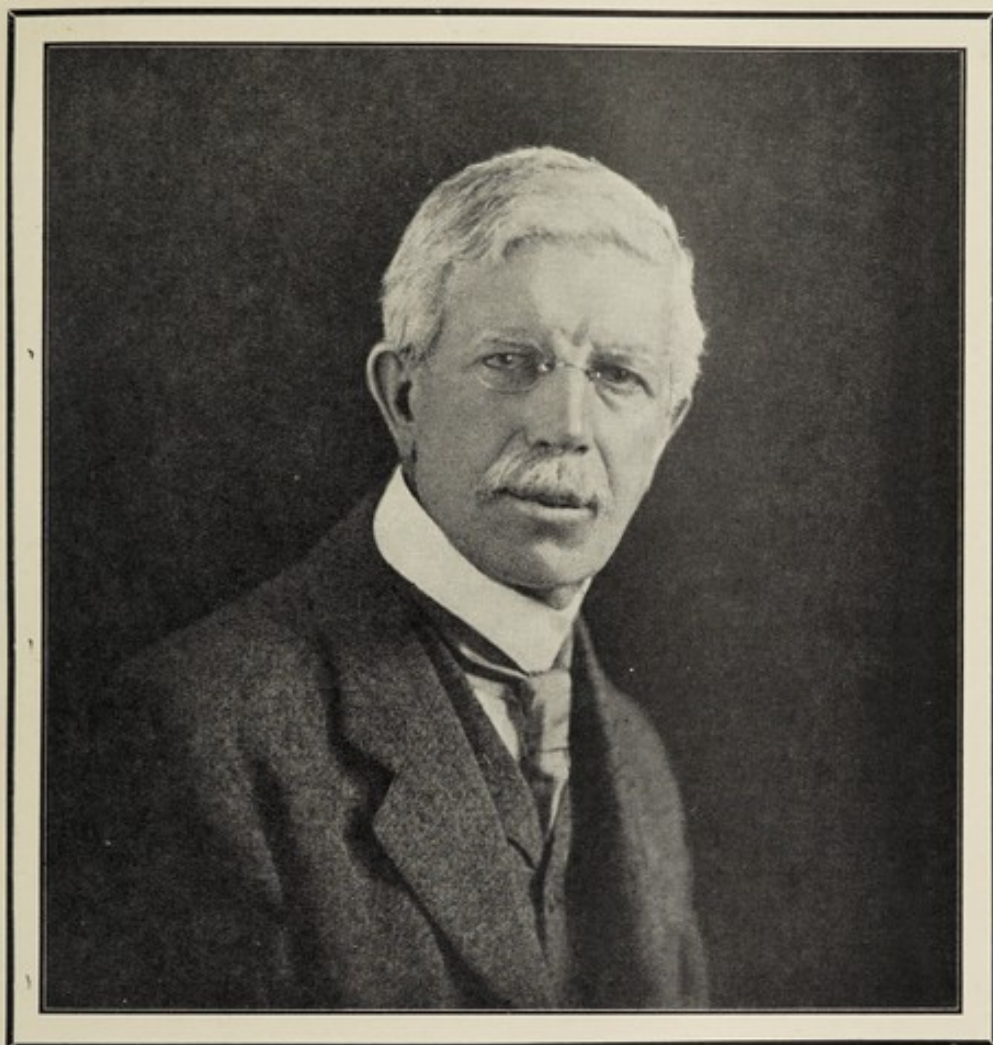
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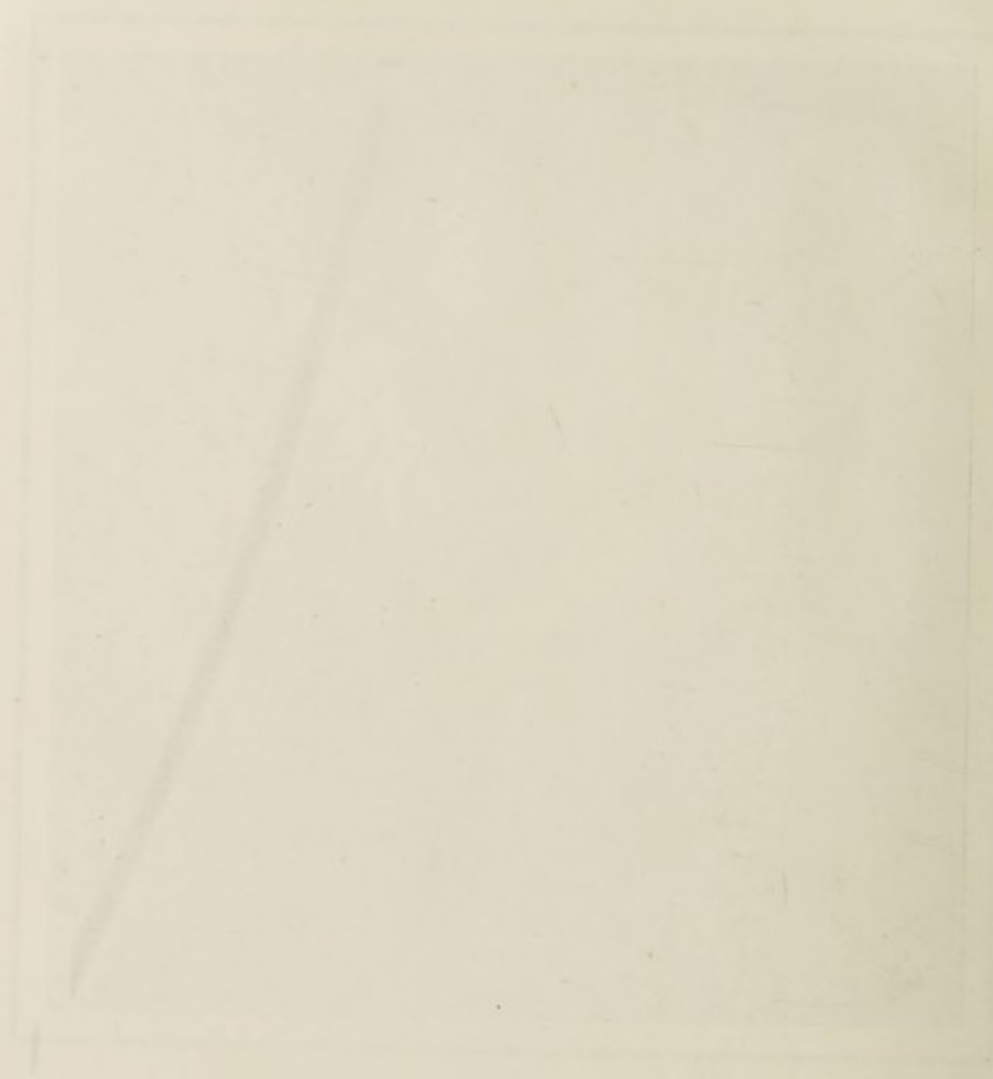
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# REPORT of the Director-General of Public Health to the Honorable the Minister for Health.

Sir,

I have the honour to present herewith my report for the year 1929. The work of this office has gone on increasing during the year as will be seen from the subjects dealt with in this report. There has been some restriction in the Department's activities owing to the necessity of practising strict economy. In this connection there has been a reduction in the medical staff of two assistant medical officers whose positions became vacant by resignations, these posts have not been filled.

Following upon a revised system of presenting the public accounts to Parliament, it was decided to make a charge for certain services rendered to private persons and to other Government bodies not maintained from consolidated revenue, approximating to the cost of such services, which consisted mainly of laboratory and medical examinations and issue of certificates under certain provisions of the Public Health Acts; this work had hitherto been carried out gratuitously. Revenue collected from this source during the year totalled £557, and is set off against expenditure. Payment is received for a small percentage only of the total work carried out in the microbiological and chemical laboratories. In addition to the £557, an amount of £6,084 was paid into consolidated revenue as a result of successful prosecutions carried out by the Department.

The necessity for consolidation and amendment of various statutes dealing with health matters which are administered by the Department has been brought under notice on a number of occasions. New South Wales is probably the most backward of the Australian States as far as its health legislation is concerned. Amendment of the Pure Food Act and Private Hospitals Act are urgently needed and it is hoped that the opportunity may be found to deal with them in the near future.

The present arrangement under which the Government pays a moiety of the salaries of the sanitary inspectors employed by certain local authorities has been under consideration by the Department during the year. Many years ago the Government arranged to pay a moiety of salary of a certificated sanitary inspector employed by a local authority if certain conditions were complied with. At that time the salary of such an officer was approximately £156 per annum, so the Government's half share was fixed at £78 per annum. At present thirty-two municipal and four shire councils benefit under the arrangement at an annual cost to the Government of £2,808. Certain districts in which such financial aid was warranted a few years ago are now well able to carry on without it, whereas other districts more in need of such assistance cannot obtain it because of the limited amount voted by Parliament for the purpose. There are certain other anomalies, and the whole question is one which calls for review at an early date.

Under the Sydney Corporation Act, 1902, the Government also contributes a sum of £3,661 per annum towards the salaries of sanitary inspectors employed by the City Council.

Dame Janet Campbell, Senior Medical Officer, Maternity and Child Welfare, Ministry of Health, England, who had been invited by the Commonwealth Government to report on maternal and child welfare work in Australia, visited this State during September, and conferred on several occasions with the Director of the Division.

Every facility was afforded Dame Janet in her enquiries into the various activities carried on by public authorities and voluntary organisations in the field of maternal and baby welfare, and visits were arranged to baby health centres, maternity hospitals, etc.

In reporting on Australian conditions, Dame Janet Campbell emphasised the special importance of maternal and child welfare work to Australia, with its scattered population and wide distances, and stated that Governments must be prepared to spend sufficient money, economically administered, on the work to secure those essential facilities which the personal resources of the people themselves are unable to supply.

## VITAL STATISTICS.

A summary of the vital statistics for the year as issued by the Government Statistician is contained at the end of this review (p. 10). The population of New South Wales at the end of 1929 was 2,479,147, of whom 1,261,970 were males and 1,217,177 females; the proportion being 104 males to 100 females. The marriage rate was 7.93 per 1,000 and the birth rate equivalent to 21.37 per 1,000 of population. The total number of births was 52,672.

Deaths numbered 24,615 (14,039 males and 10,576 females), equivalent to a rate of 9.99 per 1,000 of population. This rate was 6.3 per cent. above the average of the previous five years. The principal causes of death for 1929 and the average for the previous five years are given in the table on p. 10.

Deaths from epidemic diseases totalled 1,322, as compared with an average of 990 during the previous five years, an increase of 33 per cent. Influenza and whooping cough accounted for 541 and 212 deaths respectively. There was a considerable increase in the deaths from pneumonia, associated with influenza prevalence.

2,322 deaths from cancer and 1,307 from various forms of tuberculosis were recorded; the death rate from cancer continues to rise year by year. The rate from pulmonary tuberculosis declined two per cent., but there was an increase of 15 per cent. in the rate from other forms of tuberculosis.

Good progress has been made in the campaign against cancer by the Cancer Research and Treatment Committee in providing at three of the large Metropolitan Hospitals supplies of radium and also deep therapy X-ray machines for the treatment of patients. The number of sufferers seeking treatment at these centres is continually on the increase. Research in various fields bearing on cancer is being carried on by selected workers at the Sydney University.



The number of children under 1 year of age who died was 2,983, equal to 56.63 per 1,000 births, the rates for the Metropolis (56.52) and the remainder of State (56.72) being approximately equal.

The vital statistics for the Metropolitan and Hunter River Districts are discussed by the medical Officers of Health for those districts on pp. 60 and 67 respectively.

#### MATERNAL AND BABY WELFARE.

Emphasis is again made by the director of this Division (Dr. E. Sydney Morris) regarding the prevalence of illegal operations as an important factor of maternal mortality. It is not only the actual deaths from this cause—though these constitute a medico-sociological question of great importance—which represent the extent of the problem. These deaths are ascertained and recognised as being due to a specific factor, but the still larger problem are the deaths, classed as accidents of pregnancy, which arise from interference with pregnancy, though evidence of criminal intention or responsibility is never discovered.

The incidence of septicaemia after abortion and miscarriage is notoriously high, particularly when the termination of pregnancy is brought about by artificial means. Unfortunately, this danger is not generally recognised and the termination of pregnancy is far too frequently considered as not requiring medical attention. The result is that septicaemia is, in the fatal cases, usually well established before medical treatment is sought.

Lack of funds has prevented any marked extension of the activities of this division, but, in spite of this fact, certain progress has been made. The appointment of a medical assistant (Dr. E. Sandford Morgan) and seven supervisory nurses has been of real value and has permitted much useful work to be carried out. Through the supervisory nurses a very close co-ordination with the Nurses Registration Board has been brought about so that all midwives in the metropolitan and country districts are regularly supervised and the provisions of the regulations applying to midwifery nurses enforced.

The notification of "puerperal pyrexia" by midwifery nurses under the Nurses Registration Act and of "puerperal infection" by medical practitioners under the Public Health Act, has now been in force for sufficient time to show that such notification is working smoothly and effectively. Each case is specially investigated and whilst every effort is made to eliminate any dislocation of the practice of the nurses concerned the interests of the patients are our first consideration.

Under existing arrangements the Department and the Nurses Registration Board in the most economical way act in unison with corresponding efficiency in administration resulting from co-ordination.

Extension of the activities of the Baby Welfare section of this division have been more or less halted by financial stringency. Only three new Centres were opened during the year, each of them in country towns. The Country Women's Association was instrumental in providing the premises, furniture and equipment and is anxious to establish some twenty additional Centres. Unfortunately it is impossible to utilise this excellent offer of co-operation at the present time, though such offer is deeply appreciated.

In spite of our inability to extend this work it is pleasing to record the increasing attendances at the established Centres. During the year 36,480 individual babies attended, their total number of attendances reaching 351,160. The increasing popularity of the centres has been progressively more marked each year and were it not for a small percentage of mothers who decline to be advised our mortality rate would no doubt be considerably lowered. The infant mortality rate for 1929 (56.63) was slightly higher than the previous year (54.82). This was partly due to the prevalence of severe epidemic gastro-enteritis, which, however, exacted its toll chiefly among babies whose mothers had refused to be guided by the health Centres. The importance of breast-feeding is emphasised by the experience of the Royal Alexandra Hospital for Children during this recent epidemic. Nearly 300 children were admitted, not one of whom was wholly breast-fed, and only one or two partially breast-fed. The great majority of the babies who suffered had been artificially fed.

The Baby Health Centres stand primarily for breast-feeding, and, in view of their increasing influence on the community, it is only a matter of time when that influence will produce its beneficial result. Slowly but surely the reluctance of the irresponsible mother will be overcome, but until then one may expect a heavy toll on young lives from causes which are preventable.

#### INFECTIOUS DISEASES.

Notified cases and deaths in each district during 1929 are shown in tables on p. 35. The figures for 1929 show an increase of 375 case notifications and 120 deaths compared with 1928, mainly due to greater prevalence of diphtheria and an epidemic of infantile paralysis.

*Puerperal Infection* was proclaimed notifiable under the Public Health Act, 1902, on 16th August, 1929. This condition hitherto had been notifiable only when parturient women happened to be inmates of hospitals coming under the Private Hospitals Act. In making puerperal infection notifiable the Department recognises that it must have the cordial co-operation of medical practitioners if beneficial results are to follow its action.

*Typhoid Fever*.—438 cases and 45 deaths were notified and is the lowest incidence on record (fatality rate 10.2 per cent.); the lowest numbers previously recorded were 460 cases and 68 deaths in 1927 (fatality rate 14.7 per cent.), and 453 cases and 60 deaths in 1928 (fatality rate 13.2 per cent.). The general decline in incidence of typhoid fever throughout the State continues, although during the year there was a localised outbreak in the eastern portion of the metropolitan area involving 86 cases with five deaths. The infection was regarded as milk-borne, although no definite proof of its source was obtained. In order to limit spread of infection, preventive inoculation of home contacts was carried out and the Department established a depot in the district at which any member of the public might receive the prophylactic (free of charge) and over 400 persons received injections there. In this country the prophylactic used against the typhoid group of



fevers consists of a mixture of the organisms of typhoid and paratyphoid given by subcutaneous injection. Generally speaking, inhabitants avail themselves of this method of treatment when faced with an epidemic. A certain number of persons, however, refuse to submit themselves to the process. In some parts of the world another method of producing immunity against this class of fevers is by administering the vaccine by the mouth in tablet form. As this is a very convenient, easy and satisfactory method of producing immunity, some investigations are now being made into it by the Microbiological Laboratory.

*Scarlet Fever* is still present in epidemic form, but continues to decrease, 5,219 cases and 78 deaths being notified (fatality rate 1.48 per cent.), compared with 5,531 cases and 105 deaths in 1928 (fatality rate 1.89 per cent.). The peak year of the epidemic was 1927, when 8,369 cases and 119 deaths were recorded. As is the case in most parts of the world, this disease continues to recur at frequent intervals, and although the fatality resulting directly from it is by no means high, being less than 2 per cent. of those attacked, it nevertheless occasions a number of serious after-effects in the way of ear and kidney diseases. In recent years methods of prophylaxis by means of vaccines and sera have come more into use in different countries. Some use is made in this State of antitoxin for treatment of severe cases, and with great benefit. Very little has, however, been done by means of preventive inoculation to render immune those susceptible to the disease. This is a field much neglected in Australia, and the same is true of diphtheria at the present time.

The *diphtheria* notifications increased from 3,835 cases and 168 deaths in 1928 (fatality rate 4.38 per cent.) to 4,274 cases and 215 deaths in 1929 (fatality rate 5.03 per cent.). Although one or two districts in the State requested the Department to carry out active immunisation of children against this disease, it has not been considered advisable to undertake this work at present. A few years ago the Department embarked upon a campaign of active immunisation in various parts of the country, but owing to an unfortunate happening in a neighbouring State this work was discontinued. It is a fairly common practice when a case of diphtheria occurs in a family where there are other susceptible children to protect the latter by using antitoxin as a prophylactic. Usually no objection is raised by parents to the use of antitoxin in this way, but strong opposition still exists against any form of active immunisation. As there is at present little hope of achieving any progress in widespread active immunisation of the susceptible section of the population, it can hardly be expected that there will be any substantial reduction in the incidence of diphtheria. Use of antitoxin at the earliest possible moment when a child is suspected to be suffering from diphtheria gives the best chance of saving its life, and antitoxin used as a preventive for close contacts of the case undoubtedly serves a useful purpose in limiting the disease.

*Bubonic Plague.*—No case of plague was reported in 1929. Systematic rat-trapping was continuous, and no infection was found in the 5,110 rats examined in the Microbiological Laboratory (see p. 111.)

*Smallpox.*—Three cases of smallpox (Alastrim type) occurred in connection with the arrival of the *R.M.S. Aorangi* from Vancouver on 22nd June, 1929. To assist in tracing any infection occurring on shore chickenpox was proclaimed a notifiable disease on 28th June; the proclamation was rescinded on 23rd August, 1929. A short report on this outbreak will be found on p. 44. The occurrence provided a useful example of what may happen at any time in this country. The present system of quarantine affords a good deal of protection to Australia, but it has its limitations. With fast steamboats the difficulties and disabilities of the system have increased, and when air transport becomes more general it will probably be found that some modification of the present practice must be made.

The Federal Department of Health acted very promptly in dealing with the situation once the "Aorangi" case, which had been admitted to the Coast Hospital, was diagnosed as smallpox. This Department collaborated fully with the Federal authorities and gave every assistance in meeting the situation. It was only by prompt and effective action that the disease was limited to the actual passengers from the ship.

*Leprosy.*—The Annual Report on Leprosy in New South Wales will be found in Section III (p. 89). One patient was admitted to the Lazaret during the year, and at the end of 1929 there were 20 lepers (15 males, 5 females) under care. Cases of leprosy continue to crop up at intervals, but owing to the rarity of the disease in this State medical practitioners apparently are not very conversant with it. This is evidenced by the fact that some of the cases have been under treatment for variable periods before they come to the notice of the Department and the disease has remained unrecognised. In connection with the course of instruction at the School of Hygiene and Tropical Medicine at the Sydney University this Department has agreed that the Director of the School may have access to the infectious and contagious disease divisions of the Coast Hospital for the purposes of clinical instructions to medical students.

*Typhus Fever.*—In the two years 1928-1929 four cases of endemic typhus were reported in the north-eastern corner of the State, one (1928) at a railway camp near Kyogle, and three (1929) at Lismore. A number of cases have been reported in some of the other States. Although a good deal of prominence has been given to the disease in medical journals and therefore medical practitioners should be on the alert, it would appear that so far it is not commonly met with in this country. Endemic typhus, the form met with in Australia and elsewhere, is usually non-fatal and differs in several respects from typhus in the Old World. It occurs mainly amongst persons living under good sanitary conditions, and where there is no evidence of vermin. The Federal Department of Health has been giving close attention to the problems associated with this disease and any case coming to the notice of this Department is reported to the Federal authorities in order that the epidemiological and other factors involved may be investigated in this and other States.

*Polio-myelitis (Infantile Paralysis).*—Occasional cases of this disease had been met with prior to the year 1912, when it was first made notifiable under the Public Health Act. Since that date the annual number of notifications have ranged from 8, the lowest figure in 1919, to 311, the highest in 1916. In 1916-17 this State, in common with other parts of Australia and many other countries, experienced an epidemic of the disease. Smaller epidemics occurred here in 1921, 1923-24 and 1925-26. In 1929 the second most serious epidemic occurred, there being 241 notified cases, with 29 deaths.



In the accompanying table and the graph on p. 44 the seasonal incidence, sex and age groups attacked, etc., are given as far as they are available.

TABLE of notified cases of Infantile Paralysis and Deaths therefrom in New South Wales from 1913-1929, showing age groups, sex, and seasonal incidence.

Year.	No. of Cases.	No. of Deaths.	Age Groups.										Seasonal Incidence.														
			Under 1.		1 to 4.		5 to 14.		15 to 24.		25 upwards.		Total.		Jan.	Feb.	Mar.	April.	May.	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.													
1913	47	10	Not available.										Not available.														
1914	79	14	Not available.										Not available.														
1915	63	11	1	1	32	18	7	2	1	1	...	...	41	22	3	6	3	3	2	10	6	2	...	2	1	2	
1916	311	21	1	5	133	93	33	30	4	7	3	2	174	137	44	66	90	52	24	17	4	4	1	...	7	2	
1917	16	12	...	1	7	5	2	1	...	...	...	...	9	7	6	2	1	3	1	...	...	1	...	...	1	1	
1918	50	12	2	3	15	12	7	6	3	1	...	...	1	27	23	2	4	3	9	9	4	1	8	4	2	...	4
1919	8	3	...	...	1	2	3	1	1	...	...	...	...	5	3	1	...	1	...	2	...	1	...	...	...	...	3
1920	45	10	1	4	19	11	3	5	...	...	...	...	2	23	22	6	2	1	...	6	1	7	3	...	5	4	17
1921	184	22	7	6	64	41	22	30	7	4	3	...	103	81	36	59	37	24	7	5	7	2	4	1	...	2	...
1922	33	5	1	...	13	7	4	7	1	...	...	...	19	14	3	2	4	3	4	6	5	1	1	1	...	2	1
1923	104	8	5	1	39	22	16	15	2	2	1	1	63	41	3	7	9	18	27	9	6	4	3	2	6	10	
1924	108	6	4	5	40	25	17	14	2	1	...	...	63	45	17	10	23	17	16	8	5	1	3	4	1	3	
1925	57	14	2	3	20	15	7	7	...	3	...	...	29	28	2	4	3	...	3	3	2	...	...	6	9	25	
1926	81	21	5	3	20	27	8	10	4	2	2	...	39	42	34	14	7	11	1	2	2	1	...	1	3	5	
1927	25	4	1	1	6	5	6	3	1	1	...	1	14	11	2	4	3	3	4	1	1	1	1	...	3	2	
1928	30	2	...	2	10	2	8	2	4	1	1	...	22	8	2	2	3	11	1	1	1	...	4	2	1	...	3
1929	241	29	8	5	60	56	42	38	14	5	8	5	132	109	13	16	54	83	38	17	10	3	6	...	...	1	
Totals...	1,482	204	38	40	479	341	185	171	44	28	17	13	763	593	175	200	246	254	177	84	51	38	28	30	46	106	

The number of deaths resulting from this disease do not by any means represent its serious nature, as the various forms of paralysis and crippling which frequently follow an attack lead to serious and often lifelong disabilities. It is not possible to obtain accurate figures for the total number of persons in a community who have been crippled by poliomyelitis, but it has been estimated that during epidemic periods there may be expected from 4 to 14 paralytic cases per 100,000 of the population if notification is closely attended to. There is some evidence to show that serum obtained from persons who have recovered from an attack of the disease acts beneficially in preventing the onset of paralysis and also mitigates the severity of an attack if it is given to the patient during the early (pre-paralytic) stage. In view of the encouraging results which have been reported in different parts of the world steps were taken early in 1926 to visit recovered cases for the purpose of obtaining a supply of serum. In 169 households twenty persons were found who were willing to become donors of blood. A certain amount of blood was collected and serum prepared in the departmental laboratory; but there was then little call for it by medical practitioners, and probably less than half a dozen cases were actually treated. The outbreak was limited to 81 cases, of which 48 were notified in January and February before donors had been found.

At the beginning of the 1929 outbreak difficulty was again experienced in finding donors, notwithstanding that appeals were made for them through the public press; and the government agreed to pay £5 for each pint of blood. Arrangements were made for the blood to be collected and prepared at the Royal Prince Alfred Hospital, and kept there ready for use.

It became necessary to create some organisation which could secure supplies of the serum in advance, furnish aid early in diagnosis of the disease and the use of the serum, and secure the co-operation of medical practitioners. Sir Charles Clubbe, President of the Royal Alexandra Hospital for Children, gave whole-hearted support to the proposal and made an appeal to the public for funds, which resulted in about £2,000 being subscribed. An Infantile Paralysis Committee was then set up; and a part time medical officer was appointed to help in various directions. Lists of all cases of poliomyelitis notified from 1916 onwards were supplied by this Department and efforts were made by the Committee to secure donors at a fixed payment to adult donors of £5 per pint of blood. The blood is collected at Royal Prince Alfred Hospital laboratory and already several thousand cubic centimetres of the serum is stored there ready for use when called for. The Committee's medical officer has a small laboratory at her disposal, and, when necessary, gives assistance to medical practitioners in the diagnosis and treatment of cases. The Committee also proposes to issue informative literature in regard to the disease, and to establish depots in the larger country centres where serum will be kept on hand for use when needed.

A strong organisation has also been established in Sydney for the care of crippled children and it will now be possible for cripples to receive skilled treatment, necessary education and rehabilitation.

*Undulant Fever* (p. 115).—This disease resembles the enteric group, and cases of it may be mistaken for typhoid or paratyphoid fever. The disease, under the name of Malta fever, has been known for many years in the countries which border the Mediterranean Sea. The infection was proved to be conveyed by milk derived from goats which were infected with a specific micro-organism (*Brucella melitensis*). During recent years a disease amongst milch cows known as Contagious Abortion, and resulting from a micro-organism (*Brucella abortus*) closely related to that causing undulant fever, has been widespread throughout the world. Contagious abortion has been very prevalent in different States in Australia, and has caused serious losses amongst milking herds. The micro-organism is capable of transference to human beings, and a number of cases of illness due to this infection has been recently recorded in different parts of the world.

Investigations carried out in the Microbiological Laboratory during the past year have proved that *Brucella abortus* infection is present in about 2 per cent. of the milk supplied in the metropolitan area. As the disease may be confused with typhoid fever serological tests for *Brucella* infection were made with a number of the blood specimens submitted for the Widal reaction for typhoid. No positive reactions for *Brucella* infection were met with, and no case of undulant fever of local origin has come to the knowledge of the Department.



Although milk from an infected animal frequently contains the *Brucella* micro-organisms, the majority of the cases reported amongst human beings do not occur in children, who normally consume most milk, but amongst adult males who have to do with infected animals. Efficient pasteurisation would afford satisfactory means of protection against infection being conveyed through milk.

#### HOOKEWORM (p. 22).

The intensive survey of North Coast areas where hookworm infection is known to exist was continued during 1929 in conjunction with a medical officer of the Education Department. Examination of specimens is undertaken by the Commonwealth Laboratory at Lismore. Of the 6,407 specimens, examined, 6,131 were from whites and 276 from aborigines. Of the specimens from the aborigines 102 (36.9 per cent.) were found to be infected. 105 whites (1.7 per cent.) also showed evidence of infection.

The above figures show the heavy incidence of the infection amongst aborigines in comparison with the white residents of the North Coast. It appears that the hookworm problem is not a serious one so far as the white people are concerned, but it is certainly so amongst the aborigines. Close attention will need to be given to preventive measures amongst the aborigines for some considerable time to come.

#### VENEREAL DISEASES (p. 45).

*Existing Facilities for Treatment.*—There is urgent need for the establishment of a continuous male clinic in a central position in Sydney for the treatment of venereal diseases. Many patients have defaulted from treatment at existing clinics because the hours of attendance have been inconvenient and the waiting long. With a continuous and well-equipped clinic in operation advice and treatment will be obtainable at any hour of the day, as well as at night, and delay in the waiting-room should be reduced to a minimum. Various sites have been under consideration for the location of such a clinic, but there has been difficulty in the matter of finance.

In 1929, there were 82,582 attendances at the various venereal disease clinics in the metropolitan area. 43.2 per cent. of the attendances were to the Royal Prince Alfred Hospital clinic, and 22 per cent. to the Sydney Hospital. Of the total attendances, 19,586 were made by women; of these 35.4 per cent. were to the Royal Prince Alfred Hospital, 22.5 per cent. to the Special Clinic at the Rachel Forster Hospital for Women and Children, and 19.2 per cent. to the Sydney Hospital. It is expected that the Rachel Forster Hospital Clinic will attract a greater share of attendances as the time goes on, as it is the only continuous public clinic operating in the State and the conditions under which treatment is given there approach somewhat to an ideal.

The Director of the Division points out that the "follow up" system of patients who discontinue treatment before cure is not yet in full operation; many patients give wrong names and addresses and it is almost impossible to trace them if they default; an average of 51.34 per cent. of letters of enquiry were returned undelivered. In the eight years that the Act has been in operation defaulters have averaged 23.4 per cent. of those notified as infected; this, however, may not be a true indication of the position, as many defaulters are never notified. One large city clinic had 64.89 per cent. of defaulters in its year's notifications of new patients. These defaulters from treatment are a menace to the community as well as to themselves, and the need to evolve a satisfactory method of control by an adequate "follow up" system is obvious.

Every medical man was communicated with during the year and attention drawn once again to the requirements of the Act. Only by medical practitioners co-operating with the Department will it be possible to procure satisfactory results, and it is hoped that with their help patients who foolishly default may be induced to resume and continue under treatment until cured.

*Congresses.*—The venereal disease problem was discussed during the year by the Australasian Medical Congress and the Congress of the Racial Hygiene Association; and at each various suggestions were made for more satisfactory methods of control of this serious group of diseases.

Investigations were made by the Director of the Division during the year into late manifestations of syphilis, and on pages 47-48 notes are included on Increase in the Death Rates from Angina Pectoris; Incidence of General Paralysis of the Insane among patients admitted to New South Wales Mental Hospitals; and on the Effects of Syphilis on the Death Rate. Notes on several other investigations in progress will be published in the Report for 1930.

#### TUBERCULOSIS DIVISION (p. 51).

The notifications of pulmonary tuberculosis in 1929 numbered 1,215, as against 1,143 in 1928. Every notified case is visited for the purpose of supplying helpful advice, etc., unless the notifying physician does not desire this. The issue of a proclamation on 1st March, 1929, making notification of pulmonary tuberculosis State-wide will give greater scope to the activities of the division. Previously notification has been restricted to the Metropolitan, Hunter River and Blue Mountains districts.

In October, a ward of 30 beds for advanced cases (female) was opened at the Coast Hospital Auxiliary at Randwick. Throughout the State there are now 952 beds available for the treatment of consumptive patients; this number is considered insufficient and the Department is endeavouring to arrange for provision of another 200 beds. The number of deaths from tuberculosis in a year is taken as indicating the number of beds which should be made available in a community; in 1929 there were 1,308 deaths from tuberculosis (respiratory system 1,152, other 156). 417 of the beds at present available are at the Waterfall Sanatorium and 90 at the Coast Hospital Auxiliary at Randwick.

*Waterfall Sanatorium.*—The medical superintendent reports that 915 patients (612 males and 303 females) were under treatment at Waterfall during 1929. Of these, 285 males and 132 females were discharged; and 59 males and 67 females died. Of the 417 discharged patients, 29 were arrested cases, 61 much improved, and 215 somewhat improved; 112 patients were not apparently benefited by their stay.

Treatment was generally along ordinary sanatorium lines, but any new method suggested as beneficial is tested on willing patients, subject always to proper controls.

The installation of a modern X-ray plant at Waterfall was one of the notable improvements effected during the year.

An investigation as to the age period at which infection occurred among 8,423 cases treated at Waterfall appears on p. 98.



## INDUSTRIAL HYGIENE (p. 55).

This Division is occupied more particularly in investigating the health hazards associated with industries. Many new industries are being established in which definite occupational health hazards occur, and the value of the work of this branch is becoming more fully recognised, both by employers and employees.

The principal matters which engaged attention this year were examination, in conjunction with officers of the Industrial Hygiene Division of the Federal Health Department, of about 500 coal-miners to determine the effects (if any) of the dust of coal mines on the lungs of the mine workers. The incidence of nystagmus amongst these employees was also investigated. The occurrence of an eczematous condition amongst dough-makers at bread factories was also investigated. About 20 cases were met with during the year, and it is likely that many more exist. The condition is probably due to certain ingredients of the improvers or yeast foods used in the process of dough making, as evidenced by the sensitivity of the sufferers to these articles. Investigations into this important problem are being continued.

The ventilation of a number of theatres, cinema halls and basement shops in the city of Sydney was investigated. The increasing use of numerous forms of mechanical refrigerating apparatus in which various noxious gases (*e.g.*, methyl chloride, sulphur dioxide, etc.) are used as refrigerants led to the drawing up of a provisional safety code for the control of these installations. The code was submitted to the Commonwealth Industrial Hygiene Conference.

Considerable attention has been given to the lead industries (accumulator factories) and sandstone industries (*e.g.*, city railway tunnels), etc. Various other industrial health hazards were investigated and reported upon.

## GOVERNMENT ANALYST AND PURE FOOD BRANCHES (pp. 14 and 17).

During the year the Department lost the valuable services of Dr. Thomas Cooksey, owing to his having reached the retiring age. Dr. Cooksey had been in the Department for thirty years, during fourteen years of which period he held the important position of Government Analyst. Mr. William M. Doherty, second Government Analyst, was appointed to the vacant position.

The Government Analyst reports that during 1929, 20,611 samples were examined by his branch, of which over 17,878 were in connection with the administration of the Pure Food Act, and 2,733 for various public departments. The percentage of milk samples below standard for the year dropped to 1.5 per cent., the lowest previous record being 2.1 per cent. Milk samples procured in different parts of the country showed adulteration to the extent of 5.9 per cent. of the samples examined, probably due to less efficient supervision in country districts.

2,102 samples of fresh meat were examined, of which 583 (or over 27 per cent.) were illegally preservatives with sulphur dioxide, usually applied in the form of dusting powder. These powders are nominally used for the purpose of giving meat a florid appearance, but they also act as a preservative.

In connection with supervision of the meat trade 42 samples of brine were examined of which 36 were found to be unfit for use.

An investigation into cases of illness arising after partaking of potatoes showed an excess of solanine in some of the potatoes which had sprouted. Solanine is present in all potatoes in minute traces, but may be present in dangerous quantities in sprouting tubers.

Another matter of importance was the finding of arsenate of lead in dangerous quantities on apples that had been sprayed against codlin moth.

Active administration by the police of the Drugs Act occasioned a considerable amount of analytical work in connection with narcotics used for purposes of addiction.

Investigations were also made for the police in connection with charges of attempted poisoning, murder, assault, administration of abortifacients, &c.; and a record number of specimens of human viscera was examined in connection with police investigations. Amongst the poisons responsible for the deaths investigated were atropine, cyanide, strychnine, various narcotics, etc. The list of poisons resorted to is lengthening. Not so many years ago strychnine and arsenic were practically the only homicidal agents commonly used.

## SUPERVISION OF THE FOOD SUPPLY (p. 17).

The activities of the Pure Food Branch included the collection of 8,000 samples of milk for analysis and 2,576 samples of other foods.

Inspection was made of 11,546 premises used for the sale, preparation or storage of food, and there were 475 seizures of damaged or deteriorated foods found to be unfit for human consumption. 996 prosecutions were undertaken in connection with the administration of the Act, the fines and costs imposed by magistrates totalling £4,907. Some 9,000 prosecutions have been instituted under this Act since it was brought into operation in 1910 and over £40,000 have been collected in fines and costs.

Vigorous enforcement of the Act and Regulations has resulted in raising the standard of premises devoted to the preparation, storage and sale of food, and to a cleaner and more wholesome food supply. A revised code of regulations under the Pure Foods Act—framed on the draft agreed to by the representatives at the 1927 Federal and State Conference on Uniform Standards of Foods and Drugs—was made by the Board of Health on the recommendation of the late Pure Foods Advisory Committee. However, this new code was not gazetted but was referred to the newly appointed Advisory Committee for further consideration.

## DAIRIES SUPERVISION ACT (p. 19).

The Chief Dairy Inspector reports that 17,425 dairy premises and 576,215 dairy cattle were inspected during the year. 888 animals were condemned; the diseases found being tuberculosis, 578 (1%); actinomycosis, 157 (0.27%); cancer, 120 (0.20%); other diseases, 33 (0.05%).

The question of general application of the tuberculin test to all dairy cattle has been brought before the Department on several occasions. A limited number of dairy herds has been subjected to this test at regular intervals and are kept free from tuberculous animals. The testing has been carried out at the request of owners of the herds by officers of the Agricultural Department. To carry out a universal tuberculin testing of all dairy herds in the State and to provide for compensation for destruction of reacting animals would require an annual expenditure of many thousands of pounds.



Dairy herds are maintained by this Department at four State Hospitals and Homes. These herds are regularly subjected to the tuberculin test by officers of this branch, and are kept quite free from tuberculosis.

Mr. W. A. Mackie, Senior Dairy Inspector, reached the retiring age on 6th October, 1929, and concluded a period of thirty-three years of valuable service, twenty-four of which were served in this Department.

In the last three years over 500 samples of mixed milks from suburban dairies have been examined for tubercle bacilli, but in no instance has this organism been found, either by the microscopical examination of centrifuged sediment or by guinea-pig inoculation. This result once again confirms the opinion that Sydney milk is particularly free from tubercle infection—and may be taken as evidence of the value of administration of the Dairies Supervision Act by this Department.

*Metropolitan Milk Act 1929.*—This statute which provides for the registration and control of the supply and sale of milk for consumption or use in what is practically the metropolitan area, was assented to just before the close of 1929. The Metropolitan Milk Board, which is to administer the Act, is to be made the local authority as regards registration, control, etc., of dairymen, milk vendors and other persons, or of dairy farms, factories and milk stores engaged or used in the supply, treatment, distribution or sale of milk for consumption or use within the metropolitan milk area. The administration of the dairies Supervision Act after its 40 years existence has been transferred from the Department of Public Health to the Department of Agriculture, but the Board of Health will still possess certain powers of control under the Metropolitan Milk Act in regard to any by-laws which are made dealing with grades of milk, methods of treatment of milk, and other sanitary requirements. Although the quality of the metropolitan milk supply has been steadily on the up grade it must be conceded that there is room for its improvement. It is anticipated that with the increased powers conferred on the Milk Board by this new legislation a substantial improvement will be brought about in the course of a few years. A more general use of bottled milk in the metropolitan area is desired by this Department, the present bottled supply is very limited and cannot be regarded as satisfactory.

#### SANITATION (p. 20).

Some 70 surveys of municipal and shire towns and villages were made by the supervisory inspectors attached to this branch, who report that local authorities generally are taking greater interest in improving the sanitary conditions of their districts.

Inspections of swimming pools were completed; the investigations revealed considerable variation in methods of control. Existing ordinances are being supplemented so as to provide for more uniformity in construction and improvement in supervision.

390 country hotels were inspected and recommendations made for improvement of sanitary conveniences, provision of adequate water supplies, bathing facilities, etc. In 13 instances recommendations were made for demolition of existing buildings and their replacement by modern structures.

*Furniture Removalists.*—Inspections were made of 94 furniture storage rooms in the metropolitan district and numerous furniture removal vans. The investigation was made with a view to discovering if the business was responsible for the transmission of vermin by means of furniture, etc. In most instances the transport equipment was found in a clean condition, but proceedings were taken and convictions obtained against two traders whose premises were in an unsanitary condition. There was no evidence of vermin on any premises or in the transport equipment.

#### SECTION III.—REPORTS OF MEDICAL OFFICERS OF HEALTH.

##### *Metropolitan Combined District (p. 60).*

The population of the metropolis increased by 23,210 in 1929, and the population of the Metropolitan Combined District was estimated by the Government Statistician to be 1,314,950 on 31st December. The birth rate (18.21 per 1,000 of population) was the lowest recorded rate for Sydney. There were 13,209 deaths, giving a rate of 10.13 per 1,000 for the combined metropolitan area. Infant deaths numbered 1,318, giving a rate of 55.49 per 1,000 births. Whooping cough was present in epidemic form and caused 135 deaths, or 111 more than in 1928. There were 159 deaths from influenza; deaths from this cause were double the average for the previous five years.

During the early part of the year infantile paralysis was present in epidemic form, 149 cases with 17 deaths being notified as against 13 cases with no deaths in 1928. A conference was held with representatives of the Children's Hospital and other metropolitan hospitals with a view to arrangements for early treatment of cases in order to prevent as far as possible the crippling after effects in sufferers from this disease.

An outbreak of typhoid fever in the Lidcombe-Auburn district occurred in May, when 86 cases (with 5 deaths) were notified in a period of four weeks. The outbreak, which quickly subsided, is believed to have been associated with a milk supply from a local distributing dairy, although careful bacteriological examination failed to detect any "carrier" cases. A free anti-typhoid inoculation depot was opened at Auburn, at which over 400 persons were inoculated. Apart from this outbreak the incidence of typhoid throughout the year was remarkably low.

##### *The Hunter River District (p. 67).*

The health of the Hunter River District during 1929 continued on the whole to maintain the general improvement which has been evident in recent years.

One of the outstanding health needs of the district is an infectious diseases hospital. The site reserved at Waratah was improved during the year, but it has not yet been possible to make a beginning with erection of the necessary buildings.

During the early months of 1929 diphtheria was prevalent among young children in Newcastle and suburbs, and the limited isolation accommodation available was severely taxed. 537 cases of diphtheria were notified, compared with 441 in 1928.

There were 84 cases of typhoid fever, with 15 deaths (fatality rate 17.84). A small localised epidemic of 25 cases with 5 deaths occurred in Kearsley Shire; this outbreak was probably due to fly-borne infection from early ambulant cases. A depot was opened at which free inoculation was provided, and was largely availed of by residents. This depot, combined with prompt sanitary measures, had the effect of quickly checking the epidemic, the value of preventive inoculation was thereby again made evident.



The proposal to establish a district public health laboratory at Newcastle, if given effect to, will provide much needed facilities. It is proposed to erect the laboratory in conjunction with the new out-patient department of the Newcastle Hospital, and plans for the building have been finalised during the year. The building is to include a modern clinic for the treatment of venereal diseases, which is much needed.

Sanitary services under the control of local councils have been steadily improved, and in conjunction with the increase of sewerage facilities and provision of pure water supplies are no doubt largely instrumental in effecting the general improvement in the public health of the district.

#### *Broken Hill District (p. 71).*

In reporting upon public health work at Broken Hill during 1929 the Medical Officer of Health, Dr. W. G. George, states that the year has been marked chiefly by the taking over by this Department of the laboratory at the Broken Hill and District Hospital. This laboratory, which is in charge of the Medical Officer of Health and staffed by Health Department personnel, is performing many useful services. The greater part of its work is on behalf of the Hospital, but examinations in appreciable numbers are conducted for private medical practitioners.

In addition to carrying out the usual public health duties in the County of Yancowinna (including the City of Broken Hill) the Medical Officer of Health acts as Government Medical Officer for the district. He also carries out duties under the Workers' Compensation Acts at Broken Hill, and controls the Bureau of Medical Inspection established in connection therewith.

It had been arranged that the school medical work of the district would be carried out as well as the abovementioned duties if an assistant to the Medical Officer of Health were appointed. The Department of Education agreed to pay a moiety of the salary of the assistant for the work in the schools and the arrangement was put into effect, but after a very short period the assistant medical officer resigned and no steps have been taken to fill the position.

Broken Hill suffers a number of disabilities from a public health point of view. The climate is trying during the summer, the water supply becomes restricted owing to prolonged absence of rain, dust storms are frequent, and the city is without a sewerage system. In the absence of a water carriage system of sewerage, excreta have to be dealt with by means of apan service, a most unsatisfactory method in a region where flies constitute a veritable pest during many months of the year. In consequence no doubt of the unsatisfactory methods of dealing with excreta the almost constant prevalence of typhoid fever is not to be wondered at.

Owing to the deficient water supply it is not practicable to have a sewerage system installed, but the prevalence of typhoid might be greatly reduced if, in addition to insistence on strict compliance with sanitary requirements, susceptible residents could be induced to undergo a course of prophylactic treatment against typhoid.

#### **PUBLIC HOSPITALS ACT, 1929.**

Through the enactment of this legislation certain activities which have been carried out for many years by this Department in connection with the public hospitals of the State will henceforth be undertaken by the Hospitals Commission created under the statute. The Hospital Advisory Committee set up some years ago for the purpose of tendering advice to the Minister on various hospital matters has been dissolved, as the work carried out by it will form part of the duties of the Hospitals Commission.

It appears fairly clear that many matters of medical and sanitary interest associated with the public hospitals will entail close co-operation between this Department and the Commission. The requirements of the Nurses Registration Act affecting those hospitals which are registered as training schools for nurses will also bring the Nurses Registration Board into close contact with the Commission on certain matters.

The need of additional bed accommodation for both general and infectious cases in the metropolitan area has been brought to notice in previous annual reports as this office through its hospital admission depot is kept in close touch with the demand. It is becoming increasingly evident that further accommodation must be provided for both general and infectious cases. Additional accommodation for 120 beds for general cases has been made available at the Coast Hospital Auxiliary, Randwick, but owing to financial stringency it has not been possible to provide equipment and staff; no doubt this important question of more accommodation for the metropolitan area will receive attention by the Hospitals Commission at an early date.

#### **PRIVATE HOSPITALS ACT, 1908.**

The Assistant Medical Officer of Health (Dr. F. M. Suckling) reports on the operations under this Act on page 23. This statute, which has served a useful purpose in many ways since its inception, is found to need improvement in various directions and suggested amendments to this end are being prepared.

#### **THE COAST HOSPITAL (p. 74).**

The Medical Superintendent reports that admissions to the Coast Hospital, probably the largest general hospital in the Southern Hemisphere, numbered 10,454 in 1929, or an average of 28.6 admissions daily. This hospital now has a total of 880 beds, including 211 beds for infectious diseases and 120 beds in use at the Randwick Auxiliary, where an additional 120 beds are awaiting necessary equipment and staff.

In the isolation section 1,580 scarlet fever and 1,129 diphtheria patients were treated, the cost of the antitoxin administered to these latter patients being about £900.

In the diabetic ward 140 patients were under treatment, while a number of patients from previous years attended as out-patients. Insulin to the value of £380 was administered during the year.

In the surgical division of the hospital an important event was the opening in July of a new operation block containing two theatres, two anaesthetising rooms and a sterilising room. There were 2,995 operations under anaesthetics in 1929.



At the Coast Hospital Auxiliary at Randwick a ward of 30 beds was made available in October for female consumptive patients. At this Auxiliary there are now 120 beds in constant use, 90 beds for cases of tuberculosis and 30 beds for convalescent general cases from the main Coast Hospital. Four more wards of 30 beds apiece were reconditioned during the year, but it was not possible to equip them owing to lack of funds. Additional accommodation for the nursing staff which would be required to operate the additional 120 beds referred to was provided. When these 120 beds can be taken into use it will afford considerable relief to the existing pressure on the bed accommodation in the metropolitan district.

#### SECTION IV.—MICROBIOLOGICAL LABORATORY (p. 108).

The Principal Microbiologist reports that 43,817 specimens were examined during 1929, an increase of 1,200 on the figures (42,677) for 1928. Among the principal items were 4,334 swabbings for diphtheria, 4,060 sputa for tuberculosis, 1,185 specimens for typhoid, and 1,536 tissues for determination of malignant and other growths. About 20,000 examinations were made in connection with the diagnosis and progress of treatment in cases of venereal disease. Notes are included on p. 112 in connection with isolation of *B. typhosus* from country specimens; and on isolation of living tubercle bacilli in septic tank effluent.

Shortage of staff necessitated that the whole available time of officers should be devoted to routine examinations and did not allow of any investigational work being undertaken. The recent appointment of a medical bio-chemist will allow of work being carried out by the branch which previously could not be undertaken.

One hundred and fifty-two samples of mixed milk from suburban dairies were examined, but in no instance was tubercle bacilli detected. Guinea-pigs inoculated from three samples of the milk developed lesions identical with those caused by *Brucella abortus* (the organism of Malta or undulant fever) and the possibility of some of the aberrant cases of typhoid fever being due to this organism is being borne in mind. (See notes p. 115.)

The possibility of infection of rats in Sydney with *Leptospira icterohaemorrhagica*, the casual organism of epidemic jaundice in human beings, was again investigated, but no infected rats were discovered.

The pollution of one of the ocean beaches at Newcastle by sewage was investigated at the request of the Public Works Department (p. 116); and a beginning was made with the bacteriological examination of the water from various parts of Port Jackson.

In some notes on p. 113 Dr. Morgan discusses the possibility of an unusual epidemic in the Murrumbidgee River basin in 1928 being due to dengue.

I cannot conclude my notes on this section without referring to Mr. Robert Grant, who, through having reached the retiring age, severed his connection with the Department on 9th September, 1929. Mr. Grant was Senior Laboratory Assistant for many years, and, more recently, Assistant Microbiologist. His valuable work during his thirty years of service was much appreciated by the Department.

#### FEDERAL HEALTH COUNCIL.

The third meeting of the representatives of the different States and of the Commonwealth on this Council was held in Canberra, F.C.T., during 1929. A number of important public health subjects were given consideration and resolutions based thereon were forwarded through the official channels for consideration by the various governments. Amongst the subjects dealt with were the education and training of officers for public health work, and tuberculosis and venereal disease control.

During the meeting a joint conference was held between the Federal Health Council and representatives of the school medical services of the different States. A number of important matters bearing on the health of the school child were considered and recommendations made in regard thereto.

#### HEALTH PUBLICITY.

City and suburban newspapers, as well as the country press, are regularly supplied with articles on maternal and baby welfare or on some other aspect of public health, and increase in attendances at the Baby Health Centres from 200,000 in 1926 to nearly 400,000 in 1929, may be taken as evidence of success of such propaganda.

The Department's films continue to be widely used, and a new film, "The Campaign against Tuberculosis," is almost ready for release. A further copy of "The Fly Menace" has been obtained, the first having become worn out with frequent screenings.

Booklets have been issued on the work of the Baby Health Centres and Care of the Expectant Mother, and a leaflet on the care of the premature baby.

Health Week Campaigns were held at Sydney and Newcastle, and the booklet, "Health Makes the Commonwealth," was enlarged from 32 to 64 pages, and over 30,000 copies were distributed. The cost of printing and distributing this attractive booklet is covered by advertisements. Other propaganda comprised window displays, screening of health films, lectures, addresses, radio talks, etc.

A "Milk Week" was organised under the direction of the Hon. Dr. Arthur, M.L.A., Minister for Health, for the purpose of impressing on the public the food value of milk and the importance of milk forming the basis of the child's diet. Under the chairmanship of the Minister a committee of representatives of milk trading interests gave invaluable help and provided funds for the campaign.

Over 400,000 leaflets were distributed and posters were widely displayed throughout the metropolitan area. Special screenings of the milk film were made in suburban picture theatres for the benefit of school children, and addresses and radio talks on milk were given by the Minister and other medical men.

Free milk was distributed to children in the poorer areas of the city and at certain public schools, while thousands of gallons were sold at 1d. per glass from stands in various parts of the city.

T. H. NEELY, Secretary.

ROBERT DICK,  
Director-General of Public Health.



Extract from the Report of the Government Statistician, Mr. T. Waites, on the Vital Statistics of New South Wales for the year 1929.

**Population.**—The population at the end of 1929 was 2,479,147, of whom 1,261,970 were males and 1,217,177 females, the proportion being 104 males to 100 females. During the year the population increased by 32,273, or 1·31 per cent., of which 28,057 was due to the excess of births over deaths, and 4,216 to the excess of arrivals over departures. The mean population was 2,464,510.

**Marriages.**—The number of marriages was 19,535, corresponding to a rate of 7·93 per 1,000 of the population. The rate is 3·88 per cent. below the average of the previous five years. In the Metropolis the rate was 9·35, and in the remainder of the State 6·51 per 1,000 population.

The proportion of males married who were under 21 years of age was 7·19 per cent., and of females 26·45 per cent. The proportion in both cases is above the average for the previous five years.

Of the marriages, 18,200 were celebrated by the clergy and 1,335 by registrars. The largest number, 8,062, was celebrated according to the rites of the Church of England; then followed the Roman Catholic Church with 4,071, the Presbyterian with 2,563, the Methodist with 2,242, and all others 1,262.

**Births.**—The total number of births was 52,672, equivalent to 21·37 per 1,000 of population, which is 8·0 per cent. below the average of the previous five years. Of this number 27,065 were males and 25,607 females, the proportion being 106 males to 100 females.

Dividing the State into the Metropolis and remainder of the State, there were 22,347 births in the former and 30,325 in the latter, corresponding to rates of 18·18 and 24·55 respectively.

The number of ex-nuptial births was 2,720, equal to 5·2 per cent. of total births, which is 3 per cent. above the quinquennial average. In the Metropolis the proportion was 5·9, and in the remainder of the State 4·6 per cent. of births. Proportionately to population, ex-nuptial births represented 1·10 per 1,000, which is 5·2 per cent. below the average of the last five years.

**Deaths.**—The deaths during the year numbered 24,615, equivalent to a rate of 9·99 per 1,000 of the population. This rate is 6·3 per cent. above the average of the previous five years.

The total includes 14,039 males and 10,576 females, equivalent to rates of 11·18 and 8·75 respectively per 1,000 of population. The rate in the Metropolis was 10·15 per 1,000 and in the remainder of the State 9·83.

Of the 24,615 people who died during the year, 4,156 were under 5 years of age, 10,825 were aged from 5 to 64, and 9,626 were 65 and over. The ages of the remaining eight adults were not specified. The rates per 1,000 living in the main groups, under and over 5 years, were 16·23 and 9·26 respectively as compared with 15·82 and 8·60, the average of the previous five years.

**Infantile Mortality.**—The number of children under 1 year of age who died was 2,983, equal to 56·63 per 1,000 births. To this total the Metropolis contributed 1,263, or 56·52 per 1,000 births, and the remainder of the State 1,720, or 56·72 per 1,000 births. The rate for 1929 is ·6 per cent. above the average of the previous five years. Of the deaths under 1 year of age, 1,253, or 42 per cent., occurred under 1 week, 1,642, or 55 per cent., under 1 month, and 1,984, or 67 per cent., under 3 months.

**Causes of Death.**—Of the deaths during the year, the most important causes were as shown in the following statement, which, for purposes of comparison, also gives the average number of deaths during the preceding five years, due allowance having been made for increase in population:—

Causes of Death.	Number, 1929.	Average Number, 1924-28.	Increase (+) or Decrease (-) in 1929.	Causes of Death.	Number, 1929.	Average Number, 1924-28.	Increase (+) or Decrease (-) in 1929.
			per cent.				per cent.
Typhoid Fever ... ..	45	82	- 45	Other Diseases of the Circula-			
Measles ... ..	66	72	- 8	tory System ... ..	86	88	- 2
Scarlet Fever ... ..	78	69	+ 13	Bronchitis ... ..	508	448	+ 13
Whooping-cough ... ..	212	181	+ 17	Pneumonia ... ..	2,216	1,761	+ 26
Diphtheria and Croup ... ..	215	178	+ 21	Other Diseases of the Respira-			
Influenza ... ..	541	254	+ 113	tory System ... ..	327	304	+ 8
Plague ... ..				Diseases of the Stomach ... ..	136	161	- 16
Erysipelas ... ..	57	37	+ 54	Diarrhoea and Enteritis (under			
Infantile Paralysis ... ..	17	6	+ 183	2 years) ... ..	474	736	- 36
Lethargic Encephalitis ... ..	30	29	+ 3	Diarrhoea and Enteritis (2 years			
Epidemic Cerebro-spinal Menin-				and over) ... ..	167	212	- 21
gitis ... ..	10	22	- 55	Appendicitis ... ..	216	193	+ 12
Other Epidemic Diseases ... ..	51	60	- 15	Hernia, Intestinal Obstruction	217	217	...
Tuberculosis, Respiratory System	1,151	1,177	- 2	Cirrhosis of the Liver ... ..	111	116	- 4
Tuberculosis Meninges and				Other Diseases of the Digestive			
Nervous System ... ..	65	54	+ 20	System ... ..	396	362	+ 9
Other Tuberculous Diseases ... ..	91	82	+ 11	Bright's Disease (Acute and			
Cancer ... ..	2,322	2,301	+ 1	Chronic) ... ..	1,267	1,211	+ 5
Diabetes ... ..	315	296	+ 6	Other Genito-Urinary Diseases	469	391	+ 20
Leucæmia, Anæmia, Chlorosis ... ..	174	215	- 19	Puerperal Septicæmia ... ..	79	92	- 14
Other General Diseases ... ..	560	549	+ 2	Other Puerperal Diseases ... ..	199	241	- 18
Meningitis ... ..	181	171	+ 6	Malformations ... ..	269	262	+ 3
Cerebral Haemorrhage and				Congenital Debility ... ..	224	274	- 18
Apoplexy† ... ..	854	940	- 9	Premature Birth ... ..	886	912	- 3
Insanity ... ..	95	116	- 18	Other Developmental Diseases	310	316	- 2
Convulsions of Infants ... ..	30	57	- 47	Senility ... ..	1,050	1,067	- 2
Other Diseases of the Nervous				Suicide ... ..	361	290	+ 4
System† ... ..	679	692	- 2	Accident ... ..	1,431*	1,303	+ 10
Diseases of the Heart ... ..	4,102	3,547	+ 16	All other Causes ... ..	335	435	- 23
Diseases of the Arteries, Ath-							
eroma, etc.† ... ..	900	585	+ 54	Total ... ..	24,615	23,164	+ 6

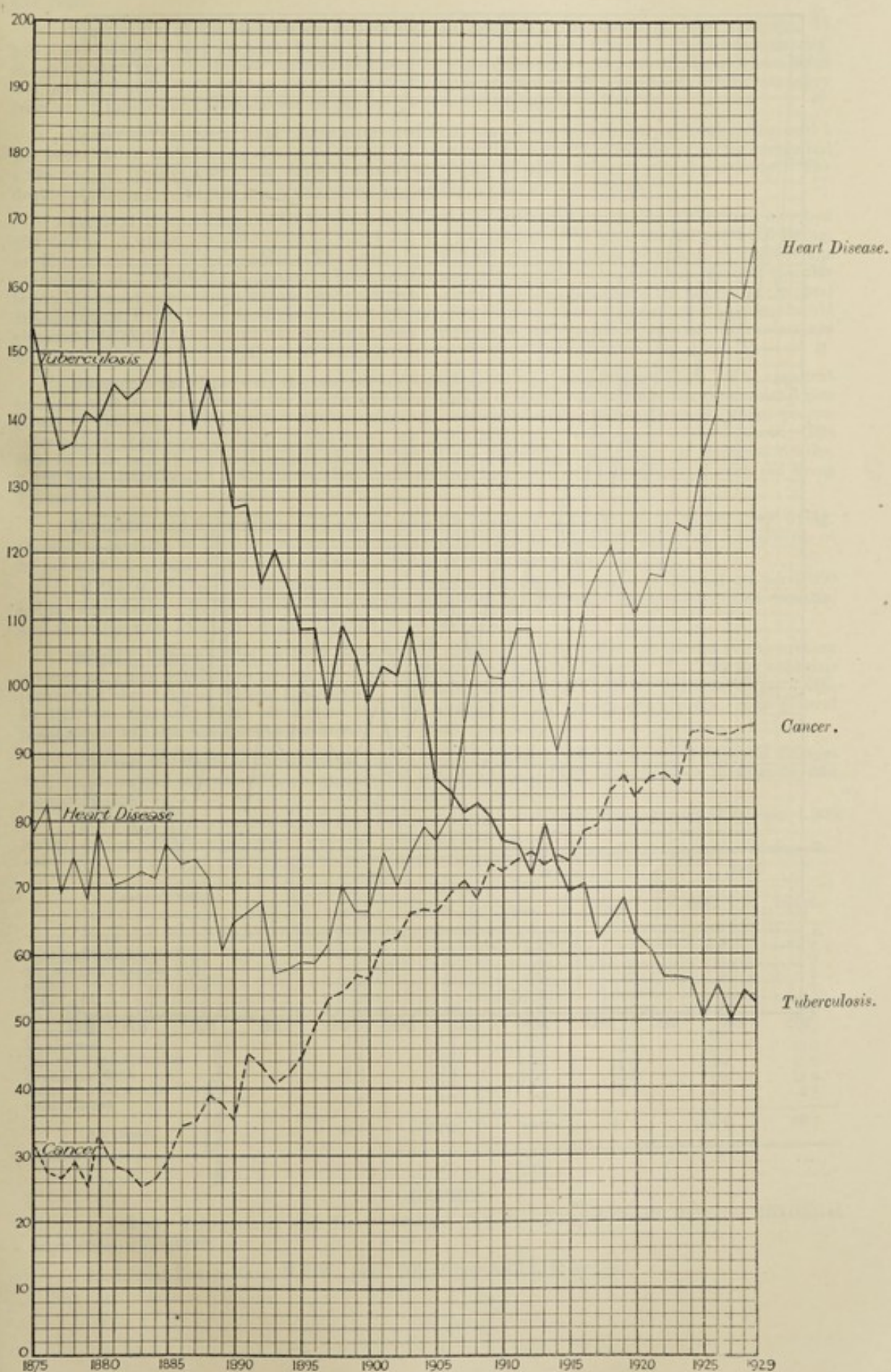
\* Includes 478 from motor accidents.

† See paragraph "Cerebral Haemorrhage," page 11.



# CANCER, TUBERCULOSIS and HEART DISEASE.

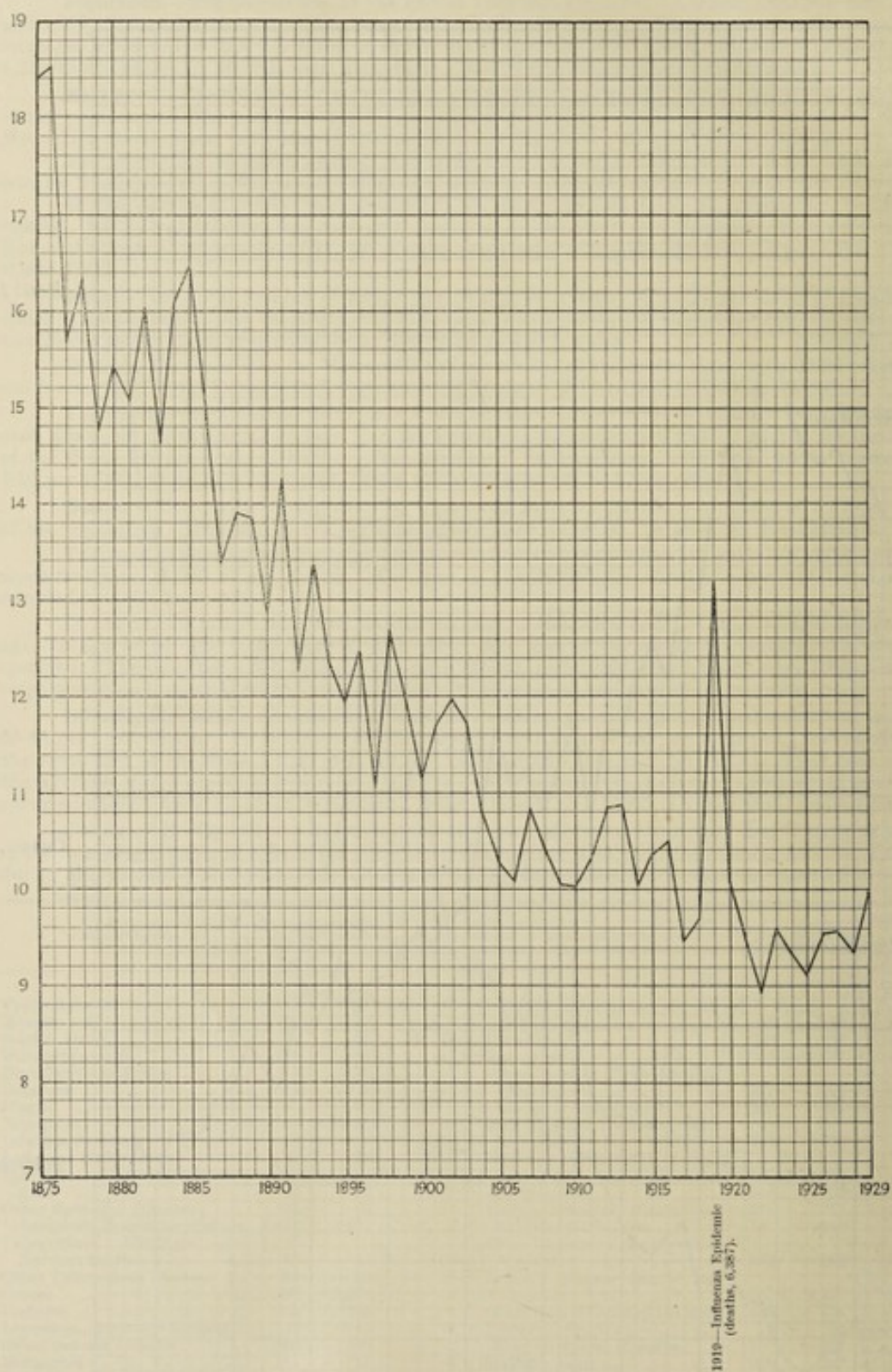
Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1929.





# ANNUAL DEATH RATE.

Per 1,000 of the Population in New South Wales, 1875-1929.





**Epidemic Diseases.**—The deaths from epidemic diseases numbered 1,322 as compared with an average of 990 during the previous five years, an increase of 33 per cent. The deaths from scarlet fever numbered 78, an experience which was 13 per cent. greater than the average of the previous five years.

**Tuberculosis of the Respiratory System** was the cause of 1,151 deaths in 1929, the rate, .47 per 1,000 living, being 2 per cent. below the average of the five years 1924-28. Speaking generally, the death-rate from tuberculosis has been declining for some years past. The deaths of males numbered 684, and of females 467, and the rates per 1,000 living were .54 and .39 respectively. The mortality from other tuberculous diseases was 15 per cent. above the average.

**Cancer.**—The deaths from cancer numbered 2,322, equal to a rate of .94 per 1,000 living, and 1 per cent. above the average of the preceding quinquennial period. The deaths of males numbered 1,224 and of females 1,098, the rates for each sex being .97 and .91 per 1,000 respectively. The death-rate from this disease has been increasing steadily for a number of years.

**Cerebral Haemorrhage.**—To cerebral haemorrhage and apoplexy during 1929 were ascribed 854 deaths, of which 436 were those of males and 418 of females. The rate was .35 per 1,000 living, or .35 for males and .35 for females. The figures for 1929 are not comparable with those of the previous quinquennium. From the beginning of 1928, arterio sclerosis in combination with any cerebral vascular lesion has been classified as a disease of the arteries. This reclassification affects the figures for Cerebral Haemorrhage, Other Diseases of the Nervous System, and Diseases of the Arteries, which under the old classification would have shown an increase of about 20 per cent., an increase of 1 per cent., and a decrease of 2 per cent. respectively, instead of the figures shown in the third column.

**Diseases of the Heart** were the cause of 4,102 deaths, the rate being 1.66 per 1,000. The apparent increase in these deaths during the last twenty-five years is probably the result of the greater attention given to pathological diagnoses. Furthermore, in combination with other diseases, where precise information is lacking, diseases of the heart are given precedence over many other diseases. The rate in 1929 was 16 per cent. above the average of the preceding five years. Of the total deaths, 2,286 were of males and 1,816 of females, the corresponding rates per 1,000 living of each sex being 1.8 and 1.50.

**Bronchitis and Pneumonia.**—Bronchitis with 508 deaths, equal to a rate of .21 per 1,000 living, showed an increase of 13 per cent., and pneumonia with 2,216 deaths, or .90 per 1,000, an increase of 26 per cent. as compared with the experience of the previous five years.

Of the deaths from bronchitis, 254 were of males and 254 of females, or .20 and .21 per 1,000 living respectively. Of the persons who died from pneumonia, 1,273 were males and 943 were females, and the rates were 1.01 and .78 per 1,000 living of each sex.

**Bright's Disease.**—During 1929 there were 1,836 deaths due to diseases of the genito-urinary system, of which 1,367 were caused by acute nephritis and Bright's disease. The rate for nephritis (acute and chronic) was .55 per 1,000 living; for males .61 per 1,000, and for females .49 per 1,000. In 1929 the rate was 5 per cent. more than the average of the previous five years. The general tendency of the rate has been to increase.

**Diseases of Infants.**—The principal causes were prematurity 886, other developmental diseases 786, diarrhoea and enteritis 366, pneumonia 360, whooping-cough 128, bronchitis 49, measles 24, and convulsions 25.

The following statement shows the causes of deaths of children under 1 year of age per 1,000 births, during 1929, in comparison with the preceding five years :—

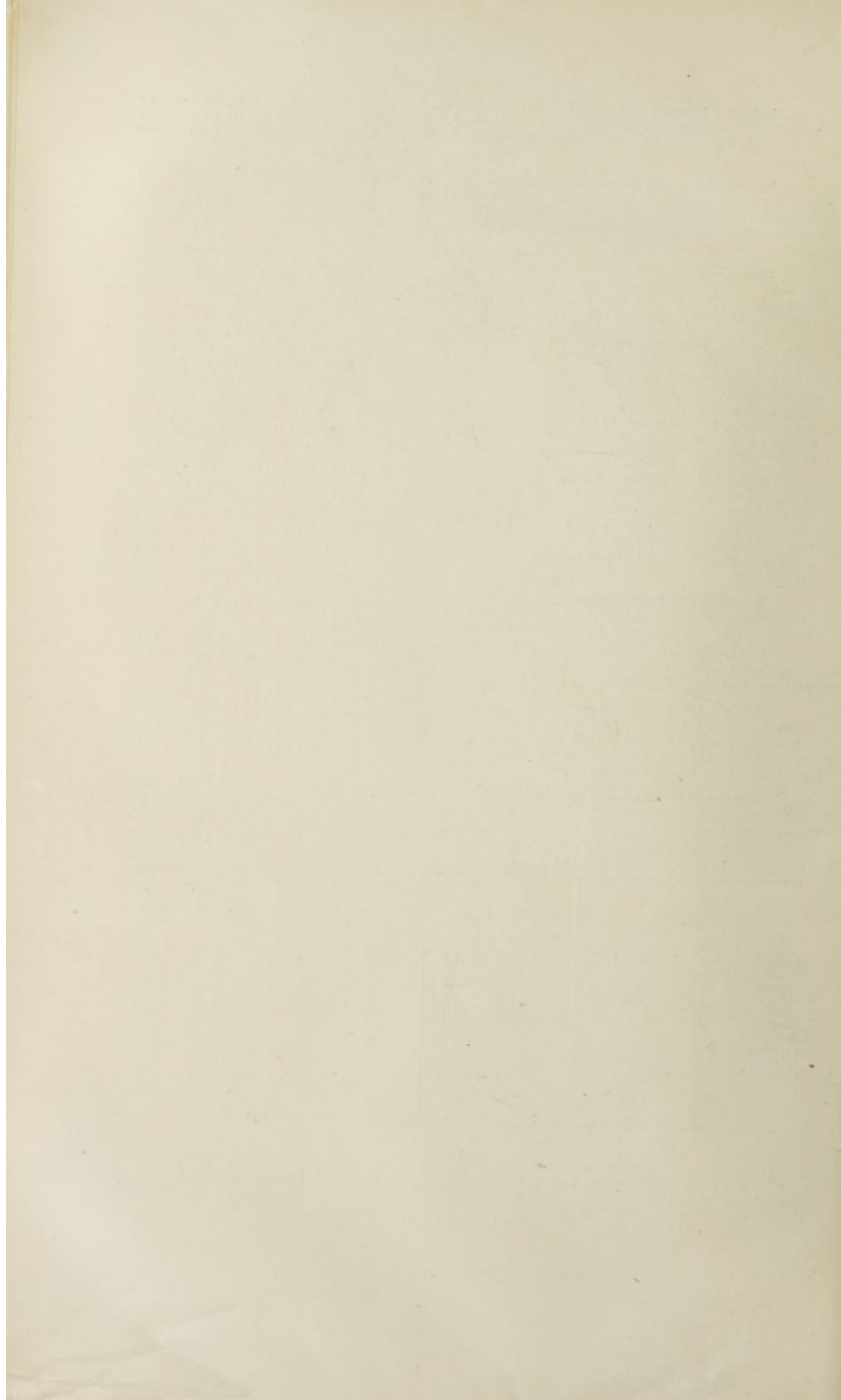
Causes of Death.	Males.		Females.		Total.	
	1929.	1924-28.	1929.	1924-28.	1929.	1924-28.
Epidemic Diseases...	4.3	3.5	4.6	3.7	4.4	3.6
Tuberculous Diseases...	.5	.2	.3	.3	.4	.2
Syphilis...	.3	.2	.3	.2	.3	.2
Meningitis...	.7	.7	.6	.6	.6	.7
Convulsions...	.4	1.0	.5	.6	.5	.8
Bronchitis...	.9	1.1	.9	.9	.9	1.0
Pneumonia...	7.2	6.2	6.4	5.4	6.8	5.8
Diarrhoea and Enteritis...	8.4	10.8	5.4	9.1	7.0	10.0
Premature Birth...	18.8	17.2	14.7	14.6	16.8	15.9
Other Developmental Diseases...	17.3	16.3	12.4	12.6	14.9	14.5
Other Causes...	4.5	4.0	3.5	3.2	4.0	3.6
All Causes...	63.3	61.2	49.6	51.2	56.6	56.3

#### GRAPHS.

1. Cancer, Tuberculosis and Heart Disease, N.S.W. Annual Death Rate per 100,000 of population, 1875-1929.

2. Annual Death Rate, N.S.W., per 1,000 of population, 1875-1929.





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## A.—PUBLIC HEALTH ADMINISTRATION.

## CHEMICAL LABORATORY.

## REPORT OF THE GOVERNMENT ANALYST FOR THE YEAR ENDED 31st DECEMBER, 1929.

*Staff.*

Government Analyst: W. M. Doherty, F.I.C., F.A.C.I.	Analysts:
Second Government Analyst: S. G. Walton, F.A.C.I.	R. G. O'Brien, A.S.T.C., A.A.C.I. E. S. Ogg, B.Sc., A.A.C.I.
Senior Assistant Government Analyst: H. B. Taylor, M.C., D.Sc., F.I.C., F.A.C.I.	Laboratory Assistants, 2. Junior Laboratory Assistants, 2.
Assistant Government Analyst: A. D. Dibley, A.S.T.C., A.A.C.I.	Clerk: Grace McGlynn. Shorthand-writer and Typist, 1.

Following the retirement on 30th January, 1929, of Dr. Thomas Cooksey, who had occupied the position of Government Analyst for 14 years, I was appointed to the vacancy on 31st January, 1929.

The outstanding feature of the analytical work during 1929, as in previous years, is the preponderating number of samples submitted for chemical examination in the course of administration of the Pure Food Act. Of a total of 20,611 samples, 17,878 were handed in by departmental inspectors and by inspectors of the various municipalities and shires throughout the State. Of the 17,878 food and drug samples, 15,454 were samples of fresh milk, of which 13,285 (or nearly 80 per cent.) were collected in the metropolitan district, and 2,169 in parts of the State other than Broken Hill. The disproportion between the number of city and country samples is mainly due to the laxity of municipal supervision in some of the country towns, and to the shortage of country inspectors on the departmental staff.

The inhibitory effect on adulteration that results from more intensive supervision is evidenced by the figures, which show that only 16 in every 1,000 of the metropolitan milk samples had been tampered with, while of the country samples, 59 in every 1,000 were at fault.

Other articles submitted under the pure food administration numbered 2,424, of which 2,137 were fresh meat or meat products—60 per cent. of the samples of fresh meat were found to have been treated with a preservative in contravention of the regulation, and a number of traders were successfully prosecuted.

A recent innovation is the use of saccharin in pickles and cordials as a substitute for sugar. This synthetic sweetening is prohibited in articles of food, with the exception of non-excisable fermented drinks, in which it is allowed in a proportion not exceeding 3 grains per gallon. Saccharin is not a sugar substitute, except to the sense of taste.

Diabetic foods were investigated, and practically in every case it was found that the starch content was either not at all or inconsiderably reduced. For the protection of diabetic patients it is desirable that a standard should be formulated for "diabetic" bread, &c.

Samples of apples exposed for sale were found to be excessively contaminated with arsenate of lead, which is extensively used by orchardists as a spray. Immediate action was taken to safeguard the public. The amounts of arsenic present in a typical specimen weighing 7½ oz. ranged from 0.11 grain on the outside to 0.004 in the whole skin and a negligible quantity in the pulp. The limit of arsenic proposed to be allowed is 1/100th of a grain per lb.

Cases of illness were traced to potatoes, and samples of the tubers were submitted for investigation, with the result that excessive amounts of solanine were found. Solanine in excess is toxic, and though the finding of an excess is rare, it occurs occasionally, especially in sprouting potatoes, the consumption of which may be an occasional cause of illness.

Numerically the Government Stores Department, with a total of 889 samples, comes next in importance to the Pure Food Branch. Analyses for this Department are continually supplemented by personal interviews and advice; and in the standardisation and supply of those goods where chemical experience has a direct bearing, resources of the Laboratory are freely made use of. This work has grown steadily from 1895, when only an occasional item was sent for investigation, to the present time, when practically the whole time of one officer does not suffice for it. The detailed list of articles shows that soap, lubricants, disinfectants and inks form the articles dealt with in greatest numbers. The work includes metallurgical experiments on electroplate ware; the determination and appraisalment of laundry adjuncts; bituminous roofing, flavouring essences, office paste, waterproof cloth, &c.

Analyses of waters and of sewage effluents totalled 555. A number of samples of water used in swimming baths and pools in country municipalities has been examined and reported upon.



From the Industrial Hygiene Branch 251 articles were submitted for examination. These were mainly specimens of body fluids for diagnostic purposes, post-mortem specimens for examination as to the presence of lead, arsenic, carbon monoxide, nitrous oxide, &c., or air, dust, paint, sludge and other articles connected with occupational diseases.

To a question submitted to this Branch during the year concerning the determination of silica the following reply was given:—

"No methods are known to this department by which silica in the form of quartz may be invariably separated by chemical means from the silica combined with a silicate, where the mixture is an impalpable powder and its mineralogical source is unknown. Neither in the circumstances can an analysis, however complete, be used to correctly allocate the basic and the acidic contents, so that it can always be affirmed with certainty that the silica present was free or combined."

In connection with the detection of lead in excretions some years ago I suggested the use of oxalate separation as an improvement on the phosphate method, and this suggestion was later developed and a note on it published.

The electrolytic method is undoubtedly intrinsically satisfactory, but is not practicable without a large expenditure on electrical equipment and platinum apparatus when a large number of specimens call for examination with reasonable expedition.

The Police Offences (Amendment) Drugs Act, 1927, made extra calls on this branch, 130 exhibits containing cocaine and 102 containing opium being received from the Criminal Investigation Branch of the Police Department.

Numerous investigations were undertaken in connection with various criminal charges, as, for instance, poisoning and attempted poisoning of human beings, and of horses and cattle, incendiarism, bank robbery, use of abortifacients, &c., and in connection with police inquiries concerning illegal poisoning of protected native animals, burnt clothing, motor accidents and identity of bricks used to weight portions of the body of a murdered man. One particularly obnoxious crime, that of throwing strong sulphuric acid, was elucidated. Fortunately, the victims did not suffer personal injury, although their clothing was destroyed. One police exhibit was a novel firearm shaped like a tube. Examination showed the projectile substance to be composite in character and to consist of a mixture of cayenne pepper and sand, the propellant being ordinary gunpowder. The purpose of the implement was to blind opponents.

An unusual examination was connected with identification of bank notes supposed to have been burglariously taken from a safe after the back had been burnt out by an oxy-acetylene apparatus. The insulation of the safe consisted of diatomaceous earth, composed of the siliceous skeleton of organisms known as diatoms. In breaking open the safe some of this earth became mixed with and adherent to the bank notes, which were later submitted for examination. A micro-photograph of the earth is appended.



Diatomaceous Earth X 480.

Examinations made in connection with human remains (78) constituted a record, and were responsible for much intensive work. Thirty-eight of the exhibits yielded positive evidence of poison. In 23 cases death (either by misadventure or suicide) was traced to strychnine, which has always been Australia's chief poison, possibly because its use in the destruction of pests makes it readily obtainable. Two deaths were from arsenic, but how the poison was administered remains an unsolved mystery. Cyanide accounted for 3 deaths and nicotine and veronal for 2 each. In the remaining cases dial, morphine and carbon monoxide were responsible for 1 death each. The list of poisons is lengthening as more synthetic narcotics come into vogue. In one case zinc chloride was the alleged cause of a serious illness, and its investigation led to the exhumation of the skeleton remains of a person who had been dead for several years. An analysis of the bones disclosed the presence of significant quantities of zinc.

A child of 2 years died after eating the rhizome of a plant known as Cunjevoi (*Colocasis macrorrhiza*), in which oxalate of calcium exists as minute acicular crystals. Whatever physical action these needles may have upon the person who eats Cunjevoi, fatal results are not attributed to the oxalate itself, acting as a poison, but rather to some other ingredient present in the rhizome, which is at present unknown.



When this Laboratory was reconstructed and equipped in 1897 only 400 specimens were examined yearly. This number has increased until now over 20,000 specimens are examined every year. As there has been no expansion of the premises there is acute congestion from the shortage of working room. Improvements must be made at an early date, as still further demands are being made continually upon the services of this Laboratory.

During the year a new toxicological room was equipped, and this has proved a boon. It is hoped that some necessary additions will be made in the near future.

The staff, which was depleted by the retirement of the Government Analyst, Dr. T. Cooksey, and the resignation of Miss Isobel Knight, was restored to its numerical strength by the appointment of an analyst and a junior assistant. The change in personnel made it necessary to occasionally request Pure Food Officers to reduce the number of samples submitted in order to keep up with the daily work. This is not satisfactory, and it is to be hoped that the economic position will allow of increase of staff at an early date.

There have been no noticeable innovations in processes or analytical methods during the year due to the constant pressure of routine matters which has consumed more than all the available official time.

W. M. DOHERTY,  
Government Analyst.

TABLE I.—Samples examined during the year 1929 for the purposes of the administration of the Pure Food Act, 1908.

Nature of Sample.	Authority Submitting.	Samples.	
		Examined.	Adulterated or Falsely Described.
Aspirin Tablets .....	Food Inspectors .....	1	0
Bread .....	" .....	1	0
Butter .....	" .....	4	1
Cake Mixture, &c. ....	" .....	2	1
Camphorated Chalk.....	" .....	2	1
Celery .....	" .....	1	0
Cheese Paste.....	" .....	1	0
Chutney.....	" .....	1	0
Cocoa Liquor .....	" .....	2	0
Cordials and Beverages ..	" .....	67	41
Cream .....	" .....	59	9
Cream of Tartar .....	" .....	9	0
Custard Powder .....	" .....	2	0
Diabetic Foods .....	" .....	5	0
Dripping .....	" .....	3	0
Egg Pulp .....	" .....	6	0
Emulsion (Clinic) .....	" .....	1	0
Eye Drops.....	" .....	1	1
Fruit (Fresh) .....	" .....	5	5
" (Dried) .....	" .....	5	0
" (Tinned) .....	" .....	1	0
Ginger (Preserved) .....	" .....	4	4
Hair Dye .....	" .....	9	0
Honey .....	" .....	1	0
Ice Cream.....	" .....	10	5
Iodine (Tincture) .....	" .....	4	1
Jam .....	" .....	1	0
Maize Sugar .....	" .....	1	0
Meat—Fresh .....	" .....	461	281
" Sausages .....	" .....	1,510	290
" Tripe .....	" .....	156	25
Medicines (Patent) .....	" .....	10	0
Milk—Fresh .....	Food Inspectors, Metropolitan District .....	8,295	172
" .....	Municipal and Shire Inspectors, Metropolitan District .....	4,990	48
" .....	Food Inspectors, Country Districts .....	673	54
" .....	Municipal and Shire Inspectors, Country Districts .....	1,496	74
Milk Shake .....	Food Inspectors .....	1	0
Oil (Edible) .....	" .....	4	0
Pectin .....	" .....	2	0
Pickles .....	" .....	21	13
Potatoes .....	" .....	2	1
Preservatives (Meat) .....	" .....	2	0
Sago .....	" .....	1	0
Sauce .....	" .....	5	0
Soap .....	" .....	11	1
Sodium Bicarbonate .....	" .....	2	1
Spirits .....	Licensing Inspectors .....	19	1
Tea .....	Food Inspectors .....	1	0
Tomato Sauce .....	" .....	5	2
Vinegar .....	" .....	1	0
Wrappers (for Food) .....	" .....	1	0
Total .....		17,878	1,032

## PURE FOOD ACT, 1908.

## REPORT OF THE CHIEF INSPECTOR ON THE GENERAL ADMINISTRATION OF THE PURE FOOD ACT, 1908, FOR THE YEAR ENDED 31ST DECEMBER, 1929.

*Staff.*

Chief Inspector: ARTHUR KENCH. Senior Inspector: CHARLES V. FRANCIS. 10 metropolitan inspectors, 2 country inspectors, and 1 assistant.

THE executive work under the Pure Food Act includes the supervision of all places where food or drugs are prepared, stored or exposed for sale. Particular attention is given to the supervision of the milk supply; to the manufacture of jams, and fruit and vegetable preserving; condiments, smallgoods, and cordials; and to the general condition of grocery, fruit, vegetable, fish, and meat shops, both wholesale and retail.

*Bread Supply.*—Special inspectorial work has been carried out in connection with the preparation and delivery of bread and pastry, and many bakeries have been remodelled and repairs effected under the supervision of departmental officers.

*Milk Supply.*—In connection with the supervision exercised over the milk supply, 7,993 samples were procured by departmental officers and submitted to the Government Analyst for analysis. Prosecutions successfully undertaken against traders who were defrauding the public by supplying adulterated milk numbered 133, and the fines and costs recovered in connection therewith totalled £572 8s. In addition, 139 samples of milk were procured and submitted to the Microbiological Laboratory for examination for tubercle bacilli and estimation of the bacterial content.

*Cream.*—Fifty-nine samples were procured, the results of analysis warranting one prosecution. Fines and costs amounted to £3 8s.

*Meat.—Use of Preservative Dusting Powders.*—The question of preservation of meat has been thoroughly investigated; 2,160 samples of meat, including sausages, were obtained and submitted to the Government Analyst for analysis; in 453 cases it was found that traders had been dusting the surface of the meat with preservative powder. Prosecutions were undertaken in every case, and resulted in fines and costs amounting to £2,290 11s. being imposed.

*Other Foods and Drugs.*—A total of 2,576 samples of foods and drugs was submitted for analysis, and 473 traders were prosecuted. The fines and costs amounted to £2,317 1s.

*Premises used for Preparation, Sale, and Storage of Food.*—Inspections were made of 11,564 premises used for or in connection with the preparation, sale, or storage of food. Prosecutions undertaken for unclean premises, &c., numbered 221; the fines inflicted totalled £1,321 4s. In addition, over 712 notices were served on traders requiring structural alterations to premises.

*Seizure and Condemnation of Unsound Food.*—During the year regular supervision has been exercised over food products in wholesale and retail stores, bulk stores, auction rooms and elsewhere. Over 1,626 tons of foodstuffs and 25,000 packages of assorted foods were found to be in so damaged or deteriorated a condition as to be unfit for food, and were seized and destroyed; 9 prosecutions were instituted and resulted in fines and costs amounting to £49 12s. The seizures included about 250 pieces of damaged crockery in use in restaurants, &c.

*Veneral Diseases Act.*—At the request of the Commissioner administering this Act special investigations were made concerning breaches of the Act; 9 prosecutions were undertaken and resulted in collection of fines and costs amounting to £70 16s.

Tables are appended showing the nature of the samples taken during the year and the class of food seized and destroyed. A detailed statement of the foods and drugs submitted for examination will be found in Table I of the Government Analyst's report (p. 16).

ARTHUR KENCH,  
Chief Food Inspector.

TABLE I.—Summary of Work performed by Pure Food Officers for the year ended 31st December, 1929.

Analysis of Samples of Milk.	1928.			1929.		
	Samples taken by—			Samples taken by—		
	Departmental Officers.	Municipal and Shire Council Inspectors.	Total.	Departmental Officers.	Municipal and Shire Council Inspectors.	Total.
Number of samples taken from all parts of the State .....	9,694	6,262	15,956	7,993	6,319	14,312
Number of samples below standard ...	268	102	370	214	110	320
Number of warnings .....	192	43	235	81	33	114
Number of prosecutions .....	166	59	225	133	77	210
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Amount of fines and costs.....	888 13 0	252 10 6	1,141 3 6	572 8 0	303 6 6	875 14 6



*Food and Drugs, other than Milk.\** (See Table I, p. 16.)

	1928.	1929.
Number of samples taken from all parts of the State .....	2,022	2,576
Number of samples below standard .....	397	518
Number of warnings .....	42	45
Number of prosecutions .....	355	473
Amount of fines and costs .....	£1,203 17s.	£2,317 1s.

\* Local authorities (municipal and shire councils) do not, as a matter of routine, collect samples of foods and drugs other than milk.

*Food unfit for Consumption, Seized and Destroyed.*

	1928.	1929.
Number of prosecutions .....	11	9
Amount of fines and costs .....	£58 12s.	£49 12s.

The seizures comprised over 1,626 tons of foodstuffs and 25,000 packages of assorted foods.

*Inspection of Premises used for Preparation, Sale, or Storage of Food.*

	1928.	1929.
Number of premises inspected in all parts of the State .....	10,177	11,564
Number of notices issued .....	666	712
Number of prosecutions .....	92	221
Amount of fines and costs .....	£598 18s.	£1,321 4s.

TABLE 2.--Summary of Legal Proceedings for Breaches of the Pure Foods Act and Regulations, 1928 and 1929.

	1928.		1929.	
	Prosecutions.	Fines and Costs.	Prosecutions.	Fines and Costs.
		£ s. d.		£ s. d.
Adulterated milk .....	166	888 13 0	210	875 14 6
Adulterated foods and drugs .....	355	1,203 17 0	473	2,317 1 0
Goods seized and destroyed .....	11	58 12 0	9	49 12 0
Unclean premises .....	92	598 18 0	221	1,321 4 4
General breaches of Act and Regulations* .....	96	330 0 0	74	272 7 0
Breaches of Venereal Diseases Act and Regulations .....	3	16 4 0	9	70 16 0
Grand Total .....	723	3,096 3 0	996	4,906 14 10

\* Uncleanly habits in preparation, handling, delivery, or storage of food; use of dirty or unsuitable utensils, etc.

TABLE 3.—Summary of work carried out under the Pure Food Act, 1908, from the date of its operation (October, 1910) to 31st December, 1929.

Collection of samples, inspections, &c.	Total No.	Total below standard.	Prosecutions undertaken.	Amount of Fines and Costs.
No. of milk samples .....	121,365	6,786	3,402	£ 17,912
No. of food and drug samples .....	18,319	3,738	2,108	7,467
Premises inspected .....	142,601	.....	2,076	10,633
General breaches of Act .....	1,776	.....	1,405	4,918
Total samples collected, inspections, &c. ....	284,061	10,524	8,991	40,930

## DAIRIES SUPERVISION ACT, 1901,

AND

## CATTLE SLAUGHTERING AND DISEASED ANIMALS AND MEAT ACT, 1902.

REPORT by the Chief Dairy Inspector on the activities of the Dairies Supervision Branch, Department of Public Health, for the year ended 31st December, 1929.

*Staff.*—Chief Dairy Inspector, T. V. Blomfield; Senior Dairy Inspector, W. A. Mackie; 2 Metropolitan, and 15 Country Inspectors.

Number of miles travelled in inspectorial work, 144,688; dairy premises visited, 17,425; dairy cattle inspected, 576,215.

Number of dairy cattle condemned for tuberculosis, 578; actinomycosis, 157; cancer, 120; other diseases, 33. Total, 888.

Number of cattle submitted to the tuberculin test, 755; reacted, 162.

*Metropolitan District.*—During the year 4,417 milch cows and 1,805 dry cows were inspected at Flemington Milch Cow Sale-yards. Especial attention is paid to these yards as they are the avenue of entry into the suburban dairies and any animals passing through them which exhibit any departure from a normal state of health are followed to their destination, closely watched, and, if necessary, tested with tuberculin. The health of the animals exposed for sale was satisfactory, none being condemned.

*Cattle Slaughtering.*—1,139 country slaughter-houses were inspected; beef cattle examined, 7,208; number condemned, 9 (8 tuberculosis, 1 actinomycosis).

*North Coast Bacon Factories.*—Meat Inspectors were stationed at the following North Coast centres:—O. H. Lowe and H. J. Kirkland (Byron Bay); A. J. Clogg (Lismore); G. R. McCredie (Ballina); J. Elliott (Grafton).

The number of animals slaughtered for human food, all of which were subjected to a searching post-mortem examination by the above staff, is as follows:—Bullocks, 714 (condemned for tuberculosis, 8); cows, 1,748 (tuberculosis, 41); pigs, 58,551 (tuberculosis, 1,757); calves, 3,486 (tuberculosis, 3); sheep, 2,534 (condemned, 0).

The reduction in the number of animals slaughtered and inspected in the above centres compared with last year's figures is accounted for by Ballina Bacon Factory closing down, and the subsequent withdrawal of the departmental inspector stationed in that town.

*Prosecutions.*—165 prosecutions were instituted for breaches of the Acts governing the work of this Branch, and fines and costs amounting to £1,010 14s. were paid by defaulting traders.

*Staff.*—Towards the close of the year the Senior Dairy Inspector, Mr. W. A. Mackie, reached the retiring age, and his disappearance from the Staff has created a gap which will not be easily filled, as his tact and experience rendered his services especially valuable in the execution of duties which have a persistent call for these qualifications.

The use of the Minit Milk-Sediment Tester has been responsible for much useful work in illustrating the extent to which milk may be contaminated by careless handling, and demonstrations with this apparatus on educational lines will be persevered with in the light of the encouraging improvement in the cleanliness of milk despatched for distribution in the city.

Use of the tester coupled with the bacteriological examination of milk by the Microbiological Staff has no doubt been the means of bringing about commendable improvement in the metropolitan milk supply.

The dairy herds maintained at the various departmental hospitals continue to show a gratifying freedom from tuberculosis, as determined by the yearly application of the tuberculin test, and the importation of a high-class Friesian sire from New Zealand will considerably strengthen the black and white herd domiciled at Lidcombe.

T. V. BLOMFIELD,

Chief Dairy Inspector.

SUMMARY of the registered dairymen and milk vendors, and approximate number of dairy cattle on registered dairy premises in New South Wales at 31st December, 1929, compiled from returns furnished by Local Authorities under the Dairies Supervision Act, 1901.

District.	Number of Registered Dairymen.	Number of Milk Vendors.	Number of Dairy Cattle on Registered Premises.
Municipalities—			
Metropolitan .....	439	4,838	10,377
Metropolitan Police .....	178	30	3,826
	617	4,868	14,203
Country Municipalities ...	2,064	916	56,140
	2,681	5,784	70,343
Police Districts .....	19,154	357	840,391
Total .....	21,835	6,141	910,734



## REPORT OF THE CHIEF SANITARY INSPECTOR FOR THE YEAR ENDED 31st DECEMBER, 1929.

*Staff.*—Chief Sanitary Inspector, E. A. CRESSWICK, M.R.S.Inst.; 7 certificated inspectors, and 1 certificated inspector and licensed surveyor.

### ROUTINE AND GENERAL.

*Inspection of Country Towns.*—Primary inspection has been made of 20 country towns during the year, and recommendations forwarded to local authorities indicating necessary improvements.

With the object of ascertaining the action taken by local authorities to give effect to previous recommendations by the department, re-inspections of 45 towns and villages were made. Five outbreaks of infectious diseases in different parts of the country were investigated, and full reports submitted thereon.

A more general interest in improved sanitary conditions is being shown by local authorities and others. In some instances, however, it was found that councils have neglected to execute their powers and duties to make necessary improvements, and stringent action by the department had to be adopted. Fortunately, such instances are becoming less frequent.

Notices were served on five local authorities under section 3 of the Public Health (Amendment) Act, 1915, in regard to sanitary or garbage services—namely, Cobbora Shire, *re* nightsoil service; and Balranald, Dungog, Moss Vale and Taree, *re* garbage services.

A recommendation was made to the Minister of Health in respect of the appointment of a qualified health inspector at Windsor, and the council was subsequently notified to appoint such an inspector. The Richmond Council had been similarly notified towards the end of 1927. The two councils have since jointly appointed a qualified inspector who will devote half his time to each district.

Inspectors have also been appointed at Kempsey, Taree, Berrigan and Blacktown in response to representations made by this department.

In several other instances local authorities are being strongly urged to engage qualified inspectors.

*Sanitary and Garbage Depot Sites.*—During the year 121 sanitary and garbage depot sites were inspected and 52 proposed sites were investigated and reported on. In some cases the existing depots were found to be unsatisfactory, and action had to be taken to cause improvements to be made. Where definite breaches of the ordinance were found it became necessary to prosecute the offenders. In most instances a marked improvement was found on re-inspection.

*Insanitary Buildings.*—Inspections were made of 87 insanitary buildings, and in 80 cases where the structures were unfit for human habitation or occupation closing order certificates were issued to local authorities, who were recommended to close the buildings. When the buildings were structurally sound the necessary improvements were indicated for the guidance of councils.

*Supervision over Abattoirs and Meat Work Wastes.*—Sixty-three inspections have been made of both the State Abattoirs and the Sydney Meat Preserving Company's works. Haslam's Creek has also been kept under observation for probable nuisance. Very few complaints were made regarding the above-mentioned works.

*General Inspections and Investigations.*—These included examination of and reports on 95 established septic tanks and sites for tanks, and of 269 plans of tanks submitted for approval; investigation of 69 complaints of drainage and other nuisances; and inspection of 26 aborigines' and other camp sites; 326 noxious trade premises; 29 slaughtering premises; 76 food premises (including butchers' shops); 160 unhealthy building sites; 27 public hospitals; 154 private hospitals, new and existing; 120 public and private schools; 139 theatres and public halls; 9 dairies; 7 cemeteries; 22 baths; 30 wharves, jetties and ferries; 10 show grounds and racecourses; 62 hotels; 13 chemical closets, including the testing of 2 new ones.

Other general work consisted of 4 air tests in new theatres; 8 inquiries into pollution of water supplies; 94 inspections of bedding and upholstery factories; collection of 33 water samples and 14 samples of sewage; and examination of 10 plans of hotels, drainage schemes, &c.

*Pollution of Harbours, Rivers and Watercourses.*—Several investigations have been made and action taken to effect improvements where necessary to protect such from pollution.

*Routine Destruction of Rats.*—Systematic destruction of rats by means of traps and poison has been carried out by departmental rat-catchers along the harbour front at Woolloomooloo Bay, Circular Quay and Blackwattle Bay.

The Sydney Harbour Trust Commissioners also employ a staff of rat-catchers who operate along the waterfront, where a marked decrease in rat infestation is noticeable. Improvements are still being carried out by the Harbour Trust Commissioners to eliminate as far as practicable all probable harborage of rats.

A total of 5,110 rats were caught by the departmental, Sydney Harbour Trust and City Council rat-catchers.

These were all examined in the Microbiological Laboratory and found free from plague.

*Noxious Trades.*—This Branch inspected 326 registered noxious trade premises during the year, and also gave information and assistance to local authorities in relation thereto. Action was taken where necessary to have improvements carried out. From general information and re-inspections many important improvements have been effected.



*Mosquito Eradication.*—There appears to be definite lack of enthusiasm on the part of local authorities in respect of the Ordinance dealing with this question. Some councils have taken definite action, but the majority are not giving mosquito eradication the attention which its importance warrants.

*Prosecutions.*—As far as possible prosecutions are avoided, but this is not always practicable. The total amount of fines and costs imposed for offences against the various Acts during the year on informations issued by officers of this Branch amounted to £166 3s. 10d.

*Displays of Sanitary Fittings and Appliances.*—At the last Medical Congress numerous sanitary appliances and fittings were exhibited at the Sydney University and attracted much interested attention. A similar display was also made in a conspicuous shop window during Health Week. Interesting and instructive lectures were also given at the last Agricultural Conference held at the Hawkesbury Agricultural College, which subsequently led to many inquiries.

#### LAND NOTIFIED AS UNFIT FOR BUILDING PURPOSES.

In continuation of the work carried out last year further survey work was effected, and bench marks have now been established in relation to all the more extensive notified areas.

Comprehensive survey was also made in connection with proposals by the Works Department to raise the surface of a large area of land adjoining Sheas Creek and Cooks River.

Surveys have been made in connection with 12 areas proposed to be notified; of these 9 have been notified, and 3 others are about to be notified.

Five notices have been revoked, the land having been so improved that retention of the restrictions was no longer necessary.

Replies to solicitors' inquiries as to whether or not certain land is notified under section 55 numbered 3,033. On 7th October, 1929, the Minister approved of a charge of 2s. 6d. being made for each reply to such inquiries.

One hundred and fifty inspections were made and levels taken during the year, and 270 lots within notified areas were brought to a condition which rendered them suitable for building purposes. This administration involved the writing of 196 reports regarding land.

#### SWIMMING POOLS.

The inspection of swimming pools was continued during the last swimming season. Separate reports were made on each pool, as well as a general comment on the whole of them.

As previously pointed out the majority of the swimming pools throughout the State are owned and controlled by local or shire councils, and in many instances are conducted at a financial loss. The general feeling is that the deficit is warranted on account of the benefits derived; there is, however, a definite reluctance to incur avoidable expenditure on maintenance. As a consequence the water is frequently unsuitable, either from lack of purification or insufficient changes. For the same reason necessary attention to cleansing of surfaces of baths and premises generally is reduced to a minimum.

The investigations revealed considerable variation in the control of swimming pools. In some centres no regulations have been made, and very little interest is displayed in the proper conduct of bathers.

Having regard to all the circumstances it is thought that the existing ordinances relating to baths should be supplemented. An additional section has, therefore, been drafted and submitted. The main objective of the new clauses is to procure uniformity of construction and regulation of baths under the best sanitary conditions.

#### THEATRES AND PUBLIC HALLS.

During the past year inspections were made of 139 public halls, chiefly in country districts. Many investigations were made into complaints, and advice was given on improvements and maintenance.

Recommendations for improvements were made in respect of about 90 separate premises. A conviction was obtained against the licensee of one public hall for failing to maintain the premises in a clean condition. Several other licensees were cautioned for breaches of the Regulations.

It is very gratifying to note the modern tendency to improve the design of public halls, and the regard which is being given to improvements in ventilation and sanitation generally. There is a noticeable improvement also in the general maintenance and conduct of halls.

#### CAMPING AREAS.

The number of camps and camping places established along thoroughfares and at popular resorts is increasing annually, and recent inspections by this Branch have clearly shown the necessity of controlling these areas. It is thought most desirable that local authorities should be given power to regulate both industrial and pleasure camps and camping areas. An ordinance for this purpose is being compiled.

#### SPECIAL INSPECTION OF HOTELS.

As the result of representation made to the Minister for Justice by several public bodies regarding the unsatisfactory sanitary conditions existing at many of the country hotels throughout the State applications were called for two additional sanitary inspectors so as to enable more frequent inspections to be made. Unfortunately, owing to financial stress these appointments are temporarily held up.



In March, at the request of the Department of Justice, two qualified sanitary inspectors were appointed and attached to the Licenses Reduction Board. These officers have been employed since April last wholly on the inspection of hotels in country districts, and have visited 34 licensing districts and examined 390 hotels. Construction and general sanitation of the hotel is carefully examined and inquiry made as to the practicability of installing a septic tank system.

Recommendations covered the installation of 102 septic tanks, 94 independent hot water services, the rebuilding, reconstruction, and renovation of many existing sanitary conveniences, and provision of adequate water storage and bathing accommodation. In 13 instances recommendations were made that the existing buildings should be demolished and new modern structures erected.

Recommendations were considered by the Licenses Reduction Board and then forwarded to the the District Licensing Inspectors with instructions to have the improvements carried out.

On 6th January, 1930, these officers were transferred to the Sanitary Inspectors' Branch of this Department, where they will carry out hotel and other inspection duties.

#### HOOKEWORM CAMPAIGN.

The hookworm campaign was recommenced early in August and continued until December.

It was intended to begin operations at Tweed Heads and traverse the areas previously visited in order of sequence. This itinerary, however, was amended in consequence of the death of a child from hookworm disease in the Kyogle area, which was then first visited. The family to which the child belonged lived in a small native settlement in which 24 out of 27 inhabitants were found to be infected. These persons were treated individually and the latest laboratory returns showed only 3 positive results.

An intensive survey of eleven construction camps along the line from Kyogle to the Queensland border was commenced late in August in company with the Railway Department's sanitary engineer. The camp sites were all found to be clean; 1,055 persons occupy the camps, but only 437 submitted specimens for examination; 12 cases of infection were found, of whom 3 were in one family.

As a result of the previous investigations and departmental action in connection therewith a sanitary scavenging service was installed at Rappville, and the service at Coraki was extended to include the aboriginal reserve. In two other areas also the services have been suitably extended.

Specimens examined in 1929 numbered 6,407, of which 6,131 were from Europeans and 276 from aborigines. Of the specimens from Europeans 105 (1.7 per cent.) were infected, and of the 276 specimens from aborigines 102 (36.9 per cent.) were infected.

The aborigines, more especially those residing in townships, are mostly averse to submitting specimens. On controlled reserves, however, the managers usually attend to this important matter.

During the year 9 official and unofficial reserves were inspected and the inhabitants "mass" treated whether infected or otherwise.

Lectures were given at 70 schools with the object of disseminating useful information and encouraging better conditions. Response to the appeal for specimens, especially from the larger schools, was rather disappointing and in most cases entailed further visits.

The necessity for structural improvements to public schools was referred to the Education Department for consideration.

During the period under review 123 dwellings were visited. In many instances the infected dwellings were revisited when inspections of schools, &c., were being carried out in the same locality.

Ten sanitary depots were inspected, mostly in company with the local Health Inspector.

The year's operations terminated on the 19th December and it was intended to resume immediately after the Public Schools' vacation.

#### REMOVAL OF FURNITURE.

In consequence of complaints of the manner in which furniture removal firms carried out their work investigations were made in the Metropolitan districts.

The inspections included 94 furniture stores, as well as vehicles and appliances used in the storage and removal of furniture. For the most part, the operations from a sanitary aspect were very satisfactory. In some instances, however, unsatisfactory conditions were found, and in two cases legal proceedings were taken and convictions obtained against offenders.

On the recommendation of the Department several councils have taken action to improve the premises and methods of these businesses within their areas.

Several of the larger firms arrange for carpets, bedding, &c., to be treated by professional cleaners, and the manner in which these firms pack and store effects so as to eliminate dust and probable infection is very satisfactory.

During the investigations every endeavour was made to encourage local councils to keep removalist firms under observation.



## PRIVATE HOSPITALS ACT, 1908.

Report on the operation of the Act for the year ended 31st December, 1929, by F. M. SUCKLING, M.B., Ch.M., D.P.H. (Sydney), D.T.M. & H. (Cambridge), Assistant Medical Officer of Health.

At the close of the year there were 659 licensed hospitals in the State, showing a decrease of 5 compared with year ended 1928.

Of these 659 hospitals, 285 are included in Sydney and District (a decrease for the year of 3), the remainder, 374 (decrease for the year of 2), being situated in the country districts.

*Inspection of Private Hospitals.*—This matter has received increased attention during the year owing to the appointment in April of seven Supervisory Nurses, who are attached to the staff of the Division of Maternal and Baby Welfare. These nurses are all registered both as general and midwifery nurses and have also undergone a special course of training in mothercraft.

The following duties were allotted to them:—Inspection of training schools recognised under the Nurses' Registration Act, inspection of private hospitals, inspection of equipment and records of registered midwifery nurses, investigation of deaths of infants under one month, investigation of cases of "puerperal pyrexia," partial investigation of maternal deaths and attendance at ante-natal clinics.

An intensive inspection and re-inspection of private hospitals in the Sydney district has been made by these nurses during the year since their appointment.

It is anticipated that hospitals in the country will be dealt with similarly in the forthcoming year.

The chief defects noted during these inspections were:—

- (a) Neglect of resident managers to keep their registers fully entered up to date.
- (b) Re-arrangement of rooms in hospitals and other alterations being made without first applying for the approval of the Board of Health.

A certain amount of inspection of country hospitals was carried out by officers when visiting towns in connection with general departmental duties, viz., those at Arianah Park, Blayney, Bombala, Bourke, Broken Hill, Bulladelah, Bungendore, Coonabarabran, Crookwell, Dalgety, Delegate, Dunedoo, Grenfell, Kandos, Milton, Moss Vale, Murrurundi, Murwillumbah, Parkes, Stockinbingal, Taree, Tweed Heads, and Wyalong.

*Community activities in connection with Private Hospitals.*—In addition to the Kuring-gai Community Service Hospital established at Chatswood in the metropolitan area, the Bush Nursing and Country Women's Associations of New South Wales still carry on excellent work in maintaining private hospitals throughout the State for the benefit of dwellers in the more remote country districts.

At the close of the year the Bush Nursing Association was responsible for licensed hospitals at Bonalbo, Dalgety, Ebor, Erigolia, Finley, Ivanhoe, Jindabyne, Kentucky, Nimmitabel, Pilliga, Reid's Flat, Tabulam, Tumbarumba, and Urbenville. An exempted hospital at Mount Hope is also under the control of this Association.

The Country Women's Association provided for hospitals at Eugowra, Gulargambone, Hillston, Tottenham, and Yenda, and others were contemplated for Tallimba and Ungarie.

The Red Cross Society is responsible for the Maternity Hospital at Hay and the Soldiers' Memorial Hospital at Stockinbingal is also a community effort.

*Exemptions.*—Only one hospital held an exemption for the year, viz., that at Mount Hope.

*Effect of the Public Hospitals Act, 1929, on the operation of the Private Hospitals Act.*—It is noted that certain hospitals hitherto licensed as private hospitals have been placed in the Third Schedule of the Public Hospitals Act, 1929. Accordingly, such hospitals cease to be private hospitals requiring licenses under the Private Hospitals Act and renewal of licenses for 1930 will not be necessary. The private hospitals affected are as follows:—The Mater Misericordiae Hospital, Waratah, the Red Cross Hospital for Consumptives ("Bodington") at Wentworth Falls, the Red Cross Hospital ("Malahide") at Pennant Hills, Lewisham Private Hospital, Mater Misericordiae Private Hospital, North Sydney, and St. Vincent's Private Hospital at Darlinghurst, Lewisham Hospital, Wagga Wagga, and St. Vincent's Hospital, Lismore.

*"Rest Homes."*—This matter was made the subject of a report by me as follows:—

It happens that I am somewhat frequently asked by occupiers of certain premises whether it is necessary that they should become licensed under the Private Hospitals Act.

These premises are of the nature of "rest homes" or homes for aged people, perhaps somewhat incapacitated and difficult to manage in their own homes, but not actually ill, e.g., senility, lameness, old hemiplegics and such like. As a rule in these homes these people receive no special treatment nor are they as a rule being attended regularly by a medical practitioner, but are perhaps more of the nature of a special type of boarders which ordinary boarding-houses do not care to accept.

The fees charged are usually low and approximate those of boarding-house rates rather than those of an ordinary private hospital.

When the person who wishes to manage such an establishment happens to be a registered general nurse but little difficulty presents itself in the matter of obtaining a license should such be insisted upon, provided premises are suitable. On the other hand most of the persons who approach the Department on



the matter are registered midwifery nurses who are giving up their usual active midwifery practice, or persons who have been partially trained in some hospital. These persons, from a practical point of view, are probably quite well able to be in charge of the type of persons they wish to accommodate.

However, if these premises must be licensed they would necessarily come under the class of a medical and surgical private hospital. Such class of hospital must be managed by a registered general nurse. This latter condition constitutes the real difficulty where the keeper of the premises is a midwifery or partially trained nurse. Such persons put forth the plea that financially the business would not warrant the employment of a general nurse as resident manager, and, moreover, that they themselves are quite able to do all that is necessary for the inmates, who do not need skilled general nursing.

I have hitherto refrained from insisting on a license for premises of this kind when the premises are not called hospitals or convalescent homes, or such implied, or when persons received are not actually sick and in need of regular attendance, and when the charges approximate boarding-house rates rather than those of a private hospital.

The opinion of the Crown Solicitor was accordingly sought and as a result thereof the Board of Health decided that it was not necessary to call upon such persons to license under the Private Hospitals Act, provided that they consented that premises should be open for inspection from time to time by an officer of the Board.

*Question of admission of cases of curettage into lying-in private hospitals.*—The Board of Health passed a resolution on 9th November, 1920, which was as follows:—"The Board decided that a patient requiring curettage or other uterine surgical operation shall not be received into, nor treated in, any private hospital licensed for the reception of lying-in cases only unless such patient has previously been admitted for normal confinement and the condition necessitating operation has supervened on confinement."

This matter was revived again during the year owing to representations made by nurses who had become registered as midwifery nurses under the Nurses' Registration Act, and in view of the following action of the Nurses' Registration Board. That Board came to the following decision in dealing with the matter in so far as it affected registered midwifery nurses, viz.:—"As to whether registered midwifery nurses are contravening section 13 (1) (a) of the Act in giving bowel irrigations and attending cases of circumcisions, curettes and miscarriages, the Board expressed the opinion that it would not be regarded as a contravention of the Act provided such cases were immediately associated with the confinement or miscarriage."

As a result of this decision I re-submitted the original resolution dealing with curettage cases in lying-in hospitals to the Board of Health with the view to its possible rescission or amendment. The Board reconsidered the matter and decided to modify its original resolution by inserting the words "except in cases of emergency" after the words "decided that."

*Regulation 17.*—As some confusion existed in the minds of resident managers of hospitals licensed for medical, surgical and lying-in cases with regard to this regulation, as to whether all deaths from whatever cause were to be notified on the prescribed form, an opinion from the Crown Solicitor was sought, which was to the effect that deaths only of lying-in cases need be so notified.

*Sepsis connected with pregnancy in Private Hospitals.*—Twenty cases were notified during the year, 16 of which were single cases from 16 different hospitals in the Sydney district and the remaining 4 from country districts, viz., Bowraville 1, Newcastle and District 3. Two of the cases in the Newcastle district were notified from one hospital at different periods and there appeared to be no causal connection between them.

It is to be noted that the number of cases notified during 1929 is an increase on that for 1928, which was ten.

This increase was anticipated and is no doubt due to the fact that "puerperal pyrexia" was made a notifiable disease under the Nurses' Registration Act on 21st December, 1928, together with results of investigations made by the supervisory nurses in inspecting private hospitals. With the further gazettal on 11th October, 1929, of "puerperal infection" as a notifiable disease by medical practitioners under the Public Health Act, 1902, one expects that even greater accuracy will be attained in the future as to the extent to which "sepsis in pregnancy" exists in private hospitals as well as in public hospitals and the community in general. "Puerperal infection" as a notifiable disease is defined as follows:—"Puerperal infection" means any local or general condition which is accompanied by fever and which arises from or is dependent upon any form of infection of puerperal origin occurring in a woman from the end of the first to the end of the tenth day after abortion, miscarriage or child-birth."

*Prosecutions.*—One private hospital keeper at Grenfell was prosecuted under an ordinance of the Local Government Act owing to the unsatisfactory state of her premises.

#### COMMENTS ON TABLES I AND II.

*Table I.*—As indicated in this table, hospitals licensed for lying-in cases only still constitute the greatest proportion of those licensed, being 55.9 per cent. of the total, which is slightly less than that of last year.

*Table II.*—The number of hospitals containing 4-10 beds still continues to comprise the largest proportion of licensed premises, being 47 per cent. of the total, an increase of 1 per cent. of that of the previous year.

In the great majority of hospitals the licensee and approved resident manager were one and the same person, the exceptions being 56 (Sydney district, 14; Country, 42). Eleven medical practitioners held the position of approved resident manager (Sydney district, 1; Country, 10).

TABLE I.—Showing the Classification of Private Hospitals licensed at 31st December, 1929, according to Nature of Cases received and the total Number of Beds provided by each class of hospital.

	Medical, Surgical and Lying-in.		Medical and Surgical only.		Lying-in.		Total.	
	No. of hospitals.	No. of beds.	No. of hospitals.	No. of beds.	No. of hospitals.	No. of beds.	No. of hospitals.	No. of beds.
Sydney and District .....	91	1,868	34	602	160	678	285	3,148
Country Districts .....	150	1,409	15	185	209	842	374	2,436
Total .....	241	3,277	49	787	369	1,520	659	5,584

TABLE II.—Showing Classification of Private Hospitals with respect to size as signified by the Number of Beds available.

	1	2	3	4-5	6-10	11-20	Over 20.	Total.
Sydney and District .....	20	23	36	49	64	55	38	285
Country Districts .....	23	37	60	74	123	48	9	374
Total .....	43	60	96	123	187	103	47	659



## MEDICO-LEGAL SECTION, &c. ; HOSPITAL ADMISSION DEPOT.

### REPORT OF THE GOVERNMENT MEDICAL OFFICER FOR SYDNEY FOR THE YEAR ENDED 31st DECEMBER, 1929.

#### *Medical Staff.*

DR. ARTHUR PALMER, Government Medical Officer for Sydney. During the year Dr. H. R. Mallam acted in place of Dr. Frederick Tooth, Medical Officer, resigned.

#### *Depot Assistants.*

One Senior Attendant; one Junior Attendant; one Escort Attendant; one Night Officer.

Sir,

I have the honour to present herewith a brief review of the work carried out in this depot during 1929.

#### MEDICAL WORK AT HOSPITAL ADMISSION DEPOT.

*Examination of Indigent Sick Persons.*—The Government Medical Officers attend at the Hospital Admission Depot every morning from 9 a.m. to 12.30 p.m. to examine indigent sick persons seeking admission to the various hospitals and institutions. During 1929, 19,333 compared with 19,196 persons in 1928 were sent to the State Hospitals and Homes, or to one or other of the Metropolitan hospitals or convalescent homes. The sick poor who are unable to attend at the depot are seen at their homes, and arrangements made for their transfer to a suitable institution.

#### MEDICAL EXAMINATIONS FOR PUBLIC SERVICES, &c.

*Examinations for the Public Service Board.*—The Hospital Admission Depot is utilised for the examination of some of the candidates for admission to the Public Service, and there were 263 examinees during the year. Other examinations of public servants were in cases of applications for retirement before 60 years through physical incapacity or other medical reasons, and their re-examination each year; or to ascertain the fitness of officers to continue on duty between the age 60 and 65 years. Special medical examinations are also occasionally required in connection with other Service matters.

*Medical Examinations of Police Staff.*—934 persons applying for admission to the police force were examined during the year, and 368 probationary constables were re-examined on completion of twelve months' service. Candidates for appointment to this important service are first examined at the Hospital Admission Depot, and after twelve months' service are re-examined at the office of the Inspector-General of Police. At my rooms in the Police Department members of the police force on the sick list are seen daily, and other matters arising in connection with this service are attended to. During 1929 there was an average daily number of 64 police on sick report.

*Other Public Services.*—874 persons were vaccinated at the Hospital Admission Depot; most of these were members of the police force.

*Medical Examinations required by the Factories Act:* there were 7,450 such examinations in 1929.

#### MEDICO-LEGAL WORK.

*Cases of Alleged Rape and Criminal Assault.*—In these cases it is desirable that the persons concerned should be examined with the least possible lapse of time, and urgent calls by the police are frequent at all hours of the day and night in connection with such charges. During 1929, 61 persons were examined in connection with such cases, and there were 75 examinations of clothes and other exhibits in criminal cases.

*Suicides, Murders, and Violent or Uncertified Deaths* are medico-legal matters which require immediate attention by this Branch. The work for the Coroner's Court in 1929 in connection with such cases comprised the external examinations of 155 dead bodies, and the making of 201 internal post-mortems. In several instances, evidence was subsequently given at the Central Criminal Court.

In connection with medico-legal cases, all exhibits of clothing, implements, &c., in cases of murder, rape and assault are submitted to this Branch before being sent on to the Microbiological or Chemical Laboratories for examination.

*Medical Examination of Accused Persons.*—A number of examinations were made of accused persons under the arrangement by which persons charged with capital or other serious offences are medically examined as soon as possible after the arrest.

Examinations have also occasionally to be made to ascertain the fitness of prisoners to travel to Long Bay.

*Lunacy Cases.*—The Reception House at Darlinghurst was visited daily throughout the year for the purpose of examining persons under detention there, and 957 persons (518 males and 439 females) were certified as insane.

The medical officers attached to this Branch are on duty at all hours, and are liable to be called upon at any time by any court of law or department of the State Government for work requiring general medical knowledge.

ARTHUR A. PALMER,  
Government Medical Officer for Sydney.



## SECTION I.—B.

## DIVISION OF MATERNAL AND BABY WELFARE.

## ANNUAL REPORT FOR 1929.

Director: Dr. E. Sydney Morris; Assistant to the Director, Dr. Elma Sandford-Morgan.

## PART I.—MATERNAL WELFARE.

In presenting this report it may not be out of place to mention the fact that in New South Wales the statistics of maternal mortality are compiled with extreme accuracy. Every death of a woman during the child-bearing period in which there is any possibility of a puerperal relationship is considered as being due potentially to puerperal causes until or unless proved otherwise. These deaths having been collected in the first instance by the Government Statistician's Department are referred to this Division so that a complete investigation may be made by a medical officer.

Even after this investigation has effected an accurate classification of all puerperal deaths (actual or potential) there still remains a discrepancy between the maternal mortality rate of New South Wales and that of most other states and countries in that deaths from illegal operations (which in most other countries are classified—in accordance with the International Classification of Causes of Death—under the heading of homicide) have been since 1925 included in our statistics among maternal deaths.

Graph No. 1 shows the annual death-rate of women from childbirth and from septicæmia per 1,000 births in New South Wales. As elsewhere in the Commonwealth (in fact, throughout the world) this maternal death-rate is far too high—much higher, it is realised, that should be the case, even allowing for a certain number of deaths which, through social conditions, difficulties due to distance and transport, &c., might be regarded as unavoidable. Nevertheless, it is encouraging to note that (as is shown in Graph No. 1 as well as in Table 1) the New South Wales maternal mortality rate is slowly declining.

In 1929 the live births in this State numbered 52,676; the maternal deaths (excluding 33 deaths from illegal operations, in order to bring our figures into line with those of other countries) 245. Our maternal death-rate per 1,000 births for the year, therefore, stands at 4·65.

TABLE 1.

Year.	Total Births.	Total Puerperal Deaths.	Deaths from Illegal Operations.	Percentage of Total Deaths caused by Illegal Operations.	Maternal Mortality Rate, excluding Illegal Operations.	Ratio.*
1905	39,501	279	13	4·6	6·7	100
1906	40,048	277	17	6·1	6·4	
1907	42,195	263	7	2·6	6·0	
1908	42,525	304	15	4·9	6·7	
1909	43,769	252	8	3·1	5·5	
1910	45,533	261	8	3·0	5·5	89
1911	47,677	279	12	4·3	5·6	
1912	51,993	305	16	5·2	5·5	
1913	52,134	329	10	3·0	6·1	
1914	53,615	296	9	3·0	5·3	
1915	52,885	272	8	3·0	4·9	82
1916	52,575	297	16	5·3	5·3	
1917	52,467	327	22	6·7	5·8	
1918	50,700	267	15	5·6	4·9	
1919	48,528	263	17	6·4	5·0	
1920	53,974	331	27	8·1	5·6	76
1921	54,634	281	33	11·7	4·5	
1922	55,214	279	32	11·4	4·4	
1923	54,112	283	33	11·6	4·6	
1924	53,670	291	32	11·0	4·8	
1925	54,615	325	40	12·3	5·2	80
1926	53,126	276	40	14·5	4·4	
1927	53,858	352	46	13·0	5·6	
1928	54,800	327	32	9·7	5·4	
1929	52,676	278	33	11·8	4·6	

\* Per cent. ratio of quinquennial averages to average of 1905-9, which is taken as 100.

In Table 2 these deaths from the various causes incidental to childbirth are shown as follows:—  
NEW SOUTH WALES.—Deaths Incidental to Childbirth, 1923-1927 and years 1928 and 1929.

Causes.	Deaths, 1923-27.		Deaths, 1928.		Deaths, 1929.	
	Number.	Rate per 1,000 Births.	Number.	Rate per 1,000 Births.	Number.	Rate per 1,000 Births.
Accidents of Pregnancy .....	163	·61	32	·58	29	·55
Puerperal Hemorrhage .....	170	·63	49	·90	34	·65
" Septicæmia .....	406	1·51	63	1·15	49	·93
" following Abortion, Miscarriage .....			39	·71	30	·57
Albuminuria and Eclampsia .....	321	1·19	67	1·22	48	·91
Phlegmasia Alba Dolens, Embolus, Sudden Death .....	114	·42	25	·46	26	·49
Other Casualties of Childbirth .....	162	·60	20	·37	29	·55
Total .....	1,336	4·96	205	5·39	245	4·65
Illegal Operations .....	191	·71	32	·58	33	·63
Grand total .....	1,527	5·67	327	5·97	278	5·28



*Illegal operations and accidents of pregnancy.*—Interference with pregnancy, whether with criminal intent or by deliberate meddling on the part of the pregnant woman herself, is apparently becoming more frequent. It is a very interesting speculation why the proportion of illegal operations should have soared from 1915 (see Graph No. 2). Is this merely one of the many inexplicable post-war phenomena, an index of the rising cost of living, or an indication of the increasing popularity of, and facilities for, abortion?

There is little doubt that many cases of interference with pregnancy do not come under the notice of the police, and the death, if it occurs, is classified under "Accidents of Pregnancy," which unfairly penalises the maternal mortality rate.

It is a disquieting fact, and one which would repay closer inquiry, though such inquiry would of necessity be of a difficult nature, that the majority of deaths from illegal operations occur among married women. They are all the subject of a coroner's inquest and from the evidence thus obtained it would appear that the question is mainly an economic one.

It is not without significance, too, that whilst the total population is more or less equally divided between Sydney and the remainder of the State, the illegal operations and deaths from abortion and miscarriage constitute a city, rather than a state, problem. Naturally, the city offers a ready means for temporary disappearance of the individual, but it also, apparently, offers ready means for procuring the desired termination of pregnancy.

It should be noted that more than one-third of the deaths resulting from puerperal septicæmia occurs subsequent to abortion and miscarriage, so that, where efforts to terminate pregnancy are frequent, the rate for puerperal septicæmia must necessarily be high.

A number of the abortions in this class is not self-induced, but undoubtedly many of them are. In either case, early abortions are generally not regarded by most women as calling for any medical attention, with the result that infection is usually, in these fatal cases, well established before treatment is sought.

#### THE ADMINISTRATIVE CONTROL OF MATERNAL MORTALITY.

The year 1929 has seen a considerable increase in the activities of the Division of Maternal and Baby Welfare of this Department. Although the financial position has not permitted the full extension of the work which had been planned, nevertheless it has been possible to establish our activities to some extent, and it is confidently hoped that, as the situation clarifies, the work will continue to progress along the lines originally laid down.

This extension of our activities has been due primarily to an increase in staff. Early in the year the staff of this department was augmented by the appointment of Dr. Elma Sandford-Morgan as my medical assistant and also by creating positions for seven supervisory nurses. These latter are all senior nurses of considerable experience, both in hospital practice and as nurses attached to Baby Health Centres. Each is a certificated general and midwifery nurse and holds, in addition, her mothercraft ("Tresillian") certificate.

As will be seen, the activities of all these officers are concerned more particularly with the work of the Division from its maternal aspect.

The main avenues for the administrative control of maternal mortality may be briefly summarised under the following headings:—

1. The training of medical practitioners and midwives.
2. The supervision of midwives' practice, and, indirectly, that of the medical practitioner.
3. Control and supervision of private hospitals.
4. Provision of adequate public maternity accommodation.
5. Notification and investigation of puerperal septic infection.
6. Provision of ante-natal clinics.
7. Education of the public.
8. Research.

Each of the above-mentioned factors will be discussed seriatim, to afford some information of the lines along which the activities of the Division are now being pursued.

1. *The Training of Medical Practitioners and Midwives.*—The medical curriculum has undergone considerable extension in recent years, and the establishment of a Chair of Obstetrics at the University of Sydney, with increased training in midwifery for medical students, must have a markedly beneficial effect in the years to come, as those students pass out into general practice.

The training of midwives, similarly, is becoming more intensive and the supervision of practising midwives by the Nurses' Registration Board progressively more strict. Practically all midwives registered by the Board have undergone training and received their diplomas at one of the approved training schools. The exceptions constitute a limited number of older midwives who are registered and allowed to practise under a concessional clause of the Nurses' Registration Act in view of their having been in practice when the Act came into force. These women are gradually, by old age and death, being eliminated from active work, and, as no new concessions are allowed, it is, therefore, only a matter of time before every midwife practising in the State will be a fully trained obstetric nurse.

The registration of all obstetric nurses is renewable annually by the Nurses' Registration Board, so in this way contact is kept by the Board with all practising midwives.

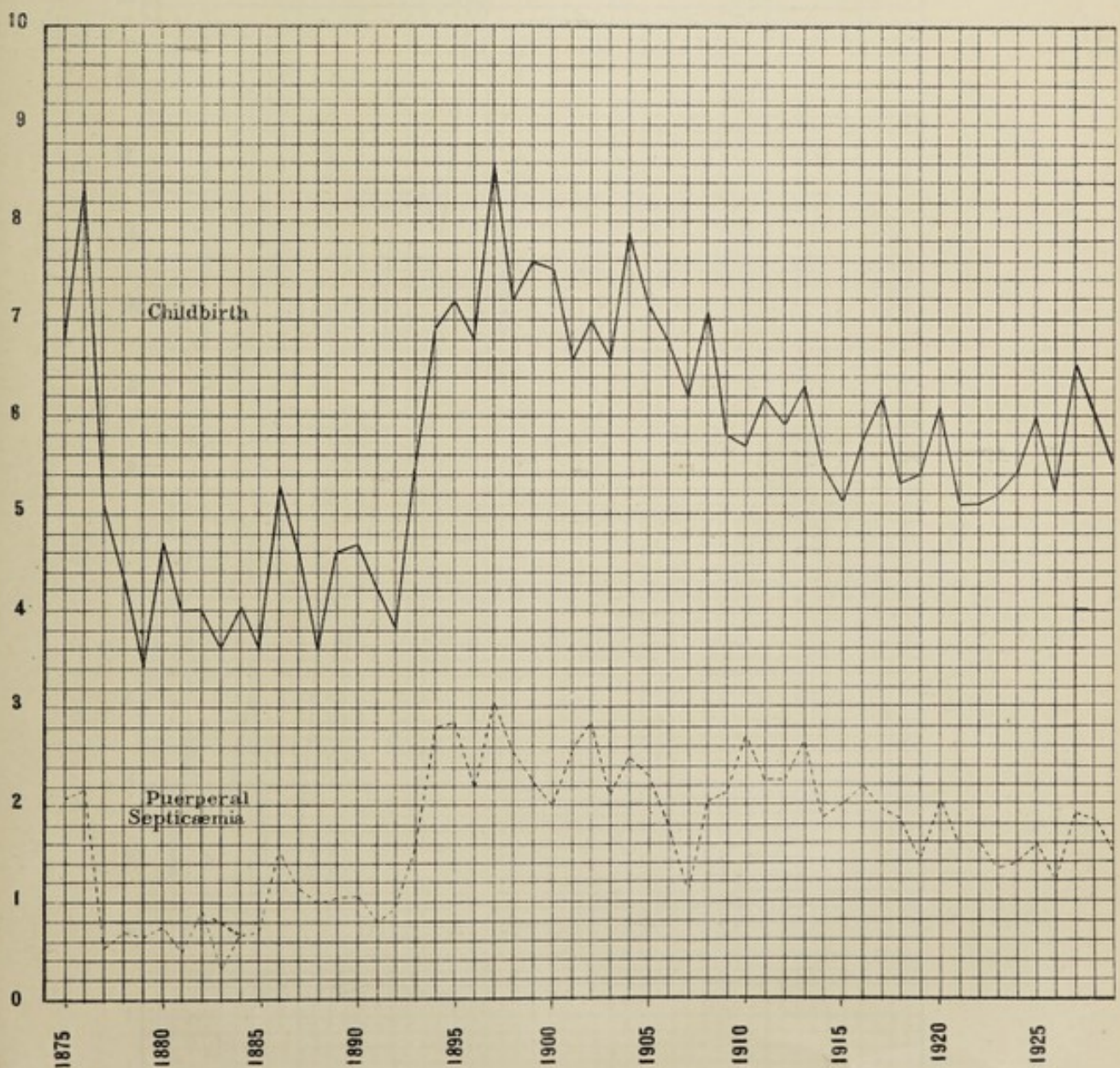
Even closer contact with the midwives is kept by this Division through the supervisory nurses, as will be seen under the next heading.



GRAPH No. 1.

CHILDBIRTH AND PUERPERAL SEPTICÆMIA.  
ANNUAL DEATH RATE OF WOMEN PER 1,000 BIRTHS  
IN  
NEW SOUTH WALES,  
1875-1929.

Rate per  
1000  
Births



Note.—Since 1905 deaths from "illegal operations" are included in total deaths in childbirth.



THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF CHEMISTRY  
CHICAGO, ILLINOIS 60637

ANALYSIS OF THE  
SOLUBLE FRACTION OF THE  
POLYMERIZATION OF VINYL  
ACETATE

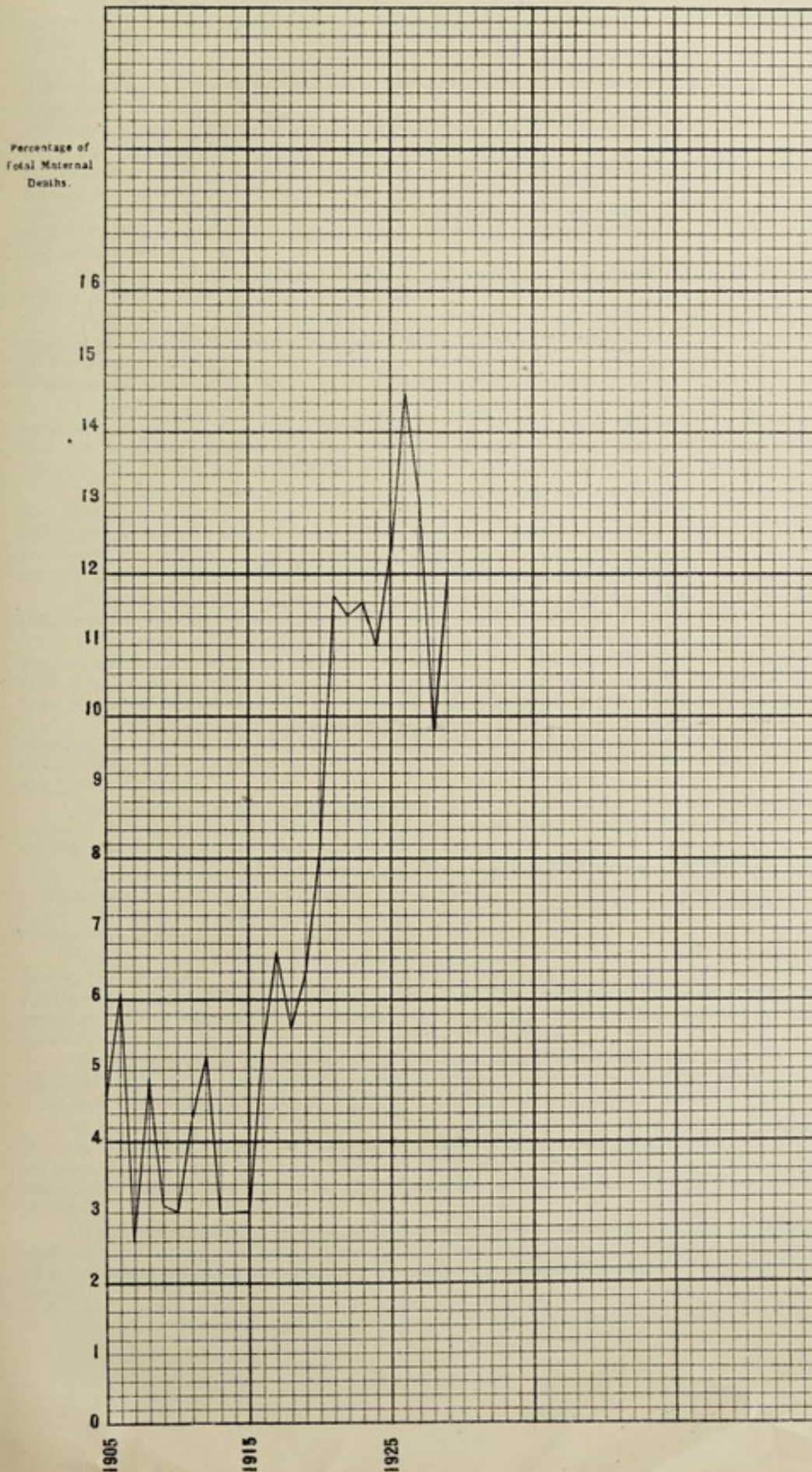
BY  
J. H. HARRIS

1954

Run	Time, hr.	Temp., °C.	Pressure, mm.	Yield, g.	Viscosity, dl./g.	Ref. Index
1	1	50	760	0.1	0.1	1.0
2	2	50	760	0.2	0.2	1.0
3	3	50	760	0.3	0.3	1.0
4	4	50	760	0.4	0.4	1.0
5	5	50	760	0.5	0.5	1.0
6	6	50	760	0.6	0.6	1.0
7	7	50	760	0.7	0.7	1.0
8	8	50	760	0.8	0.8	1.0
9	9	50	760	0.9	0.9	1.0
10	10	50	760	1.0	1.0	1.0
11	11	50	760	1.1	1.1	1.0
12	12	50	760	1.2	1.2	1.0
13	13	50	760	1.3	1.3	1.0
14	14	50	760	1.4	1.4	1.0
15	15	50	760	1.5	1.5	1.0
16	16	50	760	1.6	1.6	1.0
17	17	50	760	1.7	1.7	1.0
18	18	50	760	1.8	1.8	1.0
19	19	50	760	1.9	1.9	1.0
20	20	50	760	2.0	2.0	1.0
21	21	50	760	2.1	2.1	1.0
22	22	50	760	2.2	2.2	1.0
23	23	50	760	2.3	2.3	1.0
24	24	50	760	2.4	2.4	1.0
25	25	50	760	2.5	2.5	1.0
26	26	50	760	2.6	2.6	1.0
27	27	50	760	2.7	2.7	1.0
28	28	50	760	2.8	2.8	1.0
29	29	50	760	2.9	2.9	1.0
30	30	50	760	3.0	3.0	1.0
31	31	50	760	3.1	3.1	1.0
32	32	50	760	3.2	3.2	1.0
33	33	50	760	3.3	3.3	1.0
34	34	50	760	3.4	3.4	1.0
35	35	50	760	3.5	3.5	1.0
36	36	50	760	3.6	3.6	1.0
37	37	50	760	3.7	3.7	1.0
38	38	50	760	3.8	3.8	1.0
39	39	50	760	3.9	3.9	1.0
40	40	50	760	4.0	4.0	1.0
41	41	50	760	4.1	4.1	1.0
42	42	50	760	4.2	4.2	1.0
43	43	50	760	4.3	4.3	1.0
44	44	50	760	4.4	4.4	1.0
45	45	50	760	4.5	4.5	1.0
46	46	50	760	4.6	4.6	1.0
47	47	50	760	4.7	4.7	1.0
48	48	50	760	4.8	4.8	1.0
49	49	50	760	4.9	4.9	1.0
50	50	50	760	5.0	5.0	1.0

GRAPH No. 2.

**MATERNAL MORTALITY.**  
**DEATHS FROM ILLEGAL OPERATIONS.**  
N.S.W. 1905-1929.





UNITED STATES  
DEPARTMENT OF AGRICULTURE  
BUREAU OF PLANT INDUSTRY  
WASHINGTON, D. C.

No.		Date		Locality		Collector		Plant		Fruit		Seed		Notes	

2. *The Supervision of Midwives' Practice.*—Through the activities of the supervisory nurses, as will be seen later, owing to the fact that puerperal pyrexia is notifiable to the Board by the midwife, a close co-ordination between the Division of Maternal and Baby Welfare and the Nurses' Registration Board has now been established.

All midwives in the city and suburbs of Sydney are now being supervised by the supervisory nurses who visit them regularly, inspect their midwifery bags and instruments, examine their registers and see that they are fully cognisant of the necessary regulations.

At the time of writing similar supervision of country midwives throughout the State is being carried out, four of the supervisory nurses having been allotted to country districts, while three remain in the metropolis.

3. *The Control and Supervision of Private Hospitals.*—Although a more modern Private Hospitals Act is badly needed, the present Act having been passed about twenty years ago, nevertheless there is still scope, under the Act, for a considerably increased amount of supervision and control of Private Hospitals, and the appointment of the supervisory nurses has made this increased control possible.

The branch of this department dealing with these institutions is in close touch with this Division. The supervisory nurses visit the private lying-in hospitals regularly, inspecting the hospital, examining the register, &c., as in the case of the midwives. As was mentioned in the former paragraph dealing with the supervision of midwives, country hospitals are, at the time of writing, being visited and inspected by four of the supervisory nurses also. Full details concerning the administration of the Private Hospitals Act may be found on pp.

4. *Provision of Adequate Public Maternity Accommodation.*—This is a matter outside my jurisdiction, coming, as it does, under the Hospitals Commission.

There is a great lack of maternity beds outside the metropolis, but it is hoped that this want will be supplied in the future. Meanwhile a small beginning has been made in some districts by the activities of the Country Women's and Bush Nursing Associations, whilst some of the country hospitals already possess or are contemplating the provision of separate maternity blocks.

5. *Notification and Investigation of Cases of Puerperal Septic Infection.*—Since septic infection is the outstanding cause of a high maternal mortality rate, it is felt that during this past year, owing to the fact that new regulations dealing with the notification of this condition have been framed and put into operation, the problem has, from the administrative point of view, been attacked at its root.

The regulations under the Nurses' Registration Act have been made more comprehensive and a new proclamation has been issued under the Public Health Act, so that now the various terms, such as "puerperal fever," "puerperal septicæmia," and so on, under which puerperal infections were classed previously, are replaced by an unequivocal definition. Clearly defined regulations are laid down concerning the notification of this condition by both medical and nursing attendants on the case.

In accordance with the Nurses' Registration Act and Regulations pyrexia occurring during the lying-in period, from any cause whatever, is notifiable by the nurse in charge of the case.

In the words of the Regulation: "Every midwifery nurse shall immediately report to the Nurses' Registration Board in writing if she is in attendance on a case of puerperal pyrexia, and shall forthwith take all reasonable precautions to provide against the spread of possible infection, until she obtains advice from a medical practitioner that the patient's condition is not due to infection of puerperal origin. . . . For the purpose of this regulation 'puerperal pyrexia' is defined as any febrile condition occurring in a woman from the end of the first to the end of the tenth day after abortion, miscarriage or childbirth, in which a temperature of 100·4 deg. F. (38 deg. C.) or higher occurs upon more than one day during the period."

The regulations further provide that if the patient's condition is due to infection of puerperal origin the nurse, having again notified the Board, is not allowed to attend any other pregnant or lying-in woman until she has obtained the written permission of the Board to do so.

The result of this legislation is now that all cases of puerperal pyrexia, and, therefore, of potential infection, and not only those of actual septicæmic conditions, are at once put in touch with this Division through the Nurses' Registration Board. Should the pyrexia prove to be due to infection of puerperal origin a medical officer of this Division deals with the matter.

During the year 1929 the Nurses' Registration Board received 73 notifications\* of puerperal pyrexia from midwifery nurses. With only a few exceptions the pyrexial condition arose as a complication of full-time pregnancy. This is in distinct contrast with the notification by medical practitioners of puerperal infection which, in the vast majority of instances, is associated with the termination of pregnancy before full time and usually at an early stage of foetal development.

Investigation of the 73 cases of puerperal pyrexia showed that 45 (61·6 per cent.) were associated with some inflammatory condition in the genital tract, whilst the remainder were due to some extragenital cause, such as mastitis, pyelitis or an intercurrent disease, such as pneumonia or scarlet fever.

It rests entirely with the Chairman, Nurses' Registration Board (who is also the Director-General of Public Health and President of the Board of Health) to decide what period of time shall elapse before the nurse in charge may attend further cases. Each case is judged on its own merits, and, while it is endeavoured that the nurse shall not be unduly penalised, the interests of her other patients are considered paramount.

If the case of puerperal infection has occurred in a private hospital no new lying-in patient may be admitted until written permission is given by the President of the Board of Health. Here again every effort is made to safeguard the interests of the puerperal woman without jeopardising the interests of the hospital.

\* Information kindly supplied by courtesy of the Nurses' Registration Board.



Puerperal infection under the Public Health Act is defined as meaning "any local or general condition which is accompanied by fever and which arises from, or is dependent upon, any form of infection of puerperal origin occurring in a woman from the end of the first to the end of the tenth day after abortion, miscarriage or childbirth."

This notification by the medical practitioner acts as a check on midwives and licensees of private hospitals, since immediately on receipt of a notification of puerperal infection from a medical practitioner, steps are taken to ascertain whether any nurse has been in attendance or the patient has been in any private hospital.

Notification of puerperal infection by medical practitioners was in operation only during the last four months of the year. In this period 44 notifications were received, the vast majority, as stated previously, being cases associated with abortion or miscarriage.

6. *Provision of Ante-natal Clinics.*—The importance of ante-natal care continues to become increasingly apparent, but the problem of supplying that care (and also of creating a demand for it) is, in this State, as elsewhere, far from a satisfactory solution.

Largely as a result of personal inquiries it would appear that the still great number of women who come into labour without having received any ante-natal care at all is due to ignorance, diffidence, or indifference on the part of expectant mothers themselves to seek or accept advice, as much as it is due to failure on the part of the medical profession to supply that care.

Great efforts to educate the public concerning the necessity for this care are made by means of articles in the press, educational films, visits of Baby Health Centre nurses, and so on, but one feels convinced that in the future such propaganda must be still more actively pursued. Unfortunately, no one has yet evolved a practical scheme for getting into personal touch with pregnant women, and it is only when a woman is in such a condition that she is likely to heed advice.

The metropolitan public maternity hospitals have largely-attended ante-natal clinics, but actual figures as to their attendances are not available in all cases. It would appear, however, that only some 10,000 expectant mothers, at most, attend these clinics, and that their attendance at them is far from regular.

Over 5,000 expectant mothers also called at Baby Health Centres for advice during the year, but mainly for advice as to general hygiene and for information concerning baby clothes, &c., from the nurses in charge.

For some time I have felt that ante-natal clinics as part of the Metropolitan Baby Health Centres might meet the want for ante-natal care in a way that hospitals do not. Women will often attend a Baby Health Centre, especially if already accustomed to attend there with a baby, when they will not attend a hospital, especially a hospital where they do not intend to be confined.

To test out this theory an evening clinic was established at one of the suburban (Newtown) Baby Health Centres in June, conducted by Dr. Sandford-Morgan and the supervisory nurses, assisted by nurses from "Tresillian," who attend there for instruction in ante-natal methods as part of their training. The attendances at this clinic have so far exceeded all expectation, but it is felt, nevertheless, to be far from ideal that ante-natal care shall be provided by a medical officer who will not be responsible for the conduct of the labour or immediate after-care of mother and infant.

Again, with an officer of the Public Health Department in charge of such a clinic, there is a tendency for patients to think that ante-natal care is something which their own doctors are incapable of supplying and for local midwives to encourage their patients to attend such clinics before and after labour (being attended for the actual delivery and lying-in period by the midwives only) and so to short-circuit the local doctors.

Furthermore, it is not altogether satisfactory to have ante-natal clinics which are not attached to an institution where patients can be admitted, if necessary, for observation and treatment.

It is felt that there must be many general practitioners who would be willing and competent to staff these clinics, and it is possible that in the near future an attempt will be made to run a clinic staffed by local practitioners, with, possibly, a consultant in attendance when a further opinion is desired.

7. *Education of the Public.*—Thousands of leaflets dealing with the expectant mother have been issued, apart from literature dealing with all other aspects of maternal and infant welfare, and a comprehensive booklet covering the whole ante-natal and natal periods is now in the hands of the printer. Letters are received and answered daily from all over the State.

With the increase of staff in the Division it has been possible to expand this work of education considerably. Articles are being published regularly in the press, numerous lectures have been given throughout the year by my assistant both in the metropolis and also in several country towns. The lectures in country towns have been delivered in conjunction with the Women's Branch of the Agricultural Bureau and with the Country Women's Association, both of these organisations affording unlimited opportunity for the furtherance of this work.

Films dealing with various aspects of health education have been shown throughout the State and radio talks have also been given.

School girls and Girl Guides have been given instruction in the care of infants and in personal hygiene, and it is hoped that at a later date these important avenues of entry will lead to much greater opportunities for extension of the education of the public in mothercraft.

8. *Research.*—It is fully realised in all countries that to elucidate the problems of maternal (and neo-natal) mortality there is an enormous amount of laboratory and field investigation to be carried out. Work of this kind is, obviously, of a difficult and delicate nature, much more so, in many ways, than where one is dealing with definite disease.



As an essential part of such investigation it is necessary to obtain definite and first-hand information concerning certain aspects of the circumstances attending puerperal and neo-natal deaths as they occur, and in order to obtain this information as far as the State of New South Wales is concerned every puerperal death (as well as every death which the Government Statistician is not satisfied is due to causes other than puerperal) and every neo-natal death is now the subject of special inquiry by this Division. By means of personal visits (wherever possible, and otherwise by correspondence) by the medical officers, assisted by the supervisory nurses, a complete history of the patient's pregnancy and labour, as well as previous health and labours, economic position, home surroundings and all other conditions which can possibly have had any bearing on the case, is sought from the medical practitioner or midwife in attendance and from the relatives.

A comprehensive form of inquiry has been drawn up for the purpose of these investigations, and it is already realised that in this way many of the factors contributing to our maternal and neo-natal deaths are being elicited which will make it possible, ultimately, when a sufficient number of cases has been investigated, for us to make a definite contribution, based on facts, towards one aspect of the research which must be carried out in this most important branch of medical science.

At first these investigations were viewed with some misgivings by the medical profession and midwives. Since, however, it has been explained to them that they are made in no spirit of criticism, but of scientific inquiry, and that all information supplied is regarded as strictly confidential, it is found that the necessary data are willingly provided. The whole-hearted co-operation of the Council of the New South Wales Branch of the British Medical Association has done much towards correcting misunderstandings, and already many members of the medical profession now come forward and supply particulars before being requested to do so.

It is fully realised that these investigations are only one step in the campaign towards more research into, and more control of, maternal and neo-natal mortality. For instance, still more information could be obtained by routine post-mortem examination of still-born infants, but this could only be carried out practically by co-operation of large maternity hospitals, general practitioners and others who could facilitate the obtaining of the necessary material.

Again, the question of the relation of venereal disease to maternal, and, still more, to neo-natal mortality, has not, up till now, received special attention in New South Wales. It is realised that in this field there is much opportunity for systematic examination and research.

One feels that, ultimately, the whole question of maternal welfare is largely one of finance, and that until the financial situation improves, much work which might contribute towards the solution of the problem must, unfortunately, remain undone.

## PART 2.—INFANT WELFARE.

The infant mortality rate in New South Wales has shown a definite fall since the beginning of the century, although individual years show a fluctuation.

The rate for 1929, unfortunately, is marked by a slight rise, the death-rate among infants under one year old having been 56.63, compared with 54.82 for 1928. This is no doubt partly due to a severe epidemic of gastro-enteritis, to which reference will be made later.

In any case one feels that, although the rate in New South Wales is much lower than that of many other countries the infant mortality rate, which involves the loss of some 3,000 babies to the State every year, should be capable of being lowered much further yet.

More than half of the total infant deaths occurs during the first month of life; most of them during the first week. This neo-natal death rate is particularly stubborn, all attempts to lower it having so far proved ineffectual. As this first-month rate is influenced by the same factors as is the maternal mortality rate one feels that when we succeed in controlling the problem of maternal mortality we shall also indirectly solve the problem of neo-natal mortality.

It is probably not too extravagant to claim that the general fall in the death rate of infants under one year old is at least partly due to the increased knowledge of mothercraft among the women of New South Wales. This knowledge is disseminated mainly through the Baby Health Centres, but also by means of other departmental activities, such as lectures, radio talks and films, personal correspondence and by many articles published throughout the State in daily and weekly newspapers.

At the close of the year there were 79 Baby Health Centres in New South Wales—38 in Sydney and suburbs and 41 in the country. Unfortunately, owing to the financial depression, it has not been possible to open any new metropolitan centres, and only three new country ones—at Forbes, Dubbo and Muswellbrook (the last-named being worked from Singleton on two days weekly) were established. Some twenty additional country Centres are waiting to be opened, the premises, furniture and equipment having already been offered or provided by the local branch of the Country Women's Association in each case. Until the financial position will allow the appointment of the necessary nurses it is, unfortunately, impossible to take advantage of this excellent offer of co-operation.

The aim and object of the Baby Health Centres is to improve the standard of general health among babies by teaching their mothers the simple rules of mothercraft, whereby much sickness is prevented, and, above all, to encourage breast-feeding. It has been proved conclusively that most women can breast-feed their babies, but this is only achieved in some cases after a certain amount of difficulty.

By observation of the rules taught at the Health Centres many of these difficulties are prevented, but even when they occur they can usually be successfully overcome. In those cases in which it is necessary to resort to artificial feeding the proper method of carrying it out is shown—fresh cows' milk, suitably "modified" being used wherever possible—and the necessary precautions to prevent contamination of the milk and of the utensils used are impressed on the mother.



Practical proof of the successful campaign against unnecessary artificial feeding, as well as proof of the sound hygienic principles applied where artificial feeding is inevitable, has once more been supplied by the figures dealing with the epidemic of gastro-enteritis which occurred in Sydney during the summer just ended (1929-30) and which was of a particularly virulent type.

Of nearly 300 babies admitted to the Royal Alexandra Hospital for Children, Sydney, suffering from this condition only 43 had ever attended Baby Health Centres. The remaining odd 85 per cent. of cases occurred among the babies of that small section of the community, who, through ignorance, prejudice or indifference, refuse to avail themselves of the help and advice offered at the Centres or by the nurses who visit their homes, and whose babies, therefore, have to pay the penalty of sickness, which is almost entirely preventable, and even of death.

Dr. E. H. M. Stephen, Honorary Physician in charge of these cases admitted to the Royal Alexandra Hospital, states in his report, "There were no wholly breast-fed children admitted . . . and only one or two were partially breast-fed . . . Children over twelve months of age accounted for only 2 per cent. of the deaths."

It is necessary to emphasise the fact that no sick babies are ever treated at the Baby Health Centres, the object of these Centres being to prevent, not to treat, sickness. Any cases of sickness are immediately referred to the public hospitals or the babies' own private doctors. Each Centre has an honorary medical officer, who attends there once weekly to see difficult feeding cases.

The nurses employed at the Baby Health Centres (107 in number) are all general-trained nurses who hold in addition, their mothercraft ("Tresillian") certificates. Many also hold midwifery certificates as well.

It is the duty of these nurses not only to help those mothers who bring their babies along for advice, but also to seek mothers out and attract them to the Centres. As soon as a birth is registered, notice of that birth is supplied to the sister-in-charge of the Baby Health Centre in the district. The nurse thereupon calls on the mother with offers of help, inviting her to attend the Centre with her baby, and in this way half of all the babies born in New South Wales are, within the first few weeks after birth, brought in touch with Centres. Where circumstances will not allow the mother to visit the Centre the nurses maintain contact with the mother by regular periodic visits to her home.

In 1929 24,207 new-born babies were visited, and, in response to the invitation given by the nurses, 16,113 of them were brought along to the Centre from which the visit was made. In addition, 6,532 other babies were enrolled at the various Centres, though whether in response to the nurses' visits cannot be definitely stated. Allowing for losses by removals, deaths, &c., these results are, in my opinion, very gratifying.

Many subsequent visits (81,713) were paid, either to new-born babies requiring special care and whose mothers for one reason or another were unable to attend the Centres, or to older babies, often in response to special request by the doctor in charge of the case.

It is especially desirable that medical practitioners shall regard the work of the Baby Health Centres as complementing their own, not as opposing it. Proof that this is actually the case is given by the increasing number of babies sent along to the Centres by the general practitioners for weighing, test-feeds and advice generally.

In all, the attendances of babies at the Baby Health Centres during 1929 numbered 351,160, an increase of 22,184 over the attendances in 1928. The number of individual babies attending was 36,480, an increase of over 6,000 on the previous year's figures.

Gratifying though these figures are, and allowing for the fact that obviously many country mothers are still beyond reach of Baby Health Centres, there are still some 30 per cent. of metropolitan mothers who, we have seen, fail to attend with their babies or refuse the advice when it is carried to their door. No efforts, however, are spared to attract them nor will be spared in the future until all mothers who are within reach of the Centres will respond to their influence.

I would stress the point particularly that the chief "plank in our platform" is the encouragement of breast-feeding. Artificial feeding is only resorted to when all other means have failed or where it is obvious that temporarily the mother's milk must be supplemented (not replaced) by some artificial food until breast-feeding is fully established.

Exact figures are not obtainable, but it is fairly certain that about 75 per cent. of all the babies under nine months' old attending our Health Centres are fully breast-fed. In some districts, where accurate figures are obtainable, the number is as high as 90-95 per cent.

Owing to the uniformity of control of the Centres and of training of the nurses in charge, advice given at all the Baby Health Centres in New South Wales is, in all essential matters, uniform.

Wherever a mother may move within the State and may attend a Centre she can be sure that her baby's feeding and training will be carried out along the same lines. Where artificial feeding is inevitable, cows' milk (properly "modified") is employed, fresh wherever possible, otherwise in dried form. Patent foods are never employed.

Toddlers and older children, as well as infants, are welcomed and catered for at the Centres.

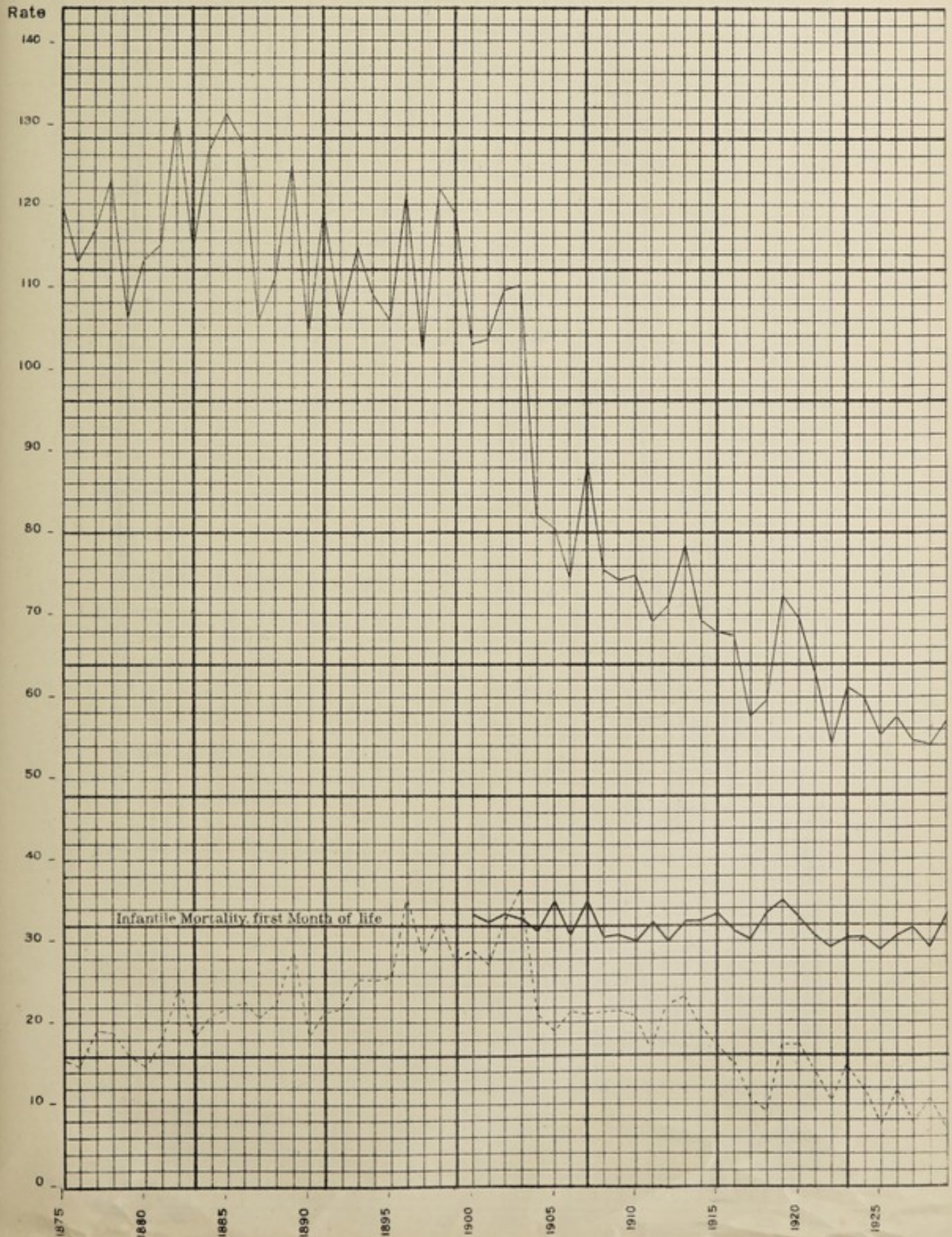
Co-operation between the medical and nursing staffs of the Baby Health Centres is maintained by means of meetings, at which papers are read by various medical officers and discussed by all present. At one meeting during the year we were fortunate enough to have an address on "The Difficult Child," delivered by Dr. Cecile Greil who was visiting Sydney, and who is an officer of the Department of Mental Hygiene of Washington, U.S.A., and conducts child guidance clinics in New York.

These staff meetings also afford an opportunity to bring forward any changes in the management or policy of the Baby Health Centres, so that uniformity of all advice given is further ensured.



# INFANTILE MORTALITY IN NEW SOUTH WALES, 1875-1929.

Annual Death Rate of Children under 1 Year, per 1,000 Births —————  
 Deaths from Diarrhoea and Enteritis of Children under 1 Year, per 1,000 Births - - - - -  
 Infantile Mortality in the 1st Month of Life, 1900 to 1929     "     "     —————



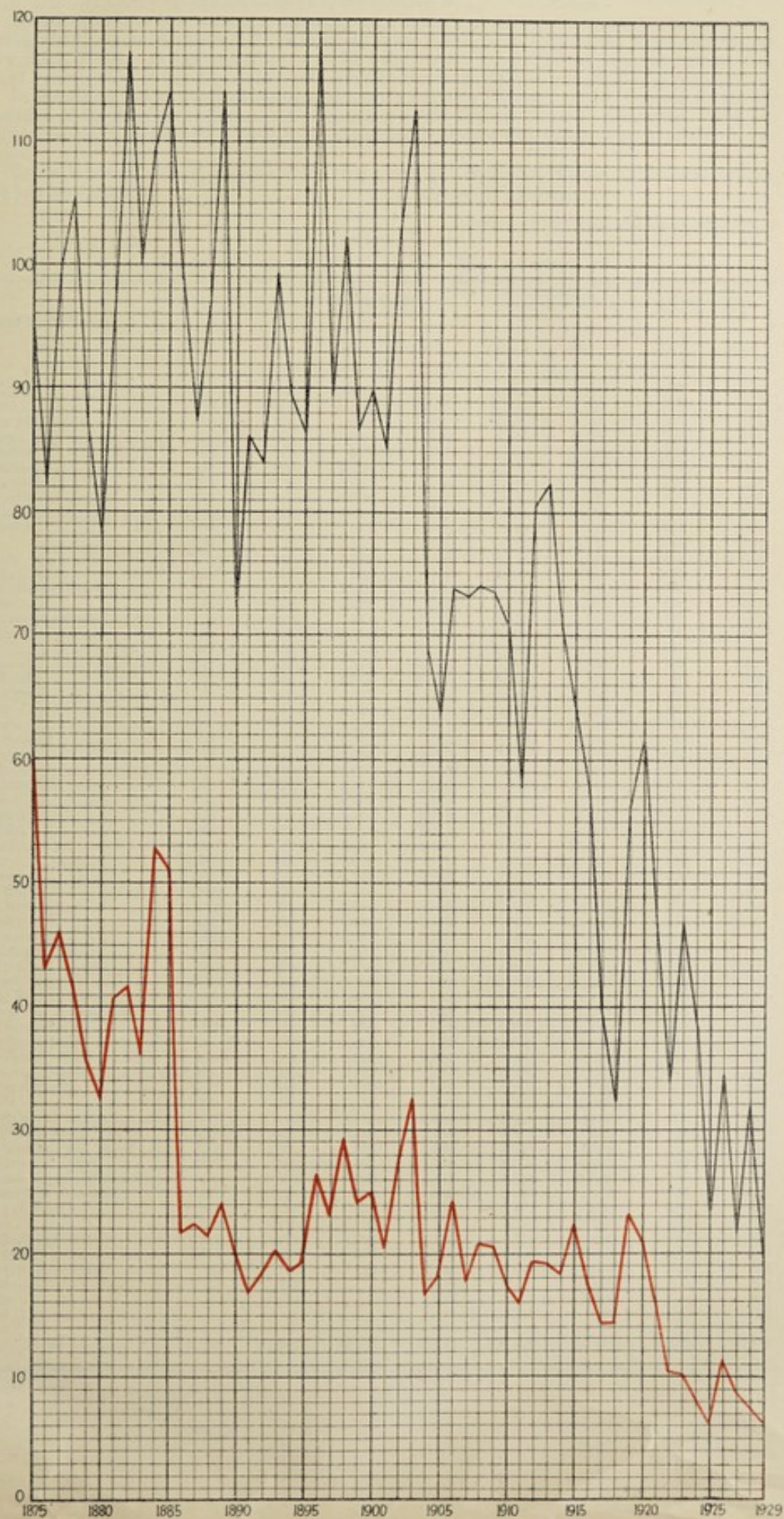




DIARRHOEA and ENTERITIS.

(Under 2 years, Black. Over 2 years, Red.)

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1929.







Many meetings have been held during the year, both in Sydney and throughout the country, where addresses have been given dealing with the activities of the Division of Maternal and Baby Welfare. These addresses have been given by members of the medical and nursing staff of the Division, the meetings being arranged generally by the Agricultural Bureau or the Country Women's Association.

Health films have been shown in several country towns and radio talks were given in connection with Milk Week and the Mothercraft Exhibition held at the Sydney Town Hall by the Benevolent Society of New South Wales. At this exhibition a model Baby Health Centre and an Ante-natal Clinic were arranged by the nurses of this department, who were in attendance there to give advice and information.

In concluding this abbreviated report of the year's activities I desire to place on record my sincere appreciation of the practical assistance and co-operation of the Country Women's Association, which has been instrumental in establishing a number of Centres and is anxious and willing to assist further in this direction.

To the honorary medical officers and the staff generally I express my thanks for their enthusiastic service and loyal support.

E. SYDNEY MORRIS,

Director of Maternal and Baby Welfare.

TABLE III.—Showing Work of Baby Health Centres.

Baby Health Centres.	Visits to Individual New-born Babies.		Subsequent Visits to Homes of Babies.		Total Attendances, including Expectant Mothers.		Individual Babies attending Centres.	
	1928.	1929.	1928.	1929.	1928.	1929.	1928.	1929.
Alexandria.....	531	396	2,063	1,911	4,553	6,907	556	689
Ashfield.....	458	622	1,150	1,021	7,325	7,807	617	752
Auburn and Depot .....	678	708	1,680	1,237	4,905	6,035	447	754
Balmain.....	625	566	1,932	1,876	8,540	7,699	707	764
Bankstown .....	468	540	569	589	2,965	3,323	392	404
Burwood.....	797	785	1,528	1,637	9,064	9,826	926	1,391
Camperdown.....	302	324	1,821	1,626	3,011	2,804	150	284
Chippendale .....	620	551	2,093	1,004	6,269	4,307	478	485
Campsie .....	796	841	1,695	2,182	8,735	7,855	852	979
Chatswood .....	496	490	955	1,226	7,939	7,719	984	893
Glebe .....	407	379	2,181	2,120	5,985	5,317	540	594
Granville .....	455	542	1,293	869	4,155	5,141	482	644
Hornsby.....	238	253	832	772	3,493	3,514	423	395
Hurstville and Depot .....	715	705	1,518	1,333	7,458	8,487	734	881
Kogarah.....	420	383	1,274	956	4,573	5,265	520	654
Lane Cove (6 months).....	175	272	543	1,585	2,478	5,257	144	492
Leichhardt.....	623	695	2,316	1,739	6,124	6,936	302	656
Manly .....	547	480	1,965	1,717	9,659	11,176	797	864
Mosman .....	342	334	1,344	1,502	7,903	8,930	598	567
Marrickville.....	527	581	1,964	2,242	6,456	7,409	775	669
Miller's Point .....	79	75	667	554	1,148	806	124	99
Mascot .....	439	351	1,820	1,011	4,943	3,727	473	490
Newtown .....	692	661	2,309	2,067	11,539	11,029	904	1,041
North Sydney .....	758	707	1,916	1,537	8,500	8,095	732	952
Paddington .....	416	548	1,958	1,670	7,572	7,212	872	770
Parramatta .....	457	458	1,476	1,596	7,493	6,996	784	756
Petersham .....	293	221	1,021	1,008	5,499	5,569	406	649
Pyrmont .....	149	118	1,263	1,045	3,617	2,749	191	244
Randwick .....	492	402	1,815	1,403	8,635	8,653	475	582
Rockdale .....	603	649	1,281	1,315	7,917	8,681	646	793
Rose Bay.....	509	487	1,887	2,109	9,316	10,500	708	893
Ryde .....	350	327	1,089	776	4,222	5,450	518	563
St. Peters .....	302	297	1,762	1,914	2,362	2,586	276	335
Surry Hills .....	348	332	986	990	5,010	5,385	493	531
South Kensington .....	499	495	2,598	2,869	6,273	6,319	774	789
Waverley .....	639	667	1,458	1,410	11,665	12,284	1,098	1,194
Woolloomooloo.....	252	227	1,385	1,209	7,262	7,573	668	733
Cessnock and Depot .....	566	485	1,507	1,670	5,230	5,199	435	543
Hamilton and Depot .....	721	668	1,930	1,787	9,638	10,612	926	1,119
Bathurst .....	249	216	712	740	3,734	4,033	350	361
Central Broken Hill.....	232	229	1,405	182	4,167	4,218	470	352
Railway Tn., Broken Hill.....	79	82	813	940	3,877	4,267	294	266
South Broken Hill .....	93	83	876	906	2,531	2,199	237	188
North Broken Hill .....	121	106	1,013	852	3,229	3,614	269	183
Mayfield and Depot .....	704	579	2,346	2,075	8,927	8,195	765	840
Wagga and Depots .....	211	301	1,162	1,399	4,554	4,798	449	992
Kurri and Depot .....	322	348	1,412	1,292	5,792	721	460	508
Lithgow .....	329	305	1,314	1,633	4,062	3,928	260	394
Newcastle and Depots .....	507	580	2,716	2,224	7,737	8,135	958	887
New Lambton and Depots .....	425	407	1,768	1,738	5,372	3,962	494	526
West Maitland and Depot .....	557	330	1,323	1,556	4,945	5,548	275	632
Goulburn and Depot .....	395	367	1,074	1,753	5,004	6,233	592	679
Yass and Depot (10 months).....	85	43	1,043	1,113	1,944	2,752	187	173
Cootamundra (6 months).....	107	124	634	1,020	900	1,921	130	210
Albury (6 months) .....	161	181	434	1,019	2,477	5,070	289	459
Moree .....	128	115	1,306	200	1,850	2,272	150	98
Tamworth (10 months) .....	313	253	1,003	883	4,175	6,424	384	392
Wollongong .....	230	227	627	664	4,000	3,635	259	459
Singleton (3 months) .....	60	100	117	735	268	1,619	90	223
Dubbo .....	.....	232	.....	610	.....	3,211	.....	306
Orange .....	.....	335	.....	927	.....	3,242	.....	427
Forbes (1 month).....	.....	42	.....	28	.....	24	.....	20
Totals .....	24,092	24,207	83,942	81,713	328,976	351,160	30,370	36,480



TABLE IV.  
SUMMARY OF ACTIVITIES OF BABY HEALTH CENTRES, 1929.

		Total Visits Paid by Nurses.	Total Attendances at Baby Health Centres.
1. Expectant Mothers—			
Number visiting centres for first time.....	3,541	.....	.....
Number of visits paid to centres subsequently .....	1,579	.....	.....
Number visited in own homes by nurse .....	1,774	1,774	5,120
2. Babies Enrolled—			
Total number individual babies attending Baby Health Centres.....	36,480	.....	.....
Number new babies enrolled during year.....	22,645	.....	.....
3. Visits by Nurses—			
Number of primary visits to new-born babies.....	24,207	.....	.....
Number of subsequent visits to babies .....	81,713	105,920	.....
4. Method of Feeding—			
Babies up to 9 months of age attending centres .....	29,993	.....	.....
Number of wholly or partially breast-fed.....	27,266	.....	.....
Number wholly artificially fed .....	3,727	.....	.....
5. Letters of Advice—			
Number of letters requesting advice answered by nurses .....	979	.....	.....
6. Attendances—			
Number of attendances by babies under 1 year of age .....	294,469	.....	.....
Number of attendances by babies over 1 year and under 2 .....	41,252	.....	.....
Number of attendances by babies over 2 years and under 3 .....	7,058	.....	.....
Miscellaneous visits—Mothers without infants, children over 3 years, &c. ....	3,261	.....	351,160

SECTION I—C.  
COMMUNICABLE DISEASES.

1.—NOTIFIABLE INFECTIOUS DISEASES RECORDED IN NEW SOUTH WALES DURING THE YEAR ENDED 31st DECEMBER, 1929.

(F. S. WEARNE.)

Public Health Acts, 1902–1921.

The Public Health Act, 1902, provides that the Governor may, by Proclamation in the *Government Gazette*, declare that any disease therein-named is an infectious disease. At the end of the year the ordinarily notifiable diseases under this Act were as shown in the following table :—

	Notifiable from—	Cases and Deaths Notified.					
		1927.		1928.		1929.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever and paratyphoid .....	1st January, 1898 .....	460	68	453	60	438	45
Scarlet fever .....	" .....	8,369	113	5,531	105	5,219	78
Diphtheria or membranous croup .....	" .....	4,059	179	3,835	168	4,274	215
Bubonic plague .....	23rd January, 1900 .....	...	...	...	...	...	...
Infantile paralysis (acute anterior poliomyelitis) .....	1st February, 1912 .....	25	4	30	2	241	29
Epidemic cerebro-spinal fever (meningococcal meningitis) .....	11th October, 1915 .....	25	10	31	8	28	10
Encephalitis lethargica .....	1st April, 1926 .....	3	27*	18	23	26	30
Cholera .....	12th August, 1927 .....	...	...	...	...	...	...
Typhus fever .....	" .....	...	...	...	...	3	...
Yellow fever .....	" .....	...	...	...	...	...	...
Puerperal infection .....	16th August, 1929 .....	...	...	...	...	44	79
Total .....		12,941	401	9,898	366	10,273	486
Population at 31st Dec.		2,461,884		2,446,874		2,479,147	

The number of cases of the above diseases notified in each district in 1929, deaths therefrom and age and seasonal incidence are shown in Tables I–VI, pp. 36–44. Pulmonary tuberculosis is notifiable under the Public Health (Amendment) Act, 1915, and venereal diseases under the Venereal Diseases Act of 1918 (see below).

*Puerperal infection* was proclaimed a notifiable disease on 16th August, 1929.

The figures for 1929 show an increase of 375 case notifications and 120 deaths compared with 1928, mainly due to greater prevalence of diphtheria and an epidemic of infantile paralysis.

*Typhoid Fever*.—The 438 cases and 45 deaths notified is the lowest incidence on record; the lowest numbers previously recorded being 460 cases and 68 deaths in 1927, and 453 cases and 60 deaths in 1928.

*Scarlet Fever*.—Although still present in epidemic form, continued to decrease, 5,219 cases and 78 deaths being notified compared with 5,531 cases and 105 deaths in 1928. The peak year of the epidemic was 1927, when 8,369 cases and 119 deaths were recorded.

*Diphtheria* notifications increased from 3,835 cases and 168 deaths in 1928 to 4,274 cases and 215 deaths in 1929.

*Infantile Paralysis* was present in epidemic form, 241 cases and 29 deaths being recorded compared with 30 cases and 2 deaths in 1928. Graphs are appended showing the case incidence and deaths since 1913; and the monthly case incidence during the epidemics of 1915–16, 1920–21, 1925–26, and 1928–29.

*Cerebro-spinal Meningitis*.—Twenty-eight cases and 10 deaths were notified as compared with 31 cases and 8 deaths in 1928.

*Encephalitis Lethargica*.—Twenty-six cases and 30 deaths were notified. It is found on investigation that a considerable percentage of the deaths are due to non-notifiable forms of encephalitis, such as cerebral abscess, brain tumours, &c.

*Bubonic Plague*.—No case of plague was reported in 1929. Systematic rat-trapping was continuous, and no infection was found in the 5,110 rats examined in the Microbiological Laboratory (see page 111).

*Smallpox*.—Three cases of smallpox (Alastrim type) occurred in connection with the arrival of the R.M.S. "Aorangi" from Vancouver on 22nd June, 1929. To assist in tracing any infection occurring on shore chickenpox was proclaimed a notifiable disease on 28th June; the proclamation was rescinded on 23rd August.

*Leprosy*.—The Annual Report on Leprosy in New South Wales will be found in Section III (p. 89). One patient was admitted to the Lazaret during the year, and at the end of 1929 there were 20 lepers (15 males and 5 females) under detention. Medical practitioners attending or becoming aware of cases of leprosy or suspected leprosy are required to notify the cases, in writing, under Part III, Division 2, of the Public Health Act, 1902.

*Typhus Fever*.—In the two years 1928–1929 4 cases of endemic typhus were reported in the north-eastern corner of the State, 1 (1928) at a railway camp near Kyogle, and 3 (1929) at Lismore.

*Pulmonary Tuberculosis—Public Health (Amendment) Act, 1915.*

The year was marked by issue of a proclamation on 1st March extending notification of pulmonary tuberculosis to the whole State. 1,215 cases were notified, of which 1,076 were from the metropolitan district and 139 from other parts of the State. The Report of the Director of Tuberculosis appears on p. 51, and of the Superintendent of the Waterfall Sanatorium on p. 96.

*Venereal Diseases Act, 1918.*

This Act has been in operation since December, 1920. Activities under it are recorded on p. 45. The notifications for 1929 were exactly equal to those for 1928, viz., 5,226. Some late manifestations of syphilis are discussed by the Director of the Division on p. 47.



TABLE I.—Showing the number of notified cases of, and deaths from, the following diseases:—Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Croup, Encephalitis Lethargica, Infantile Paralysis (Acute Anterior Poliomyelitis), Plague, Scarlet Fever, Typhoid Fever (including Paratyphoid), Pulmonary Tuberculosis, and Puerperal Infection\* in the METROPOLITAN COMBINED DISTRICTS for the year ended 31st December, 1929.

Municipality or Shire.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
METROPOLITAN MUNICIPALITIES.																	
Sydney, City of ...	109,460	2	...	152	2	129	6	3	2	1	1	2	...	160	87	9	4
Alexandria .....	10,280	1	...	5	...	20	2	...	...	...	...	...	...	8	8	1	2
Annandale .....	13,080	...	...	19	...	16	2	4	...	...	...	...	...	11	5	...	2
Ashfield .....	39,450	3	...	120	...	42	1	2	...	1	...	1	2	20	17	1	2
Auburn .....	19,480	44	4	31	...	29	3	4	...	...	...	...	...	14	7	...	...
Balmain .....	33,060	...	...	45	1	53	5	1	...	...	...	...	...	18	23	2	1
Bankstown .....	21,100	...	...	32	1	74	3	4	1	...	...	...	...	7	11	...	1
Bexley .....	19,830	...	...	30	1	45	2	1	...	...	...	...	...	7	5	...	...
Botany .....	7,600	2	1	18	...	6	1	...	...	...	...	...	1	1	2	...	...
Burwood .....	19,200	2	...	59	5	30	3	2	1	...	...	1	1	13	5	1	...
Canterbury .....	70,870	1	...	334	4	166	8	9	...	1	...	1	...	54	37	2	3
Concord .....	21,850	2	...	96	1	58	4	10	2	1	...	2	1	11	14	1	1
Darlington .....	3,660	...	...	6	...	6	...	1	...	...	...	...	...	3	3	...	...
Drummoyne .....	28,570	1	...	45	...	21	...	2	...	...	...	...	...	14	18	1	...
Eastwood .....	2,870	...	...	5	...	2	...	...	...	...	...	...	...	7	6	...	...
Enfield .....	13,740	1	...	87	2	61	2	7	1	...	...	...	...	16	4	...	1
Erskineville .....	7,610	...	...	11	...	15	2	...	...	...	...	...	...	7	6	...	1
Glebe .....	23,090	3	...	36	...	35	1	4	...	...	1	...	...	25	21	3	2
Granville .....	18,700	15	1	37	...	27	1	1	...	...	...	...	...	9	9	...	...
Homebush .....	3,100	...	...	10	...	11	1	1	1	...	...	...	...	7	7	...	...
Hunter's Hill .....	9,520	1	...	10	...	7	...	...	...	...	...	1	...	1	4	...	...
Hurstville .....	20,760	2	...	92	1	53	3	7	...	...	...	...	...	17	15	...	...
Kogarah .....	28,340	...	...	80	1	48	2	3	...	1	...	...	...	15	9	1	1
Kuring-gai .....	27,020	4	...	131	1	12	...	7	2	1	...	...	1	16	19	...	...
Lane Cove .....	14,490	...	...	55	...	23	...	...	...	...	...	...	...	4	2	1	2
Leichhardt .....	31,290	2	...	51	1	36	2	2	...	...	...	...	...	30	16	...	1
Lidcombe .....	15,260	27	1	25	...	23	4	1	...	...	...	...	...	29	10	...	4
Manly .....	25,710	...	1	68	1	12	1	1	...	...	...	...	...	16	7	...	1
Marrickville .....	46,270	5	...	132	2	55	4	4	...	1	...	...	1	43	29	2	...
Mascot .....	13,460	4	...	29	1	26	2	2	...	...	...	...	...	9	2	1	...
Mosman .....	24,660	1	...	51	...	16	...	3	...	1	...	...	1	11	8	...	...
Newtown .....	28,580	3	...	65	1	41	2	1	1	...	1	3	...	26	20	3	1
North Sydney .....	54,620	3	...	141	1	32	1	5	...	2	...	1	2	34	25	...	2
Paddington .....	26,990	1	...	73	3	38	3	1	...	...	...	...	...	41	22	1	1
Parramatta .....	17,330	5	...	93	...	64	6	...	...	...	...	...	...	7	7	...	2
Petersham .....	27,950	2	...	72	2	21	...	5	...	...	...	...	...	20	16	2	...
Randwick .....	72,540	12	3	170	2	109	5	4	3	1	...	...	...	64	53	3	...
Redfern .....	24,130	2	...	34	...	63	3	3	...	...	...	1	...	33	22	2	1
Rockdale .....	36,410	2	...	113	1	107	5	2	...	1	...	...	1	9	5	...	1
Ryde .....	24,640	2	...	51	1	39	...	9	2	...	...	1	...	26	12	...	2
St. Peters .....	13,810	1	...	33	1	32	...	2	...	...	...	...	...	6	4	3	...
Strathfield .....	11,900	...	...	34	1	25	1	5	1	...	...	1	...	7	3	...	1
Vaucluse .....	7,110	1	...	17	...	6	...	...	...	...	...	...	...	7	4	...	...
Waterloo .....	12,660	3	...	27	...	40	1	1	...	...	...	...	...	16	10	...	...
Waverley .....	51,730	8	...	155	4	69	3	8	...	1	1	...	...	41	22	...	1
Willoughby .....	41,440	1	...	151	2	74	3	3	...	...	...	...	...	22	30	...	3
Woolahra .....	33,850	4	...	94	1	26	...	3	...	...	...	1	1	27	11	1	...
EXTRA METROPOLITAN MUNICIPALITIES.†																	
Cabramatta and Canley Vale ...	4,590	1	...	10	...	16	1	2	...	...	...	...	...	5	...	...	...
Dundas .....	5,400	...	...	15	...	10	1	1	...	...	...	...	...	3	2	...	...
Ermington and Rydalmere ...	2,140	...	...	3	...	1	...	...	...	...	...	...	...	8	...	...	...
Fairfield .....	7,490	1	...	10	...	3	...	...	...	...	...	...	...	17	4	...	...
Holroyd .....	14,150	7	1	23	1	32	...	1	...	...	...	...	...	12	6	1	1
Ingleburn .....	1,620	...	...	4	...	1	...	...	...	...	...	...	...	2	1	...	...
Liverpool .....	6,110	...	...	4	...	9	1	1	...	2	1	...	...	14	3	...	...
SHIRES.																	
Hornsby .....	20,320	...	...	57	...	42	1	6	...	...	...	1	1	19	25	...	1
Warringah .....	15,080	1	...	17	...	19	...	...	...	...	...	...	...	4	3	...	...
Harbour of Port Jackson .....	...	1	...	3	...	1	...	...	...	...	...	...	...	3	...	...	...
Totals .....	1,305,970	184	12	3,371	46	2,077	102	149	17	15	5	17	13	1,076	726	42	46

\* Notifiable from 16th August 1902.

† (+ Ingleburn.)



TABLE II.—Showing the number of notified cases of, and deaths from, Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria or Membranous Croup, Encephalitis Lethargica, Infantile Paralysis (Acute Anterior Poliomyelitis), Scarlet Fever, Typhoid Fever, including Paratyphoid, Pulmonary Tuberculosis, and Puerperal Infection\* in the HUNTER RIVER COMBINED DISTRICT, for the year ended 31st December, 1929.

District.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES.																	
Adamstown.....	4,760	...	...	3	1	28	1	1	1	...	...	...	...	1	1	...	...
Carrington.....	3,080	2	...	2	...	21	...	...	...	...	...	...	...	1	...	...	...
Cessnock.....	14,150	3	...	15	...	34	4	...	...	...	...	...	...	7	8	...	1
Greta.....	1,520	1	...	1	...	2	...	...	...	...	...	...	...	1	1	...	...
Hamilton.....	20,260	2	1	28	...	55	1	...	...	...	...	1	...	3	4	...	...
Lambton.....	4,470	...	...	7	...	13	1	...	...	...	...	...	...	...	...	...	...
Maitland, East ..	4,010	6	2	1	...	17	1	...	...	...	...	...	...	...	3	...	...
"    West ..	7,770	6	...	5	...	29	1	1	...	...	1	1	...	6	1	...	1
Merewether.....	8,160	2	...	8	...	14	...	...	...	...	...	...	...	3	4	...	...
Morpeth.....	1,070	8	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Newcastle.....	14,690	3	...	8	...	20	1	1	...	...	...	1	...	13	8	2	3
New Lambton ..	5,990	...	...	1	...	24	1	...	...	...	...	...	...	1	2	...	...
Raymond Terrace	860	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...
Singleton.....	3,390	...	...	6	...	8	2	...	...	...	...	...	...	...	1	...	...
Stockton.....	5,560	11	4	...	...	13	1	...	...	...	...	...	...	...	...	...	...
Wallsend.....	7,350	3	...	6	...	36	1	...	...	...	...	...	...	...	1	...	2
Waratah.....	17,680	1	...	18	...	57	2	...	...	...	...	1	...	1	4	...	1
Wickham.....	12,000	2	...	15	...	29	1	...	...	...	...	...	...	1	3	...	...
SHIRES.																	
Bolwarra.....	3,370	2	...	1	1	7	...	...	...	...	...	...	...	...	...	...	...
Kearsley.....	24,390	25	5	18	1	45	3	2	...	2	...	1	...	...	6	...	...
Lake Macquarie ..	25,330	3	1	23	...	60	1	1	...	...	...	...	...	...	6	...	...
Port Stephens.....	3,940	...	...	1	...	3	1	...	...	...	...	...	...	...	...	...	...
Tarro.....	6,850	4	1	3	...	20	2	...	...	...	...	...	...	3	1	...	...
Harbour of Port Hunter.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total .....	200,650	84	15	170	3	537	26	6	1	2	...	1	5	41	54	2	9

\* Notifiable from 16th August, 1929.

TABLE III.—Showing the number of notified cases of, and deaths from, Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria or Membranous Croup, Encephalitis Lethargica, Infantile Paralysis (Acute Anterior Poliomyelitis), Scarlet Fever, Typhoid Fever, including Paratyphoid, Pulmonary Tuberculosis, and Puerperal Infection†, in the REMAINDER OF STATE for the year ended 31st December, 1929.

Municipality.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES.																	
Aberdeen .....	880	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Albury .....	9,430	2	...	3	...	84	4	...	...	...	...	...	...	1	4	...	...
Armidale .....	6,710	2	...	4	...	23	2	...	...	...	...	...	...	...	4	...	...
Ballina .....	3,040	...	...	2	...	18	2	...	...	...	...	...	...	...	...	...	...
Balranald .....	1,040	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Barraba .....	1,240	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Bathurst .....	9,350	...	...	58	...	6	1	...	...	...	...	...	1	...	4	...	...
Bega.....	1,880	...	...	4	...	...	...	1	...	...	...	...	...	...	...	...	...
Berry.....	2,490	...	...	5	...	3	1	...	...	...	...	...	...	...	...	...	...
Bingara .....	1,010	...	...	...	...	4	...	...	...	1	...	...	...	...	...	...	...
Blackheath .....	2,630	...	...	5	1	...	...	1	...	...	...	...	...	1	1	...	...
Blayney .....	1,510	...	...	2	...	7	...	...	...	...	...	...	...	...	...	...	...
Bombala .....	990	...	...	20	1	2	1	...	...	...	...	...	...	...	...	...	...
Bourke.....	1,670	1	...	16	...	33	1	...	...	...	...	...	...	...	1	...	1
Bowral .....	3,090	1	...	26	1	...	...	...	...	...	...	...	...	...	5	...	...
Braidwood .....	1,040	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brewarrina .....	640	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Broken Hill.....	23,380	63	4	120	1	96	4	1	1	...	...	...	...	...	26	...	1
Burrowa .....	1,260	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...	...
Camden .....	2,180	1	...	4	...	2	...	...	...	...	...	...	...	...	2	...	...
Campbelltown .....	2,650	2	...	14	1	2	...	...	...	...	...	...	...	1	1	...	...
Carcoar .....	430	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Casino .....	3,340	3	...	7	...	13	...	...	...	...	...	...	...	...	...	...	...
Castlereagh .....	350	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Cobar .....	1,050	...	...	3	...	3	...	...	...	...	...	...	...	...	4	...	...
Condobolin .....	1,870	...	...	15	...	1	...	...	...	1	...	...	...	...	4	...	...
Cooma .....	1,870	...	...	9	...	1	...	...	...	...	...	...	1	...	...	...	...
Coonamble .....	2,360	...	...	50	...	11	1	...	...	...	...	...	...	...	5	...	...
Cootamundra .....	4,140	...	...	4	...	3	2	...	...	...	...	...	...	1	1	...	...
Coraki .....	1,260	...	...	1	...	13	...	...	...	...	...	...	...	...	...	...	...
Corowa .....	2,640	...	...	...	...	3	1	...	...	...	...	...	...	...	3	...	...
Cowsra .....	4,460	...	...	1	...	13	...	...	...	...	1	...	...	...	2	...	...

\* Notification extended to whole State on 1st March, 1929.

† Cases notifiable from 16th August, 1929. Deaths are shown for whole year.



REMAINDER OF STATE.—Return showing the number of Cases, &c., from Country Municipalities—*continued.*

Municipality.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
MUNICIPALITIES—continued.																	
Deniliquin .....	2,960	...	...	1	...	5	...	...	...	...	...	...	...	3	...	...	...
Dubbo .....	5,810	2	...	20	2	33	...	...	...	...	...	...	...	3	...	...	1
Dungog .....	1,830	1	1	2	...	22	...	...	...	...	...	...	...	...	...	...	...
Forbes .....	4,930	...	1	11	...	1	...	...	...	...	...	...	...	3	...	...	...
Gerrington .....	750	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Glen Innes .....	4,660	...	...	5	...	22	1	...	...	...	...	...	...	1	1	...	...
Goulburn .....	12,720	...	...	38	...	7	...	...	...	...	...	...	...	1	6	...	1
Grafton .....	4,970	...	...	8	1	11	1	...	...	...	...	...	...	...	4	...	1
Grafton South .....	1,690	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Grenfell .....	2,120	...	...	...	...	5	...	4	1	...	...	...	...	...	...	...	...
Gulgong .....	1,460	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Gunnedah .....	2,610	...	...	31	...	3	...	...	...	1	...	...	...	2	3	...	1
Hay .....	2,630	...	...	3	...	...	...	...	...	...	...	...	...	...	2	...	...
Hillston .....	830	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...
Illawarra Central .....	6,870	...	1	9	...	4	1	...	...	...	...	...	...	...	2	...	2
„ North .....	6,920	...	...	43	1	8	...	...	...	...	...	...	...	...	...	...	...
Inverell .....	5,010	...	...	5	...	6	...	1	...	...	...	...	...	...	3	...	...
Jamberoo .....	1,080	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Junee .....	3,410	...	...	3	...	4	...	...	...	...	...	...	...	...	1	...	...
Katoomba .....	10,170	...	...	34	1	3	...	...	...	...	...	...	...	20	18	...	...
Kempsey .....	3,620	...	...	1	...	4	...	...	...	...	...	...	...	...	3	...	...
Kiama .....	2,100	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Lismore .....	9,820	...	...	16	...	59	1	1	...	...	...	...	...	...	2	...	...
Lithgow .....	15,250	...	...	62	2	42	1	...	...	...	...	...	...	...	3	...	2
Macleay .....	1,610	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...
Manilla .....	1,490	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
Mittagong .....	1,590	...	...	49	...	...	...	...	...	...	...	...	...	...	...	...	...
Moama .....	630	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Molong .....	1,520	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Morree .....	3,610	...	...	16	1	14	...	...	...	...	...	...	...	...	6	...	...
Moss Vale .....	2,110	...	...	9	...	1	...	...	...	1	...	...	...	...	...	...	...
Mudgee .....	3,070	...	...	3	...	5	...	2	...	...	...	1	1	...	...	...	...
Mullumbimby .....	1,300	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Murrumburrah .....	3,010	...	1	...	...	1	...	...	...	...	...	...	...	...	2	...	...
Murrumbidgee .....	1,330	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Murwillumbah .....	2,930	...	...	3	...	20	...	...	...	...	...	...	...	...	...	...	...
Muswellbrook .....	2,590	...	...	...	...	8	...	...	...	...	...	...	...	...	1	...	...
Narrabri .....	2,710	...	...	8	...	7	...	...	...	...	...	...	...	...	...	...	...
Narrabri West .....	960	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Narrandera .....	3,600	...	...	8	...	15	...	...	...	...	...	...	...	...	2	...	...
Narromine .....	1,360	...	...	5	...	6	...	...	...	...	...	...	...	...	...	...	...
Nowra .....	2,570	...	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...
Nyngan .....	1,370	...	...	13	...	1	...	...	...	...	...	...	...	...	3	...	1
Orange .....	8,550	1	...	31	...	23	2	1	...	...	1	1	...	1	8	...	...
Parkes .....	5,750	7	1	6	...	14	...	...	...	...	...	...	1	1	4	...	...
Peak Hill .....	1,180	...	...	...	...	8	3	1	...	...	...	...	...	...	1	...	...
Penrith .....	3,950	...	...	1	...	11	1	1	...	...	...	...	...	...	1	...	...
Pieton .....	1,020	...	...	4	...	2	...	...	...	...	...	...	...	...	3	...	...
Port Macquarie .....	1,720	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Queanbeyan .....	4,020	...	...	8	...	...	...	...	...	...	...	...	...	...	1	...	...
Quirindi .....	2,340	3	...	...	...	1	...	...	...	...	...	...	...	...	2	...	...
Richmond .....	2,010	...	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...
Scone .....	1,910	2	...	3	...	2	...	1	...	...	...	...	...	2	2	...	1
Shellharbour .....	1,690	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	...
Shoalhaven South .....	1,030	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Marys .....	2,080	1	...	1	...	6	...	...	...	...	...	...	...	...	1	...	...
Tamworth .....	7,740	5	...	15	...	49	1	2	1	...	...	...	...	...	4	...	1
Taree .....	2,350	...	...	20	1	6	...	...	...	...	...	...	...	...	1	...	...
Temora .....	3,340	...	...	...	...	1	...	2	1	...	...	...	...	...	1	...	...
Tenterfield .....	2,450	...	...	1	...	4	...	...	...	...	...	...	...	...	...	...	...
Ulladulla .....	1,380	...	...	1	...	1	...	...	...	...	...	...	...	...	1	...	...
Ullmarra .....	2,200	...	...	1	...	4	1	...	...	...	...	...	...	...	1	...	...
Uralla .....	930	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...
Wagga Wagga .....	8,990	...	...	27	3	18	1	5	1	...	1	...	...	3	8	...	...
Walcha .....	1,320	...	...	3	...	1	...	...	...	...	...	...	...	...	...	...	...
Wallendbeen .....	760	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Warren .....	1,300	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Wellington .....	3,370	...	...	14	...	8	...	...	...	...	...	...	...	1	2	...	...
Wentworth .....	920	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Wilcannia .....	470	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Windsor .....	3,720	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Wingham .....	1,230	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Wollongong .....	9,660	...	...	49	1	8	...	1	...	...	...	...	...	...	2	...	...
Wyalong .....	850	1	...	5	...	1	...	...	...	...	...	...	...	...	2	...	...
Yass .....	2,680	...	...	1	...	10	...	...	...	...	1	...	...	...	1	...	...
Young .....	3,610	2	1	20	1	3	1	...	...	...	...	...	...	1	3	...	...
Total Municipalities.....	382,220	114	10	1,004	19	861	37	27	5	4	3	3	4	39	199	1	14







REMAINDER OF STATE.—Return showing the number of Cases, &c., from Country Shires—*continued.*

Shire.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
SHIRES—continued.																	
Muswellbrook	3,340	...	...	3	...	13	...	1	...	...	...	...	...	...	2	...	...
Nambucca	6,550	1	...	...	...	6	1	...	...	...	...	...	...	...	1	...	...
Namoi	6,580	...	...	9	...	4	...	...	...	...	...	...	...	...	...	...	...
Narraburra	4,730	...	...	2	...	...	...	3	...	...	...	...	...	...	...	...	...
Nattai	4,000	...	...	8	...	...	...	2	...	...	...	...	...	...	1	...	...
Nepean	2,590	...	...	...	...	4	...	...	...	...	...	...	...	...	3	...	...
Nundle	1,100	1	...	...	...	25	...	...	...	2	...	...	...	1	...	...	...
Nymboida	2,110	...	...	...	...	5	...	...	...	...	...	...	...	...	1	...	...
Oberon	2,530	...	...	4	...	...	1	...	...	1	...	...	...	...	1	...	...
Orara	1,570	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Patrick's Plains	6,080	...	...	3	...	1	...	1	...	...	...	...	...	...	6	...	...
Peel	7,030	1	...	1	...	13	1	...	...	...	...	...	...	...	...	...	...
Rylstone	4,550	...	...	5	...	2	1	...	...	...	...	...	...	...	...	...	...
Severn	5,480	2	...	2	...	3	...	...	...	1	...	...	...	...	3	...	...
Stroud	5,180	...	...	1	...	3	...	...	...	...	...	...	...	...	...	...	1
Sutherland	11,880	...	...	37	...	20	1	1	...	...	...	...	...	...	11	...	...
Talbragar	3,640	...	...	6	1	17	1	1	...	...	...	...	...	...	1	...	...
Tallaganda	2,170	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Tamarang	2,680	...	...	...	...	7	1	...	...	...	...	...	...	...	3	...	...
Tenterfield	4,640	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
Terania	6,560	...	...	3	...	32	1	...	...	...	1	1	...	...	2	...	...
Timbrehongie	4,410	...	...	6	...	2	...	1	...	...	...	...	...	1	...	...	...
Tintenbar	6,000	1	1	1	...	40	1	...	...	...	...	...	...	...	1	...	...
Tomki	3,720	...	...	...	...	8	...	...	...	...	...	...	...	...	1	...	...
Tumbarumba	2,260	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tumut	8,180	...	...	...	...	4	...	...	...	...	...	1	1	2	4	...	...
Turon	3,010	...	...	6	...	3	...	...	...	...	...	...	...	...	1	...	...
Tweed	10,350	...	...	3	...	11	1	...	...	...	...	...	...	...	2	...	...
Upper Hunter	4,520	1	1	2	...	15	1	...	...	...	...	...	...	...	...	...	...
Urana	2,680	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Wade	5,730	1	...	22	...	9	...	6	...	...	...	...	...	...	1	...	...
Wakool	3,320	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Walgett	3,110	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Wallerobba	5,390	...	...	...	...	5	1	...	...	...	...	...	...	...	1	...	...
Waradgery	830	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Warrah	1,970	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wangool	5,800	...	...	2	...	6	...	...	...	...	...	...	...	...	...	...	...
Weddin	3,320	...	...	1	...	1	1	...	...	...	...	...	...	...	2	...	1
Willimbong	7,140	1	...	19	...	15	...	3	...	...	...	...	...	...	3	...	...
Windouran	840	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wingadee	3,240	2	...	2	...	...	...	...	...	...	...	...	...	...	1	...	2
Wingecarribee	4,290	...	...	3	...	...	...	2	...	...	...	...	...	...	...	...	...
Wollondilly	5,090	...	...	14	...	2	1	1	...	...	...	...	...	...	10	1	...
Woodburn	2,800	...	...	...	...	5	...	...	...	...	...	...	...	...	...	1	...
Woy Woy	2,970	...	...	3	...	...	...	1	...	...	...	...	...	...	1	2	...
Wyaldra	2,060	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...
Yallaro	2,990	1	1	...	...	1	...	1	...	...	...	...	...	...	...	1	...
Yanko	5,100	...	...	2	...	1	...	1	...	...	...	...	...	...	2	...	...
Yarrowluma	2,290	...	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...
Total, Shires..	590,840	52	7	664	7	798	50	59	6	7	2	5	8	59	170	1	10

## COUNTRY POLICE DISTRICTS.

Western Division (Unincorporated)	...	...	1	...	2	...	...	...	...	...	...	...	...	3	...	...	...
Balranald	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bourke	...	...	...	6	...	1	...	...	...	...	...	...	...	...	...	...	...
Brewarrina	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Broken Hill	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Cobar	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Hav	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hillston	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Menindie	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mitchell	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nyngan	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Walgett	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wentworth	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wilcannia	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	14,719	4	1	10	2	1	...	...	...	...	...	...	...	3	...	...	...
* Lord Howe Island	111	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Outside the State—	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Queensland	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Victoria	...	4	...	...	...	19	...	...	...	...	...	...	...	...	...	...	...
South Australia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	...	4	...	...	...	19	...	...	...	...	...	...	...	...	...	...	...

\* Registered at Randwick.





TABLE IV.—Table showing Age and Sex Incidence, and Mortality, in Remainder of State—continued.

Age Period	Typhoid and Paratyphoid.			Scarlet Fever.			Diphtheria.			Encephalitis Lethargica.			Infantile Paralysis.			Cerebro-spinal Meningitis.			Pulmonary Tuberculosis.			Purpural Infection.																				
	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.	Incidence.		Mortality.																		
	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.	Notified Cases.		Notified Deaths.																		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.																		
All ages.....	59	48	107	4	10	14	579	979	1,558	9	19	28	747	817	1,564	45	38	83	6	2	8	5	5	10	3	8	11	4	1	5	51	47	98	187	159	346	...	...	...	23	23	
Under 1 year.....	7	11	18	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1-4.....	156	165	321	2	3	5	1	328	328	55	4	5	1	328	328	55	4	5	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5-14.....	4	2	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15-24.....	156	507	792	1	3	4	285	507	792	8	11	19	284	503	787	11	6	17	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25-34.....	4	23	27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35-44.....	1	45	46	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45-54.....	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
55-64.....	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
65 and over.....	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Not stated.....	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

## REMAINDER OF STATE.

## SUMMARY.

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Etiopathia Lethargica.		Pulmonary Tuberculosis.*		Purpural Infection.†	
	Cases.		Cases.		Cases.		Cases.		Cases.		Cases.		Cases.		Cases.	
	Deaths.	Notified Deaths.	Deaths.	Notified Deaths.	Deaths.	Notified Deaths.	Deaths.	Notified Deaths.	Deaths.	Notified Deaths.	Deaths.	Notified Deaths.	Deaths.	Notified Deaths.	Deaths.	Notified Deaths.
Metropolitan Combined Sanitary District.....	184	12	3,371	46	2,077	102	149	37	15	5	17	13	1,076	726	42	46
Metropolitan River Sanitary District.....	84	15	1,120	3	537	26	6	1	2	...	1	5	41	51	...	9
Metropolitan River Sanitary District.....	63	...	120	...	96	...	1	...	...	...	...	...	...	...	...	...
Metropolitan River Sanitary District.....	51	10	884	19	745	37	26	5	4	3	2	4	39	199	1	14
Metropolitan River Sanitary District.....	52	7	664	7	798	50	59	6	...	...	...	...	...	...	...	...
Metropolitan River Sanitary District.....	4	1	10	1	1	1	1	1	...	...	...	...	...	...	...	...
Metropolitan River Sanitary District.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Metropolitan River Sanitary District.....	438	45	5,219	78	4,274	215	241	29	28	19	29	29	1,215	1,152	44	79

\* Notification extended to whole State 1st March, 1929.

† Cases notifiable from 16th August, 1929. Deaths are shown for the whole year.

TABLE V.—Showing the seasonal prevalence of Cerebro-spinal Fever (Meningococcal Meningitis), Diphtheria and Membranous Croup, Infantile Paralysis (Acute Anterior Poliomyelitis), Encephalitis Lethargica, Scarlet Fever, Typhoid Fever (including Paratyphoid), Pulmonary Tuberculosis, and Puerperal Infection,† in New South Wales for the year ended 31st December, 1928.

Month, 1929.	Typhoid Fever and Paratyphoid.										Scarlet Fever.									
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January.....	12	1	13	3	2	...	15	4	42	8	234	8	9	1	...	...	144	1	387	10
February.....	13	1	10	1	1	...	17	2	41	4	231	2	7	...	1	...	86	1	325	3
March.....	14	2	10	2	3	...	12	2	39	6	191	3	11	...	6	...	70	2	278	5
April.....	13	1	13	1	...	...	10	...	36	2	249	3	10	1	19	...	123	3	401	7
May.....	98	2	21	4	24	1	10	2	153	9	316	2	12	...	26	...	174	1	528	3
June.....	6	3	...	...	6	...	8	...	20	3	255	2	8	...	22	...	154	3	439	5
July.....	1	...	4	1	1	2	4	...	10	3	377	5	13	1	10	...	189	5	589	11
August.....	3	...	2	1	...	...	4	1	9	2	327	4	17	...	11	...	128	1	483	5
September.....	6	...	...	...	1	...	3	...	10	...	317	7	14	...	9	...	135	3	475	10
October.....	5	1	6	1	3	...	5	1	19	3	291	4	12	...	6	...	129	4	438	8
November.....	10	1	3	...	10	...	7	...	30	1	299	2	33	...	7	1	128	1	467	4
December.....	3	...	2	1	12	1	12	2	29	4	284	4	24	...	3	...	98	3	409	7
Total.....	184	12	84	15	63	4	107	14	438	45	3,371	46	170	3	120	1	1,558	28	5,219	78

Month, 1929.	Diphtheria.										Encephalitis Lethargica.									
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January.....	93	11	29	...	3	1	67	6	192	18	2	1	1	1	...	...	...	...	3	2
February.....	112	5	29	1	...	...	60	1	201	7	2	1	...	...	...	...	...	1	2	2
March.....	199	8	45	2	2	...	152	8	398	18	...	1	...	1	...	...	1	3	1	5
April.....	307	11	113	8	12	...	256	12	688	31	1	...	...	...	...	...	1	2	2	2
May.....	378	17	149	5	33	...	343	15	903	37	3	1	...	...	...	...	...	1	3	2
June.....	204	11	57	3	12	...	174	13	447	27	3	1	...	...	...	...	2	...	5	1
July.....	201	11	26	2	11	...	109	7	347	20	...	3	...	...	...	...	1	...	1	3
August.....	135	4	22	3	8	2	93	7	258	16	...	...	...	...	...	...	1	...	1	...
September.....	132	7	21	1	2	1	78	5	233	14	2	...	...	1	...	...	...	1	2	2
October.....	114	2	16	1	6	...	76	6	212	9	...	1	...	...	...	...	...	...	...	1
November.....	114	8	12	...	5	...	93	...	224	8	4	3	...	1	...	...	...	...	4	4
December.....	88	7	18	...	2	...	63	3	171	10	...	1	...	1	...	...	2	4	2	6
Total.....	2,077	102	537	26	96	4	1,564	83	4,274	215	17	13	1	5	...	...	8	12	26	30

Month, 1929.	Infantile Paralysis.										Cerebro-spinal Meningitis.									
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January.....	11	...	...	...	...	...	2	...	13	...	2	...	...	...	...	...	2	...	4	...
February.....	13	3	1	...	...	...	2	...	16	3	...	...	...	...	...	...	...	...	...	...
March.....	43	6	3	...	...	...	8	1	54	7	2	...	1	...	...	...	1	...	4	...
April.....	51	4	...	...	...	...	32	3	83	7	1	...	...	...	...	...	...	1	...	...
May.....	20	1	1	...	...	1	17	1	38	3	1	2	...	...	...	...	1	1	3	...
June.....	6	1	...	...	...	...	11	...	17	1	...	...	...	...	...	...	1	...	1	...
July.....	3	1	...	1	1	...	6	2	10	4	3	1	1	...	...	...	1	4	2	...
August.....	...	...	1	...	...	...	2	2	3	2	4	...	...	...	...	...	...	1	1	1
September.....	1	...	...	...	...	...	5	1	6	1	...	...	...	...	...	...	1	1	1	1
October.....	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	4	1	5	2
November.....	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	2	1
December.....	1	1	...	...	...	...	...	...	1	1	1	...	...	...	...	...	...	...	1	...
Total.....	149	17	6	1	1	1	85	10	241	29	15	5	2	...	...	...	11	5	28	10

Month, 1929.	* Pulmonary Tuberculosis.										† Puerperal Infection.									
	Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.		Metropolitan Combined Districts.		Hunter River Combined Districts.		Broken Hill District.		Remainder of State.		Total.	
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
January.....	89	59	6	4	...	3	9	19	104	85	...	6	...	3	...	...	...	1	...	10
February.....	76	48	5	5	...	2	5	25	86	80	...	3	...	...	...	...	...	1	...	4
March.....	80	53	3	6	...	...	7	31	90	90	...	3	...	1	...	...	...	1	...	5
April.....	89	63	1	5	...	1	2	21	92	90	...	4	...	...	...	...	...	1	...	5
May.....	110	57	5	6	...	5	8	19	123	87	...	...	...	1	...	...	...	2	...	3
June.....	65	64	3	2	...	3	8	33	76	102	...	4	...	...	...	...	...	...	...	4
July.....	84	57	...	4	...	5	15	36	99	102	...	4	...	2	...	...	...	3	...	9
August.....	108	64	9	6	...	1	3	33	120	104	...	7	...	...	...	...	...	5	...	12
September.....	93	64	2	2	...	2	11	39	106	107	18	4	...	1	...	1	1	3	19	9
October.....	105	64	3	5	...	1	7	29	115	93	12	3	...	1	...	...	1	1	13	5
November.....	110	74	2	4	...	2	8	35	120	115	6	3	...	...	...	...	...	6	6	8
December.....	67	63	2	8	...	1	18	28	84	91	4	8	...	...	...	...	...	...	4	8
Total.....	1,076	726	41	54	...	26	98	346	1,215	1,152	42	48	...	9	...	1	2	23	44	79

\* Notification extended to whole State, 1st March, 1929.

† Cases notifiable from 16th August, 1929. Deaths are shown for whole year.



TABLE VI.—Showing the number of Cases of Infectious Diseases notified in the State of New South Wales during the years 1898 to 1929, inclusive, and the number of deaths therefrom.

Year.	Population.	Typhoid Fever.*		Scarlet Fever.*		Diphtheria.*		Plague.†		Infantile Paralysis.‡		Cerebro-spinal Meningitis.§		Encephalitis Lethargica		Pulmonary Tuberculosis.¶		Total Deaths from Pathology in N.S.W.‡
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
1898	1,323,130	3,302	387	6,342	83	1,493	169	...	...	...	...	...	...	...	...	...	...	1,104
1899	1,344,080	2,783	347	1,389	25	741	60	...	...	...	...	...	...	...	...	...	...	1,078
1900	1,364,590	3,442	398	895	9	726	63	303	103	...	...	...	...	...	...	...	...	1,056
1901	1,376,199	2,702	291	1,288	16	922	131	...	...	...	...	...	...	...	...	...	...	1,134
1902	1,397,858	2,624	276	2,010	61	757	74	140	41	...	...	...	...	...	...	...	...	1,123
1903	1,416,879	4,855	475	5,358	87	1,214	134	2	...	...	...	...	...	...	...	...	...	1,235
1904	1,440,919	2,370	249	4,056	50	1,584	156	12	6	...	...	...	...	...	...	146	...	1,156
1905	1,469,153	2,226	239	1,773	21	1,118	102	56	21	...	...	...	...	...	...	128	...	1,037
1906	1,498,609	2,373	271	3,085	42	1,219	100	20	8	...	...	...	...	...	...	118	...	1,007
1907	1,531,980	1,972	189	2,570	26	1,376	133	51	20	...	...	...	...	...	...	161	...	961
1908	1,560,026	2,607	307	2,755	40	2,001	123	6	3	...	...	...	...	...	...	112	...	1,008
1909	1,596,685	2,615	287	7,178	30	2,419	166	24	7	...	...	...	...	...	...	196	...	1,040
1910	1,638,220	2,714	294	1,642	23	4,989	207	...	...	...	...	...	...	...	...	184	...	1,024
1911	1,698,735	1,864	184	2,618	11	4,784	226	...	...	...	...	...	...	...	...	222	...	1,099
1912	1,778,962	2,126	236	662	11	5,440	253	...	...	...	...	...	...	...	...	265	...	1,078
1913	1,832,546	2,187	236	1,120	23	6,380	310	...	...	47	10	...	...	...	...	228	...	1,210
1914	1,862,028	2,284	250	3,207	21	5,831	247	...	...	79	14	...	...	...	...	293	...	1,178
1915	1,868,644	1,941	219	8,335	97	5,838	264	...	...	63	11	50	33	...	...	361	86	1,122
1916	1,846,736	1,742	209	5,759	107	6,588	309	...	...	311	21	309	145	...	...	1,499	666	1,157
1917	1,886,701	1,091	103	2,255	27	5,805	247	...	...	16	12	197	98	...	...	1,319	584	1,017
1918	1,928,174	810	112	1,308	15	5,151	221	...	...	50	12	120	80	...	...	1,308	586	1,093
1919	2,000,173	857	106	959	10	2,826	114	...	...	8	3	28	23	...	...	1,102	678	1,216
1920	2,099,763	1,016	132	937	24	5,043	263	...	...	45	10	34	27	...	...	1,509	674	1,118
1921	2,128,786	949	129	1,060	8	6,854	306	2	1	184	22	30	28	...	...	1,240	791	1,129
1922	2,174,688	706	99	1,153	11	4,094	207	33	9	33	5	21	22	...	...	1,045	517	1,080
1923	2,211,106	873	104	2,623	13	3,480	176	1	1	104	8	27	22	...	...	1,218	657	1,109
1924	2,256,649	768	97	3,421	29	4,364	222	...	...	108	6	29	38	...	...	1,096	730	1,165
1925	2,300,081	533	80	3,043	27	3,004	118	...	...	57	14	37	27	...	...	1,195	617	1,022
1926	2,349,401	608	80	4,755	53	3,579	147	...	...	81	21	32	23	...	...	1,205	705	1,144
1927	2,401,884	460	68	8,369	113	4,059	179	...	...	25	4	25	10	3	27	1,158	632	1,056
1928	2,446,874	453	60	5,531	105	3,835	168	...	...	30	2	31	8	18	23	1,212	815	1,166
1929	2,479,147	438	45	5,219	78	4,274	215	...	...	241	29	28	10	26	30	1,215	1,152	1,152

\* Notifiable from 1st January, 1898.

† " " 23rd January, 1900.

‡ " " 1st February, 1912.

§ " " 11th October, 1915.

|| " " 1st April, 1926.

¶ 18th October, 1904, in the city of Sydney only; and under Public Health (Amendment) Act, 1915, from 11th August, 1915, in the Metropolitan and Hunter River Districts; from 2nd October, 1916, in the Katoomba Municipality and Blue Mountain Shire, and from 17th December, 1920, in the Blackheath Municipality. Notification extended to whole State on 1st March, 1929.

Puerperal infection was proclaimed a notifiable disease on 16th August, 1929; 44 cases were notified to 31st December, 1929. Seventy-nine deaths were recorded for the year.

## GRAPHS.

Annual Death-rate per 100,000 and case rate per 10,000 of population —

Typhoid Fever ... }  
 Scarlet Fever ... } 1898-1929  
 Diphtheria ... }

Infantile Paralysis:—Annual case and Death-rate per 10,000 of population, 1913-1929.

" " —Monthly case incidence epidemics of 1915-16; 1920-21; 1925-26; and 1928-29.

Whooping Cough:—Annual Death-rate per 100,000 of population ... 1875-1929.

Annual Death-rate per 100,000 of population in New South Wales ... 1875-1929 (p. 11).

## VARIOLA (ALASTRIM TYPE) IN NEW SOUTH WALES, 1929 (F. M. Suckling, M.B., M.S. D.P.H.)

On Saturday, 22nd June, 1929, the Young Australia League contingent returned to Sydney per s.s. "Aorangi," which left Vancouver on 30th May, 1929, calling at Honolulu, Suva and Auckland en route. There had been several cases amongst the party of what was considered to be varicella, and on arrival at Sydney one boy (W.K.) was convalescent and another (A.T.) was suffering from a condition regarded as varicella. W.K. was allowed to proceed to the homes of friends; A.T. was sent to the Coast Hospital as suffering from chicken-pox, but the disease was subsequently diagnosed as modified smallpox, known as "alastrim."

Following this diagnosis A.T. was transferred to the Quarantine Station, North Head, on 28th June, 1929. He had not been previously vaccinated, so this was done on 24th and 28th June, and an immunity reaction resulted, thus confirming the diagnosis of smallpox. W.K. was also removed to the Quarantine Station on 24th June, and received a primary vaccination. Steps were taken by the Commonwealth authorities on 24th June to order all passengers and crew into quarantine, vaccinate them and release them under surveillance.

W.K., who showed signs of successful vaccination on 29th June, 1929, fell ill on 1st July with headache, pains in the limbs and a rise of temperature to 104°, developed a rash on 4th July, which was definitely that of "alastrim," the infection having been incurred whilst on board the "Aorangi"; so that it would seem that his previous illness was due to an attack of varicella, which disease, there is reason to believe had also existed amongst the boys during their travels.

On 5th July, J.W., another Y.A.L. boy from the "Aorangi," who had been under surveillance in Sydney, developed smallpox and was removed to quarantine.

The outbreak was limited to these three cases so far as New South Wales was concerned.

This department assisted in the outbreak by visiting and vaccinating contacts and investigating suspected cases. Varicella was proclaimed a notifiable infectious disease in this State on 28th June, 1929, to assist in tracing any source of infection. This proclamation was rescinded on 23rd August, 1929.



## TYPHOID FEVER.

Annual Death Rate per 100,000 of the Population, and Annual Case Rate per 10,000 in New South Wales, 1898-1929.

Black line — Death Rate.  
Red line — Case Rate



## DIPHTHERIA.

Annual Death Rate per 100,000 of the Population, and Annual Case Rate per 10,000 in New South Wales, 1898-1929.

Black line — Death Rate.  
Red line — Case Rate





TEMPERATURE

Record of temperature taken during the day and night of the 1st of May 1900.

Room No. 1000

Atmospheric temperature taken at 1000 ft. above the ground.

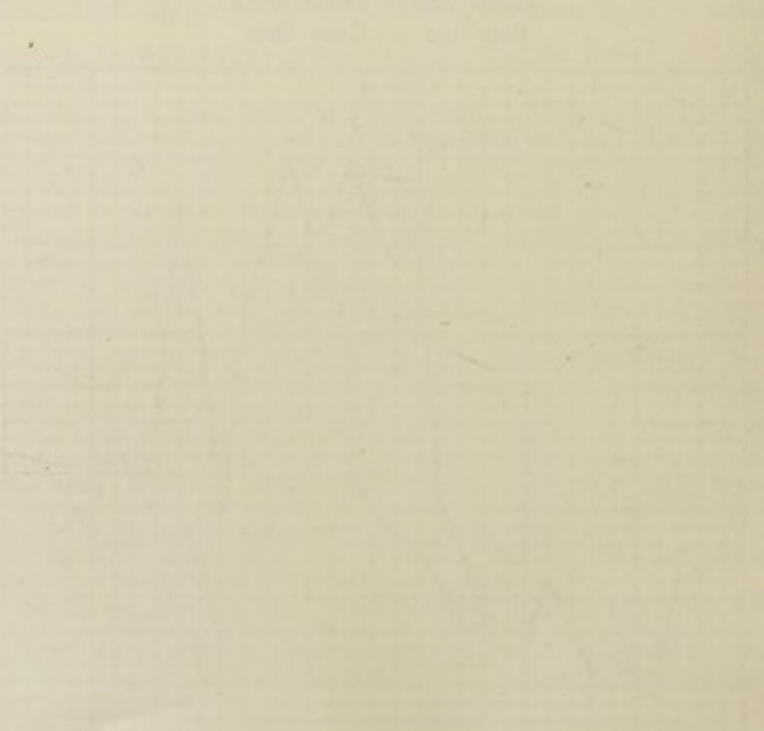


WIND

Record of wind direction and force taken during the day and night of the 1st of May 1900.

Room No. 1000

Atmospheric temperature taken at 1000 ft. above the ground.

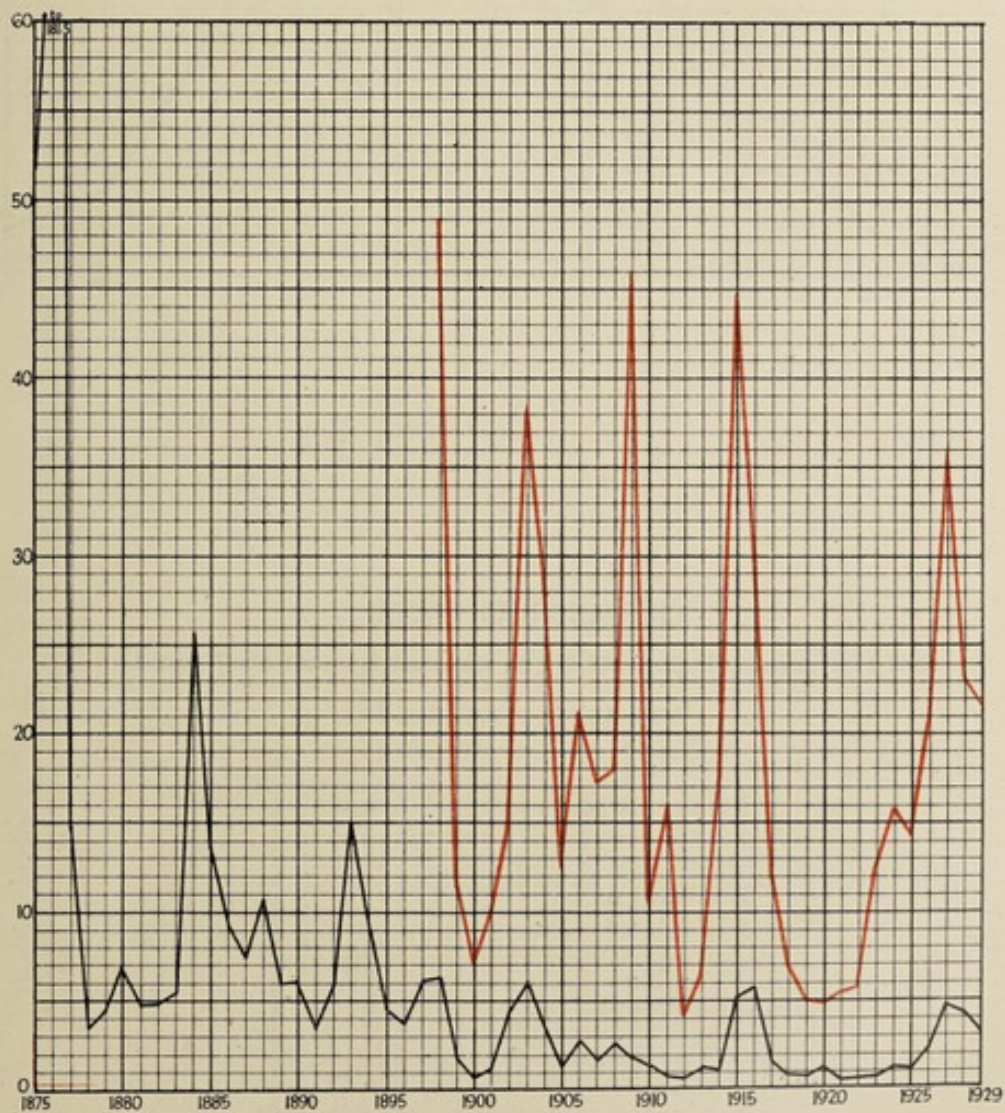


## SCARLET FEVER.

Annual Death Rate per 100,000 of the Population, 1875-1929, and Annual Case Rate per 10,000 of the Population, 1898-1929.

Black line—Death Rate.

Red line—Case Rate.



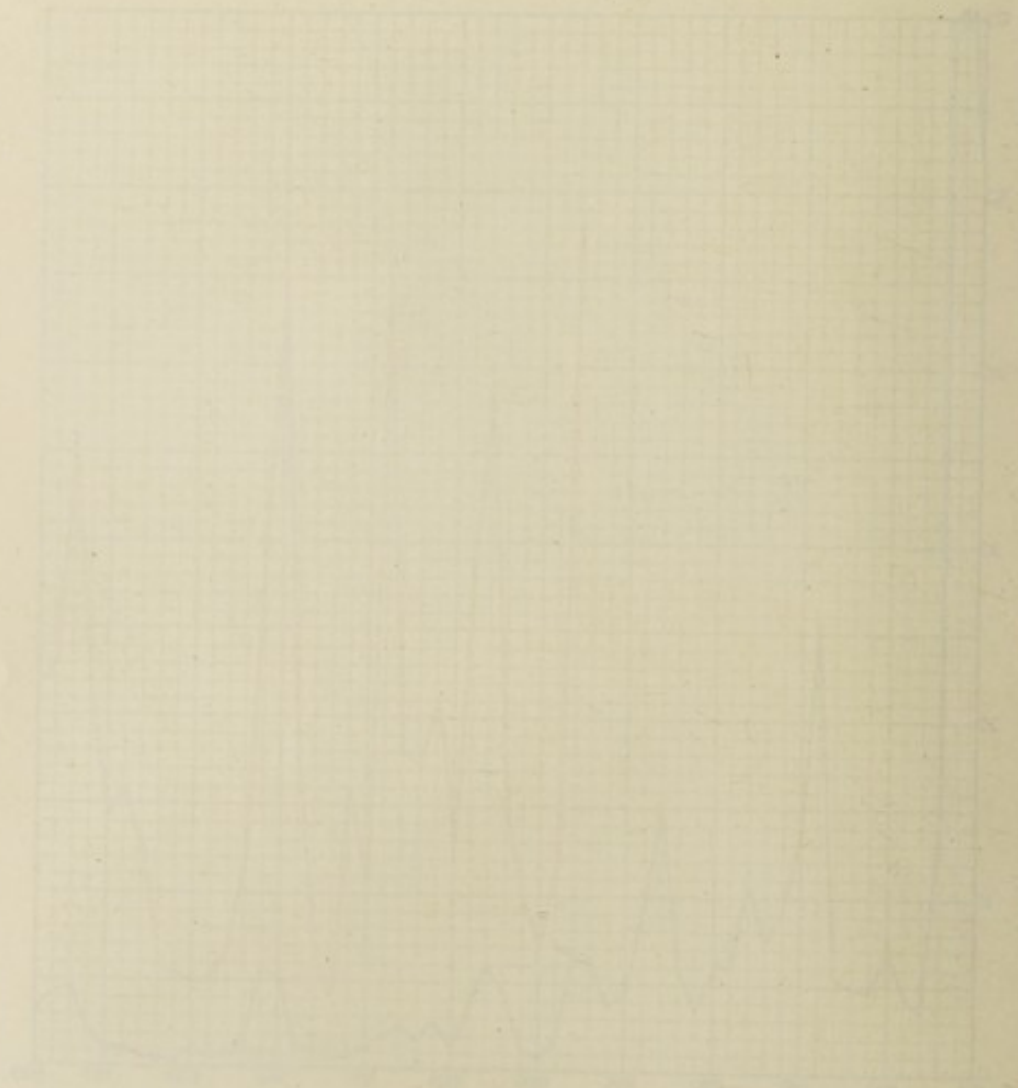


# SCARLET FEVER

Report made from the results of the examination of the patient, and from the history of the case.

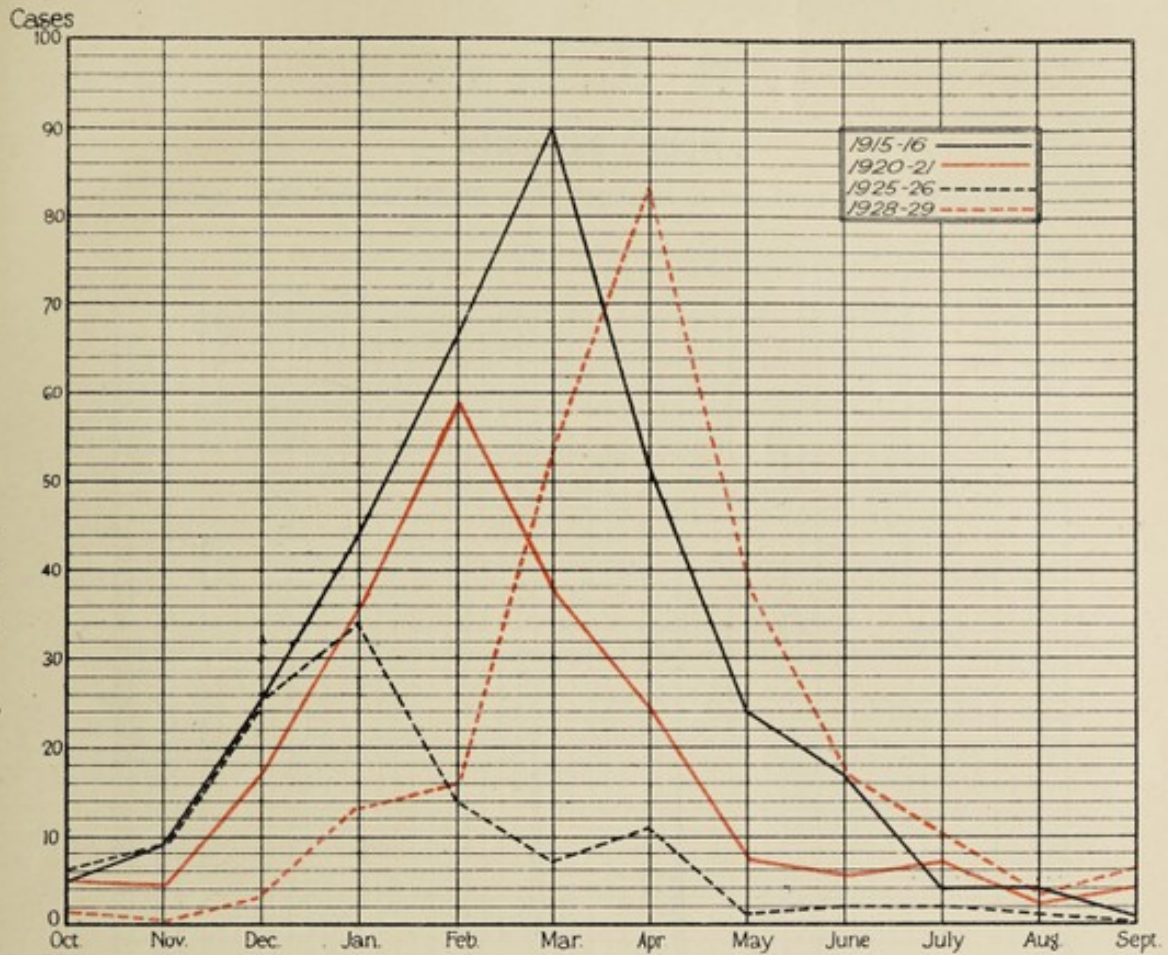
History of the case.

On the 1st of March, 1881, a young man, aged 18 years, was brought to the hospital, complaining of a severe headache, and of a high fever.



## INFANTILE PARALYSIS.

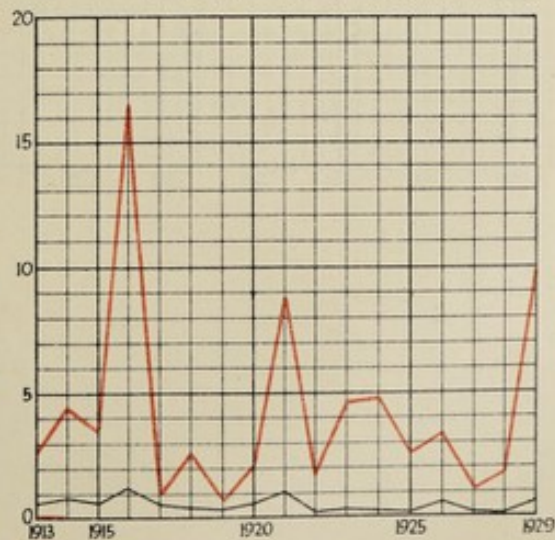
Graph illustrating Epidemics during the years 1915-16, 1920-21, 1925-26, and 1928-29.



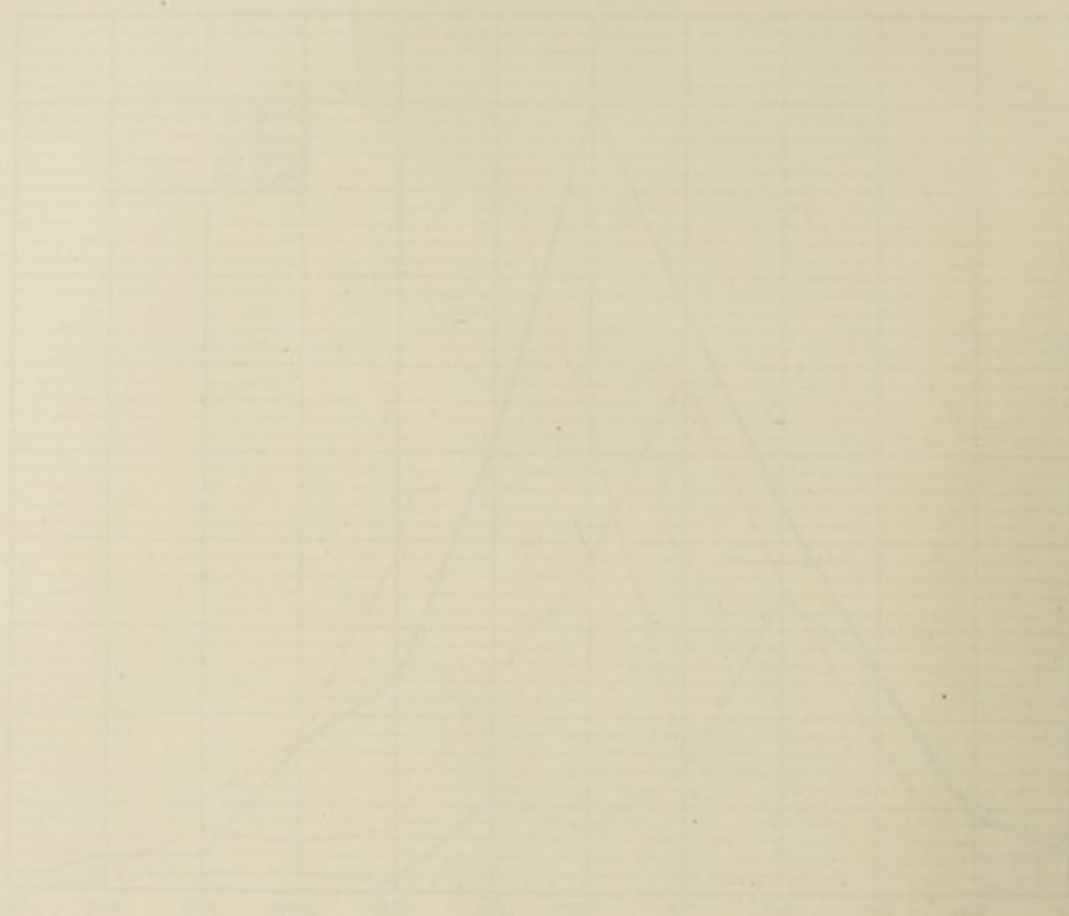
## INFANTILE PARALYSIS.

Annual Death Rate and Case Rate per 100,000 of the Population, 1913-1929.

Black line - Death Rate.  
Red line - Case Rate.





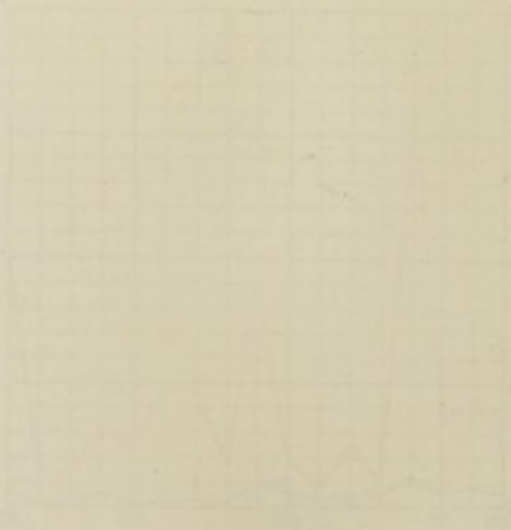


INSTRUMENTAL ANALYSIS

THEORY AND PRACTICE OF ANALYTICAL CHEMISTRY

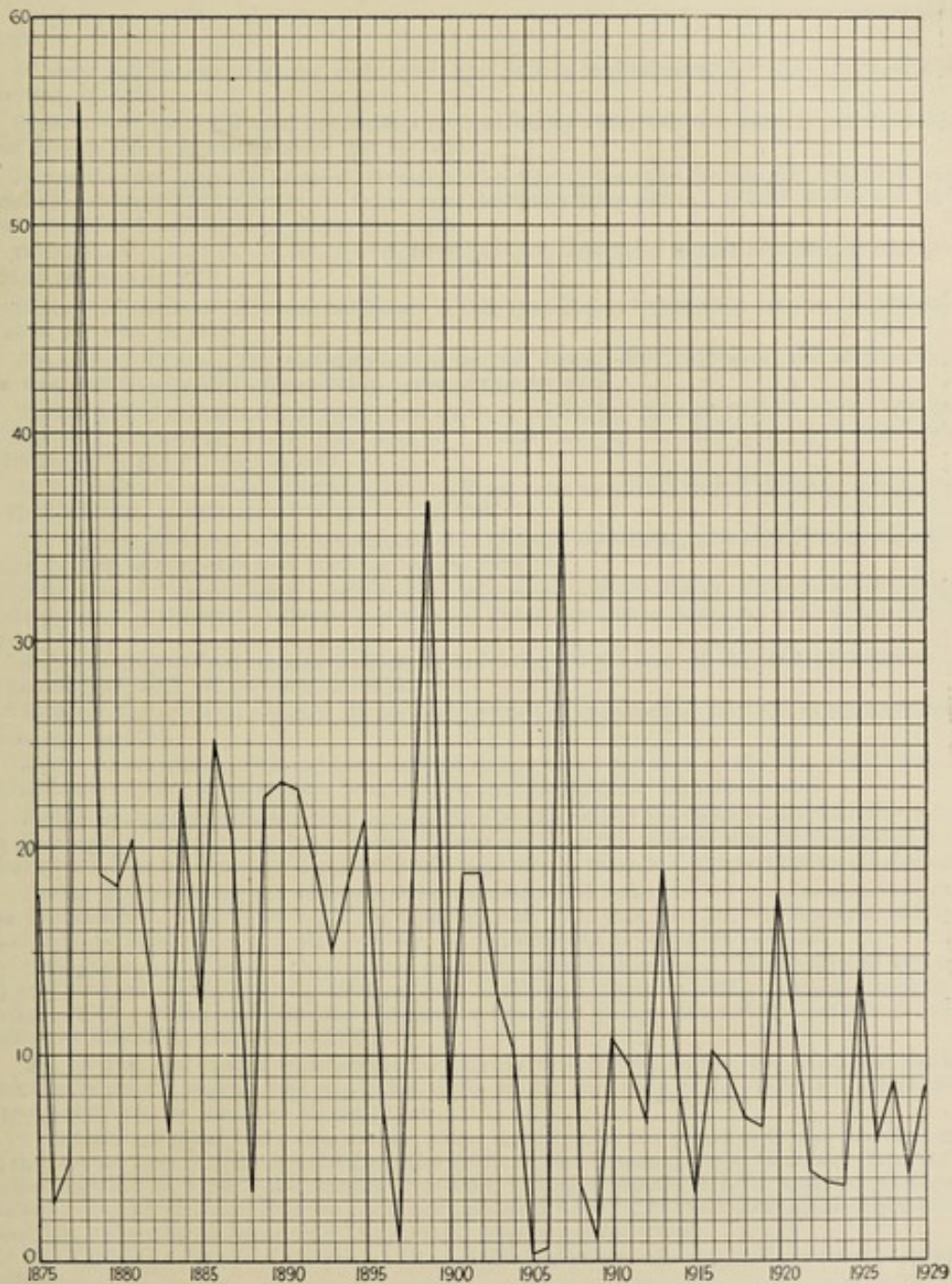
THEORY AND PRACTICE OF ANALYTICAL CHEMISTRY

THEORY AND PRACTICE OF ANALYTICAL CHEMISTRY



## WHOOPING COUGH.

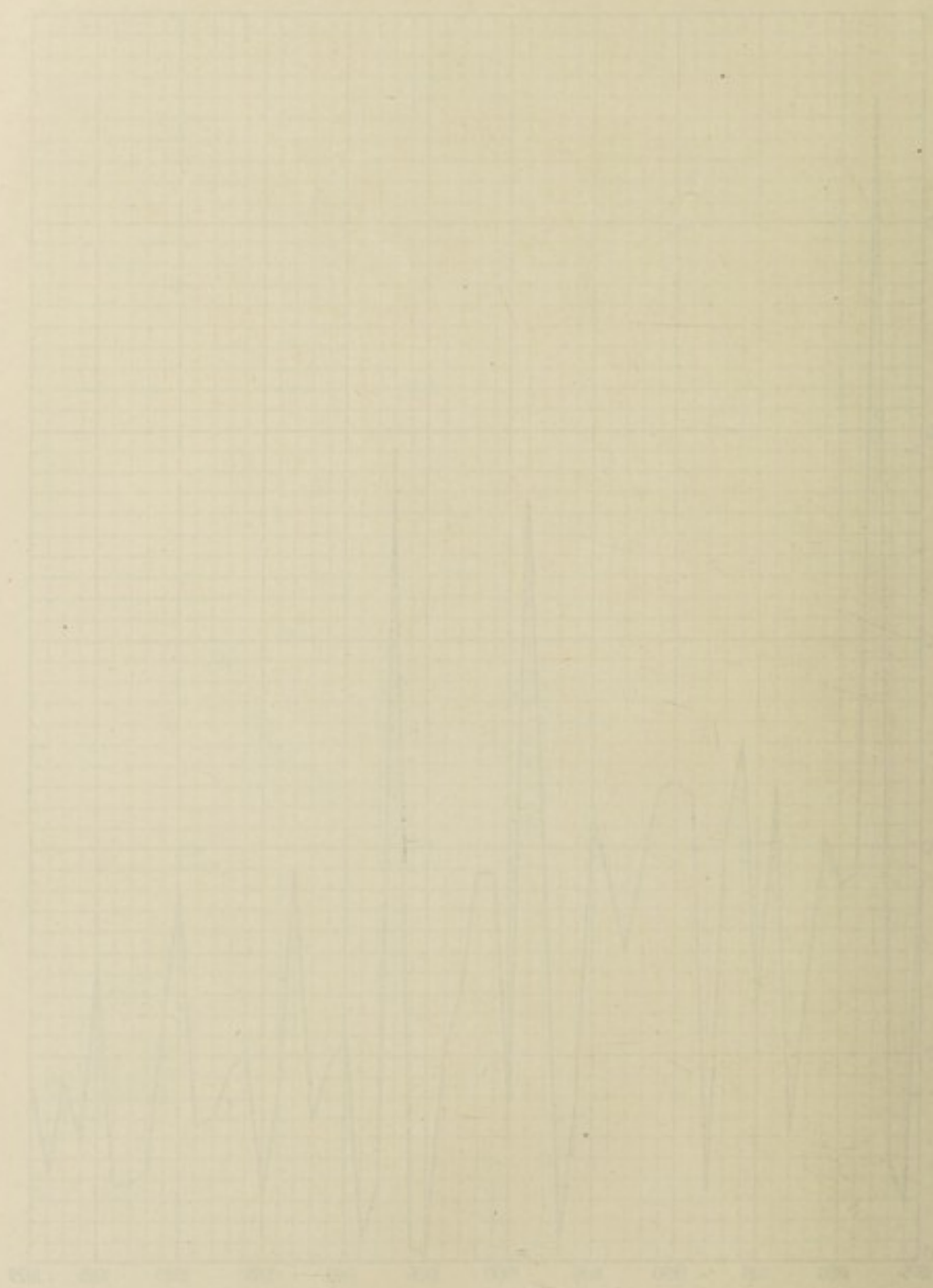
Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1929.





# WHOPPING COUGH

Annual Death Rate per 100,000 of the Population in New York State, 1875-1925



# VENEREAL DISEASES ACT, 1918.

## REPORT ON OPERATION OF THE ACT FOR THE YEAR ENDED 31st DECEMBER, 1929.

Commissioner - - - ROBERT DICK, M.B., M.S., D.P.H.

Director of Division - JOHN COOPER BOOTH, M.B., B.S.

*Notifications.*—5,226 notifications of venereal disease were received during 1929, a total equal to that for 1928.

Of these notifications 49.92 per cent. came from private medical practitioners, as compared with 36 per cent. in 1928.

*Syphilis.*—Of the 5,226 total notifications received during 1929, 995 were cases of syphilis (males 710 and females 285) a figure 260 below that for 1928.

During the nine years the Venereal Diseases Act has been in operation the sex ratio of notified cases of syphilis has averaged 2.93 males to one female case, the figures being 2.49 to 1 in 1929, 2.52 to 1 in 1928, with an average of 3 to 1 for the previous five years.

Of the cases of syphilis notified in 1929, 30.95 per cent. were being treated privately, as compared with 21.35 per cent. in 1928.

Of the total notifications of venereal disease in 1929 syphilis contributed 19.04 per cent., as compared with 24.01 per cent. in 1928.

*Gonorrhoea.*—Of the 5,226 total notifications received during 1929, 3,979 were cases of gonorrhoea (males 3,441 and females 538) a figure 264 in excess of that for 1928.

The sex ratio of notified cases of gonorrhoea shows a very slight increase (.12) for males. For the years 1923–1925, the average was 10 male cases to 1 female case; for the three years 1926–1928, it was 7.84, 7.3 and 6.27; and 6.39 to 1 in 1929.

Of the cases of gonorrhoea notified in 1929 51.99 per cent. were being treated privately as compared with 37.36 per cent. in 1928 and 38.58 per cent. in 1927.

The percentage of cases of gonorrhoea notified in the total notifications of venereal disease was 76.14 per cent. in 1929, as compared with 71.09 per cent. in 1928.

*Other forms of Venereal Disease:* *Soft Chancre* is uncommon in this State and notifications of this disease were .27 per cent. of the total notifications of venereal disease for 1929 as compared with .52 per cent. in 1928.

*Gonorrhoeal ophthalmia* remains consistently low being .06 per cent. of the total notifications for 1929 as compared with .06 per cent. for 1928.

*Venereal Warts:* Were reported .25 per cent. of the total notifications for 1929, as compared with .23 per cent. for 1928.

*Gleet:* (an unsatisfactory term) has remained at just over 4 per cent. of the total notifications of venereal disease for the past three years, being 4.25 per cent. for 1929, 4.07 per cent. for 1928.

*Failure to continue treatment.*—The act provides that if a patient has discontinued treatment before being discharged as cured or free from venereal disease, his name and address must be forwarded by his medical attendant to the Commissioner in order that steps may be taken to secure resumption of treatment.

During 1929 the names and addresses of 842 defaulters (535 males and 307 females) were forwarded to the Commissioner. This figure is 271 less than last year. The defaulters for 1929 represent 16.11 per cent. of the total notifications of venereal disease, as compared with 21.28 per cent. for 1928.

Owing to wrong information having been given 387 letters (a decrease of 215 as compared with last year) were returned unclaimed giving 45.96 per cent. undelivered letters for 1929 as compared with 54.18 per cent. in 1928. Of the total defaulters 368 resumed treatment giving a figure of 43.7 per cent. for 1929 as compared with 39.62 per cent. in 1928.

The location and control of defaulters may always be a difficult matter, but where the medical practitioner in private, and the staff at a public clinic, has the confidence of the patient and gives skilled and sympathetic service, defaulters should be few.

*Defaulters Notified to the Commissioner under the Act.*—For the period of 9 years and 1 month that this Act has been in operation (1st December, 1920, to 31st December, 1929) there have been 12,747 defaulters notified, of which 4,135 resumed treatment, leaving a balance of 8,612 apparent permanent defaulters. Registered letters returned unclaimed numbered 6,500; 2,112 defaulters apparently received notices, but still remained defaulters. There were 3 prosecutions for default.

The following table shows the percentage of notified defaulters who remained apparent permanent defaulters:—

Year.	Total Defaulters Notified.	Resumed Treatment.	Remained in Default.	Percentage Remaining in Default.
1921	2,472	906	1,566	61.73
1922	1,992	628	1,364	68.47
1923	1,749	545	1,204	68.84
1924	1,354	422	932	68.83
1925	955	241	714	74.76
1926	1,060	280	780	73.58
1927	1,210	304	906	74.88
1928	1,113	441	672	60.38
1929	842	368	474	56.29



The figures show that the year 1929 has given the best results so far since the introduction of the Act in the following up of patients and inducing them to resume treatment, but the results are still far from satisfactory. Many of the defaulters are syphilitics and of them a number are certain to become a charge on the State at some future date (as inmates in asylums, hospitals, &c.). There is also the ever present danger of these people infecting others.

More active steps are now being taken in following up defaulters by a visit from a nurse, or (in the case of males) a male inspector, and it is hoped that the percentage of untraced defaulters will be further decreased each year. The lack of provision for continuous treatment of males is no doubt a reason for many cases of default.

#### CLINICS.

*Metropolitan District.*—No additional clinics were opened in 1929. There are at present 8 clinics in operation, one of which (at the Rachel Forster Hospital for Women) may be classed as continuous.

Although there has been a decrease in the number of patients admitted to public clinics and an increase in the number reported treated privately, it does not necessarily indicate that more patients are seeking private attention, and may merely be due to the fact that more private practitioners are complying with the requirements of the Act and notifying, and that some clinics have limited the number of admissions.

Attendances at the clinics for males numbered 64,349 in 1929 as compared with 62,996 in 1928; at the clinics for females the figures were 20,529 for 1929, 17,924 for 1928.

It is realised that the clinics attached to public hospitals are carrying on under difficulties as regards staff, accommodation and finance, and that the present arrangements for the treatment of venereal diseases leave much to be desired.

The need for a central continuous clinic for males under departmental control is obvious and urgent. This matter has been mentioned in former reports, but so far the desired clinic has not yet been established. During the year various sites were inspected and one, with a building on it, strongly recommended. Plans for alterations of the building and estimates of cost were prepared and there at present the matter rests.

*Newcastle District.*—Although the notifications of venereal disease from the Newcastle district are greater this year than any previous year and give promise of being still increased in 1930, the proposed clinic has not yet been erected. The urgent need for the establishment of a modern clinic in this seaport city has been mentioned in former reports, but so far no facilities have been provided.

Complaint was made at the end of 1929 that, owing to financial misfortune, a large number of persons who were being treated privately were now forced to seek free treatment, and that such treatment was not available.

This office has had difficulty in former years in arriving at a true assessment of venereal disease in Newcastle district owing to the few notifications received from that area. On paper the amount of venereal disease reported has been absurdly small and unless the medical practitioners will aid in presenting a true picture of the present state of affairs, by complying with the requirements of the Venereal Diseases Act and Regulations, it may be some time before the desired relief is available.

*Bed Accommodation.*—The Coast Hospital provides bed accommodation for 91 male patients. At other institutions there are a total of 29 beds for females and 15 for children.

There is need for the provision of a hostel for women who are attending as out-patients at a clinic, and for additional accommodation for pregnant infected women.

Women and children are poorly provided for as regards bed accommodation.

*Expenditure.*—The Federal Government contributed £4,500 towards the expenditure incurred in 1929 in connection with venereal disease. There has been a steady increase in expenditure. In 1927 it was £28,581; in 1928, £31,275; and in 1929, £36,898.

*Pathological Examinations.*—Table 2b shows the use made of laboratory tests for diagnostic purposes and progress reports during treatment.

In 1929, 21,166 serological tests were made on 9,180 specimens as compared with 21,263 on 9,072 specimens in 1928.

In 1929, 4,924 smears were examined for detection of gonococci as compared with 4,669 in 1928.

*Division of Venereal Diseases.*—The Director of the Division of Venereal Diseases took up duty on 2nd April, 1929.

Several suggestions, many of which agree with opinions already expressed, have been submitted by him, the chief being the urgent need for the immediate establishment of a continuous clinic for males in Sydney.

It is hoped that when this clinic is established arrangements may be made with hospitals in out-lying suburbs to provide facilities for irrigation and so save patients unnecessary daily journeys from their district of employment into the city. The visits made to the central clinic in such cases would then be for routine observation or for special treatment, each patient reporting according to the requirements of the Regulations or more frequently according to the urgency of his condition.

#### SYPHILIS IN MATERNITY HOSPITALS.

A questionnaire was sent to 5 of the public maternity hospitals in Sydney inquiring as to what action was taken to detect syphilis in the expectant mother and what steps were taken when syphilis was detected to attempt to ensure the birth of a healthy infant.

Four out of the 5 hospitals replied. In none of the hospitals was a routine Wassermann or other test carried out. As a reason for this one hospital stated that there was no indication for it, one that it had no pathological department, and 2 could give no reason.

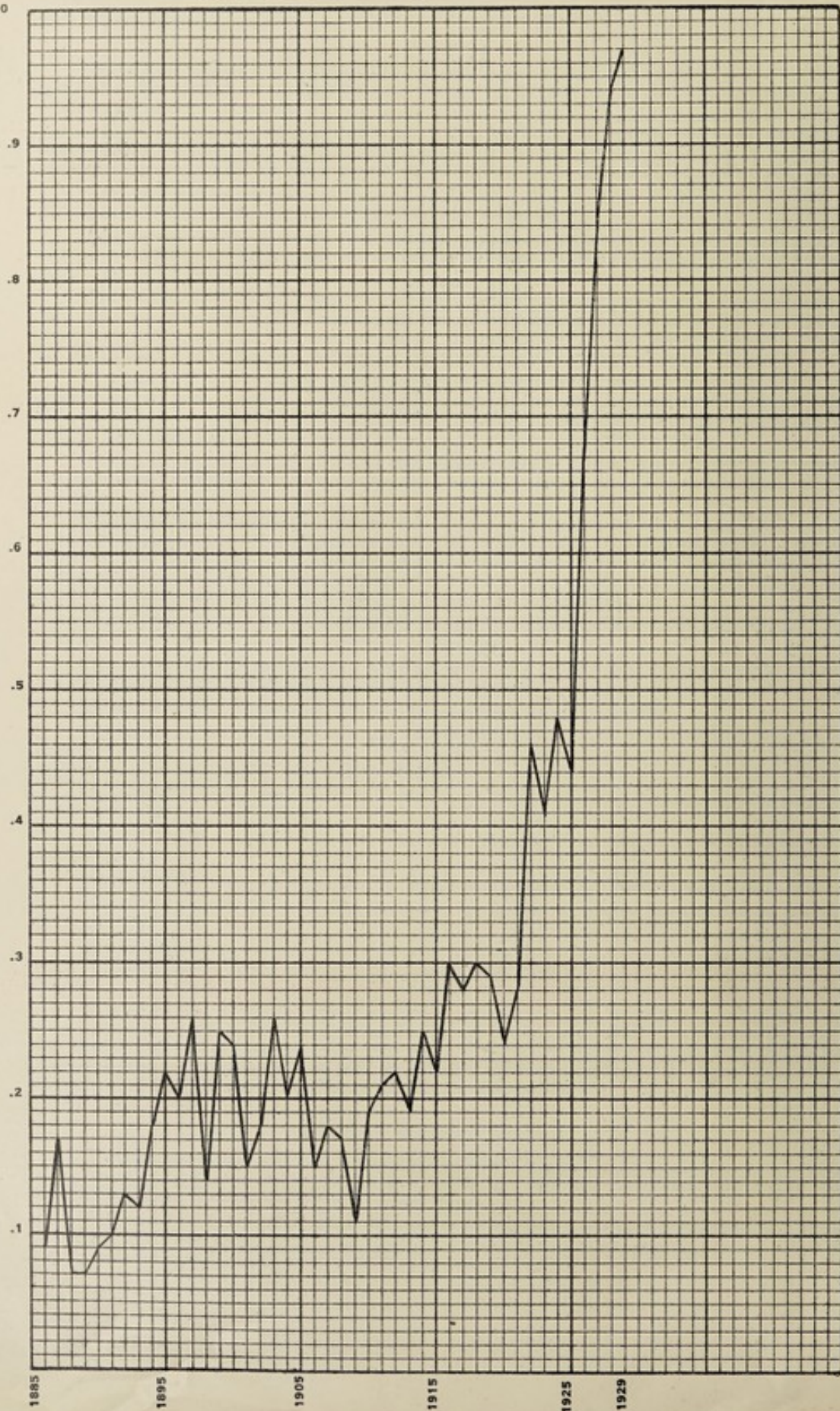




DEATHS  
from  
ANGINA PECTORIS  
in  
NEW SOUTH WALES, 1886-1929.

RATE PER  
10,000 OF  
POPULATION.

1.0





It appeared that a blood examination was only made in suspicious cases or where clinical indications of syphilis existed. As a general rule patients were asked if they had ever had syphilis, but no attempt was made to verify their statements unless signs of the disease were present.

Where syphilis was detected it was usual—with the exception of one hospital, which, being a general hospital, had a clinic of its own—to transfer the patient to a clinic at another hospital for treatment.

The replies to the question as to how many cases of syphilis were detected each year conveyed but little useful information, as either no record had been kept or the ideas were very vague. Only one hospital appeared to have any idea of the probable incidence of this disease, the others definitely under-estimated the possibilities of the situation.

All the hospitals warned their nurses of the dangers of infection and a lecture was generally given on gonorrhœa and syphilis during the course of training.

None of the hospitals were able to give any opinion as to probable death rate from syphilis in infants born dead or dying within one month of birth, and apparently none of them at present are in a position to express any authoritative opinion as to the incidence of syphilis among their patients. Two of the largest hospitals are planning to introduce routine tests in the near future for the detection of venereal disease.

Routine tests for venereal diseases, especially syphilis, should be made on every pregnant woman, both for her own sake and for the sake of the unborn child.

It is recognised that venereal diseases are preventable, and such prematernity examinations for venereal disease in expectant mothers are part of the prophylactic scheme which this Department has in view.

When the medical profession recognises more fully the enormous amount of invalidity and the preventable increase in the death rate primarily due to venereal disease, especially syphilis, such examinations will become usual and be regarded as a customary part of routine ante-natal supervision.

#### LATE MANIFESTATIONS OF SYPHILIS.

##### 1. INCREASE IN DEATH RATE FROM ANGINA PECTORIS. IS THIS PRIMARILY DUE TO SYPHILIS OR TO OTHER CAUSES?

When comparing the yearly death-rate from angina pectoris in New South Wales for the past years (1920-1929) it was noticeable that there was a very marked rise in the latter half of this decade.

In 1925 the rate was .44 per 10,000 of population, and from that year the rise was rapid and continuous to .97 per 10,000 in 1929.

This sharp rise in the death rate is not peculiar to New South Wales, but occurs also in England and Wales and in New Zealand.

It is difficult to obtain reliable figures from Canada and the United States of America, but there are indications of a similar increase in Canada.

The reason put forward for the sudden increase in England and Wales in 1927 to .72 per 10,000 (as against .48 per 10,000 for 1926) was explained (Registrar-General's Statistical Review of England and Wales for the year 1927, Text) by the fact that in former years deaths from sclerosis and thrombosis of the coronary arteries were classified with those from similar diseases of other arteries, but in 1927 such deaths were transferred to angina pectoris. This transference, however, does not explain the rise in the death rate to .94 per 10,000 in 1928. It is of interest that the death rate from angina pectoris in England and Wales and in New South Wales is the same for the year 1928, .94 per 10,000.

It is difficult to account for this increase in New South Wales. It is not due to any particular loading of this group from the arterio-sclerosis atheroma and aneurysm group, for the latter group shows a tendency to rise slightly over the period under review.

It apparently is not an aftermath of the influenza epidemic of 1919, for there was not a corresponding rise after the epidemic of 1891.

It can hardly be due to a fashion in diagnosis, for it affects other countries and the complaint is one with dramatic signs. No doubt many precordial discomforts are diagnosed as angina pectoris when some other condition really accounts for the distress, but when death results the margin of error in diagnosis should be quite small.

It has been claimed that about half the deaths from angina pectoris are primarily due to syphilis. It is known that syphilis is responsible for many deaths which are politely hidden under other names on death certificates to-day. May be syphilis is responsible in no small degree for this increase in the death rate from angina pectoris. This remains to be proved, and it is hoped that medical practitioners in attendance on such cases will assist in solving this problem.

Many persons who have ceased treatment after subcurative doses of arsenobenzene and other compounds have considered themselves cured, there being no outward signs of the disease. The majority of such people will some time have to pay the price of such foolishness, either in invalidity or in premature death. Perhaps the increase in angina pectoris is part of the price being paid for neglect to continue treatment which was commenced in the days of the Great War.



## 2. GENERAL PARALYSIS OF THE INSANE.

During 1929 an examination was made of the figures dealing with the admission into Mental Hospitals in this State of patients suffering from General Paralysis of the Insane and a calculation made of the incidence per 10,000 of the population. The years examined were from 1910 to 1928, inclusive. The average was 358 per 10,000 of the population.

Year.	Rate per 10,000 population.	Year.	Rate per 10,000 population.	Year.	Rate per 10,000 population.	Year.	Rate per 10,000 population.
1910	322	1915	435	*1920	158	1924-25	330
1911	411	1916	366	1920-21	346	1925-26	383
1912	453	1917	349	1921-22	340	1926-27	325
1913	460	1918	367	1922-23	208	1927-28	323
1914	505	1919	383	1923-24	328		

\* 1st January to 30th June.

The subject of late manifestations of syphilis is a matter of vital importance.

Such conditions help to fill our hospitals and asylums and contribute towards inefficiency and unemployment.

Many known defaulting syphilitics have had but little treatment, and there is a growing suspicion that subcurative doses of treponemocidal drugs, as well as the exclusive use of arsenobenzene compounds, may lead to a higher percentage of subsequent neurosyphilitics.

It is necessary to sound a warning against the present apathetic attitude of the community as a whole regarding venereal disease.

This group of diseases, as well as affecting the health of the community, is a menace to the progress of the nation. It is a cause of sterility, miscarriage and still birth; taking toll in infant life from a country which can ill afford to lose a native born.

During 1930 the "follow up" of defaulters will be carried out more searchingly than hitherto, and where the defaulter persists in refusing to comply with the requirements of the law action will be taken to compel him to continue treatment until cured.

## EFFECT OF SYPHILIS ON THE DEATH RATE.

## RATE PER 100,000 OF POPULATION IN COMPARISON WITH SOME PRINCIPAL DISEASES.

The "array of observations" given opposite shows syphilis as the maximum. Under the heading of syphilis has been included the proportion of deaths from other classifications which should be ascribed to syphilis according to C. B. Ransome.\* As a comparison the valuation of the Committee appointed by the Commonwealth Government in 1914 to consider and report on the Causes of Death and Invalidity in the Commonwealth† is paralleled with the first mentioned scale. Under either scale the total arrived at is one which is of sufficient magnitude to demand attention and justify further action and expenditure of funds.

## Death Percentage allotted to Syphilis.

Ransome's* Value.	Commonwealth† Committee's Value.	Disease.
100	100	Syphilis.
100	100	Locomotor Ataxia.
100	100	Congenital debility, Icterus, Sclerema.
100	100	General Paralysis of the Insane.
50	—	Angina Pectoris.
50	33½	Organic disease of Heart.
40	75	Diseases of Arteries, Atheroma Aneurysm.
40	33½	Cerebral Haemorrhage, Apoplexy.
40	33½	Softening of the Brain.
20	20	Bright's Disease.
10	33½	Epilepsy.
10	33½	Encephalitis.
10	33½	Meningitis.
—	20	Hepatic Cirrhosis.
—	33½	Paralyses without specified cause.

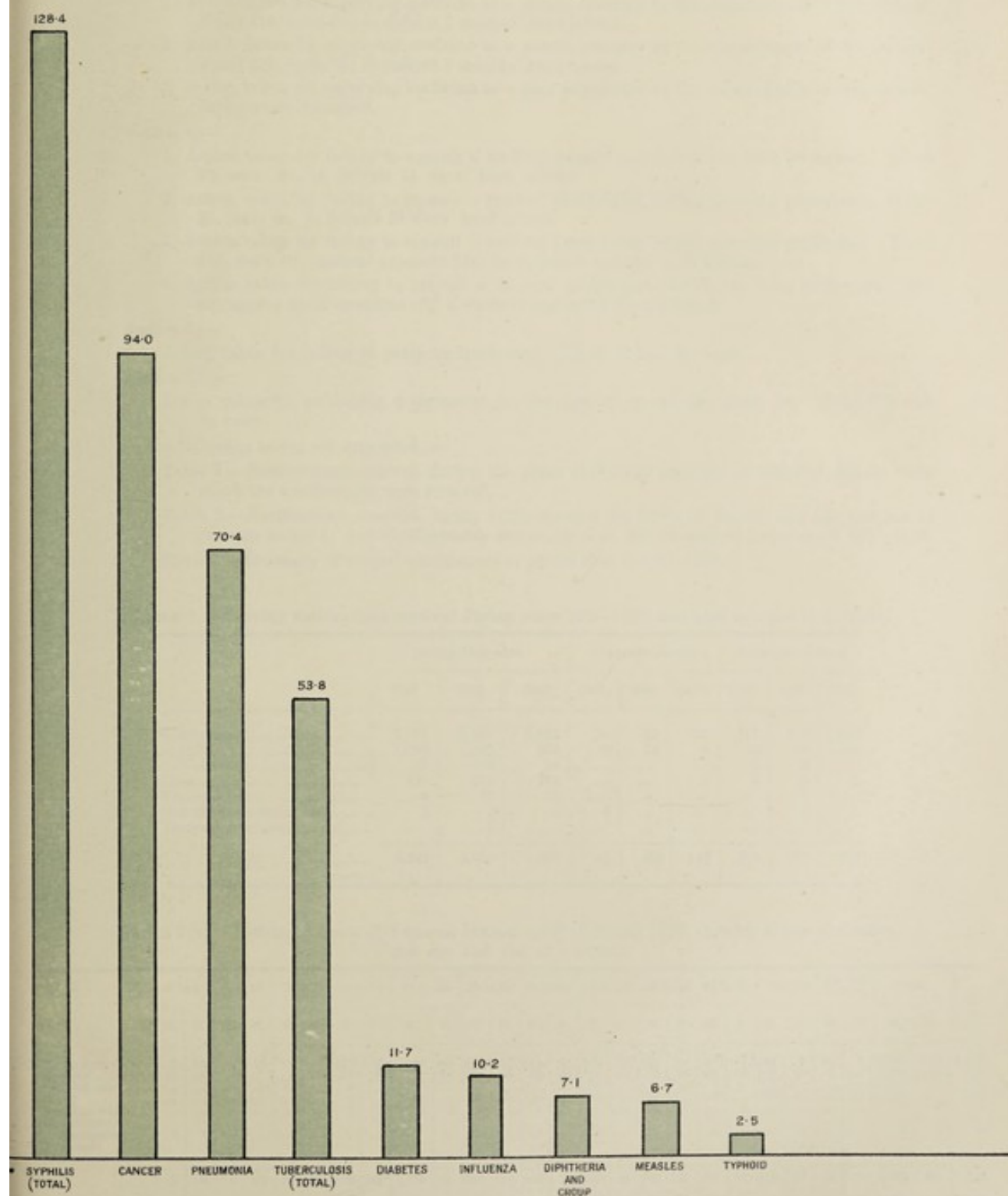
\* Virginia (U.S.A.) Medical Monthly, 1929, vol. 56, p. 307.

† Report on Venereal Diseases, May, 1916.

## EDUCATIONAL PROPAGANDA.

The Department possesses the following films dealing with venereal disease and sex hygiene:—"The Gift of Life," "The Health Twins," "Social Hygiene for Women," "Waste," "Memories," "The Flaw," "Whatsoever a Man Soweth," and "Well-born." These films have been extensively shown in conjunction with addresses and lectures. Leaflets are distributed and posters kept displayed in public lavatories throughout the State. The poster drawing attention to clinics available for the treatment of women and children has been rewritten and will be displayed in 1930. A circular was sent, with a copy of the Venereal Diseases Act and Regulations, to every medical practitioner in the State in October and November, 1929, drawing attention to their obligations.

The estimated probable position of Syphilis in an Array of Observations of deaths from various causes in New South Wales (per 100,000, 1928), based on figures supplied in an article on "The Prevention of Syphilis in Virginia, U.S.A.," by C. B. Ransone (Virginia Med. Monthly, Vol. 56, 1929, p. 307).



\* UNDER THIS HEADING HAS BEEN INCLUDED THE PROPORTION OF DEATHS FROM OTHER CLASSIFICATIONS THAT MIGHT BE ASCRIBED TO SYPHILIS.



The estimated probable position of the ...  
 various ... in the ...  
 article on "The ..."  
 date ...



...

The members of the Racial Hygiene Association of New South Wales and of the "Fathers and Sons Welfare Movement" have been of considerable assistance to this Department in organising meetings, displaying films and distributing literature. The Racial Hygiene Association of New South Wales held a congress in September, 1929, which was successful in awakening public interest in matters connected with venereal disease.

It is unfortunate that the publicity given to venereal disease problems is only spasmodic. One cannot hope for much advance in the education of the public in these matters unless the publicity given is continuous and capable of sustaining interest and stimulating action.

#### PROSECUTIONS.

There were nine prosecutions under the Venereal Diseases Act during the year, viz.:—

##### Section 3 (1).—

1. Action taken for supplying medicine to a person contrary to the requirements of this section. Fined £15, costs 8s., in default 2 months' hard labour.
2. Action taken for supplying medicine to a person contrary to the requirements of this section. Fined £15, costs 8s., in default 2 months' hard labour.
3. Action taken for supplying medicine to a person contrary to the requirements of this section. Information dismissed.

##### Section 4.—

1. Action taken for failing to consult a medical practitioner within the time prescribed. Fined £3, costs 8s., in default 21 days' hard labour.
2. Action taken for failing to consult a medical practitioner within the time prescribed. Fined £3, costs 8s., in default 21 days' hard labour.
3. Action taken for failing to consult a medical practitioner within the time prescribed. Fined £10, costs 8s., medical expenses 21s., in default 2 months' hard labour.
4. Action taken for failing to consult a medical practitioner within the time prescribed. Did not appear upon summons and a warrant was issued for her arrest.

##### Section 5.—

Action taken for failing to continue treatment. Fined £2 and 8s. costs.

##### Section 25.—

Action taken for publishing a statement for the cure of gonorrhoea, gleet, &c. Fined £20 and 8s. costs.

The following tables are appended:—

Table 1.—Notifications received during the years 1927–1929 arranged in order of district from which the notifications were received.

Table 2.—Notifications received during 1929, showing (a) forms of disease and age and sex of patients notified; and (b) diagnostic examination in Microbiological Laboratory, 1927–1929.

Table 3.—Summary of annual attendances at public clinics, 1927–1929.

TABLE 1.—Showing notifications received during years 1927–1929, arranged in order of districts.

	Metropolitan Area.			Newcastle District.			Remainder of State.		
	1927.	1928.	1929.	1927.	1928.	1929.	1927.	1928.	1929.
Gonorrhoea .....	3,884	3,487	3,651	39	22	122	211	206	206
Syphilis .....	1,190	1,180	928	9	12	15	58	63	52
Soft chancre .....	31	24	14	...	...	...	3	3	...
Gleet .....	237	210	213	...	...	5	3	3	4
Venereal warts .....	6	11	13	...	...	...	...	1	...
Gonorrhoeal ophthalmia .....	1	2	2	1	...	...	...	1	1
Venereal granuloma .....	...	1	...	...	...	...	1	...	...
Total .....	5,349	4,915	4,821	49	34	142	276	277	263

TABLE 2 (a).—Return of cases of Venereal Disease notified during 1929, showing forms of disease, and age and sex of patients.

		0 to 5		6 to 10		11 to 15		16 to 20		21 to 25		26 to 30		31 to 35		36 to 40		41 to 45		46 to 50		Over 50		Age not Stated.		Total.		Total.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Gonorrhoea	...	5	46	2	46	14	19	473	139	979	133	818	71	444	32	320	27	159	14	97	7	106	3	24	1	3,441	538	3,979
Syphilis	...	13	11	4		6	35	43	121	56	124	39	93	38	74	39	62	18	60	14	112	15	7	...	710	285	995	
Soft chancre	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	3	...	1	...	1	...	1	...	...	...	14	...	14
Gleet	...	...	...	...	...	...	...	4	45	...	53	...	45	...	33	...	20	...	9	...	10	...	3	...	222	...	222	
Venereal warts	...	...	...	...	...	...	2	1	2	2	1	1	1	1	1	...	...	...	...	1	...	...	...	...	7	6	13	
Gonorrhoeal ophthalmia	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	3	
Venereal granuloma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
		19	59	6	52	19	25	518	183	1,149	191	998	111	583	71	431	66	242	32	167	22	229	18	34	1	4,395	831	5,226



TABLE 2 (b).—Diagnostic examinations for Venereal Diseases made in the Microbiological Laboratory during the years 1927-1929:

Year.	Gonorrhoea. (Smears and Urine.)	Gonorrhoea. (Complement Deviation Test.)	Syphilis. (Wassermann Reaction.)	Syphilis. (Kahn's test.)	Syphilis. (Smears for Spirochaetes.)
1927	3,928	2,726	7,300	5,629	16
1928	4,069	3,811	9,072	8,380	36
1929	4,924	3,737	9,180	8,249*	43

\* Second test had to be omitted on some specimens owing to shortage of staff.

TABLE 3.—Summary of Annual Attendance Returns at Public Clinics for treatment of Venereal Diseases, 1927-1929.

Year Ended.	Attendances.			New Cases.					
				Gonorrhoea.			Syphilis.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
<i>Royal Prince Alfred Hospital.</i>									
1927	28,096	6,673	34,769	629	189	818	181	81	262
1928	28,765	6,924	35,689	557	162	719	169	62	232
1929	29,261	7,226	36,487	515	141	656	166	70	236
<i>Sydney Hospital.</i>									
1927	16,718	2,827	19,545	947	61	1,008	208	62	270
1928	15,729	3,764	19,493	595	89	684	192	90	282
1929	10,755	3,718	14,473	246	49	295	149	78	227
<i>Royal Alexandra Hospital for Children.</i>									
1927	636	1,406	2,042	4	35	39	24	42	66
1928	1,173	2,231	3,404	...	23	23	25	51	76
1929	912	1,906	2,818	1	28	29	13	19	32
<i>Royal South Sydney Hospital.</i>									
1927	1,763	241	2,004	82	1	83	28	14	42
1928	2,261	357	2,618	95	10	105	19	11	30
1929	3,215	522	3,737	128	2	130	14	7	21
<i>Royal North Shore Hospital.</i>									
1927	4,055	1,315	5,370	63	24	87	24	12	36
1928	3,730	1,897	5,627	83	17	100	39	19	49
1929	3,893	1,853	5,746	76	39	115	3	10	13
<i>Coast Hospital Night Clinics for Syphilis (Men Only).</i>									
1. Hospital Admission Depot, Head Office (Coast Hospital Staff).									
1927	7,936	...	7,936	...	...	...	448	...	448
1928	9,209	...	9,209	...	...	...	498	...	498
1929	9,876	...	9,876	...	...	...	436	...	436
2. Coast Hospital, Little Bay.									
1927	1,471	...	1,471	...	...	...	...	...	...
1928	2,129	...	2,129	...	...	...	...	...	...
1929	6,438	...	6,438	...	...	...	...	...	...
<i>Rachel Forster Hospital for Women and Children.</i>									
1927	M. and F.	1,400	1,400	...	60	60	...	24	24
1928	M. and F.	4,413	4,413	...	101	101	...	74	74
1929	M. and F.	5,404	5,404	...	103	103	...	68	68

SECTION I—D.  
TUBERCULOSIS DIVISION.  
REPORT OF DIRECTOR TO 31st DECEMBER, 1929.

STAFF.

*Director*—Dr. H. K. DENHAM, B.A., LL.B., M.B., Ch.M., D.S.O., V.D.

One Clerk, four Visiting Nurses.

I have to report as follows on the work of the Tuberculosis Division for 1929.

*Co-operation.*—With the continuation of the active functioning of the Board of Control of the Campaign against Tuberculosis, co-ordination of the various anti-tuberculosis associations is making satisfactory progress. It has now reached a high degree of efficiency, although more can still be accomplished. It is especially desirable that there should be closer co-operation with private practitioners, private sanatoria, and the Relief Section of the Chief Secretary's department, and this is anticipated in the near future. During the year an arrangement has been made with the Child Welfare department whereby that department notifies this Division of all families in which a member is known or suspected to have tuberculosis. The family is then visited and given suitable instructions to avoid the spread of infection. The Child Welfare department has also been supplied with pamphlets, showing the times of attendance at the various anti-tuberculosis dispensaries, for distribution by their officers among suspects and contacts in homes under their supervision which are not already being visited by a tuberculosis nurse.

NOTIFICATION.

By proclamation dated 1st March, 1929, Sections 10, 11 and 12 of the Public Health (Amendment) Act, 1915, were extended to the whole of the State of New South Wales. Hence notification of cases of pulmonary tuberculosis now occurring in the Metropolitan, Hunter River and Broken Hill Combined Sanitary Districts must be made to the Medical Officer of Health for those districts and those occurring elsewhere in the State, to the Secretary, Board of Health. An amendment of the Public Health (Amendment) Act, 1915, will be required before notification can be made direct to this Division. There was no appreciable increase in the number of notifications received as a result of the extension, and a circular was recently sent to all medical practitioners directing attention to the fact that notification of pulmonary tuberculosis is now compulsory throughout the whole of the State. A substantial increase in the total number of notifications is anticipated in 1930.

TABLE 1.—showing the age and sex incidence of the 1,215 cases of Pulmonary Tuberculosis notified during the year ended 31st December, 1929.

Age Period.	Metropolitan Combined Sanitary District. Population—1,305,970			Hunter River Combined Sanitary District. Population—200,650.			Blue Mountains Tourist District. Population—29,380.			*Remainder of the State. Population—937,510.			*Whole State. Population—2,464,510.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
0-4 years ...	...	1	1	...	...	...	...	...	...	...	...	...	...	1	1
5-14 " ...	4	5	9	...	...	...	...	...	...	...	1	1	4	6	10
15-24 " ...	78	123	201	4	3	7	4	7	11	3	7	10	89	140	229
25-34 " ...	128	125	253	5	5	10	11	10	21	3	8	11	147	148	295
35-44 " ...	190	85	275	4	4	8	12	5	17	4	4	9	210	98	308
45-54 " ...	138	33	176	6	2	8	7	...	7	2	4	6	153	44	197
55-64 " ...	71	27	98	3	2	5	...	1	1	5	...	5	79	30	109
65 and over ...	37	16	53	...	1	1	...	...	...	...	...	...	37	17	54
Age not stated..	9	1	10	1	1	2	...	...	...	...	...	...	10	2	12
All Ages	655	421	1,076	23	18	41	34	23	57	17	24	42	729	486	1,215

\* From 1st March, 1929.

The total for the Metropolitan area, 1,076, was an increase of 16 on the figures for the year 1928; that for the Hunter River district, 41, a decrease of 21 as compared with 1928; 57 notifications were received from the Blue Mountains District, a decrease of 33 on the figures for the previous year. Notifications for the rest of the State of New South Wales amounted to only 41. Thus, despite the extension of the area of compulsory notification to the whole State the notifications received for 1929, viz., 1,215, total only 3 more than those received during 1928.

During 1929, 532 second notifications were received, an increase of 191 on the number for 1928.

132 notices were sent to medical practitioners who were known to have treated a patient for pulmonary tuberculosis and who failed to notify same.

TABLE 2.—Showing the Number of Deaths from all forms of Tuberculosis in (a) Metropolis; (b) whole State during the year ended 31st December, 1929.

	Metropolis.			Whole State.		
	M.	F.	Total.	M.	F.	Total.
Respiratory system .....	447	279	726	685	467	1,152
Meninges and nervous system .....	23	17	40	39	26	65
Other .....	27	20	56	47	44	91
Total .....	497	325	822	771	537	1,308



The deaths from all forms of tuberculosis for 1929, viz., 1,308, show a decrease of 9 on the number for 1928; that for tuberculosis of the respiratory system, 1,152, a decrease of 14; that for tuberculosis of the meninges and nervous system, 65, an increase of 13, and that for other forms of tuberculosis, 91, a decrease of 8 on the corresponding figures for the previous year.

With the extension of compulsory notification to the whole State, District Registrars are under a statutory obligation to report to the Secretary of the Board of Health every death registered as being due to pulmonary tuberculosis, and have been notified to that effect. That the provisions of the Act are not being complied with in all cases is evident from the figures supplied to the Government Statistician, which showed 987 deaths in the State as being due to pulmonary tuberculosis, whereas the number of notifications of deaths from that cause received at this office was only 679, a deficiency of 308. This is considered a very serious matter and steps will be taken to see that the law is rigidly enforced.

On receipt of a notice of death from pulmonary tuberculosis of a patient in a private dwelling, a notice is issued from this office instructing the local authority to carry out the fumigation of the premises concerned. During the year 304 such notices were issued, an increase of 56 on the number for 1928.

#### *Decline in Deaths from Tuberculosis.*

The figures for 1929 indicate that the death rate per million of population from tuberculosis in all forms has undergone a slight decrease on the figures for the previous year. This will be seen in Graph 1 on p. 54. Reference to the graph will also show that, with minor fluctuations, the decline has been practically continuous for the last 45 years and has been remarkably uniform.

#### *Institutional Accommodation.*

TABLE 3.—The list below shows the number of institutional beds at present available for the treatment of tuberculosis patients. This list and the following instructions regarding admission should prove useful to medical practitioners.

Sanatoria and Hospitals.	Type of Cases Received.	Number of Beds.		
		Males.	Females.	Total.
1. Waterfall Sanatorium (under Government control) .....	Intermediate .....	293	124	417
2. Randwick Auxiliary Hospital (under Government control) .....	Late .....	60	30	90
3. Queen Victoria Homes (subsidised)—				
Thirlmere .....	Early female .....	...	54	54
Wentworth Falls .....	Early male .....	54	...	54
4. Red Cross Society (subsidised)—				
" Bodington " .....	Early male and female ...	...	...	98
" Malahide " .....	Late male and female.....	...	...	21
" Southern " .....	Male quiescent .....	20	...	20
(The above institutions work in full co-operation with the Tuberculosis Division.)				
R. T. Hall Sanatorium .....	.....	8	8	16
Private Hospitals (approximately) .....	.....	...	...	40
Repatriation Department—				
Prince of Wales Hospital .....	.....	65	...	65
Lady Davidson Home .....	.....	77	...	77
				952

A ward of 30 beds for female patients at Randwick Auxiliary Hospital was opened during the year, and has been of great benefit in providing for female cases with advanced disease. This ward completes the present scheme of classification for female cases and enables this Division to relieve Waterfall Sanatorium of many of its bed cases.

*Admission to Institutions* Nos. 1 to 4 on the above list is arranged by application to the Director, Tuberculosis Division, 5 Richmond Terrace, Domain, Sydney. Applicants for admission to sanatoria apply personally at this office between 9 and 12, Monday to Friday inclusive, bringing with them a note from their medical adviser giving the clinical findings and the results of sputum and X-ray examinations. The Board of Control of the Campaign against Tuberculosis requires that no patient shall be admitted to a sanatorium unless either sputum or X-ray examination gives a positive result.

*Country cases* are also admitted to sanatoria through the Director, Tuberculosis Division. It is considered that hopeless cases resident in the country should be cared for in their local hospitals. Country patients suitable for admission to sanatoria are required to fulfil the following conditions:—

They should have (a) result of sputum examination; (b) result of X-ray examination, where possible; (c) a reasonable prospect of arrest of the disease; (d) be afebrile for at least a fortnight prior to removal; and (e) not need to be provided with an escort except in the case of children.

Application forms for the admission of country patients to sanatoria can be obtained at the office of the Director, Tuberculosis Division.

#### *Sanatoria.*

Good use has been made of these institutions and satisfactory results obtained. Owing to the different methods adopted by the various sanatoria in compiling their annual reports it is impossible at present to give a comparative table of their activities and results. To obviate this the Board of Control of the Campaign against Tuberculosis has formulated and adopted a classification scheme for patients which should enable such a table to be included in future reports. The annual report of the Waterfall Sanatorium is on p. 96.

The Red Cross Sanatorium, "Bodington," and the two Queen Victoria Homes are for patients suffering from the disease in the early stages. Despite all that is done by dispensaries in the way of examining contacts and suspects, early cases are not yet found in sufficient numbers to tax the resources of these sanatoria and the term "early" case has had to be interpreted rather liberally. Waterfall Sanatorium is reserved for male and female cases who are in an intermediate stage of the disease.



All the sanatoria carry out the same stereotyped treatment by rest and graduated walks. There is no system of graduated work in any of them, and none carries out treatment by artificial pneumothorax. An X-ray plant has been installed at Waterfall Sanatorium during the year which will enable a great amount of scientific work to be undertaken in the way of further investigation of patients, and of treatment by pneumothorax where necessary. On account of the difficulty of obtaining resident medical officers, the Red Cross and the Queen Victoria sanatoria are looked after by visiting medical officers, and though the work done by these officers is excellent, a resident medical officer is considered essential. Present circumstances seem, however, to preclude this.

#### Dispensaries.

A table showing the work of the various anti-tuberculosis dispensaries is given below. A marked increase is shown in practically every item compared with the figures for 1928.

It will be noted that there has been a substantial increase in (1) persons attending for examination, (2) new patients, and (3) contacts. The efforts of the visiting nurses have no doubt contributed to these results. The public generally is appreciating more the excellent work carried on by these dispensaries, and with their co-operation this Division is steadily getting into wider touch with tuberculous patients. There is need for the provision of similar facilities in other centres, e.g., Broken Hill.

At the present time there are only four dispensaries in the State. In his comprehensive report on Tuberculosis in Australia the Commonwealth Director of Tuberculosis has expressed the opinion that there should be at least one anti-tuberculosis dispensary for every 300,000 of population. On these figures New South Wales would require eight dispensaries, an increase of four on the present number. Of these, one should be in Sydney and one in Broken Hill. The widely scattered nature of the country population of New South Wales, however, renders the decision as regards the best centres for the establishment of the other two extremely difficult.

TABLE 4.—Comparative Statement of Work carried out at the various Anti-tuberculosis Dispensaries during a period of 12 months, 1927-28, 1928-29.

	Royal Prince Alfred Hospital.		Royal North Shore Hospital.		National Association for the Prevention and Cure of Consumption.		Newcastle Throat and Chest Dispensary.	
	1-7-27-30-6-28.	1-7-28-30-6-29.	1928.	1929.	1928.	1929.	1928.	1929.
Persons attending for examination .....	1,247	1,609	309	350	811	940	...	...
Total attendances .....	4,700	5,726	1,245	1,085	5,336	3,860	362	385
New patients .....	425	467	164	233	667	698	61	92
Contacts examined .....	361	477	60	68	214	320	...	...
Old patients who attended during year .....	461	665	168	198	144	242	...	...
Deaths .....	62	85	13	13	32	19	...	...
Sputa examined .....	501	594	102	112	476	648	25	51
X-ray examinations .....	990	1,209	300	319	146	392	16	25
Number of nurses' visits .....	1,774	2,520	3,265	3,615	1,760	1,930	...	...
Number of homes visited .....	810	1,091	236	280	320	358	...	...
Sent to sanatoria .....	117	155	19	14	28	34	8	16
Sent to hospitals .....	58	68	22	16	28	9	9	16
Sent to country .....	108	145	14	10	3	2	Nil.	1

#### Visiting.

In the metropolitan area the visiting of tuberculous cases and their families is undertaken by the nurses of this Division and of the anti-tuberculosis dispensaries; in the Newcastle district by a nurse on the staff of the Medical Officer of Health.

In 1928 the scope of this work was much enlarged by the appointment of two additional nurses, making a total of four nurses available on this staff. During the same year, a request was submitted for the appointment of five additional nurses to ensure the adequate visiting of all the tuberculous families recorded on the register of this Division, but unfortunately this request has not yet been complied with.

The total number of visits made in 1929 to the homes of tuberculous patients was 9,633. Of these, 5,610 were made by nurses not attached to this Division and the remainder, 4,023, by departmental nurses. Of these 4,023 visits, 2,455 were to patients attending at the anti-tuberculosis dispensaries and 1,568 to non-dispensary patients. The 4,023 visits were paid to the homes of 1,059 patients, thus the average number of visits per patient per year was 3.8. It is thus seen that there is still much room for improvement in this direction; an improvement which can only be brought about by the appointment of additional visiting nurses.

Of the four departmental nurses, one assists at the anti-tuberculosis dispensary at Royal Prince Alfred Hospital, a second visits for the National Association for the Prevention and Cure of Consumption, and the remaining two visit non-dispensary cases. Such visiting as they may perform is obviously insufficient when the total number of patients is taken into consideration. Including the nurses of the anti-tuberculosis dispensaries, the total number of tuberculosis visiting nurses is nine for the whole of New South Wales, and the total number of patients on the register is 7,660. This gives an average of one nurse to 850 patients. It would be impossible for the present staff of nurses to visit more than a small proportion of these cases. It is recognised that 300 patients is the greatest number that one visiting nurse can keep under adequate supervision, thus the nine nurses at present available could only account for 2,700 cases, leaving about 5,000 cases uncared for.

The best means of teaching a patient how to care for himself and to protect others is by sending him to reside in a sanatorium for a time. It is the experience of the visiting nurses that the sanatorium-trained patient usually, but not always, is careful in his family circle, though he may overlook details.



Such cases do not require to be visited very often. It is impossible, however, for many reasons for all patients to be sanatorium-trained, those who have not passed through this routine are more difficult to educate, and frequent visits and advice are necessary. It is for this reason that an augmented staff of visiting nurses is necessary.

*Board of Control of the Campaign against Tuberculosis.*

During 1929 the Board of Control met on five occasions. The previous policy of the Board has been continued, and many important aspects of the campaign have received consideration in the endeavour to improve the welfare of the tuberculous patient and his family and to generally combat the disease.

Several changes in its personnel have taken place—Dr. Harvey Sutton resigned on his appointment to the position of Director of the School of Hygiene and Tropical Medicine at the Sydney University, and the Hon. G. F. Earp, M.L.C., resigned on account of ill-health. Their positions were filled by the appointment of Dr. C. P. Stewart and Dr. W. Brodie Grant. Dr. Baret ceased to be a member of the Board on his appointment as Medical Superintendent at Lidcombe State Hospital, the present Director taking his place.

The present personnel of the Board of Control is as follows:—

Dr. R. Dick, Chairman	} Representing the Office of the Director-General of Public Health.
Dr. H. K. Denham	
Dr. H. W. Palmer	
Dr. Holmes a'Court, Sydney Hospital.	
Dr. E. W. Fairfax, Royal Prince Alfred Hospital.	
Dr. S. A. Smith, British Medical Association.	
Dr. C. P. Stewart, Education Department.	
Dr. C. L. S. Macintosh, Royal Alexandra Hospital for Children.	
Dr. F. J. Bridges, Royal North Shore Hospital.	
Dr. W. Brodie Grant, National Association for the Prevention and Cure of Consumption.	
Dr. Cotter Harvey, Queen Victoria Homes.	
Russell Sinclair, Esq., Australian Red Cross Society.	
Grant Hanlon, Esq., Picton Lakes Village T.B. Settlement.	

Among the more important matters dealt with by the Board during the year 1929 were:—

1. The adoption of a scheme for the classification of tuberculous patients in order to standardise the annual reports of all sanatoria and dispensaries.
2. The question of having the study of tuberculosis brought more prominently into the medical course at the Sydney University.
3. The extension of notification of pulmonary tuberculosis throughout New South Wales.
4. The question of the provisions of a fund (estimated at £20,000 per annum) to be allocated for the care of the family of the consumptive.

*General.*

Picton Lakes Village Tuberculosis Settlement.—This settlement, which is the first of its kind in the State, was opened on 12th May, 1929, and is situated 1,134 feet above sea level, with ideal climatic conditions, about 57 miles from Sydney. It was founded and is to be maintained by public subscription, but the Government guaranteed the sum of £1,500 for installation of the electric light and power supply and a piped water supply, which extends through the village.

The object is to enable sanatoria patients in whom the disease has been arrested for six months at least to reside there rent free with their wives and families. There were 33 persons in residence at the end of 1929. At present there are 29 buildings, of which 17 are detached cottages. There are two hostels for single patients (6 males and 6 females), a co-operative store, recreation hall, an industrial building fitted with machinery for making light furniture, toys, &c., and an administrative block, with the matron's quarters, examination rooms, and rooms for use as wards when necessary.

A matron is in charge and a medical practitioner at Picton visits as required.

The settlement is represented on the Board of Control by its organising secretary, and admission to the settlement is arranged in co-operation with the Director of the Tuberculosis Division.

*Publicity.*

During the year publicity work in connection with tuberculosis has been continued. This took the form of distribution of leaflets, display of models and posters during Health Week, and the broadcasting of many instructive talks on the disease, its treatment, and the precautions to be taken to avoid infection; it is probable that many persons have been reached by this means who could not otherwise have been got into contact with. A local film has been prepared for use in the campaign against tuberculosis, and should be most useful in educating the general public and securing their active co-operation in the fight against this wasteful disease.

*Inadequacy of the Visiting Staff.*

This is a serious handicap, and it is very desirable that additional appointments be made in the near future if the Division is to enlarge its present scope of activities.

In conclusion, thanks are due to the members of the Board of Control for their efforts throughout the year and also to the various hospitals, associations, and other agencies which are actively co-operating in every possible way with this Division.

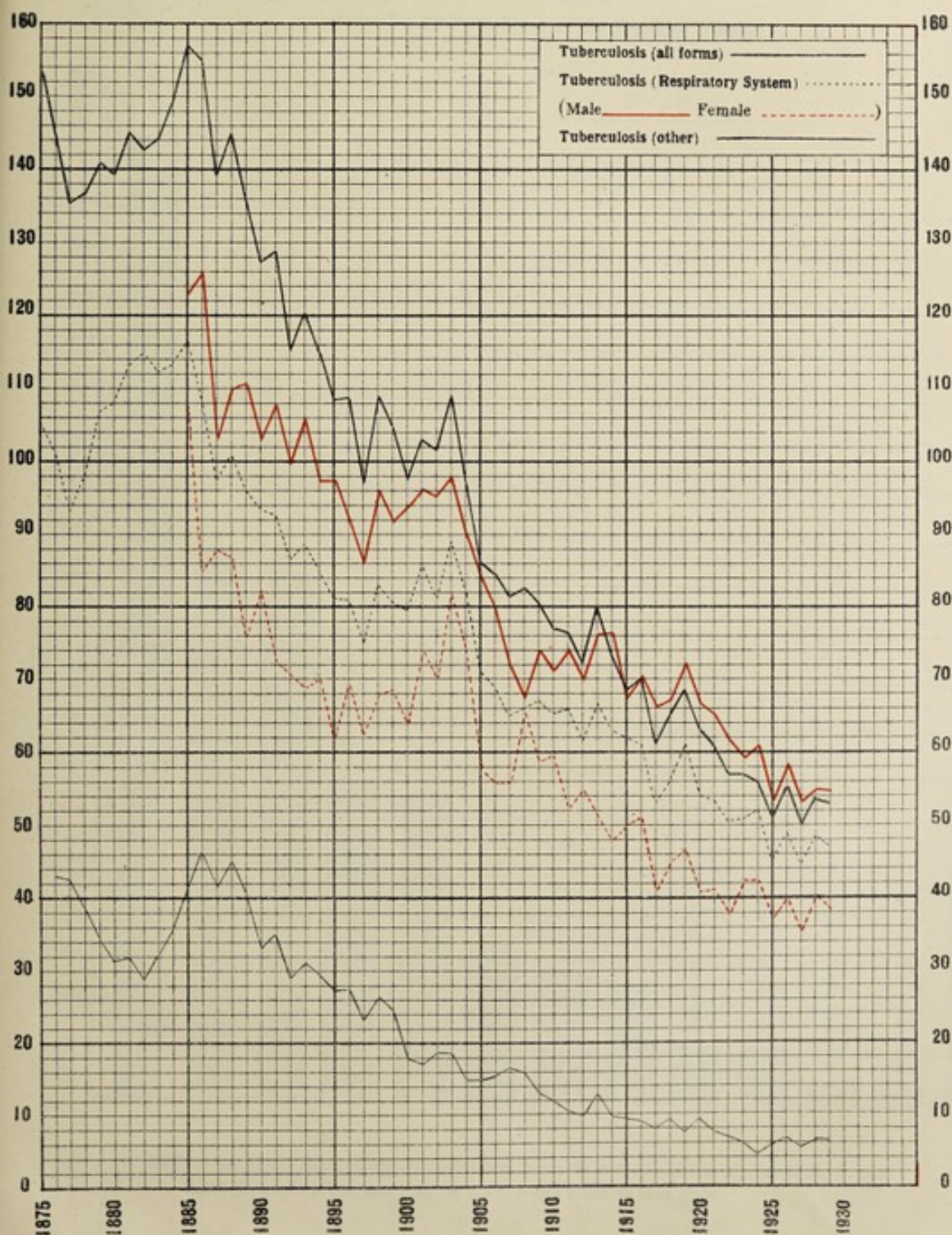
H. K. DENHAM,  
Director.

*GRAPHS.*

1. Annual death-rate from tuberculosis per 100,000 of population in New South Wales, 1875-1929.
2. Total deaths from some of the principal diseases, New South Wales, 1929.

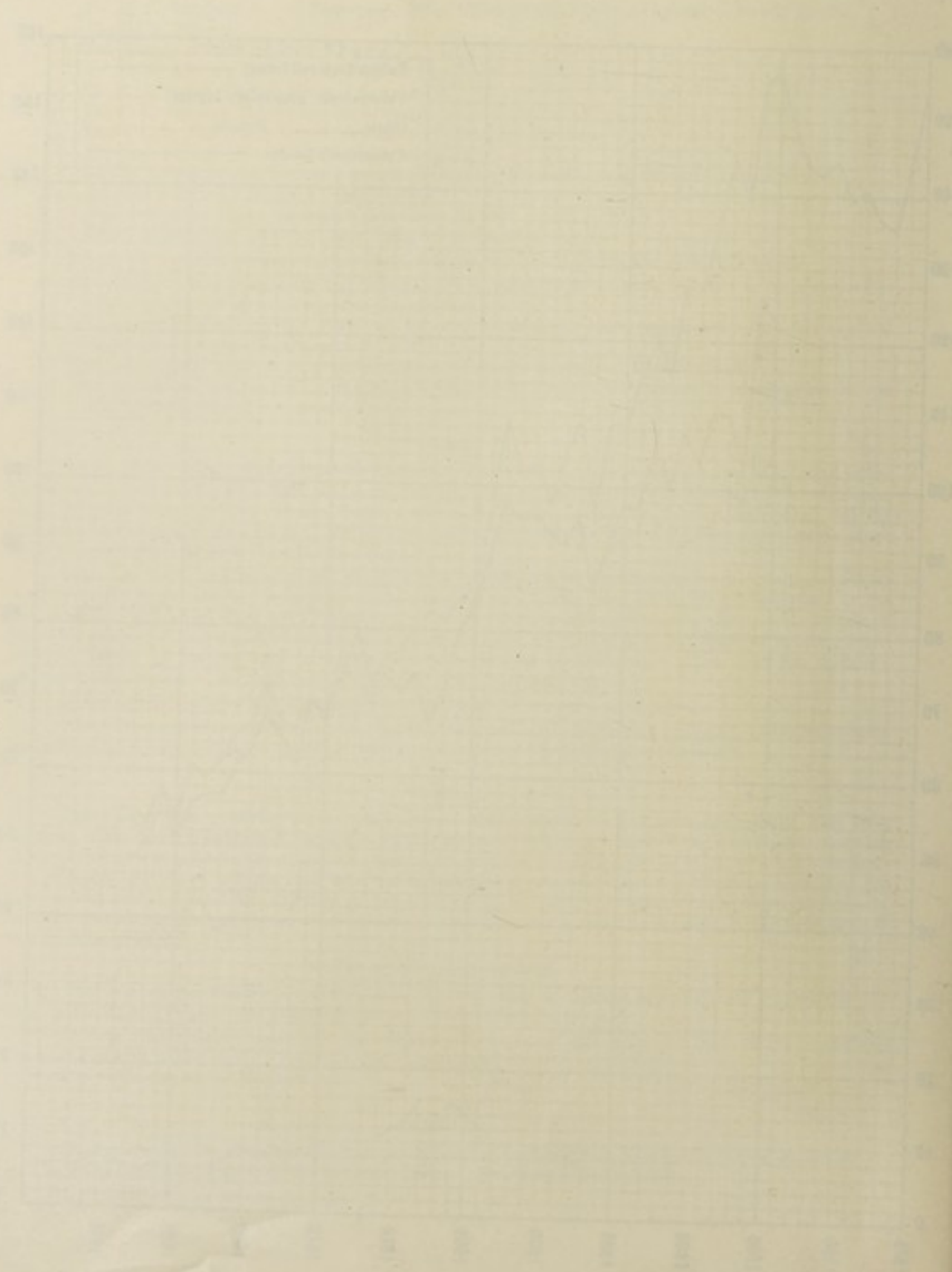


**TUBERCULOSIS.**  
 Graph 1.  
**ANNUAL DEATH RATE PER 100,000 OF POPULATION**  
**IN NEW SOUTH WALES, 1875-1929.**





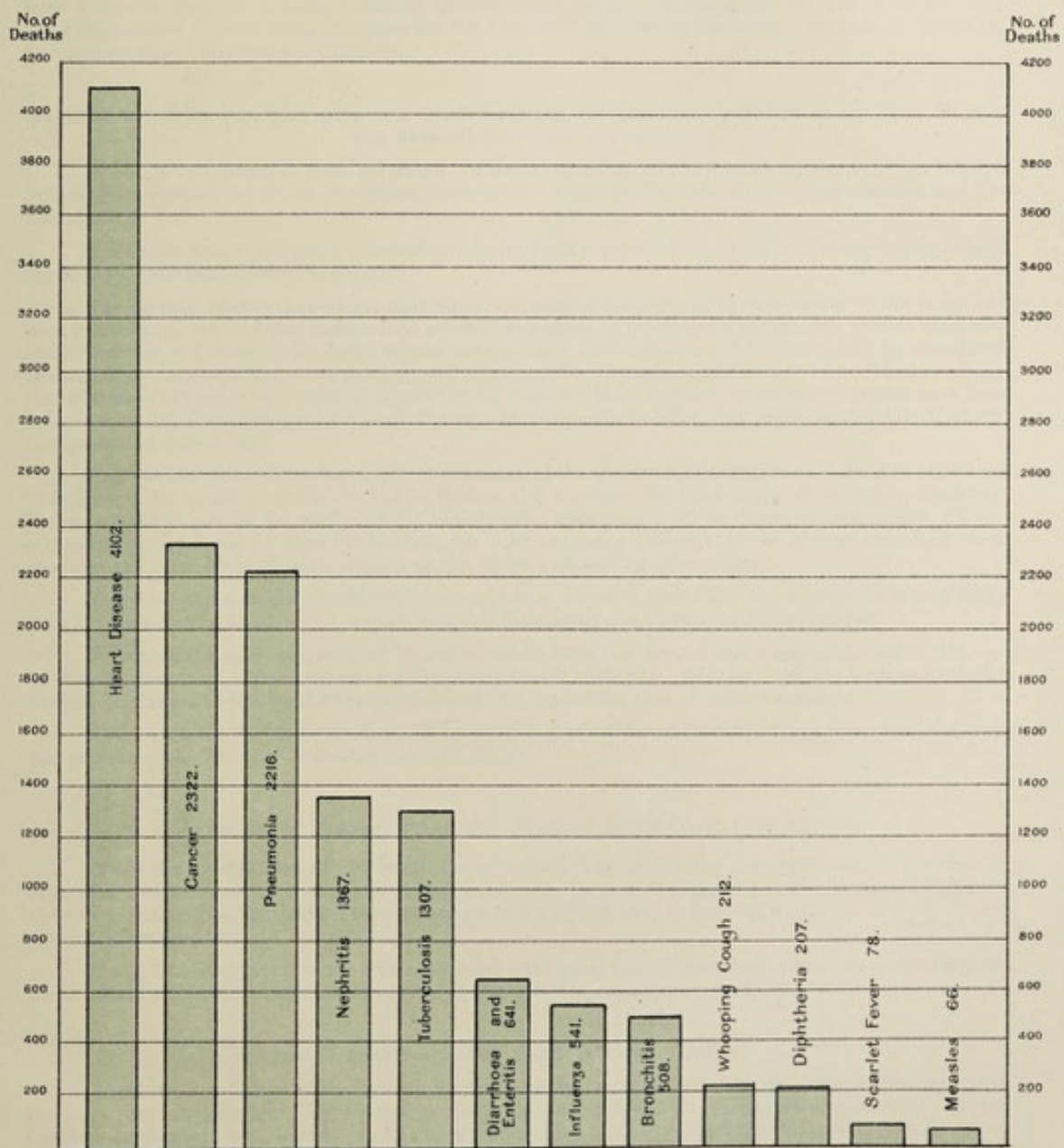
THE  
 ANNUAL DEATH RATE PER 1000 OF INHABITANTS  
 IN NEW SOUTH WALES 1911-1912



## TUBERCULOSIS.

Graph 2.

NEW SOUTH WALES, 1929.  
Total Deaths from Some of the Principal Diseases.



NOTE.—In 1895, Tuberculosis occupied first place as a cause of death. In 1928, it had fallen to fourth place, and now, in 1929, it has fallen to fifth place.





## SECTION I.—E. DIVISION OF INDUSTRIAL HYGIENE.

REPORT OF THE MEDICAL OFFICER OF INDUSTRIAL HYGIENE FOR THE YEAR ENDED  
31ST DECEMBER, 1929.

*Staff.*—Medical Officer of Industrial Hygiene, CHARLES BADHAM, B.Sc., M.B., CH.M., D.P.H.;  
Physicist Assistant, H. E. RAYNER, B.Sc.; Engineer Assistant, H. D. BROOSE, B.E.

This Division undertakes the investigation of all industrial hazards to health; the ventilation of theatres, cinemas and other places; the examination of factory children; and the investigation of cases of industrial disease for the Workers' Compensation Commission.

The work for the year comprised enquiries concerning fibrous diseases of the lungs and incidence of miners' nystagmus amongst South Coast coal miners; bakers' dermatitis; accumulator factories and other lead industries; industrial arsenical poisoning; ventilation; and other industrial activities.

The International Labour Office of the League of Nations convened a conference of experts in silicosis to be held in Johannesburg in August, 1930. In addition to those from South Africa, experts were invited from Australia, Belgium, Canada, Germany, Great Britain, Italy, Netherlands and the United States; and the International Labour Office has done me the honour of nominating me as the expert from Australia, and is generously defraying my expenses.

EXAMINATION IN CONJUNCTION WITH THE COMMONWEALTH AUTHORITIES OF SOUTH COAST COAL MINERS  
FOR FIBROUS DISEASES OF THE LUNGS.

About 500 coal miners were examined. This examination was requested by the Coal Commission following on a report by Dr. K. R. Moore, Director of Industrial Hygiene of the Commonwealth and Dr. Badham.

Briefly the Coal Commission required medical opinion concerning the practice of stone dusting, which the Mines Department desired to enforce.

The medical officers pointed out that already a marked incidence of fibrous disease of the lungs had been found in one pit, and that unless some attempt was made to determine what was the present incidence and characters of fibrosis of the lungs in coal miners then all future cases of fibrosis would be considered to come from the practice of stone dusting, and this scientific safeguard would have to cease. The knowledge that fibrosis of the lungs exists in coal miners locally is no new thing; already some twelve miners have been compensated for this condition, for such disease not being due to silica dust comes under the Workers' Compensation Act of 1926.

Our knowledge of the radiographic appearances of the chests of men who have worked in sandstone in Sydney or in quartz and silicate ores in Broken Hill has been the chief mode of estimating disability. Unless we gain a similar knowledge of the radiographic appearances of the chests of coal miners all our compensation work will be done in the dark, for it by no means follows that the fibrosis caused by silica produces the same train of consequences as the fibrosis caused by other dusts.

This investigation into the fibrosis present in coal miners is essential if the compensation now given is to have a scientific basis, and a correct means of estimating disability is to be formulated.

Nearly all the men compensated for fibrosis come from one pit and this reason alone would demand an investigation from any unbiassed and competent health authority. Similar work has been and is being done in England and our local knowledge should not lag behind that of other countries.

The results of this investigation will be published after the whole subject has been discussed with the experts of the Silicosis Conference in South Africa.

## INCIDENCE OF MINERS' NYSTAGMUS AMONGST SOUTH COAST COAL MINERS.

While the examination of 500 South Coast miners was proceeding an opportunity was taken to determine the incidence of nystagmus among these men, to test out various methods described for its detection, and to find the value of the different methods with a view to forming standards of disability for compensation purposes.

It may be stated here that the incidence found was similar to that described by European investigators while certain of the more recent observations of Ohm on this subject were confirmed.

## BAKERS' DERMATITIS IN NEW SOUTH WALES IN 1929.

About twenty bakers with dermatitis were seen during the year, and the cause of the increased incidence was investigated. The cutaneous reactions of these bakers to certain substances used in yeast foods or accelerators were tested. It was found from these tests that the individuals who gave the most marked reactions to these substances were of the allergic type and sensitive to most of the chemicals and proteins met with in the course of their work.



The substances with which routine testing was carried out comprised wheat flour of various brands, malt-wheat flour of several types, ammonium persulphate, ammonium chloride, treacle, malt extract, dried yeast, and potassium bromate. It was found that all the bakers who had suffered from dermatitis had been using yeast foods or accelerators containing ammonium or potassium persulphate and moreover that the outbreak of dermatitis followed a few months after the introduction of this chemical in yeast foods, a practice new in Australia. I followed the procedure which I have adopted in many cases of industrial sensitizations by using water suspensions or solutions of whole products. This practice enables one to incriminate a substance of being irritating even if it cannot prove a protein sensitization. I might sum up the results in this preliminary note by saying that a typical subject shows a marked wheal and erythema to most of the substances mentioned above, particularly malt-wheat flour, and that the reaction to ammonium persulphate in 5 to 10 per cent. solutions is great wheal and marked erythema which persists often for days, whereas the other reactions disappear within an hour or two. Often the testing with ammonium persulphate lights up a resolving dermatitis. One per cent. solutions of ammonium persulphate applied over a few minutes do not produce a marked reaction. Individuals unaffected by dermatitis have not reacted to these substances. It is proposed to continue this investigation and to ascertain if the practice of bleaching flours has any bearing on this question. A critical appreciation of the results so far obtained will be published later. One is tempted to forecast that bakers' dermatitis in Sydney in 1929 results from the unfortunate association of allergic individuals with aqueous solutions of persulphate.

#### HEALTH HAZARDS IN LEAD INDUSTRIES.

The examination of suspected cases of lead poisoning has continued. The following statement concerning the hazards and hygiene of accumulator factories was made by me to the Industrial Hygiene Conference at Canberra and the Commonwealth Arbitration Court in connection with an award for employees in electrical trades.

##### *Statement concerning the Hazards and Hygiene of Accumulator Factories.*

"The making of accumulators for motor car, radio and other purposes, is an industry of quite recent origin in New South Wales. Five years ago there were two or three small factories, now there are seven and five of these have a considerable output. During recent years the insanitary conditions found in this industry has been a matter of concern to me.

"I have not hesitated to condemn conditions in these places which I regarded as insanitary and have even recommended to my Chief, the Director-General of Public Health, that the Chief Inspector of Factories should be advised to prohibit further work under conditions then existing at Clyde in August, 1927, and at U. S. L. Company in July, 1929.

"I urged upon the Department of Labour and Industry in 1926 the necessity for gazettal and enforcement of approved regulations to control this industry and in May, 1928, they were gazetted. These regulations which closely follow the English text are deficient in two important details, for the Act under which they were framed would not allow compulsory medical examination of employees, nor the prohibition of child labour. The action of these new regulations has been markedly beneficial but the full benefits which I anticipate have not yet been secured, and only continued departmental pressure and education of the management of the majority of these accumulator factories will bring about the necessary standard of sanitation.

"During the last five years I have encouraged employees at these factories to report to me personally when in ill health and by this practice and in my office as a certifying surgeon and medical referee under the Workers' Compensation Acts, I have probably seen a large proportion of all the cases of industrial lead poisoning." (Attached to the report was a list of 103 cases of industrial lead poisoning from accumulator factories investigated during the years 1927-9).

"The insanitary conditions in the accumulator industry in New South Wales were similar to those found in the white lead industry sixty years ago when Mrs. Warren's sister "died of lead poisoning when she only expected to get her hands a little paralyzed, but she died." The ignorance of the management of most of these accumulator factories of the causes of lead poisoning and the failure to appreciate the need in their places of the scrupulous cleanliness found in the white lead corroding trade, shows the necessity for continuing a campaign of education among them, not unbacked by stringent application of regulations until the accumulator trade acquires also a tradition and practice of hygiene.

"Often I have requested works' managers to visit a white lead corroding works and a butter factory and to apply the standards of cleanliness found in these places. They have not gone, but explained that some man did not wash his hands and smoked a cigarette, unable to appreciate that the lead dust in the air of their factory made lead poisoning inevitable. Among the employees of this new industry there are no craft traditions of hygiene. The practices of house painters as regards overalls are unknown to them and the enforcement of a proper standard of cleanliness is no easy matter.

"I have inspected in the last fortnight the following factories: Exide, Clyde, Vesta, Century, U. S. L. and Erg. The Exide factory is the most satisfactory and an example to the others. The chief things that call for attention in these factories are the inefficient practice in regard to overalls, the neglect to remove the dust caused by manipulation of dry battery plates and failure to keep pasting tables and floors wet and to reach a high standard of general cleanliness.

"I do not anticipate that the factories will reach the standards aimed at by my Division for some years, and until this time a periodical medical examination of employees is desirable and can, if efficient, minimise considerably the incidence of disabling stages of lead poisoning by removing a worker from a lead process at the earliest stage of lead poisoning before the working capacity of the individual has



been affected. To make the medical examination effective it must have the support of the personnel affected and this can only be brought about by the principle of security of tenure of a non-lead process job to which an affected lead process worker has been transferred.

"There are a varying number of non-lead process jobs in any accumulator factory and I see no difficulty in working along these lines or even arranging a roster of alternate non-lead process and lead process jobs. To make such an arrangement workable there should be no marked difference in wages for the various processes. A scheme of this nature has been in force lately at Clyde, with satisfactory results as regards the decreased incidence of lead poisoning and the Exide and Century factories are using or about to use such a scheme.

"I consider that the following things which do not appear in the New South Wales Regulations should be helpful to the health of employees in accumulator factories.

1. No male person under the age of 18 years to be employed in a lead process.
2. No overtime to be worked in a lead process.
3. A monthly medical examination of personnel with security of tenure for any lead process worker transferred by medical advice to a non-lead process job.

"Further I think that the inspection of accumulator factories should be in the hands of factory inspectors specially trained for this work."

At the end of 1929 two of the larger accumulator factories appointed a medical officer skilled in the diagnosis and treatment of lead poisoning.

#### ARSENICAL POISONING.

Two moderately severe cases of arsenical poisoning were found in men engaged in the manufacture of enamel baths. The source of the poisoning was arsenic which is employed by some firms along with lead in the vitreous enamel which is dusted on to iron baths heated to red heat. One of the workmen was engaged shot-blasting a defective bath, the other was engaged in mixing the frit.

Another case of arsenical poisoning came from a man engaged in spraying a strong solution of sulphuric acid and arsenic on prickly-pear. There have been a few cases reported from this occupation which is a highly hazardous one. Several mild ones have occurred in brass moulders. I have not determined the origin of the arsenic but suspect old gas fittings. Proof of these cases has only been possible by the examination of the hair and nails and urine for arsenic. The analysis of the urine in these cases is often of little value.

The following table is of interest.

TABLE showing the amount of arsenic found in the hair, nails and urine of 5 industrial cases of arsenic poisoning, 3 domestic cases, and the average in the hair of 6 laboratory workers.

Number.	Arsenic in hair, mgms. per 100 grms.	Arsenic in nails, mgms. per 100 grms.	Arsenic in Urine, mgms. per litre.	Time since last exposure in days.	Remarks.
1	.....	.....	·00	11	Shot blasting defective enamelled bath. Glazed with arsenic lead containing vitreous enamel.
2	0·80	9·20	·02	30	
3	10·0	.....	·10	1	
4	8·0	.....	·02	60	Enamel fusing of above vitreous enamel for three months.
5	1·0	.....	·16	1	
6	.....	.....	·12	1	Brass moulding mostly scrap metal—slightly affected.
7	33·5	160·0	.....	79	
8	8·5	5·5	.....	Approximately	Furnace hand—brass moulding—slightly affected.
9	3·0	5·5	.....	90 days.	
10	7·5	22·0	.....	...	
11	Not greater than ·10	.....	.....	...	Spraying prickly-pear with solution of sulphuric acid and arsenic for ten days—severe peripheral neuritis.
					Three members of one family, hospital cases, peripheral neuritis. Source of poison—white ant exterminator (50 per cent. arsenic) accidentally used for pepper.
					Average of six laboratory workers.

#### SPRAY PAINTING.

Examinations were made of a number of men engaged in spray painting. Results obtained agreed closely with the findings of Meyer (Germany). Inspections were made of spray painting shops and recommendations made for improving the working conditions.

#### ACTIVITIES IN THE SPHERE OF VENTILATION.

At the request of the Minister for Health, a report was submitted on the ventilation of basement shops. It was found that the chemical purity of the air was better than in many of our theatres, and in most cases equal to that of the average office. Lack of air movement was the cause of discomfort. This could be rectified by the installation of sufficient rotary fans. Suitable regulations for the ventilation of all basement shops were recommended.

Inspections of theatres in Sydney and suburbs, Newcastle and Wollongong were made. In several cases the ventilation was found to be defective and the Chief Secretary's Department was requested to take action to have the ventilation brought up to the standard required by the regulations.

This division assisted in the drafting of proposed regulations for the ventilation of bathrooms and garages.

#### ACTIVITIES IN THE REFRIGERATION INDUSTRY.

A safety code for the control of refrigeration was drawn up and submitted to the Industrial Hygiene Conference.



#### ACTIVITIES IN THE SANDSTONE INDUSTRY.

The routine work of testing the dust conditions in the City Railway tunnels was continued and the high standard of ventilation was maintained. At the request of the Industrial Commission of New South Wales an inspection of a sandstone tunnel under construction on the Moss Vale-Port Kembla railway was made. Owing to insufficient plant the ventilation was much below the standard of 200 particles of silica dust per c.c. set by this division.

#### THE USE OF X-RAY MACHINES IN SHOPS OR OTHER INDUSTRIAL PLACES.

At the request of the Minister for Health, an investigation was made of the X-ray machines in use in the boot departments of several city shops.

The hazards resulting from these machines come under two headings—(1) Danger to customer; (2) Danger to operator.

(1) Following examination with pastilles (platino-cyanide) the erythema dose, i.e., the dose which might produce burns to the customer, was found to be over 25 minutes if all the rays come through the lead glass covering the screen, but there was a leakage around the screen which might lead to a burn in a shorter time. As the exposure when fitting a shoe is generally well under a minute there would appear to be little danger to the customers unless he or she repeatedly used the machine on successive weeks. The danger to the customer could be overcome by testing the machines and the exhibition of warning notices against an exposure of more than a few minutes every few weeks.

(2) The X-ray machines investigated revealed a very definite hazard to the individual operating the machine. Owing to insufficient protection around the screen there is a leakage of rays through the walls of the machine which makes it unsafe for the operator.

The following recommendations for the control of X-ray machines in shops and other industrial places were made :—

- (1) That all X-ray machines in shops or other industrial places should be licensed after testing and inspection by the Board of Health.
- (2) That the present users of machines be required immediately to protect the machines to the satisfaction of the Board of Health.
- (3) That in the case of machines used for shoe fitting a notice warning customers that their feet should not be exposed for more than three (3) minutes in any one month, and that the use of the machines to search for needles and such like bodies is dangerous.

#### OTHER INDUSTRIAL ACTIVITIES.

Minor inquiries have been made into many industrial activities, including sandblasting, dust hazard in brick kilns, dermatitis in a rural worker from stinkwort (*Inula graveolens*).

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## SECTION II.

1929.

	PAGE.
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## SECTION II.

## 1.—Metropolitan Combined Sanitary Districts of Sydney.

## Report of the Medical Officer of Health for the Year 1929.

J. S. PURDY, D.S.O., M.D., C.M.(Aberd.), D.P.H.(Camb.), F.R.S.(Edin.), F.R.San.I.

To the Director-General of Public Health.

Sir,

I have the honor to report on the health conditions of the Combined Sanitary Districts of the Metropolitan Area of Sydney for the year 1929. Both the death and infantile mortality rates were slightly higher.

The Metropolitan Combined Sanitary Districts for the purposes of health administration consist of the Metropolis together with eight outside Metropolitan districts.

The Metropolis proper or Sydney and Suburbs includes the City of Sydney and forty-six municipalities.

The outside Metropolitan districts, which are separately dealt with statistically, include six municipalities together with Warringah and Hornsby Shires.

From the beginning of 1929 the municipalities of Auburn, Bankstown, Granville, Lidcombe, and Parramatta have for the first time been included in the Metropolis.

From the beginning of 1927 deaths have been distributed by the Government Statistician to the locality where known in which the deceased permanently resided, and births to the place of permanent residence of the mother.

Unfortunately, therefore, the details in this report as far as the Metropolis proper is concerned are not comparable with those of previous years.

With regard to the total Metropolitan Combined Sanitary Area, there has been no alteration, consequently it is possible to compare the details with those of previous years.

The population of the Metropolitan Combined Sanitary Districts was estimated by the Government Statistician to be 1,314,950 on the 31st December, 1929, of which the City of Sydney contained 109,000 (a decrease of 1,000 as far as the City proper is concerned). The population at the end of 1928 was 1,291,740, so that the increase for the whole Metropolitan area during the year was 23,210, equivalent to 1·8 per cent. The mean population was 1,304,350.

*The Metropolis.*—The population of the Metropolis on 31st December, 1929, was 1,238,660, of which the city contained 109,000, and the suburban municipalities 1,129,660. The mean population for the area was 1,229,070. The annual rate of increase in the population for the last thirty years was 3·15 per cent.

*Marriages.*—The marriages celebrated within the Metropolitan Combined Area numbered 11,757, equal to a rate of 9·01 per 1,000 of the population.

*Births.*—In the Metropolitan Combined Area, the births registered numbered 23,756, equivalent to a rate of 18·21 per 1,000 of population. Of the births 12,185 were males and 11,568 females, the proportion being 105 males to 100 females. The ex-nuptial births numbered 1,382, or 5·82 per cent. of the total births, and equal to 1·06 per 1,000 of the population. The birth rate for 1929 was the lowest recorded for Sydney.

*Deaths.*—The deaths in the Metropolitan Combined Area numbered 13,209, giving a rate of 10·13 per 1,000 of the population. The number of children under 1 year of age who died was 1,318, or 55·49 per 1,000 births.

## SUMMARY OF VITAL STATISTICS.

Metropolitan Combined Area, 442,981 acres (692½ square miles); population (estimated to the middle of the year, 1,304,350) on 31st December, 1929, 1,314,950, an increase during the year of 23,210, equivalent to 1·8 per cent.; births, 23,753 (birth rate 18·21); deaths, 13,209 (death-rate 10·13); deaths of infants, under 1 year of age 1,318 (infantile mortality rate, 55·49 per 1,000 births).



TABLE I.

SHOWING Population, Density of Population, and certain Death-rates in the Municipalities of the Metropolitan Combined Sanitary Districts for 1929, including deaths which have occurred in General Hospitals, Special Hospitals for Consumption, and Hospitals for the Insane. Deaths occurring in Hospitals in the Metropolis have been distributed to their proper districts before calculating these rates.

Municipality.	Estimated Mean Population, 1929.	Mean Density of Population to the acre.	Death Rate per 1,000 of Population.				
			All Causes.	Diarrhoeal Diseases, including Enteritis.	Epidemic Diseases.	Tuberculosis of Respiratory System.	All Tubercular Diseases.
City of Sydney .....	109,460	33.7	12.02	.16	.37	.79	.89
Alexandria .....	10,280	9.8	11.87	.49	.49	.78	.78
Annandale .....	13,080	37.8	10.02	.08	.38	.38	.61
Ashfield .....	39,450	19.3	10.03	.25	.48	.43	.53
Auburn .....	19,480	7.5	8.57	.31	.51	.36	.36
Balmain .....	33,060	33.8	11.13	.09	.51	.69	.72
Bankstown .....	21,100	1.1	9.24	.14	.71	.52	.71
Bexley .....	19,830	10.4	7.77	...	.25	.25	.25
Botany .....	7,600	3.5	9.61	.39	.02	.26	.39
Burwood .....	19,200	17.4	11.93	.42	.99	.26	.31
Canterbury .....	70,870	8.6	8.20	.28	.40	.52	.61
Concord .....	21,850	8.0	7.51	.09	.55	.64	.69
Darlington .....	3,660	67.8	9.56	...	.55	.82	.82
Drummoyne .....	28,570	14.6	8.33	.14	.32	.63	.67
Eastwood .....	2,870	1.0	17.77	...	1.39	2.09	2.09
Enfield .....	13,740	8.2	9.46	.51	1.16	.29	.44
Erskineville .....	7,610	40.9	11.83	.26	.92	.79	.92
Gebe .....	23,090	44.6	10.96	.17	.30	.91	.93
Granville .....	18,700	4.6	10.86	.53	.48	.48	.59
Honebush .....	3,100	5.2	20.65	.65	1.29	2.26	2.58
Hunters Hill .....	9,520	6.7	7.46	.11	.21	.42	.42
Hurstville .....	20,760	3.4	10.36	.24	.72	.72	.77
Kogarah .....	28,340	5.9	8.54	.18	.21	.32	.42
Ku-ring-gai .....	27,020	1.4	9.18	.07	.26	.70	.74
Lane Cove .....	14,490	5.6	7.32	.07	.07	.14	.14
Leichhardt .....	31,290	27.1	10.35	.22	.38	.51	.64
Lidcombe .....	15,290	2.0	28.18	.59	.52	.66	.79
Manly .....	25,710	9.2	9.02	.19	.23	.27	.31
Marrickville .....	46,270	24.5	9.81	.32	.54	.63	.73
Mascot .....	13,460	5.3	8.77	.22	.45	.15	.15
Mosman .....	24,660	11.5	9.00	.12	.12	.32	.32
Newtown .....	28,580	59.5	11.02	.10	.49	.70	.91
North Sydney .....	54,620	21.6	9.56	.16	.37	.46	.59
Paddington .....	26,990	64.1	12.00	.18	.66	.82	.89
Parramatta .....	17,330	7.8	14.14	.23	.58	.40	.52
Petersham .....	27,950	32.9	11.31	.25	.39	.57	.61
Randwick .....	72,540	8.5	10.12	.15	.44	.73	.83
Redfern .....	24,130	59.7	12.47	.29	.91	.91	.99
Rockdale .....	36,410	7.1	8.29	.25	.49	.14	.19
Ryde .....	24,640	3.5	8.63	.20	.49	.49	.57
St. Peters .....	13,810	15.3	8.25	.29	.36	.29	.36
Strathfield .....	11,900	6.6	7.14	.34	.34	.25	.34
Vaucluse .....	7,110	8.9	7.88	.14	...	.56	.56
Waterloo .....	12,660	15.3	9.72	.39	.47	.79	.79
Waverley .....	51,730	23.7	9.01	.14	.41	.43	.52
Willoughby .....	41,440	7.6	8.86	.14	.46	.72	.72
Woolahra .....	33,850	18.0	9.51	.06	.30	.32	.35
Total Metropolis .....	1,229,070	8.2	10.15	.21	.45	.55	.63
Cabramatta and Canley Vale .....	4,590	Not computed on account of the population being confined to small areas with large unpopulated spaces surrounding.	10.89	...	.22	...	...
Dundas .....	5,400		6.85	...	.37	.37	.37
Brimington and Rydalmere .....	2,140		12.15	...	...	...	...
Fairfield .....	7,490		8.41	...	.53	.53	.53
Holroyd .....	14,150		7.07	.21	.14	.42	.49
Hornsby .....	20,330		11.32	.20	.44	1.23	1.38
Ingleburn .....	1,620		10.49	...	...	...	...
Liverpool .....	6,110		18.49	.33	.98	.49	.65
Warringah .....	15,080		8.02	.40	.27	.20	.20
Total .....	76,900		9.83	.20	.37	.57	.64
Total combined Metropolitan Sanitary Districts .....	1,305,970		10.13	.20	.45	.56	.63

*Deaths.*—The recorded deaths in the Metropolitan Combined Sanitary Districts for 1929, after correction and including those for institutions, totalled 13,209 (7,182 males and 6,027 females), equivalent to a rate of 10.13 per 1,000 of the population. The number of children under 1 year of age who died was 1,319, or 55.49 per 1,000 births.

The death rate for the Metropolis for the year was 10.15 per 1,000 of the population, whilst the infantile mortality rate was 50.52 per 1,000 births.

In 1928, I was able to record that the average death rate in the metropolis for the past eight years was 8.94, the lowest recorded for any city with a population of half a million, whilst the infantile mortality was 58 per 1,000 births.



Whilst it has to be remembered that in this year's figures the municipalities of Auburn, Bankstown, Granville, Lidcombe, and Parramatta have been added to the previous 41 municipalities included in the Metropolis, the fact remains that one has to go back a decade to find the death-rate above 10 per 1,000, and actually in 1917, it was only 9.75 per 1,000.

With regard to the infantile mortality, when the figure had come down to 49.3 for 1928 for the Metropolis it was hoped that we were at the commencement of a decline in this rate; whereas we find it has swung back to what obtained in 1927, and is practically only 3 per 1,000 less than in 1917.

The number of persons aged 65 and over who died in 1929 was 4,907, or 39.4 per cent. of the total deaths. Of these 136 were aged 90 to 94; 14 were 95, 5 were 96, 8 were 97, 6 were 98, 4 were 99, and one 101.

#### CAUSES OF DEATHS IN THE METROPOLIS.

*Diseases of the Heart.*—An analysis of the chief causes of death in the Metropolis shows that the group diseases of the heart again occupy the premier position, accounting for 2,332, or a rate of 189 per 100,000 in contrast to a rate of 172 per 100,000 for the somewhat similar Metropolis of the previous year.

In Sydney in 1903 heart diseases formed 8 per cent.; in 1913 nearly 9 per cent.; in 1923 and 1926 15 per cent.; and in 1927 to 1929, as much as 18 per cent. of the total deaths.

As to sex, there were 1,116 deaths from heart diseases among females, to 1,216 among males. 18 males and 30 females under 25 years of age died from diseases of the heart; 54 males and 55 females from 25 to 40 years of age; and 775 males and 542 females from 40 to 70 years of age. Occupation is the main factor in the difference in the higher rates in men than in women after 40 years of age.

With regard to rheumatic affections, the great congener of heart disease, chronic rheumatism, chronic arthritis, rheumatoid, and osteo-arthritis, and gout with rheumatic fever, only accounted for 54 deaths, or 4.3 per 100,000, actually a decrease of 3 of the previous year. Of these deaths, 18 were due to acute rheumatic fever, and occurred between 5 and 19 years of age. There were 5 deaths from rheumatic fever between the ages of 35 and 45, and 4 deaths between 60 and 69 years of age.

The fact that 79 men and 34 women died from angina pectoris also illustrates the greater frequency of degenerative changes in the arteries of the male than the female in later life. Syphilis and alcoholism are recognised as causing degenerative changes both of the heart and arteries.

In 1929, 23 males and 7 females were reported to have died from syphilis, 2 males and 5 females being under 1 year of age. There is little doubt that if a certificate of death were a confidential document, merely given by the medical practitioner to the Registrar, and certainly if the causes of death were always verified by a post-mortem, syphilis would be more frequently recognised as a primary cause of many degenerative changes which ultimately end in death.

Fourteen men and 4 women are recorded as having died from alcoholism (acute and chronic), the ages of the women being 1 between 25 and 30 and the other 3 between 40 and 45.

The practice of an annual medical examination should be more extensively encouraged by propaganda for reduction of heart, kidney, and other diseases. Already one insurance company in Australia following the lead of companies in U.S.A., has demonstrated that expenditure on health propaganda and the provision of nursing has been a good investment, not only in bringing increased business, but in lowering the age of the incidence of death among their clientele.

*Cancer*, the cause of which still baffles intensive and extensive research, with a terrible toll of 1,253 deaths (607 males and 648 females) in the Metropolis, and 85 in the outside metropolitan districts (a decrease of 26 for the whole metropolitan area), comes next on the list of killing diseases, and emphasizes the warning to people not to delay having recourse to the skilled surgeon for the removal of the first evidence of this malignant disease. As usual 60 to 70 years of age is the most fatal period to both sexes. As to the site of the disease and the importance as a causative factor of chronic irritation, it is noted that only 6 females died from cancer of the buccal cavity (mouth) in contrast to 63 males so affected, which is certainly suggestive of pipe smoking as a possible source of irritation.

Cancer of the genital organs and of the breast caused 249 deaths of women over 40 years of age. The fact that 168 males and 91 females were recorded as dying from cancer of "other or unspecified organs," suggests either the need of a more extensive tabulation of the deaths as to the site of the disease, or more probably carelessness in filling in death certificates.

*Pneumonia* comes third in the list with 1,050 deaths, exactly double the number of deaths which occurred in 1922; 423 were from broncho-pneumonia (males 208 and females 215), and 626 (males 353 and females 274) from pneumonia (other). As Osler pointed out, "this is one of the most widespread and fatal of all acute diseases" and has been "the captain of the men of death" to use the phrase applied by John Bunyan to consumption.

Debilitating causes of all sorts render individuals more susceptible after 35 years of age. Alcoholism is perhaps the most potent predisposing factor, and with occupation, especially the inhalation of dust rather than exposure in a climate such as ours, accounts for the higher incidence in the men over 30 years of age.

*Bright's Disease* (acute and chronic) claimed 734 victims. Acute nephritis (including unspecified under 10 years of age) accounted for 24 males and 16 females; chronic nephritis for the deaths of 374 males and 320 females. Between 40 and 65 years of age there were 171 deaths of males from chronic nephritis to 117 deaths of females. The excess of deaths in males one ascribes to occupation, drinking, and over-eating, especially of meat.

*Tuberculosis.*—The number of deaths from all forms of tuberculosis in the metropolis proper during 1929 was, according to the Government Statistician, 778, of which 682 were due to tuberculosis of the lungs (an increase of 95), 40 to tubercular meningitis, and 56 to other tubercular diseases. These figures include



deaths of former metropolitan residents which occurred at Waterfall Sanatorium and other institutions. From the beginning of 1927 deaths have been allocated by the Government Statistician to the locality in which the deceased permanently resided). During the past forty years there has been a reduction of the death rate of pulmonary tuberculosis by more than half. Whilst intensive propaganda in the prevention of tuberculosis, together with instruction in sanatoria, must have had some effect in improving the general condition of the people, I am convinced that better housing, especially the elimination of dampness, increased wages, shorter hours of labour, better feeding, an all round better standard of living, and, above all, more appreciation of living and sleeping in the open air, have all contributed to the ever-improving record.

*Deaths from Accidents.*—It is an indictment against our modern conditions of living that the next most common causes of death is that due to accidents. In 1929 no less than 678 persons (525 males and 153 females) were fatally injured.

Accidents from railways and tramways caused 57 deaths, of which 6 were women; vehicles and horses, 18 deaths (14 males and 4 females); motor vehicles, 288, an increase of 122 on the record of the previous year. No less than 229 males and 59 females were killed during the year by motor vehicles. One can quite understand why Sydney is sometimes referred to as the City "of the Quick and the Dead." The traffic problem on the streets gets more acute each year, as measured by the number of fatalities. It has been estimated that 65 per cent. of all accidents are due to negligence, lack of thought, and, above all, lack of appreciation of danger.

The frequency of electrical burns and shock suggests that everyone should at least know how to remove a person from a live wire and how to resuscitate by the simple Schafer method.

*Cerebral Haemorrhage* accounted for the deaths of 200 males and 267 females, a total of 467. It is interesting to note that no less than 124 deaths were of females over 70 years of age.

#### *Deaths from Epidemic Diseases.*

*Measles.*—There was a marked decrease in the number of deaths from measles. Whereas there were 90 deaths in 1928, there were 25 in 1929. The average for the previous five years was 30. The sex distribution was 13 males, 12 females, 12 being under 1 year of age.

*Whooping Cough* accounted for 135 deaths, 111 more than in 1928. Under 1 year of age in 1929 there were 34 males and no females died from whooping cough; under 5 years of age the deaths were equal to 58 males and 73 females.

*Scarlet Fever.*—There were 45 deaths from scarlet fever in 1929. This was a decrease of 18 on the number for the previous year, whilst in 1927 there was an increase of 10, which was six times the average for the preceding five years. To get similar numbers of deaths from scarlet fever in the metropolis we had to go back to 1915, 1916, and 1902-03. On the estimated mean population of 1,115,400 the death rate per 1,000 works out at .006, or 6 per 100,000 of population in contrast to 20 per 100,000 in England, where the death rate for scarlet fever has fallen from 1.2 in the sixties of last century to .02 per 1,000 in 1924; 26 deaths from scarlet fever in 1929 were of children under 5 years of age.

Scarlet fever, like other infectious diseases spread by droplet infections, appears to run in cycles, and apparently, as to its incidence is quite independent of the thoroughness or otherwise with which it is controlled. The suggestions that contacts should not be kept away from school, but be examined daily during the incubation period, is supported by experiences in England. Probably the safest course is removal to hospital where there is not nursing facilities at home, with exclusion of contacts from school. Reports are favourable as to the curative properties of anti-scarlatina serum.

*Diphtheria.*—There were 98 deaths from diphtheria in 1929, 24 more than in 1928, and 33 above the average for the previous five years; 78 deaths were of children under five years.

*Influenza.*—In 1929 there were 159 deaths from influenza. To compare this figure with that of 1928, deducting 13 deaths for the five municipalities added to the metropolis, there was an increase of 70. The deaths were actually double the average for the previous five years.

*Infantile Paralysis.*—Whereas there were no deaths from this disease in 1928, there were 17 in 1929.

*Epidemic Cerebro Spinal Meningitis* accounted for 4 deaths, in contrast to 10 deaths in 1928, and 15 in 1927, with an average of 16 for the previous five years in the former area described as the metropolis.

*Encephalitis Lethargica* accounted for 12 deaths, none of which occurred in Auburn, Bankstown, Granville, Lidcombe, or Parramatta, so that there was an increase of 2 over 1928, a decrease of 3 from 1927, and of 4 below the average for the previous five years before 1927.

*Typhoid Fever* with 11 deaths in 1929 showed a decrease of 4 on the previous year in the metropolis, or excluding 4 deaths in Auburn, 1 each in Granville and Lidcombe, an actual decrease of 10 in the area previously described as the metropolis. As the decrease in 1928 was 41 per cent. on the average of 39 for the previous five years, this shows a marked gain.

The infectious diseases to show decreases were measles, scarlet fever, epidemic cerebro spinal meningitis and typhoid. Whooping cough, diphtheria, influenza, infantile paralysis and encephalitis lethargica showed an increase.

*Diabetes* accounted for 172 deaths, deducting 13 for the five municipalities not included in the metropolis in 1928, this shows an increase of 21 deaths. As noted in previous years the sixth decade of life had the largest number of deaths, later on the average than in England and the United States. Previously I have emphasised the sex incidence of this disease in so far as it has been a more frequent cause of death among women than among men in Sydney. The usual incidence in England and the United States is in the ratio of 3 men to 2 women, but the reverse in Sydney obtains. In 1929 the deaths were 97 females to 75 males.



*Diarrhoea and Enteritis* in 1929 accounted for 181 deaths of children under 2 years of age, and 71, 2 years and over. In 1928 there were 231 deaths of children under 2 years, an increase of 23 on the record of the previous year, but a decrease of 126 on the average of 357 for the previous five years in the metropolis, which at that time did not include Auburn, Bankstown, Granville, Lidcombe and Parramatta. So the record in this regard shows a marked improvement.

*Maternal Mortality.*—In the metropolis in 1929 there were 44 deaths from puerperal septicæmia, and 92 deaths from other puerperal diseases. In 1928 there were 43 deaths from puerperal septicæmia, 19 of which occurred in cases of abortion and miscarriage. Deducting 1 death in Bankstown, 3 in Lidcombe and 2 in Parramatta in 1929, this shows there were 38 deaths from puerperal septicæmia in the area formerly known as the metropolis, a decrease of 5 on the number for the previous year. Of the 44 deaths from puerperal septicæmia, 27 followed abortion and miscarriage. Puerperal albuminuria and convulsions accounted for 20 deaths, a reduction of 7 on the previous year. Puerperal hæmorrhage caused 14 deaths, 3 less than in the previous year. Other accidents of labour were credited with 9 deaths. In the metropolis there were 96 deaths of women either in childbirth or immediately associated therewith. This gives a maternal mortality rate of 4.3 per 1,000 births. In the above figures are not included deaths from ectopic gestation, 12; "other accidents of pregnancy," 2; from illegal operations, 24, or 2 from abortion.

The great amount of research into the causes of maternal mortality shows that "environmental conditions, such as employment, overcrowding, cleanliness of the home," have practically no influence in determining a fatal result. Emphasis must be laid on the necessity for examination and supervision during pregnancy and the desirability for the encouragement of natural labour. It is interesting to note that in Edinburgh in 1927 the maternal death rate among mothers receiving antenatal care was only 2.4 per 1,000, while among those whose pregnancies were not supervised the rate was 11.2 per 1,000. With regard to puerperal septicæmia, which causes one-third of the maternal deaths, it is recognised, to quote from the Annual Report of the Scottish Board of Health for 1928, that "the autogenous case of puerperal sepsis is at the most relatively infrequent . . . in at least the vast majority of cases puerperal sepsis is preventable."

*Infantile Mortality.*—The deaths of infants under 1 year of age in the metropolis as recorded by the Government Statistician during 1929 numbered 1,263, whilst the births numbered 22,349, giving an infantile mortality rate of 56.62 per 1,000 births. Of the deaths in 1929 associated with infantile mortality, the most marked increase was from pneumonia from which there were 166 deaths. Of the total of 1,263 deaths in the first year of life no less than 519 occurred in the first week, and a total of 678, or more than half, in the first month. Looking at the rates of infant mortality in Sydney for the past fifty years we see a reduction from 192 per 1,000 in 1880 to 55 in 1929, a phenomenal decrease until 1917, when it was 58. The fall in the infant mortality has been caused mainly by reduction of the over-one-month mortality, the under-one-month rate not having appreciably fallen. The problem of the reduction of neonatal mortality is wrapped up with the problem of maternal mortality, but cannot be solved entirely by intensive educational propaganda. It is also related to the problem of eugenics and has to do with the age of marriage, the elimination of the unfit, the suppression of venereal diseases and many other public health problems. One would like to see in Australia in general, and in New South Wales in particular, the visitation of mothers and infants within a few hours of childbirth, the presentation of instructions to all women upon marriage, the teaching of all girls in schools in mothercraft, and, above all, the formation in all districts of voluntary committees presided over by women imbued with the ideals of healthy motherhood and the need for prenatal and antenatal care.

TABLE 2.

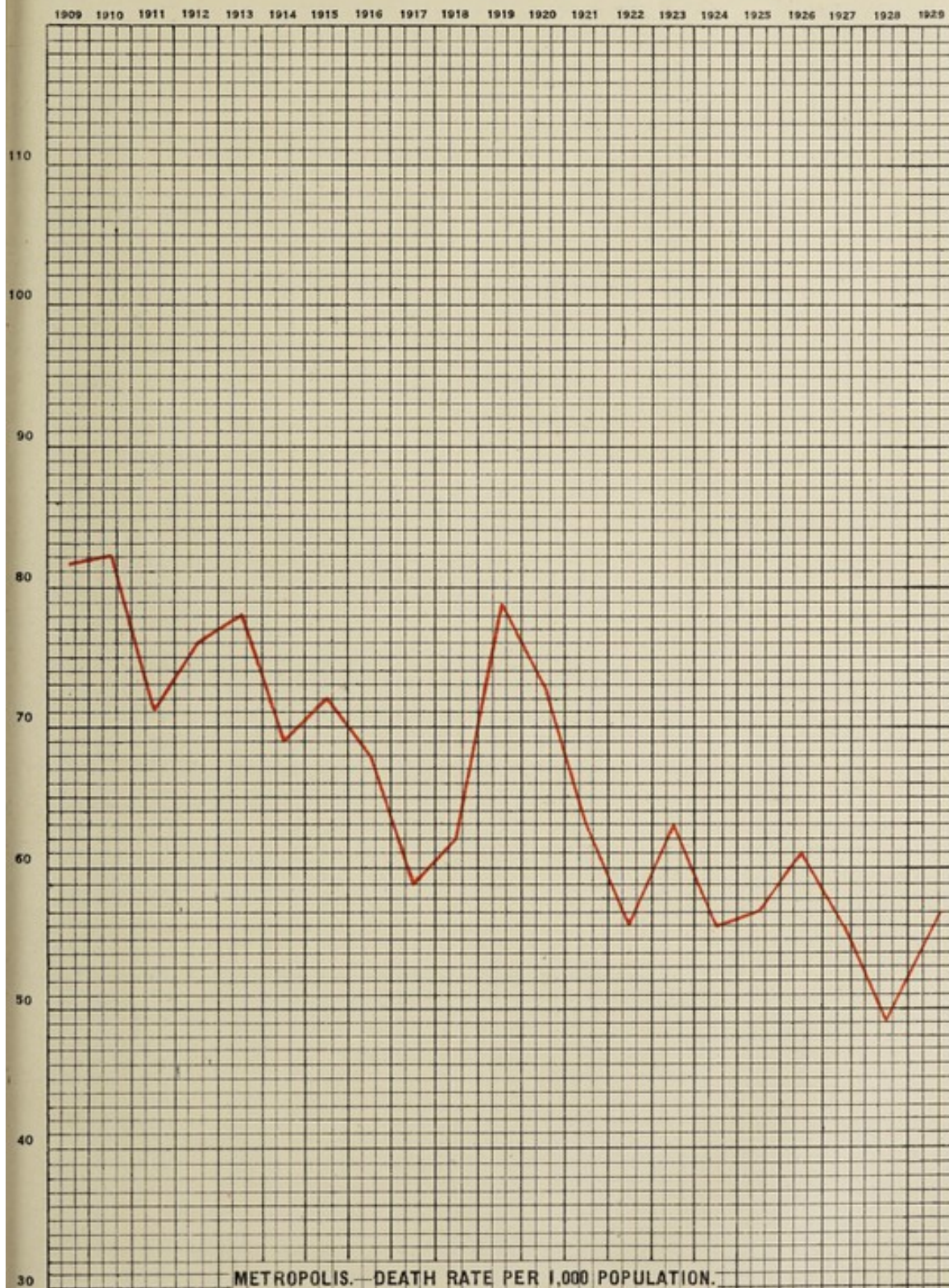
(a)—Showing Deaths of Infants under 1 year of age in the Metropolis from various causes, 1920-29.

The accompanying graph shows the infantile mortality rate during the period 1909-29.

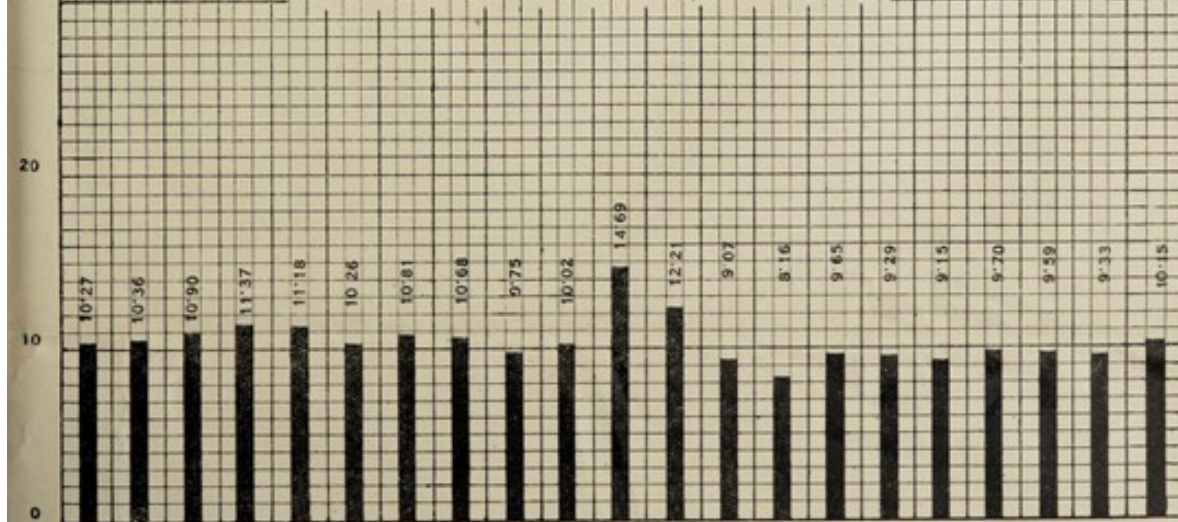
Cause of Death.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
Measles .....	20	3	1	6	2	1	8	1	23	12
Scarlet fever .....	...	...	...	...	...	...	...	...	...	3
Whooping-cough .....	121	27	24	24	16	68	37	70	16	19
Diphtheria .....	11	1	10	12	5	10	10	8	8	14
Influenza .....	6	7	1	9	4	6	3	5	3	2
Cerebro-spinal meningitis .....	2	1	3	2	6	2	5	3	2	10
Tuberculous meningitis .....	1	9	8	2	3	1	4	4	2	4
Other tuberculous diseases .....	3	5	2	2	1	2	3	2	5	11
Meningitis .....	7	14	10	19	19	12	15	17	12	6
Convulsions .....	22	18	15	11	13	12	25	19	5	6
Other nervous diseases .....	8	4	1	2	3	1	8	4	2	10
Bronchitis .....	26	20	21	29	17	18	10	13	13	19
Pneumonia .....	126	101	132	129	138	152	97	146	108	166
Other respiratory diseases .....	12	6	2	2	4	3	1	5	7	3
Diseases of the stomach .....	11	12	6	6	5	5	6	8	3	1
Diarrhoea and enteritis .....	443	385	257	407	224	191	248	163	181	144
Intestinal obstruction and hernia .....	10	17	7	8	9	9	15	5	6	12
Bright's disease .....	...	2	2	...	5	...	1	1	...	2
Prematurity .....	440	379	362	379	382	354	386	313	320	379
Other developmental diseases .....	319	332	351	299	237	282	287	285	268	310
Accident .....	12	9	7	10	13	11	7	13	8	20
All other causes .....	58	52	57	47	156	66	67	76	50	110
Total .....	1,658	1,414	1,279	1,405	1,262	1,186	1,243	1,161	1,042	1,263



# METROPOLIS.—DEATHS UNDER 1 YEAR PER 1,000 BIRTHS.



## METROPOLIS.—DEATH RATE PER 1,000 POPULATION.



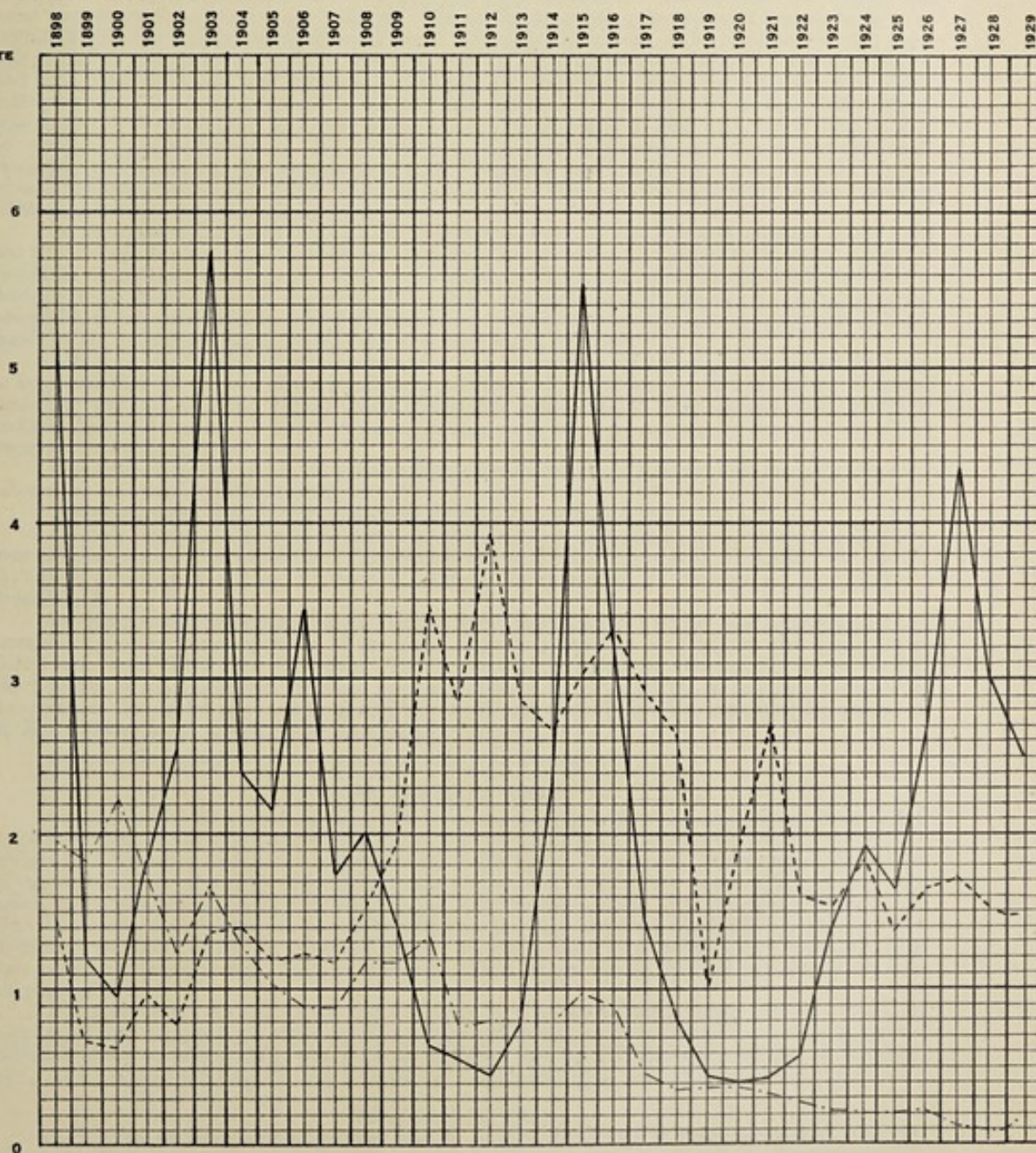




# ATTACK RATE—METROPOLIS—PER 1,000 POPULATION.

SCARLET FEVER —————  
 DIPHTHERIA - - - - -  
 TYPHOID FEVER — · — · —

ATTACK RATE  
 PER 1,000.







## INCIDENCE OF INFECTIOUS DISEASE.

**Scarlet Fever.**—The graph shows that the incidence of scarlet fever is on the decline and that, judging from past experience, we are entering a period of comparative quiescence following the five yearly period of increased incidence. There were 3,371 cases in the metropolitan area. In Australia generally there has been increased incidence of scarlet fever without increased mortality of late years. Notification, isolation and disinfection have failed to prevent the spread of this disease. Especially in boarding schools and institutions is Dick testing and immunisation indicated.

**Diphtheria.**—There has been little change in the incidence of this disease. There were 2,077 cases in the metropolitan area, giving an attack rate of 1.59 per 1,000. There were 102 deaths, giving a death rate of .07 per 1,000.

**Typhoid Fever: Incidence.**—In 1929 there were 82 cases of typhoid notified in the area known as the metropolis in 1928, when the number was 113. The inclusion of Auburn, Granville, Lidcombe and Parramatta with respectively 44, 15, 27 and 5 brought the number of cases in the metropolis up to 173. In the whole of the metropolitan area there were 184 cases. The attack rate for the whole metropolitan area was .14 per 1,000—86 cases were notified from Auburn, Lidcombe, Granville, Holroyd and Parramatta between the 24th April and the 5th June; 73 of these cases obtained milk from one source, a depot where 300 gallons of flash-pasteurised milk were chilled and then distributed. The outbreak was explosive in onset and practically confined to one milk run. The age incidence was quite typical of typhoid being most prevalent from the fifteenth to the thirtieth year. An interesting feature of the outbreak was that there was no case of typhoid fever associated with milk from the adjoining premises where fifty cows were milked and from which fresh milk was distributed. Recently Dr. Warren Coleman referred the question of the multiplication of the *Bacillus typhosus* in raw and flash-pasteurised milk to Dr. W. H. Park of New York, who wrote: "There probably is a little destruction of typhoid bacilli in fresh milk, but if there is, it is too small for practical protection. We all know that there have been many epidemics due to infection of raw milk, while only a very few of pasteurised milk. Naturally pasteurised milk can only become infected when it is contaminated after pasteurisation, as in the case of Montreal, and more lately in San Francisco where caps were put upon the milk by a carrier."

In the Auburn-Lidcombe outbreak the evidence showed that the source of infection of the milk was after flash-pasteurisation, as the cases were practically limited to the consignment to one dairy. Although two of the sons of the proprietor of the dairy gave a history of having suffered with typhoid fever in Western Australia some years previously, specimens of their urine and faeces, as in the case of other members of the household, gave negative results. In all specimens were examined from twelve persons associated with the family of the proprietor, but in no case was a positive result obtained.

Attention was directed during the year to the need for a more rapid extension of the sewerage system to keep pace with the increase of the population, more especially in certain industrial suburbs. A special conference was held with the Medical Officer of the Metropolitan Water, Sewerage and Drainage Board and the Chief Sanitary Inspector, and recommendations made as to the urgency for the extension of the sewerage in certain specified areas.

**Pulmonary Tuberculosis.**—For the Metropolitan Combined Sanitary District 1,058 cases of pulmonary tuberculosis were notified during 1929.

**Epidemic Cerebro Spinal Fever.**—15 cases were notified with 4 deaths.

**Infantile Paralysis.**—Whereas in 1928 there were only 13 cases notified and no deaths, in 1929 there were 149 cases notified and 17 deaths. The monthly incidence was—January, 11; February, 13; March, 43; April, 51; May, 20; June, 6; July, 3; August, 0; September, 1; October, 0; November, 0; December, 1.

In 1928 a conference was held in the Sydney Town Hall at which a scheme was formulated for the supervision of cases by co-operation of the Royal Alexandra Hospital for Children, the Royal Prince Alfred, and Royal North Shore Hospitals. The President of the Alexandra Hospital, Sir Charles Clubbe, who presided at the conference, has since been instrumental in raising £2,000, to be used for combating the spread of the disease and in securing serum for treatment of patients. The committee has appointed Dr. Karen Helms as its secretary and investigation officer.

**Encephalitis Lethargica.**—17 cases were notified with 12 deaths.

## THE PRE-SCHOOL CHILD.

The problem of the pre-school child, how to bridge the gap between the supervision of the infant at the baby clinic and at school is one which can only be solved by more co-ordination between the medical service of the Education Department and that of the Public Health Department. Until this gap is bridged by the establishment of district community health centres, and we have the means of immunising that section of the population against diphtheria, scarlet fever, whooping-cough, and the other diseases which affect the pre-school child, little can be done to reduce the incidence and death rate in the infectious diseases which more especially attack the pre-school child. Whooping-cough, diphtheria, scarlet fever, and, to a lesser extent, measles, showed the heaviest mortality—almost 90 per cent. of the total mortality in the first five years of life.

The work of the district nurses, school nurses, and nurses at baby welfare centres should be co-ordinated into community health centres, one feature of which would be intensive propaganda for the protection of the pre-school child, who as far as organised care by institutions is concerned, is nobody's bairn. It is essential to bridge the gap between the baby health clinic and the school clinic.

## MOSQUITO REDUCTION.

Conferences of local authorities were held to further the efforts at mosquito control. At the Australasian Medical Congress a special session was given to the discussion of this subject and slides sent by Dr. Hunter, Medical Officer of Health, Singapore, and the Mosquito Institute, Hayling Island, were exhibited. The public have been aroused by propaganda to the importance of co-operating in measures for the reduction of the nuisance. Evidence was given before the Select Committee of Parliament on the Reclamation Scheme for the Cook's River Improvement, and there is a prospect of work being undertaken for the reclamation of the flats and mangrove swamps on the Parramatta River.



## REFUSE DISPOSAL.

There are now 12 incinerators in the metropolitan area, and gradually local authorities are realising that incineration is the most hygienic method of disposal of garbage. In certain areas it was necessary to cause the local authorities to exercise more care in covering garbage after tipping. At Concord several acres were reclaimed without any serious nuisance by careful drainage and covering with sufficient spoil.

## RECREATION GROUNDS AND PARKS.

Whilst the city proper is admirably provided with parks and recreation grounds owing to those who first founded the settlement being men of prevision, securing no less than 19 per cent. of the area, it is found that on the periphery some municipalities have not even 2 per cent. of their area occupied by parks and recreation grounds. Although it is over ten years since attention was directed to this need, with some exceptions such as Woollahra, Marrickville, North Sydney, and Bexley, nothing commensurate with the great increase of population has been done to provide sufficient playgrounds. A local authority which does not provide at least 10 per cent. of its area for recreation handicaps its residents and fails in one of its obvious duties in providing for the health of its future citizens.

## PROPAGANDA.

Sydney, led by the Hon. the Minister for Health, Dr. Arthur, held a successful Milk Week, which attracted much attention to the need for increasing the consumption of this perfect food. For the past eight years Health and Baby Week was held in the second week of October. On this occasion 40,000 copies were issued of the pamphlet "Health makes the Commonwealth."

## INSPECTION OF RESTAURANTS, TEAROOMS, BUTCHERS' SHOPS, MILK VENDORS, COMMON LODGING-HOUSES, BARBERS' SHOPS, &amp;c., IN THE CITY.

In connection with the general administration of the City Health Officer's Department, it may be stated that there are 21,393 premises, 295 restaurants, 209 tearooms, 52 grill-rooms, 159 fruit shops, 84 fish shops, 86 butchers' shops, 468 barbers' shops, and 1,296 milk vendors in the city.

The following is a summary of the routine work during the year :—

1. Number of complaints received and dealt with	...	...	...	...	...	...	383
2. House-to-house inspection work, re-inspections, inspections re restaurants, garbage receptacles, streets, lanes, &c.	...	...	...	...	...	...	46,451
3. Inspections of butcheries, meat depots, poulterers, &c.	...	...	...	...	...	...	7,785
4. Inspections made under Pure Food Act Regulations	...	...	...	...	...	...	14,345
5. Inspections of common lodging-houses	...	...	...	...	...	...	47
6. Inspections under Dairies Supervision Act	...	...	...	...	...	...	4,040
7. Investigations of smoke nuisance	...	...	...	...	...	...	86
8. Inspections made by lady inspector	...	...	...	...	...	...	1,958
9. Investigations of infectious diseases	...	...	...	...	...	...	230
10. Notices served	...	...	...	...	...	...	3,595
11. Number of premises referred to the City Building Surveyor	...	...	...	...	...	...	443
12. Plans reported on	...	...	...	...	...	...	1,091
13. Number of premises visited by rat-catching staff	...	...	...	...	...	...	10,283
14. Number of complaints investigated by rat-catchers	...	...	...	...	...	...	416
15. Number of traps set and poison baits laid	...	...	...	...	...	...	50,778
16. Number of rats caught	...	...	...	...	...	...	4,606
17. Number of milk vendors registered	...	...	...	...	...	...	1,296
18. Number of milk samples taken for analyses	...	...	...	...	...	...	1,004
19. Disinfection of premises	...	...	...	...	...	...	211
20. Prosecutions against offenders	...	...	...	...	...	...	1,541
21. Total amount of fines inflicted	...	...	...	...	...	...	£1,844

## LEGAL PROCEEDINGS, SYDNEY MUNICIPAL COUNCIL.

The following is a record for the year 1929, with regard to legal proceedings undertaken by the Sydney Municipal Council :—

Sydney Corporation Act and By-laws	...	...	...	...	...	...	1,357
Public Health Act...	...	...	...	...	...	...	11
Pure Food Act	...	...	...	...	...	...	64
Police Offences Act	...	...	...	...	...	...	19
Electric Lighting Act	...	...	...	...	...	...	29
City of Sydney Improvement Act	...	...	...	...	...	...	41
Dairies Supervision Act	...	...	...	...	...	...	20
Total...	...	...	...	...	...	...	1,541

One hundred and five notices were served in the city proper under the Pure Food Act; 1,091 plans were inspected and reports made thereon by the City Health Officer's staff.

Three thousand five hundred and ninety-five notices were served in the city under the Public Health Act, the Sydney Corporation Act, the Pure Food Act, the Dairies Supervision Act, and the Noxious Trades Act.

Of 1,004 samples of milk taken in the city, 7 were found not in conformity with the standard. There were 4 convictions for selling milk deficient in milk fat.

## SEPTIC TANK INSTALLATIONS.

Number of septic tanks inspected and approved by the Board of Health, 220; sites inspected as to suitability for installing septic tanks, 351.



## 2.—Hunter River Combined Sanitary District.

H. G. WALLACE, M.B., B.S., D.P.H.

### REPORT OF THE MEDICAL OFFICER OF HEALTH FOR YEAR ENDED \* 31st DECEMBER, 1929.

I have the honour to submit the following report on health conditions in the Hunter River District during 1929.

*Description.*—The Hunter River Combined Sanitary District consists of eighteen municipalities and five shires, with an area of about 2,000 square miles. The inhabitants are chiefly engaged in industrial, coal-mining and pastoral occupations.

*Administration.*—The council of each Shire or Municipality is a Local Authority charged with the administration of the Public Health Act and certain allied Acts under the direct supervision of the Department of Public Health. The staff of the District Headquarters consists of one Medical Officer of Health, one Sanitary Inspector, one Nurse Inspector and one Clerk, while from time to time the district is visited by inspectors from Head Office staff in Sydney.

Each Local Authority employs one or in some cases two health inspectors. The majority of the inspectors employed by the councils have no special qualification in health work, and many, in addition to health duties, carry out those of town clerk, engineer, traffic inspector, working foreman, &c. The result is that their health work is liable to be overshadowed by other duties, and matters such as housing inspections, inspections under the Pure Food Act, &c., tend to be left to the staff of the Health Department.

It would seem preferable, particularly in the more thickly populated districts, if two or more councils could combine to appoint a certificated health inspector who could devote the whole of his time to the work. One reason why this has not hitherto been done is the question of control, and this will probably remain a difficulty until some scheme such as the District Health Council proposed by the Royal Commission on Health in 1925 is adopted.

*Population.*—The estimated mean population of the Hunter River Combined Sanitary District in 1929 was 200,650.

The chief towns are Newcastle, the second city of New South Wales, with a population, including suburbs, of about 120,000; Cessnock, with a population of about 19,000, and East and West Maitland with a combined population of 12,000.

*Vital Statistics.*—Tables showing populations, births, deaths and infantile mortality rates for each municipality and shire are appended to this report. The birth rate for the whole district was 22.65 compared with 25.4 for the previous year, and 21.37 for the whole State (1929). The number of ex-nuptial children born during the year was 204 or 4.49 per cent. of the total births.

The death rate for the district was 9.33 compared with 8.8 for the previous year, and 9.99 for the whole State (1929).

The chief cause of death was Diseases of the Heart, to which 306 deaths were attributed. Next in frequency came Cancer, with 170 deaths; Pneumonia, 142 deaths; and Accident 107 deaths. Diarrhoea and enteritis came eighth on the list with 85 deaths, of which 76 were at ages under 5 years.

*Infectious Diseases.*—Tables showing incidence of notifiable infectious diseases in each municipality and shire are appended.

#### DIPHTHERIA.

Five hundred and thirty-seven cases of Diphtheria were notified during the year, compared with 436, the annual average for the previous five years. Of these 481, or 89.8 per cent. were removed to hospital.

The disease, though relatively mild in type, was widespread. A mild epidemic occurred in Newcastle and suburbs in the early months of the year, taxing the inadequate isolation accommodation available to the utmost, patients at one hospital sleeping sometimes three in a bed.

The Schick Test was not made use of in this district during the year, owing to popular reaction against the use of immunization methods following the Bundaberg mishap. Nevertheless a limited amount of toxin-antitoxin immunization was carried out by local medical practitioners. It is hoped to re-introduce the method of Schick testing followed by immunization of susceptibles during the coming year.

The incidence rate per thousand of population in the district was 2.66. The death rate per thousand of population was .129 compared with .087 for the whole State.

Twenty-six deaths, equal to 4.8 per hundred cases, occurred in the district during the year.



## TYPHOID FEVER.

Eighty-four cases with 15 deaths were notified from the whole district during the year, compared with 66, the annual average for the previous five years. The fatality rate was 17·84 per cent. The death rate per thousand of population was ·074 compared with ·018 for the whole State.

Of the cases notified 76 or 90·9 per cent were treated in hospital. The relatively small number of cases treated at home is a very satisfactory feature as the tendency to remove patients to hospital for treatment must materially lessen the number of contact cases. Facilities for the detection of "carriers" are, however inadequate or lacking at most hospitals in the district, and the establishment of the projected public health laboratory at Newcastle would almost be justified from this aspect alone. The only epidemic outbreak during the year occurred at Homeville in Kearsley Shire, where 25 cases occurred with 5 deaths. Investigation showed that the infection was probably fly-borne from early ambulant cases. A brief publicity campaign was followed by the offer of free inoculation with anti-typhoid vaccine, to which 334 persons responded, 618 doses of T.A.B. vaccine being administered. Combined with a general clean-up of the neighbourhood this had the effect of checking the epidemic.

## SCARLET FEVER.

One hundred and seventy cases of scarlet fever were notified compared with an average of 247 per annum during the previous five years.

Three deaths from the disease were reported, giving a fatality rate of 1·76.

The rate of incidence per thousand of population was ·84.

Of the 170 cases notified, only 59 were treated in hospital. The chief reason for this is probably the shortage of accommodation for infectious cases at hospitals in the district.

## PULMONARY TUBERCULOSIS.

Thirty-eight new cases of pulmonary tuberculosis were notified during the year compared with 65 the annual average during the previous five years. The deaths from pulmonary tuberculosis numbered 54.

The creation of a Tuberculosis Division of the Department of Public Health in 1927 under the charge of a director, and the formation of the Tuberculosis Advisory Board has promoted the co-ordination of anti-tuberculosis activities throughout the State. Co-operation with the sanatoria in notifying admissions and discharges of patients from this district has enabled the visiting nurse to keep in closer touch with patients, and presence of the secretary of the Newcastle & Northumberland Benevolent Society, Hon. J. L. Fegan, who is also a member of the Board of Health, secretary of the Throat and Chest Dispensary, and a member of the Board of the Newcastle Hospital, has enabled valuable co-ordination between the work of these institutions to be carried out.

The Throat and Chest Dispensary has continued its activities in the charge of Doctors Byrne and Beveridge. It has been of value in arranging the admission of patients to sanatoria in various parts of the State. It is to be regretted however, that there is at present no suitable accommodation for tuberculous cases in the district, and that the general hospitals are often loaded with cases which could probably be more economically handled by a sanatorium. A suggestion has been made that the Hospitals Commission might consider the erection of a Tuberculosis Ward in connection with the Convalescent Home of the Newcastle Hospital at New Lambton, but so much public prejudice exists against the proposal that it seems unlikely to be gone on with.

## OTHER NOTIFIABLE INFECTIOUS DISEASE.

*Infantile Paralysis.*—Six cases were notified during the year from widely scattered localities. There was one death from the disease.

*Cerebro-Spinal Meningitis.*—Two cases only of meningococcal meningitis were notified, neither of which proved fatal.

*Encephalitis Lethargica.*—One case was notified during the year, which was followed by death of the patient.

*Puerperal Fever.*—This became notifiable for the first time on 16th August, 1929. Two cases, neither of which proved fatal, were notified during the year.

*Dengue Fever.*—No recrudescences of dengue fever occurred during the year. In Newcastle and suburbs anti-mosquito work was continued and resulted in a general diminution in the prevalence of *Aedes argenteus*. In other towns where the work was not carried out, *Aedes argenteus* remained in large numbers and there remains the possibility of epidemics occurring in those parts of the district which have not taken precautions to eradicate the dangerous variety of mosquito.

*Plague.*—Newcastle remained free from plague. The services of a full-time rat-catcher were retained during the year, to obtain specimens from along the wharves and from buildings adjacent to the waterfront. These specimens were regularly examined for signs of plague. In addition the Railway Department and the Department of Navigation continued the laying of poison baits. The Newcastle City Council continued to pay a bonus of 6d per head for rats brought in to the councils depot in Cook's Hill, where they are examined and incinerated.

Some poisoning at garbage dumps, which are usually rat-infested, was carried out by various councils, and the improvement of stables, produce stores and the like was continued throughout Newcastle.

*Housing.*—The shortage of housing through the district was much less marked than in previous years. The long continued dispute in connection with the coal mines caused a general depression through the district, and numerous families vacated houses and moved to other parts of the State.



In the larger towns the elimination of the more unsuitable dwellings was continued, the assistance of the staff of this Department being frequently requested by councils in dealing with condemnations of dwelling-houses.

In parts of the coalfields district, especially at Catherine Hill Bay, some very poor housing conditions still exist, and are very difficult to deal with owing to local conditions of land tenure, &c. The general conditions, however, are improving, and it seems probable that negotiations now in progress between owners and employees will result in considerable improvement in the near future.

*Infantile Mortality.*—Births in the district during 1929 numbered 4,545 and deaths of infants under one year of age 320 giving an infantile mortality rate of 70·4 compared with an average rate of 61·9 during the previous five years.

The work of the Baby Health Centres continues to receive increasing support from residents. They are directly administered from Sydney and are not under the control of this office. Particulars of their activities appear elsewhere.

*Maternal Mortality.*—The number of deaths from causes connected with childbirth was 33 showing a death-rate in childbirth of 7·2 per thousand births, compared with 6·1 the annual average for the previous five years.

The lack of accommodation for outdoor patients at the Newcastle Hospital has caused the establishment of a modern pre-natal clinic there to be postponed. The Baby Health Centres in the district could act in connection with such a clinic if established, and do a great deal in the education of mothers in this respect. Undoubtedly, a great part of the avoidable mortality from toxic and other conditions could be prevented by making facilities for pre-natal care more easy of access than at present.

During the year investigations were made on behalf of the Division of Maternal and Baby Welfare of all maternal deaths in Newcastle and suburbs.

*Private Hospitals.*—Inspections of the 54 licensed private hospitals in the district were made at intervals. Forty-three of these were for lying-in cases only, while 10 received medical and surgical cases as well. The total number of beds available was 486. The largest of these private hospitals, the Mater Misericordiae Hospital, at Waratah, was declared a public hospital under the new Hospitals Act during the year.

On the whole there was a general high standard in respect to the Management of Private Hospitals and registers were better kept than formerly. Nevertheless there appears to be some need for revision of the Private Hospitals Act and regulations, particularly in the direction of providing for equipment and adequate staff.

*Pure Foods Act.*—An inspector from the staff of the Head Office visited the district at intervals during the year, and his work under the Pure Food Act was extremely valuable. A little more interest was shown by the councils in this direction than in the past, but there is an increasing need year by year, as the population of the district increases, for the services of a full time officer who will be able to work continuously throughout the district. Inspector Godfrey of this office, carried out a number of inspections and condemnations of food found to be unfit for human consumption, and Nurse Inspector McKay devoted some time to inspections of shops in the district.

*Meat Inspection.*—In the area within fourteen miles radius of the Newcastle District Abattoirs, having a population of approximately 14,000 people, all the meat sold for human consumption is from animals slaughtered under hygienic conditions and subjected to a careful inspection by qualified meat inspectors. Outside the abattoir area, however, the meat consumed by sixty or seventy thousand persons in the rest of this district is mainly from animals slaughtered in small slaughter-houses, and not subjected to strict inspection.

In 1920 an inquiry into the matter of better meat inspection was conducted by departmental officers, and the appointment of qualified meat inspectors by the councils was recommended. At a conference of representatives from district councils held at West Maitland it was decided to give effect to this recommendation.

No further steps were taken until 1924 when shortly after my appointment to this district the necessity for providing adequate inspection of meat in the thickly populated coalfields area was brought before the councils concerned, discussions taking place during 1924 and 1925 without finality being reached.

In 1927 various conferences of representatives from the councils were held with a view to securing unanimity of action, but the councils failed to agree. The proposal to establish a district abattoir under a county council scheme was rejected, and towards the end of the year a separate proposal was put forward by the Cessnock and Kearsley Councils, which received the approval of the Board of Health. This proposal has not yet been put into effect. In May 1928 the Hon. the Minister for Health appointed the Chairman of the Metropolitan Meat Industry Board, Mr. J. B. Cramsie, to conduct an inquiry into the matter at West Maitland. Mr. Cramsie's report showed conclusively the necessity for better meat inspection, affirmed the necessity for establishment of abattoirs, and suggested the concentration of killing in three or four slaughter-houses as a temporary measure. The butchers were unable to agree with the councils on concentration in killing-centres, and the councils in the Maitland district towards the end of 1929 decided to establish an abattoir under a Board composed of representatives of the councils concerned, to serve a five-mile radius from West Maitland Post Office. Meantime a proposal had been put forward by the West Maitland Council to establish an abattoir for that Municipality alone. The consent of the Hon. the Minister for Local Government, however, was necessary before the requisite loan moneys could be obtained, and this was withheld pending finalisation of the larger scheme.

The Council of East Maitland later withdrew from the agreement previously reached regarding the Maitland Abattoir scheme, and the position at the end of the year was, that no improvement in meat inspection had been made, and the parties seemed as far as ever from agreement.



Two courses suggest themselves as a solution of the difficulty. The first is, that as a majority of Councils favour establishment of an abattoir near Maitland which could serve the whole district, an Act to give effect to this could be brought forward to include the areas concerned in one abattoir area, and to establish a Board consisting of representatives of each council.

A second, and simpler alternative would be to extend the Newcastle Abattoir Area to include the coalfields, giving the Councils of the areas concerned representation on the Abattoir Board. This would probably be the most economical scheme, and provided some means were adopted to protect the West Maitland Municipal Saleyards, would probably be acceptable to the majority.

It is to be hoped that in the interests of the public health, some such course as those outlined will be adopted early in the New Year.

*Noxious Trades Act.*—Premises licensed under the Noxious Trades Act were inspected at intervals during the year. On the whole they were well kept, and appliances and premises were maintained in a satisfactory state.

*Hospital Accommodation.*—The Newcastle Hospital had to stand the strain of a minor epidemic of diphtheria during the early part of the year, as many as sixty-nine patients being crowded into the isolation wards at one stage, where there is normally accommodation for less than half that number. The isolation accommodation at Wallsend Hospital also was severely taxed. Fortunately the district has remained free from extensive epidemics for some years, but the above-mentioned facts show how inadequate the existing isolation accommodation is, and emphasize the necessity for the erection of a separate infectious diseases hospital at the earliest possible date. The matter has been brought under the notice of the Hospitals Commission, but difficulties of finance apparently stand in the way of providing this much needed accommodation.

*Venereal Disease.*—There is still no properly constituted public clinic for the treatment of Venereal Diseases in Newcastle. Although plans for such a clinic were incorporated in the design of the proposed new out-patient building at Newcastle Hospital, the erection of the building has not yet been commenced. The treatment at present provided at the Hospital is almost useless, owing to the lack of facilities. The Medical Superintendent in his report for 1929 states "A clinic organized on a definite basis is an immediate necessity for the thorough and efficient treatment of each case." The Honorary Medical Board reports "The want of suitable accommodation is preventing any really effective progress in dealing with Venereal Disease cases. This want should be given urgent and immediate consideration. In a city of such importance as Newcastle a properly equipped Venereal Disease Clinic is a public necessity, and from the point of public health it is difficult to understand why it has been so long delayed."

The provision of a clinic for treatment of Venereal Disease is undoubtedly the most urgent health need of Newcastle, and it is hoped that by some means funds will be made available during the coming year to establish it on an efficient basis.

*Public Health Laboratory.*—Incorporated in the design of the proposed out-patient building at the Newcastle Hospital is a modern laboratory. The necessity for a local laboratory to provide diagnostic facilities is at present keenly felt. The detection of "carriers," for example, among patients suffering from infectious diseases in this district is not at present efficiently carried out. A laboratory at Newcastle would be able to serve a large and populous district. If Newcastle is to serve as a "base" for the Northern district, as suggested by the Hospitals Commission, the provision of a modern public health laboratory will be of inestimable value.

*Miscellaneous Services.*—During the year over 500 persons were medically examined, including 442 workers claiming compensation for injuries received in the course of their employment. Other examinations included:—

- (a) All first class pilots stationed at Newcastle.
- (b) Candidates for employment in the Public Service, or public servants requiring medical examination on account of sickness incapacitating them from duty.
- (c) Young persons whose parents are in poor circumstances, seeking employment in factories for the first time.
- (d) Applicants for admission to hospitals or asylums.
- (e) Casual and permanent employees of the Hunter District Water Supply and Sewerage Board.

Under instructions from Head Office visits were made outside the district to Dungog *re* garbage disposal, to Chichester *re* alleged pollution of the river, to St. Clair *re* cases of tuberculosis, and to Cassilis *re* typhoid fever.

*Bacteriological Laboratory.*—A number of specimens of sputum, and of swabbings from suspected diphtheria cases were examined during the year for medical practitioners in the district, but, as in previous years, the time available for such work was limited, and the number of specimens whose examination could be undertaken was relatively small.



### 3.—Broken Hill and District.

#### REPORT OF MEDICAL OFFICER OF HEALTH; W. E. GEORGE, M.B., CH.M., FOR THE YEAR ENDED 31st DECEMBER, 1929.

The arrangement outlined in the last annual report for the carrying out of public health duties at Broken Hill has been continued during the past year.

The position of Assistant Medical Officer of Health has been vacant during the year owing to the resignation of Dr. R. W. Thompson, and as yet there has been no appointment to fill the vacancy. In consequence of this it has not been possible to carry out the medical inspection of school children as was intended.

Work at the State Laboratory, attached to the Broken Hill and District Hospital, has been very heavy during the year, the total number of examinations carried out being 5,697, comprising 495 biochemical and 5,202 bacteriological examinations.

The population of the city for the year 1929 was 27,960. There were 651 births, divided into 350 males and 301 females. The deaths numbered 349 (males, 230; females, 119).

There was a considerable increase in the notifications of infectious diseases during the year, comparative figures being :—

	1928.	1929.
Typhoid and Paratyphoid Fever ... ..	49	64
Scarlet Fever ... ..	4	120
Diphtheria ... ..	17	96
Infantile Paralysis ... ..	1	1
Cerebro-spinal Meningitis ... ..	...	...
Encephalitis Lethargica ... ..	1	...

There were numerous cases of diphtheria and scarlet fever during April, May, June and July, 1929, though fortunately these diseases manifested themselves in a mild form.

Typhoid fever also shows an increased incidence, and unfortunately this disease in Broken Hill is not of a mild type.

The seasonal outbreak of typhoid fever in Broken Hill is associated with the great increase in the number of flies which occurs regularly in the summer months. The care of closets and garbage receptacles on many premises in the municipality, with regard to rendering them flyproof, can be described as unsatisfactory, although disposal of this refuse when collected by the council is fairly satisfactory. Housing in the municipality, as in most mining towns, is poor. Very few of the houses are flyproofed, dust is abundant, and many housewives, giving up all hope of keeping their houses clean, become careless in other matters as well. Garbage receptacles are left uncovered, closet pans are not kept flyproof, and it is only occasionally any substance is found constantly employed to discourage the breeding of flies in these receptacles. Flies are always numerous during the spring and summer months. The presence of mild and/or unrecognised cases of typhoid fever and carriers of the infection under such favouring conditions as those just mentioned no doubt account for the continued prevalence of this disease in the community.

Fortunately, almost all known cases of typhoid fever are removed to the district hospital for treatment, and no case is discharged from hospital until the faeces and urine are found free of *B. typhosus* on three occasions.

W. E. GEORGE,  
Medical Officer of Health.





1929.

## SECTION III.

Report upon the State Hospitals and Homes under the Control  
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## SECTION III.

REPORT upon the State Hospitals under the Control of the  
Director-General of Public Health.

## 1.—THE COAST HOSPITAL, SYDNEY: REPORT FOR THE YEAR 1929.

## The Medical Superintendent to The Director-General of Public Health.

Sir,

I have the honor to submit the following Report on the working of the Coast Hospital during the year 1929.

The Staff during the year has been as follows:—

*Honorary Medical Staff.*

Honorary Physicians.—Alfred Walter Campbell, M.B., M.S. (Edin.), M.D.; James McDonald Gill, M.D. (Lond.), L.R.C.P. (Lond.), M.R.C.S. (Eng.); Hazlett Hamilton Marshall, L.R.C.P.S. (Edin.), L.F.P.S. (Glas.), M.B., M.S. (Edin.); Alan Worsley Holmes à Court, M.D. (Syd.), M.R.C.P. (Lond.), Medaille d'Epidemies; Richmond Jeremy, M.B., Ch.M. (Syd.), M.R.C.P. (Lond.).

Honorary Surgeons.—Sir Charles Clubbe, L.R.C.P. (Lond.), M.R.C.S. (Eng.); George Henry Abbott, M.B., Ch.M. (Syd.); Sir Alexander MacCormick, M.B., M.S., M.D. (Edin.), M.H.F.R.C.S. (Eng.), H.F.R.C.S. (Edin.); John Colvin Storey, M.B., Ch.M. (Syd.), F.R.C.S. (Eng.); Edward Thomas Thring, F.R.C.S. (Eng.), L.R.C.P. (Lond.); Harry Cecil Rutherford Darling, M.D. (Lond.), F.R.C.S. (Eng.); Earle Christian Grafton Page, M.B. (Syd.); Thomas Maynard Furber, M.B. (Syd.); James Harold Willmott Leadley, M.B., M.S. (Syd.).

Honorary Gynæcologists.—Joseph Foreman, L.S.A. (Lond.), L.M.R.C.P. (Edin.), M.R.C.S. (Eng.); Ralph Worrall, M.D., M.S. (Ire.).

Honorary Ophthalmic Surgeons.—Charles Gordon McLeod, M.B., M.S. (Edin.); Albert Tange Dunlop, M.B., M.S. (Syd.).

Honorary Ear, Nose, and Throat.—Herbert Huff Johnston, M.B. (Syd.).

Honorary Dermatologists.—Wahab McMurray, M.D., M.S. (Ire.); Ewan Murray Will, M.B., Ch.M. (Syd.).

Honorary Urologist.—Robert Joseph Silverton, M.B., M.S. (Syd.).

Honorary Radiographer.—(Vacant).

Honorary Orthopædic Surgeon.—Wilfred Vickers, M.B. (Syd.).

*Resident Medical Staff.*

Medical Superintendent.—Reginald Jeffery Millard, M.B., Ch.M. (Syd.), D.P.H. (Camb.), C.M.G., C.B.E.

Deputy Medical Superintendent.—Robert Maxwell McMaster, M.B., M.S. (Syd.), D.S.O.

Senior Medical Officers.—Cecil Julian Manning Walters, M.B., Ch.M. (Syd.); Robert James Wherry Malcolm, M.B., M.S. (Syd.); Albert Edward Roy Hoskins, M.B., Ch.M. (Syd.), resigned 12th June, 1929; Arthur Alexander Moon, M.B., Ch.M. (Syd.), appointed 13th June, 1929.

Junior Medical Officers.—8.

Manager.—Mr. R. Goldrick.

Matron, Miss C. M. Burne.

Sub-Matron, Miss C. M. Dickson, R.R.C.

Asst. Sub-Matron, Miss V. K. Angus.

Dispenser, Miss E. M. Kirton.

Clerk and Storekeeper, Mr. W. Dwyer.

Sisters, 15; Nurses, 222; other Female Staff, 67.

Attendants (Ward), 27; other Male Staff, 57.

## STATISTICS.

Detailed tables of statistics will be found in the Appendix, but I may summarise here the more important of these.



I.—The following table is a comparative general statement for 1929 and the previous year :—

	1928.	1929.
Remaining in Hospital on 31st December .....	727	714
Admitted during the year .....	10,102	10,454
Total cases under treatment during the year .....	10,745	11,181
Discharges, including deaths .....	10,018	10,467
Deaths .....	654	713
Death-rate per cent. of total discharges .....	6.5	6.8
Average daily number of occupied beds .....	737.4	740
Average stay of patients (in days).....	24.5	24.1

For the year the number of admissions was 352 more than in 1928, and the average daily number of occupied beds was 740 as against 737.4 in 1928. The average stay of patients was 24.1 days.

II. *Infectious Diseases.*—The following table summarises the work of the year in regard to these, and affords a comparison with 1928. In this table the "cases" are cases treated until discharge or death, and the fatality is reckoned on the total cases treated. Cases remaining in hospital on 31st December, 1929, are not included in these figures for the year :—

	1928.			1929.		
	Cases.	Deaths.	Fatality.	Cases.	Deaths.	Fatality.
Typhoid Fever .....	24	2	8.4	52	3	5.77
Measles .....	525	62	11.8	234	18	7.69
Scarlet Fever .....	1,723	44	2.55	1,580	32	2.02
Whooping-cough .....	11	...	...	72	11	15.27
Diphtheria .....	1,141	18	1.6	1,121	29	2.56
Influenza .....	154	4	2.5	212	1	0.4
Erysipelas .....	130	5	3.84	119	12	10.08
Other Epidemic Diseases .....	23	...	...	100	...	...

*Typhoid Fever.*—The number of cases under treatment was more than in 1928; the fatality was lower.

*Scarlet Fever.*—Was less prevalent than in 1928—3,418 cases being notified in the whole metropolitan area during 1929 as against 3,729 during 1928, and the cases treated at the Coast Hospital showed a corresponding decrease. There were 32 deaths.

*Diphtheria.*—In the Metropolis the cases notified amounted to 2,124 in 1929 as against 2,028 in 1928; and the cases treated at the Coast Hospital were 1,111 as against 1,119 in 1928. The percentage of notified cases which came to this hospital for treatment was—in 1928, 53.8 per cent.; and in 1929, 53.1 per cent. Of the 29 fatal cases, 18 died within seven days of admission. Intubation was performed on 25 patients and tracheotomy on 5.

Antitoxin was administered in the hospital to 1,139 cases in the doses shown in the following table :—

Antitoxin.	Cases.	Percentage of Total Cases.	Antitoxin.	Cases.	Percentage of Total Cases.
2,000 units .....	7	.61	38,000 units .....	2	.17
4,000 " .....	46	4.03	40,000 " .....	32	2.80
6,000 " .....	57	5.00	42,000 " .....	3	.26
8,000 " .....	203	17.82	44,000 " .....	...	...
10,000 " .....	213	18.70	46,000 " .....	3	.26
12,000 " .....	116	10.18	48,000 " .....	2	.17
14,000 " .....	48	4.21	50,000 " .....	12	1.05
16,000 " .....	110	9.65	52,000 " .....	1	.08
18,000 " .....	8	.70	54,000 " .....	...	...
20,000 " .....	190	16.68	56,000 " .....	...	...
22,000 " .....	8	.70	58,000 " .....	...	...
24,000 " .....	9	.79	60,000 " .....	6	.52
26,000 " .....	5	.43	62,000 " .....	...	...
28,000 " .....	6	.52	64,000 " .....	...	...
30,000 " .....	29	2.54	70,000 " .....	1	.08
32,000 " .....	8	.70	80,000 " .....	1	.08
34,000 " .....	1	.08	100,000 " .....	1	.08
36,000 " .....	10	.87	110,000 " .....	1	.08

Altogether 3,289 cases of typhoid fever, measles, scarlet fever, diphtheria, influenza, meningitis, and whooping cough were treated. In the Appendix will be found some further details of these cases, viz. :—

Table III.—Age and sex distribution of cases discharged or died during the year.

Table IV.—Number of cases of diphtheria, scarlet fever, and typhoid notified within the Metropolis, and the percentage of these cases treated at the Coast Hospital in each of the years 1916–1929, inclusive.

Table V.—Duration of stay in hospital of cases of typhoid fever, measles, scarlet fever, whooping cough, and diphtheria.

Table VI.—Fortnightly admissions of all patients during 1929.

Table VII.—Classification of diseases treated during 1929.

Table VIII.—Operations performed during 1929.

Table XI.—Summary table showing the work of the Coast Hospital and its cost each year from 1894 to 1923.



**Abortion.**—During the year 755 patients were treated for abortion. The admissions for this condition have increased of late years at a startling rate, as indicated by the following figures, which show the ratio of abortion cases to all cases treated in successive years 1920-1929 inclusive:—

Year.	Total females treated.	Abortions.	Percentage.	Year.	Total females treated.	Abortions.	Percentage.
1920	2,645	193	7.25	1925	4,602	497	10.8
1921	3,210	237	7.38	1926	5,550	620	11.1
1922	3,426	354	10.3	1927	5,759	581	10.0
1923	4,289	381	8.8	1928	5,302	572	10.7
1924	4,325	436	10.0	1929	5,575	755	13.5

3. **Expenditure.**—Table IX gives a detailed statement of the working expenses for 1928 and 1929 from which it will be seen that the total expenditure increased from £113,562 1s. 9d. in 1928, to £127,721 5s. 1d. in 1929, and the average cost per occupied bed increased from £154 0s. 0d. to £172 11s. 10d.

Instruction by lectures and demonstrations was, as usual, given to the Nurses by the Medical Staff and Matron; and in invalid cookery by a specially engaged teacher (Miss Shepherd), as in former years. Examinations were held in accordance with regulations, and nurses passed as follows:—

First-year examination	...	...	...	...	...	...	...	...	41
Second-year	„	...	...	...	...	...	...	...	57
Third-year	„	...	...	...	...	...	...	...	42
Fourth-year	„	...	...	...	...	...	...	...	40

During the year 28 certificated nurses left the hospital to take up private nursing, and to take positions in other hospitals. In addition to these, 8 Coast Hospital nurses passed the N.R.B. Obstetric Examination, after having the necessary training at Montrose Hospital, whilst 39 nurses passed the Nurses Registration Board Examination in General Nursing.

Sick leave was granted to 146 nurses, amounting in the aggregate to 2,882 days. Of these nurses some were ill on more than one occasion, there being 203 cases of illness altogether. Of the sick nurses 10 had diphtheria, 403 days; 12 had scarlet fever, 606 days. All the nurses recovered satisfactorily.

5. **Laboratory.**—The following Table summarises the work done in the hospital laboratory month by month. In all, 13,914 cultures were examined for diphtheria. The practice was continued of accepting no diphtheria culture as negative unless found so after forty-eight hours' incubation.

1929.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Cultures examined for diphtheria—													
1. After 12-24 hours' incubation	777	833	1,339	1,610	1,956	1,426	1,333	1,154	972	980	786	748	13,914
2. Negative after 12-24 hours' incubation, and re-examined after 48 hours	595	591	815	1,228	1,442	997	1,061	908	768	830	644	607	10,486
3. Positive for diphtheria at second examination	16	31	45	81	94	79	65	35	27	22	14	20	529
4. Percentage of positives in second examination	2.6	5.2	5.5	6.5	6.5	7.9	6.1	3.8	3.5	2.6	2.1	3.2	5.0
Blood—Full counts	29	21	19	17	17	17	18	16	26	32	22	29	263
Leucocyte counts	31	37	38	54	57	29	58	25	41	43	29	42	484
Parasites, &c.	3	...	3	5	3	3	4	5	3	3	2	...	34
Cultures	7	12	11	12	4	7	6	5	14	17	9	4	108
Widals	14	15	14	21	53	10	13	2	6	7	7	9	171
Sugar	96	93	88	84	114	79	123	97	77	137	121	111	1,220
Typing for trans- fusion	6	2	4	...	3	3	9	11	6	29	1	7	81
Fluids—Cerebro-spinal	9	11	5	21	11	7	19	12	10	10	19	6	140
Body fluids	7	14	5	10	4	4	8	10	13	4	8	10	97
Faeces	7	6	2	11	4	4	9	6	9	6	3	12	79
Pus—For organisms, &c.	36	14	15	20	16	26	45	94	75	58	62	39	500
Smears—Gonococci	161	139	120	99	101	122	130	90	101	102	118	120	1,403
Leprosy	2	...	...	...	...	...	...	1	1	...	...	1	5
Diphtheria and Vin- cent's Angina	2	3	...	3	9	1	7	9	8	2	1	1	46
Sp. pallidum	5	8	7	5	4	5	4	8	1	1	4	9	61
Hairs and Scales for fungi	5	2	5	1	...	2	...	1	...	1	1	1	19
Sputum for T.B.	101	123	82	98	110	71	116	163	102	145	119	116	1,346
Urine—Bacteriological	19	6	2	10	3	12	3	6	7	5	2	9	84
Bacteriological and pus, &c.	37	41	22	26	21	28	20	21	27	28	21	41	333
Deposits only	30	34	25	30	36	15	46	43	53	60	56	50	478
Chemical	25	26	6	11	13	18	12	17	20	19	8	8	183
Vaccines prepared	5	4	6	5	6	...	8	5	1	1	...	6	47
Totals	2,009	2,035	2,633	3,331	3,987	2,886	3,052	2,700	2,341	2,520	2,043	1,986	31, 82



**The Principal Works carried out at the hospital during 1929 were as follows:—**

- Renewal of roof of Administrative Block.
- Alteration and additions (bathroom and verandahs, Female Staff Quarters).
- Provision of monier pipe line for conveyance of stormwater.
- Completion of new Operation Theatre.
- Extension of Engineers' Workshop.
- Improvement of cold water supply, new hospital units.
- Conversion of Catherine Hayes section, Coast Hospital Auxiliary, into Nurses' Quarters.
- Provision of new morgue, Coast Hospital Auxiliary.
- Provision of sterilizing plant, &c., Coast Hospital Auxiliary.
- Restoration of boat slip, Male Lazaret.

The above works were carried out by the Public Works Department.

In addition to carrying out the repair, minor alterations of plant, furniture and buildings, &c., the hospital staff were responsible for the improvement of the steam service at the operation theatre, provision of furniture, tables, &c., for new operation theatre, installation of oil-fuel burner to replace use of coal in laundry boilers, &c.

**Dairy.**—During the year 23,775 gallons of milk were produced, valued at £1,572 10s. 8d.

**Vegetable Garden.**—82,771 lb. of vegetables, valued at £517 6s. 4d., were produced in the vegetable garden attached to the hospital.

**Auxiliary Branch at Randwick.**—During the year an additional ward, containing 30 beds, was opened for the accommodation of female tuberculous cases. There are now four wards, providing accommodation for 120 patients at this branch.

Of the 4 wards in use, 2 are occupied by male tuberculous patients, 1 by female tuberculous patients and the other ward by male general cases.

During the year the renovation of the Catherine Hayes section was completed, and the building, which provides accommodation for 34 nurses, will be occupied early in the new year.

I have, &c.,

W. MEGARVEY,  
Manager.

R. J. MILLARD,  
Medical Superintendent.

**TABLE I.—General Statement of the working of the Hospital from 1st January to 31st December, 1929.**

	Males.	Females.	Total.	
Number of beds available in the General Division on 31st December, 1929.....	274	271	545	
"    Infectious Division .....			211	
"    Nurses' Sick Room .....		4	4	
Coast Hospital Auxiliary, Randwick .....	96		96	
Total accommodation .....			856	
Number of inmates remaining in hospital on 31st December, 1928...	369	358	727	
"    admitted during the year 1929 .....	4,869	5,585	10,454	
Total treated .....	5,238	5,943	11,181	
Discharged—Cured .....	2,727	3,968	6,695	
"    Relieved.....	1,564	1,130	2,694	
"    Unrelieved .....	150	166	316	
"    No Disease.....	28	21	49	
Died .....	423	290	713	
Total number discharged, or who died.....	4,892	5,575	10,467	
Remaining in hospital on 31st December, 1929.....	346	368	714	
<hr/>				
Average daily number resident.....		740		
Average residence of discharged patients in days .....		24.1		
Rate of mortality on total number who were discharged or who died .....		6.8		
Total cost of maintenance and treatment of indoor patients .....		£127,721	5s. 1d.	
Average cost of patients per annum .....		£172	11s. 10d.	
<hr/>				
Out-patients—	Males.	Females.	Total.	Total Visits.
Total number of individuals who received treatment.....	2,111	2,407	4,518	12,008
Venereal Disease .....				6,438
Night Clinic at Health Depot .....				9,875
Total cost of Out-patient treatment .....				£974 1s. 3d.



## Hospital Staff on 31st December, 1929.

Medical and Administrative.	Number.	Nursing.	Number.	General.	Number.
Medical Superintendent .....	1	Sub-Matron .....	1	Gardener .....	1
Deputy Medical Superintendent .....	1	Asst. Sub-Matron .....	1	Foreman .....	1
Assistant Medical Officers .....	11	Sisters—		Artisans .....	12
Manager .....	1	Senior .....	9	Attendants, Outdoor .....	10
Matron .....	1	Junior .....	6	“ .....	15
Dispensers .....	3	Nurses—		Telephone .....	
Clerks .....	9	Staff .....	24	Attendants .....	4
Laboratory Assistants .....	2	Pupil .....	198	Male Cooks .....	4
X-Ray Assistant .....	1	Ward .....		Female Cooks .....	8
		Attendants .....	27	“ Servants .....	38
Total .....	30	Housekeeper .....	1	Laundresses .....	13
		Massense .....	1	Needlewomen .....	3
			268		109
				Total Staff .....	407

TABLE II.—Return showing the number of Wards, together with the cubic space and number of beds in each Ward, in the General and Infectious Divisions of the Coast Hospital for the year 1929.

Ward.	Cubic Space.	No. of Beds.	Cubic space per Bed in Ward.	Ward.	Cubic Space.	No. of Beds.	Cubic Space per Bed in Ward.
1 .....	77,788	91	855	16 .....	11,520	13	886
3 .....	12,000	10	1,200	17 .....	16,915	30	564
4 .....	12,900	11	1,173	18 and verandah .....	53,062	50	1,263
5 and gallery .....	31,368	25	1,254	19 and verandah .....	53,062	50	1,263
6 .....	10,800	8	1,350	20 and verandah .....	53,062	50	1,263
7 .....	10,800	8	1,350	21 and verandah .....	53,062	50	1,263
8 and gallery .....	32,268	24	1,344	23 and verandah .....	53,062	50	1,263
9 .....	12,000	8	1,500	24 .....	19,023	25	761
10 and N. Sick Room ..	16,356	14	1,168	25 .....	19,023	25	761
11 .....	22,320	26	858	26 .....	19,023	25	761
12 .....	23,880	28	853	27 .....	19,023	25	761
13 .....	28,236	41	688				
14 .....	43,520	43	1,012	Total .....	732,369	760	
15 .....	28,296	30	943				

## Coast Hospital Auxiliary, Randwick.

Ward.	Cubic Space.	No. of Beds.	Cubic space per Bed.
23 .....	23,415	24	975
24 .....	23,415	24	975
26 .....	23,415	24	975
28 .....	23,415	24	975

These figures do not include 6 beds on the verandah of each ward.





TABLE IV.—Showing Number of Cases of Diphtheria, Scarlet Fever, and Typhoid Fever notified within the Metropolis, and the percentage of these cases treated at the Coast Hospital, in each of the years 1915-1929 inclusive.

	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
<i>Diphtheria.</i>															
Cases notified in Metropolis...	2,551	2,820	2,576	2,399	988	1,825	2,916	1,807	1,722	2,115	1,626	2,048	2,112	2,028	2,124
Cases treated at Coast Hospital.....	940	1,149	1,239	1,241	501	834	1,360	905	854	1,115	787	1,018	997	1,123	1,111
Percentage.....	36.85	40.6	48.8	51.7	50.72	45.6	46.6	50	49.5	52.7	48.4	49.7	47.2	53.8	52.3
<i>Scarlet Fever.</i>															
Cases notified in Metropolis...	4,726	2,715	1,217	765	424	468	511	653	1,541	2,241	1,916	3,424	5,840	3,729	3,418
Cases treated at Coast Hospital.....	1,224	968	564	333	174	167	174	229	622	1,045	842	1,668	2,183	1,723	1,572
Percentage.....	25.9	35.7	46.3	43.5	41.04	35.6	34	35	40.4	46.6	43.9	48.7	37.4	46.2	46.0
<i>Typhoid Fever.</i>															
Cases notified in Metropolis...	821	654	403	327	335	366	342	246	265	242	230	245	184	133	185
Cases treated at Coast Hospital.....	104	79	21	41	20	56	49	33	51	58	50	60	33	22	53
Percentage.....	12.67	12	5.2	12.5	5.97	15.3	14.3	13.4	19.2	23.9	21.7	24.4	18	16.6	28.6

TABLE V.—Duration of Stay in Hospital of cases of Typhoid Fever, Measles, Scarlet Fever, Whooping Cough, and Diphtheria.

Duration of Stay.	Typhoid Fever.			Measles.			Scarlet Fever.			Whooping Cough.			Diphtheria.		
	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.	Cured.	Died.	Total.
1 week or less	...	1	1	43	4	47	6	17	23	6	6	12	59	18	77
1-2 weeks..	3	1	4	97	8	105	9	4	10	14	2	16	232	6	238
2-3 "...	4	1	5	29	4	33	31	2	33	20	2	22	366	2	368
3-4 "...	4	...	4	12	...	12	498	1	499	7	...	7	165	...	165
4-5 "...	4	...	4	5	...	5	676	5	681	7	...	7	106	1	107
5-6 "...	9	...	9	5	2	7	108	...	108	3	...	3	61	1	62
6-7 "...	9	...	9	3	...	3	60	2	62	1	...	1	43	1	44
7-8 "...	5	...	5	4	...	4	43	...	43	2	...	2	23	...	23
8-9 "...	4	...	4	3	...	3	34	...	34	1	...	1	10	...	10
9-10 "...	...	...	...	5	...	5	20	...	20	...	...	...	6	...	6
10-11 "...	2	...	2	1	...	1	17	...	17	...	...	...	6	...	6
11-12 "...	2	...	2	2	...	2	12	...	12	...	...	...	3	...	3
12-13 "...	2	...	2	2	...	2	11	...	11	...	...	...	4	...	4
13-14 "...	...	...	...	1	...	1	9	1	10	...	1	1	4	...	4
14-15 "...	1	...	1	1	...	1	5	...	5	...	...	...	4	...	4
15-16 "...	...	...	...	1	...	1	1	...	1	...	...	...	1	...	1
16-17 "...	...	...	...	...	...	...	4	...	4	...	...	...	...	...	...
17-18 "...	...	...	...	2	...	2	1	...	1	...	...	...	2	...	2
18-19 "...	...	...	...	...	...	...	2	...	2	...	...	...	1	...	1
19-20 "...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
20-21 "...	...	...	...	...	...	...	2	...	2	...	...	...	1	...	1
21-22 "...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
22-23 "...	...	...	...	...	...	...	1	...	1	...	...	...	1	...	1
23-24 "...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24-25 "...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25-26 "...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Over 26 "...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total...	49	3	52	216	18	234	1,548	32	1,580	61	11	72	1,100	29	1,129

TABLE VI.—Fortnightly Admission of Cases during 1928.

	Fortnight ending—												Total.
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	
	14 28	11 25	10 24	7 21	5 19	2 16 30	14 28	11 25	8 22	6 20	3 17	1 15 31	
Typhoid Fever	1 1 3	...	2 1 2	...	5 19	...	2 1	...	1	...	2 10	...	53
Measles	27 9 2	8 2 1	2 2 4	...	3 4	8 9 3	3 4	10 5 7	4 12 8	26 14 22	...	...	199
Scarlet Fever	42 49 62	50 38 47	54 55 65	61 73 77	52 55 90	60 71 60	65 63 56	59 45 92	78 58	1,572	...	...	1,572
Whooping Cough	1 1	1	...	1	...	4	1 1 2	2 2 1	2 5 11	16 9 8	3 9	...	79
Diphtheria	13 22 25	31 46 66	64 69 104	78 78 56	54 51 49	33 39 34	27 44 19	23 22 19	14 31	1,111	...	...	1,111
Influenza	7 7 5	10 7 4	1 6 10	6 5 10	8 18 40	34 10 3	2	...	2 1	...	3 1	...	208
Other Diseases	263 324 29	02 267 258	247 290 257	42 253 220	271 255 300	235 278 272	320 272 281	307 323 288	307 306	7,232	...	...	7,232
Total.....	354 412 392	61 362 377	379 422 445	406 416 367	396 390 484	367 405 380	423 392 373	420 417 436	417 421	10,454	...	...	10,454



TABLE VII.—Return of the Number of Persons under Treatment, the Order of Disease for which they were treated, and the Number of Deaths in each Order during the year 1929. (Includes cases remaining in Hospital on 31st December, 1928.)

	Discharged during the year.				Remaining in on 31st December, 1929.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un- relieved.	Died.			
CLASS 1.—GENERAL DISEASES.							
Typhoid Fever .....	48	1	...	3	1	52	44-0
Malaria .....	1	2	...	...	...	3	16-66
Measles .....	213	3	...	18	15	234	19-2
Scarlet Fever .....	1,536	11	1	32	151	1,580	34-19
Whooping-cough .....	36	24	1	11	7	72	19-2
Diphtheria .....	1,087	12	1	29	49	1,129	23-76
Influenza .....	198	12	1	1	...	212	11-00
Mumps .....	15	1	...	...	...	16	15-5
Dysentery .....	...	...	...	...	...	...	...
Erysipelas .....	100	7	...	12	3	119	15-35
Other Epidemic Diseases .....	86	13	1	...	2	100	9-6
Purulent Infection and Septicæmia .....	2	...	...	1	...	3	29-66
Anthrax .....	...	...	...	...	...	...	...
Tetanus .....	1	...	...	3	...	4	8-0
Rickets .....	...	...	...	...	...	...	...
Lethargia .....	...	...	...	1	...	1	21-0
Tuberculosis of the Lungs .....	1	111	16	154	79	282	68-92
" Acute Miliary .....	...	...	...	...	...	...	...
" Meningitis .....	1	...	...	4	...	5	12-4
" Pott's Disease .....	...	...	...	...	...	...	...
" Hips .....	...	10	...	...	3	10	125-6
" Other .....	4	12	2	1	5	19	140-0
Poliomyelitis .....	3	8	0	2	...	13	85-15
Syphilis—Primary .....	...	54	5	1	18	60	35-6
" Secondary .....	...	25	...	...	...	25	37-9
" Tertiary .....	...	20	2	2	...	24	52-1
" Cerebral and other Diseases .....	...	16	2	2	...	20	72-5
" II 2, III 9 .....	...	...	...	...	...	...	...
Soft Chancre .....	4	5	...	...	...	9	20-2
Gonorrhœal Disease .....	3	707	11	3	62	724	34-04
Cancer, &c., of the Mouth .....	4	...	4	3	...	11	26-8
" of the Stomach and Liver .....	...	5	11	8	...	24	27-7
" of the Peritoneum, Intestines, and Rectum .....	5	8	4	5	...	22	38-67
" of the Female Genital Organs .....	4	10	13	3	1	30	22-71
" of the Breast .....	1	5	7	...	1	8	33-7
" of the Skin .....	5	2	4	2	...	13	32-0
" of other Organs .....	3	12	9	18	...	42	20-5
Tumours .....	12	2	1	...	...	15	12-6
Acute Rheumatism .....	21	40	...	1	11	62	27-8
Chronic Rheumatism and Gout .....	4	30	2	1	2	37	24-86
Diabetes .....	...	101	1	23	22	125	46-43
Exophthalmic Goitre .....	...	3	1	1	...	5	33-2
Hodgkin's Disease .....	...	...	1	2	...	3	55-33
Anæmia, Chlorosis .....	2	14	...	2	3	18	36-77
Leprosy .....	...	...	...	...	...	...	...
Alcoholism, Acute and Chronic .....	6	12	2	1	...	21	6-85
Other Chronic Poisoning and Lead .....	1	2	1	...	...	4	44-75
Other General Diseases .....	2	3	...	3	1	8	15-75
Diseases of Spleen .....	...	1	...	...	...	1	15-0
Addison's Disease .....	...	...	...	...	...	...	...
Diseases of Pituitary Glands .....	...	...	...	...	...	...	...
Total, Class 1 .....	3,409	1,304	99	353	436	5,165	...
CLASS 2.—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.							
Meningitis .....	4	...	...	6	1	10	11-8
Cerebro-spinal Meningitis .....	...	...	...	...	...	...	...
Other Diseases of the Spinal Cord .....	1	1	1	1	...	4	45-25
Cerebral Hæmorrhage .....	...	20	6	14	2	40	23-2
General Paralysis of Insane .....	...	...	...	...	...	...	...
Other forms of Mental Alienation .....	...	...	6	...	...	6	11-3
Epilepsy .....	...	9	1	...	1	10	7-1
Chorea .....	2	3	...	1	...	6	39-0
Locomotor Ataxia .....	...	3	...	...	1	3	13-33
Neuralgia and Neuritis .....	8	22	2	...	1	32	16-62
Other Diseases of the Nervous System .....	4	11	2	...	2	17	17-9
Diseases of the Eye and Adnexa .....	5	2	1	...	...	8	17-75
Diseases of the Ear .....	61	22	...	3	3	86	23-30
Encephalitis .....	1	2	...	3	...	6	22-0
Cerebral Embolism and Thrombosis .....	...	6	...	...	2	6	32-16
Infantile Convulsions under 5 .....	...	...	...	...	...	...	...
Total, Class 2 .....	86	101	19	28	13	234	...
CLASS 3.—DISEASES OF THE CIRCULATORY SYSTEM.							
Angina Pectoris .....	...	2	...	...	...	2	13-5
Acute Endocarditis .....	2	16	2	17	3	37	36-7
Organic Diseases of the Heart .....	4	113	6	43	23	166	29-6
Diseases of the Arteries, Atheroma, &c. ....	...	...	...	...	...	...	...
Embolism and Thrombosis .....	6	2	...	1	3	9	21-11
Diseases of the Veins (Varices, Ulcer, and Hæmorrhoids) .....	33	12	...	...	1	45	22-37
Diseases of the Lymphatic System .....	5	2	2	...	1	9	6-55
Hæmorrhage .....	1	...	...	...	...	1	1-0
Pericarditis .....	1	...	...	2	...	3	23-0
Aneurism .....	...	...	2	...	...	2	18-0
Arteriosclerosis .....	...	20	...	5	...	25	27-8
Other Diseases—Circulatory System .....	...	1	...	...	...	1	21-0
Total Class 3 .....	52	168	12	68	31	300	...



TABLE VII.—Return of the Number of Persons under Treatment, &amp;c.—continued.

	Discharged during the year.				Remaining in on 31st December, 1929.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un- relieved.	Died.			
CLASS 4.—DISEASES OF THE RESPIRATORY SYSTEM.							
Diseases of the Nasal Fossa .....	49	35	2	2	1	88	13-84
Diseases of the Larynx .....	8	1	...	...	...	9	6-33
Capillary Bronchitis.....	...	...	...	...	...	...	...
Acute Bronchitis .....	26	5	...	1	1	32	17-4
Chronic Bronchitis .....	4	41	...	2	...	47	40-25
Broncho-Pneumonia .....	25	...	...	19	7	44	12-8
Pneumonia .....	267	9	...	77	16	353	17-19
Pleurisy .....	46	13	1	2	6	62	29-09
Asthma .....	5	30	1	...	7	36	14-0
Other Diseases of the Respiratory System .....	...	9	1	1	1	11	81-5
Congestion and Gangrene of Lung .....	...	...	...	1	...	1	19-0
Bronchitis, Unspecified .....	8	9	...	1	...	18	12-8
Total, Class 4 .....	438	152	5	106	39	701	...
CLASS 5.—DISEASES OF THE DIGESTIVE SYSTEM.							
Gastritis.....	15	7	2	...	...	24	8-58
Diseases of the Teeth and Gums .....	...	...	...	...	...	...	...
Diseases of the Mouth and its Associated Organs .....	6	6	2	...	...	14	13-28
Diseases of the Pharynx .....	408	15	1	2	3	426	8-61
Ulcer of the Stomach .....	13	31	1	3	9	48	27-0
Other Diseases of the Stomach (Cancer excluded) .....	1	12	...	...	4	13	20-8
Diarrhoea and Enteritis (children under two years only)	2	...	...	...	...	2	21-5
Diarrhoea and Enteritis (children over two years and adults).....	27	3	...	...	3	30	8-66
Appendicitis .....	305	19	2	8	23	424	16-6
Hernia, Intestinal Obstruction .....	75	4	4	5	9	88	24-27
Other Diseases of the Intestines .....	32	52	3	3	...	90	21-7
Diseases of the Anus and Faecal Fistulae .....	...	...	...	...	...	...	...
Cirrhosis of the Liver .....	...	6	...	8	1	14	22-71
Biliary Calculi .....	50	44	2	11	...	107	23-77
Other Diseases of the Liver.....	15	7	2	1	3	25	16-1
Simple Peritonitis (non-puerperal) .....	3	2	...	3	1	8	16-0
Hydatid undefined .....	...	1	...	...	...	1	84-0
Other Diseases of Digestive System .....	4	2	...	...	...	6	19-0
Oesophagus, Stricture of.....	2	...	...	...	...	2	46-0
Ulcer of Duodenum .....	5	15	1	3	...	24	21-41
Total, Class 5 .....	1,053	226	20	47	56	1,346	...
CLASS 6.—DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA (NON-VENEREAL).							
Acute Nephritis.....	13	8	...	6	8	27	31-07
Uterine Haemorrhage .....	11	4	0	1	...	16	17-18
Other Diseases of the Kidneys and their Adnexa .....	63	66	2	2	8	133	17-6
Calculi of the Urinary Passages .....	11	18	3	...	2	32	29-53
Diseases of the Bladder .....	15	17	1	...	...	33	20-2
Other Diseases of the Urethra, Urinary Abscess, &c. ...	19	29	...	2	2	50	16-38
Diseases of the Prostate .....	8	42	1	8	4	59	25-11
Non-venerae Diseases of the Male Genital Organs.....	24	7	2	...	...	33	14-21
Salpingitis and Pelvic Abscess .....	138	72	2	4	8	216	23-80
Uterine Tumour (non-Cancerous) .....	26	7	1	...	...	34	24-17
Other Diseases of the Uterus .....	...	...	...	...	...	...	...
Cysts and other Ovarian Tumours.....	21	2	0	0	1	23	22-82
Other Diseases of the Female Genital Organs .....	46	35	7	...	3	88	19-07
Non-puerperal Diseases of the Breast (cancer excepted)...	5	1	...	...	1	6	7-33
Chronic Nephritis.....	1	34	3	32	...	70	19-27
Total, Class 6 .....	401	342	22	55	37	820	...
CLASS 7.—PUERPERAL CONDITIONS.							
Abortion.....	717	24	4	10	9	755	8-87
Ectopic Gestation.....	36	12	3	4	2	55	18-47
Hyperemesis .....	...	...	...	...	...	...	...
Pyelitis .....	67	40	6	...	...	113	17-6
Haemorrhage .....	4	3	1	...	...	8	8-0
Retroversion .....	3	4	...	...	...	7	8-0
Albuminuria .....	3	2	...	...	...	5	15-0
Pregnancy .....	...	10	...	...	...	10	10-0
Other Accidents of Labour.....	4	...	...	...	...	4	26-0
Puerperal Diseases of the Breast .....	10	2	...	...	...	12	13-41
Puerperal Septicæmia .....	5	1	...	12	4	18	12-66
Total, Class 7 .....	849	98	14	26	15	987	...
CLASS 8.—DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.							
Gangrene .....	...	...	...	...	...	...	...
Phlegmon, Acute Abscess .....	93	29	1	2	5	125	25-0
Other Diseases of the Skin and Adnexa .....	99	63	3	...	15	165	21-99
Scabies .....	...	...	...	...	...	...	...
Furuncle .....	22	8	0	1	1	31	14-32
Elephantiasis.....	...	...	...	...	...	...	...
Total, Class 8 .....	214	100	4	3	21	321	...

TABLE VII.—Return of the Number of Persons under Treatment, &amp;c.—continued.

	Discharged during the year.				Remaining in on 31st December, 1929.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un- relieved.	Died.			
CLASS 9.—DISEASES OF THE ORGANS OF LOCOMOTION.							
Non-tuberculous Disease of the Bones .....	22	56	3	3	15	84	82-97
Arthritis and other Diseases of the Joints (Tuberculosis and Rheumatism excepted).....	12	41	4	2	2	59	30-20
Other Diseases of the Organs of Locomotion .....	15	19	...	...	4	34	16-73
Total, Class 9 .....	49	116	7	5	21	177	...
CLASS 10.—MALFORMATIONS.							
Co-genital Malformations .....	8	4	1	...	...	13	31-6
Total, Class 10 .....	8	4	1	...	...	13	31-6
CLASS 11.—DISEASES OF EARLY INFANCY.							
Total, Class 11 .....	4	...	...	1	...	5	32-0
CLASS 12.—OLD AGE.							
Senility .....	...	1	4	5	...	10	44-7
Total, Class 12 .....	...	1	4	5	...	10	...
CLASS 13.—VIOLENCE.							
Lysol Poisoning.....	...	...	...	...	...	...	...
Scalds and Burns (other than fire).....	11	8	0	1	...	20	23-7
Poisoning by Food (not ptomaine) .....	9	...	...	...	...	9	3-44
Bite of Snake or Insect .....	3	1	...	...	...	2	4-0
Firearms Accidents .....	9	...	...	...	...	3	160-3
Cutting Instruments.....	9	12	1	1	6	23	13-30
Burning by Fire.....	5	...	...	...	1	5	40-8
Falls .....	58	27	...	6	...	91	39-70
Crushings .....	2	...	...	...	1	2	12-0
Railways and Tramways and Motor .....	15	...	...	...	...	15	24-6
Injuries by Vehicles and Horses.....	9	1	...	2	...	12	34-25
Shock .....	...	...	1	1	...	2	8-15
Other Injuries .....	2	1	...	...	4	3	7-33
Assault .....	...	...	...	...	...	...	...
Fractures (not obtainable) .....	6	...	...	...	13	6	34-0
Other Acute Poisonings (except gas).....	2	...	...	1	...	3	4-0
Total, Class 13 .....	132	50	2	12	25	196	...
CLASS 14.—ILL-DEFINED DISEASES.							
Malnutrition .....	...	...	...	...	...	...	...
Debility .....	...	2	...	...	...	2	20-0
Marasmus .....	...	...	...	...	...	...	...
Observation .....	...	30	97	4	13	131	8-50
No disease .....	...	...	10	...	5	10	6-0
Nurslings with mothers, no disease .....	...	...	49	...	2	49	14-81
Mothers with nurslings, no disease.....	...	...	...	...	...	...	...
Total, Class 14 .....	...	32	156	4	20	192	...
SUMMARY.							
Total, Class 1.—General Diseases .....	3,409	1,304	99	353	436	5,165	...
" 2.—Diseases of the Nervous System and of the Organs of Special Sense .....	86	101	19	28	13	234	...
" 3.—Diseases of the Circulatory System .....	52	168	12	68	31	300	...
" 4.—Diseases of the Respiratory System .....	438	152	5	106	39	701	...
" 5.—Diseases of the Digestive Organs .....	1,053	226	20	47	56	1,346	...
" 6.—Diseases of the Genito-Urinary System and Adnexa .....	401	342	22	55	37	820	...
" 7.—Diseases of the Puerperal Condition .....	849	98	14	26	15	987	...
" 8.—Diseases of the Skin and of the Cellular Tissue .....	214	100	4	3	21	321	...
" 9.—Diseases of the Organs of Locomotion...	49	116	7	5	21	177	...
" 10.—Malformation .....	8	4	1	...	...	13	...
" 11.—Infancy .....	4	...	...	1	...	5	...
" 12.—Old Age .....	...	1	4	5	...	10	...
" 13.—Violence.....	132	50	2	12	25	196	...
" 14.—Ill-defined Diseases .....	...	32	156	4	20	192	...
Grand Total .....	6,685	2,694	365	713	714	10,467	...



TABLE VIII.—Operations performed during 1929.  
NOTE.—“Recovered” means lived for at least ten days after operation.

	Recovered.		Died.		Total.		Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.			Male.	Female.			
1. Alimentary System.						5. Osseous and Arthritic System.					
Repair of hare-lip	1	...	...	...	1	Moving joint under anaesthetic	...	1	...	...	1
Repair of cleft palate	1	...	...	...	1	Reduction of fracture	2	5	...	...	7
Oesophagascopy	1	...	...	...	1	Reduction of dislocation	...	1	...	...	1
Gastrostomy	1	...	...	...	1	Plating of fracture	1	2	...	...	3
Gastro-enterostomy	7	1	...	...	8	Wiring of fracture	4	4	...	...	8
Oversewing gastric ulcer	7	1	...	...	8	Osteotomy	20	8	...	...	28
Oversewing duodenal ulcer	3	...	...	...	3	Sequestrectomy	12	6	...	...	18
Enterostomy	...	...	...	1	1	Amputation of leg	10	8	...	...	18
Entero-enterostomy	...	...	3	...	3	Amputation of arm	1	...	...	...	1
Colostomy	1	1	...	1	3	Amputation of finger	3	1	...	...	4
Caecostomy	4	2	...	...	6	Amputation of toe	4	...	...	...	4
Bowel resection	3	5	1	1	10	Excision of semi-lunar cartilage	1	...	...	...	1
Appendicectomy	197	212	2	2	413	Laminectomy	...	1	...	...	1
Closing Gastrostomy	1	...	...	...	1	Excision of ganglion	2	...	...	...	2
Cholecystectomy	1	41	2	1	45	Tenotomy	2	...	...	...	2
Cholecystostomy	...	18	...	1	19	Arthrotomy	6	...	...	...	6
Choledochotomy	...	3	1	...	4						
Cholecystenterostomy	2	...	1	...	3						
Draining abscess of peritoneal cavity	10	6	...	...	16		69	38	...	...	107
Draining abdominal hydatid	2	...	...	...	2						
Freeing of adhesions	2	13	1	2	18						
Laparotomy	14	15	2	3	34	6. Respiratory System.					
Fistula in ano	6	2	...	...	8	Resection of turbinate bones	4	1	...	...	5
Fissure in ano	1	2	...	...	3	Removal of nasal polypi	1	4	...	...	5
Herniae—						Resection of nasal septum	14	2	...	...	16
Inguinal	59	...	2	...	61	Tracheotomy	...	1	...	4	5
Femoral	3	5	1	1	10	Thoracotomy	26	15	2	...	43
Umbilical	1	5	1	...	7	Bronchoscopy	1	...	1	...	2
Incisional	4	7	...	...	11		46	23	3	4	76
	332	339	17	13	701						
2. Genito-urinary System.						7. Circulatory System.					
Circumcision	27	...	...	...	27	Excision of varicose veins	1	1	...	...	2
Dilatation of urethral stricture	2	...	...	...	2	Haemorrhoidectomy	19	3	...	...	22
Drainage of extravasation of urine	3	...	...	...	3		20	4	...	...	24
Varicocele	5	...	...	...	5						
Hydrocoele	11	...	...	...	11						
Orchidectomy	1	...	...	...	1	8. Lymphatic and Glandular System.					
Prostatectomy	8	...	...	...	8	Tonsils and adenoids	164	148	...	...	312
Orchidopexy	2	...	...	...	2	Excision of gland	3	3	...	...	6
Cystoscopy	32	38	...	...	70	Adenoidectomy	6	8	...	...	14
Application of radium (bladder)	...	1	...	...	1	Thyroidectomy	...	3	...	...	3
Diathermy to bladder	2	1	...	...	3		173	162	...	...	335
Supra pubic cystostomy	5	1	...	...	6						
Uretero-lithotomy	3	...	...	...	3						
Nephrotomy	4	2	...	...	6						
Nephrectomy	5	7	...	...	12						
Nephrodexy	1	1	...	...	2						
	111	51	...	...	162						
3. Gynaecological System.						9. New Growths.					
Colpo-perineorrhaphy	...	13	...	...	13	Epithelioma of skin	...	3	...	...	3
Colpomy	...	29	...	...	29	Rodent ulcer (excision)	1	1	...	...	2
Trachelorrhaphy	...	5	...	...	5	Excision of lip and glands	1	...	...	...	1
Diathermy to cervix uteri	...	1	...	...	1	Partial gastrectomy	1	...	...	...	1
Insertion of radium cervix uteri	...	6	...	...	6	Excision of carcinoma of bowel	1	...	...	...	1
Curetting uteri	...	772	...	5	777	Excision of breast and glands	...	7	...	...	7
Snipping from cervix	...	4	...	...	4	Excision of benign tumour	4	3	...	...	7
Curetting cervix uteri	...	2	...	...	2		8	14	...	...	22
Induction of abortion	...	8	...	...	8						
Salpingectomy	...	94	...	...	94						
Salpingo-oophorectomy	...	61	...	1	62						
Oophorectomy	...	11	...	...	11						
Internal shortening	...	8	...	...	8	10. Miscellaneous.					
External shortening	...	3	...	...	3	Paracentesis tympani	42	87	...	...	129
Ventro-suspension	...	1	...	...	1	Draining maxillary antrum	24	18	...	...	42
Ventro-fixation	...	1	...	...	1	Draining frontal sinus	8	3	...	...	11
Hysterectomy	...	46	...	...	46	Draining mastoid antrum	15	24	...	...	39
	...	1,065	...	6	1,071	Cerebral decompression	2	...	...	...	2
4. Cellular and Cutaneous System.						Ramsectomy	...	2	...	...	2
Incision	94	79	...	...	173	Lumbar puncture	12	25	1	...	38
Diathermy	2	1	...	...	3	Neurectomy	1	2	...	...	3
Excision of wart	5	5	...	...	10	Diathermy to lip	1	...	...	...	1
Avulsion of nail	7	8	...	...	15	Teeth extraction	...	2	...	...	2
Excision of cyst	9	3	...	...	12	Removal of foreign body	6	2	...	...	10
Curetting of sinus	8	19	...	...	27	Arrest of haemorrhage	5	6	...	...	11
Skin graft	5	3	...	...	8	Plaster fixation	5	4	...	...	9
Suture of wounds	1	...	...	...	1	Examination under anaesthetic	3	21	...	...	24
	181	109	...	...	290	Cisternal puncture	1	...	...	...	1
						Surgical dressings	3	10	...	...	13
							120	206	1	...	327

TABLE VIII.—Operations performed during 1929—continued.

## Summary of Operations.

	Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.	
1. Alimentary .....	332	339	17	13	701
2. Genito-urinary .....	111	51	...	...	162
3. Gynaecological .....	...	1,065	...	6	1,071
4. Cellular and cutaneous .....	131	109	...	...	240
5. Osseous and arthritic .....	69	38	...	...	107
6. Respiratory .....	46	23	3	4	76
7. Circulatory .....	20	4	...	...	24
8. Lymphatic and glandular .....	173	162	...	...	335
9. New growths .....	8	14	...	...	22
10. Miscellaneous .....	130	206	1	...	337
	1,020	2,011	21	23	3,075

## General Anaesthetics.

Kelene and ether, 2,270; ether, 262; chloroform, 33; chloroform and ether, 14; local, 62; ethylene, 1 intrapharyngeal ether, 226; intra-tracheal ether, 5; kelene, 122; spinal, 0. Total, 2,995



## STATEMENT OF WORKING EXPENSES OF THE COAST HOSPITAL FOR THE YEARS 1928-29.

TABLE IX.—Maintenance and Treatment of Patients and Staff.

	1928.			Average.				1929.			Average.		
	£	s.	d.	£	s.	d.		£	s.	d.	£	s.	d.
<b>A. Salaries and Wages—</b>													
1. Administrative .....	2,142	17	0					2,252	4	7			
2. Medical .....	4,208	15	6					4,663	5	8			
3. Clerical .....	2,987	7	11					3,111	19	11			
4. Dispensary .....	1,179	14	4					1,236	19	11			
5. Nursing .....	29,961	11	10					34,391	1	8			
9. Laundry .....	3,429	0	2					3,366	3	3			
10. Tradesmen and Mechanics .....	4,628	9	0					4,720	1	6			
11. Cleaning and General .....	13,020	8	0					14,179	2	3			
12. Farm and Garden .....	764	18	4					779	18	2			
13. X-ray .....	316	0	0					341	13	0			
14. Workmen's Compensation Insurance Premium.....								823	18	4			
	62,639	2	1	84	18	10		69,866	8	3	94	8	3
<b>B. Provisions—</b>													
1. Meat .....	4,384	2	7					5,117	10	7			
2. Milk .....	2,643	6	1					2,299	13	0			
3. Butter .....	2,482	15	8					2,444	2	10			
4. Bread and Flour.....	1,871	5	9					1,278	7	10			
6. Eggs .....	2,037	0	7					1,491	15	1			
7. Fish, fresh .....	1,192	8	5					635	6	8			
8. Poultry .....	1,690	3	1					1,761	13	10			
9. Groceries .....	4,347	18	2					5,128	6	0			
10. Vegetables and Fruit .....	1,210	10	5					2,569	10	7			
11. Malt Liquors .....	9	1	6					37	15	0			
12. Ice .....	87	0	4					108	11	0			
13. Cream .....	309	16	5					405	5	1			
	22,155	9	0	30	1	0		23,277	17	6	31	9	2
<b>C. Drugs and Surgical Appliances—</b>													
1. Drugs, &c. ....	6,322	0	0					7,098	15	1			
2. Dressings and Bandages .....	416	4	2					382	4	10			
3. Surgical Appliances, Renewals.....	32	7	11					95	19	8			
4. Surgical Instruments, Renewals .....	217	0	5					173	6	7			
5. Stimulants .....	274	18	5					157	6	8			
	7,262	10	11	9	17	1		7,907	12	10	10	13	9
<b>D. Fuel, Light, and Power—</b>													
1. Coal, Coke, and Wood .....	2,843	4	2					3,612	19	11			
4. Electricity .....	541	3	3					2,029	4	7			
5. Electrical Fittings, Renewals .....	258	18	8					423	1	5			
	3,643	6	1	4	18	10		6,065	5	11	8	3	11
<b>E. Domestic—</b>													
1. Bedding and Bed Linen .....	1,611	6	0					1,261	10	7			
2. Clothing .....	871	2	10					1,090	2	5			
3. Drapery .....	723	12	0					657	10	11			
4. Uniforms .....	4	14	8					101	10	2			
5. Renewals of Furniture .....	596	1	10					447	18	4			
6. Ironmongery and Cutlery, &c. ....	362	5	10					179	1	6			
7. Brushware, Earthenware, &c. ....	363	16	1					254	14	2			
8. Laundry Materials .....	436	10	4					499	13	2			
	4,969	9	7	6	14	10		4,492	1	3	6	1	5
<b>F. Printing and Stationery—</b>													
1. Printing and Stationery .....	450	12	9					468	3	9			
3. Postage .....	82	14	6					106	5	0			
	563	7	3	0	15	2		574	8	9	0	15	6
<b>G. Maintenance of Buildings and Grounds—</b>													
1. Ordinary Repairs and Alterations .....	1,039	6	9					943	17	5			
2. Roadways and Grounds .....	67	1	8					42	2	4			
	1,106	8	5	1	10	0		985	19	9	1	6	7
<b>J. Miscellaneous—</b>													
1. Rates and Taxes .....	273	16	4					114	8	5			
2. Insurance.....	210	7	5					234	9	9			
3. Burials and Coffins.....	46	19	2					101	1	3			
4. Telephones .....	522	3	11					735	19	7			
7. Petty Expenses .....	506	1	4					406	2	0			
8. Unclassified .....	616	11	4					455	4	4			
	2,175	19	6	2	19	2		2,047	5	4	2	15	4
<b>K. Extraordinary Expenditure—</b>													
1. Surgical Instruments .....								21	9	0			
2. Appliances .....	78	6	0					74	16	12			
3. Machinery .....	175	2	10										
4. New Furniture .....	881	0	11					526	13	10			
5. New Buildings and Additions .....								3	19	0			
6. Miscellaneous .....													
7. Drapery .....													
8. Ironmongery .....													
Brushware .....													
10. Bedding and Bed Linen .....													
11. Special Repairs .....	25	0	0										
	1,459	9	9	1	11	5		626	18	0	0	16	11

TABLE IX.—Maintenance and Treatment of Patients and Staff—*continued*.

	1928.		Average.	1929.		Average.
	£	s. d.		£	s. d.	
L. Special Department—						
1. X Ray .....	491	4 9		508	8 7	
	491	4 9	0 13 4	508	8 7	0 13 9
M. Farm and Garden, Live Stock, &c.—						
1. Purchase of Horses and Cows .....	60	0 0		7	0 0	
2. Purchase of Fodder .....	1,727	5 7		1,421	12 4	
3. Miscellaneous .....	109	12 9		57	10 10	
	1,896	18 4	2 11 3	1,486	3 2	2 0 2
N. Auxiliary Hospital—						
1. Salaries and Wages .....	3,599	7 10		5,181	18 2	
2. Maintenance .....	3,913	7 10		5,568	3 11	
3. Stores .....				1,043	4 2	
	7,512	15 8	10 3 9	11,793	6 3	15 18 9
Total Expenditure .....	115,576	1 4	156 14 8	129,631	15 7	175 3 6
Add value of goods received from other Institutions .....	3	6 6		37	13 4	
	115,579	7 10		129,669	8 11	
Deduct value of goods supplied to other Institutions .....						
	115,579	7 10		129,669	8 11	
Add value of Stock on hand, 31st Dec., 1928 .....	5,236	2 3		5,101	15 4	
	120,815	10 1		134,771	4 3	
Deduct value of Stock on hand, 31st Dec., 1929 .....	5,101	15 4		5,449	9 11	
	115,713	14 9		129,321	14 4	
Deduct Extraordinary Expenditure, Cost of Out-door Patients Equipment Auxiliary Hospital .....	2,151	13 0		1,600	9 3	
	113,562	1 9		127,721	5 1	
Average cost per occupied bed, General and Infectious Division, based on upkeep Expenditure .....			154 0 0			172 11 10
Deduct Collections paid to Revenue .....	11,637	2 2		13,212	18 4	
	101,924	19 7		114,508	6 9	
Net cost per occupied bed, General and Infectious Division .....			138 4 5			154 14 9

TABLE X.—Amount expended from the Vote of the Public Works Department not included in the foregoing statistics.

	1928.		1929.	
	£	s. d.	£	s. d.
Steam and Hot Water Services—				
Repairs—Steam and Hot Water Services .....			528	19 10
Repairs and Renewals of Boilers .....	127	14 2	196	15 3
Hot Water Services .....	506	18 1	425	5 6
Total .....	634	12 3	1,151	0 7
Electric Light and Power Service—				
Electric Maintenance .....			212	10 0
Total .....	634	12 3	212	10 0
General—				
Repairing Laundry Plant .....	1,499	11 6	336	4 2
Repairs and Renovations of Buildings .....	6,389	4 1	2,275	19 9
Drainage .....			858	2 8
Repairs and Extensions Water Service .....			504	19 6
New Buildings and Additions .....	5,897	19 8	2,210	12 5
Installation Diathermy Apparatus .....			85	0 0
Renovations, Randwick Auxiliary Hospital .....	1,703	6 4	7,252	18 5
Total .....	15,490	1 7	13,523	16 11
Grand Total .....	16,124	13 10	14,887	7 6



TABLE XI.—SUMMARY TABLE, showing the work of the Coast Hospital and its cost each year, from 1885 to 1929.

Year.	No. of Patients admitted	Average residence of discharged patients in days.	Rate of Mortality on cases treated.	Infectious Disease included in foregoing columns.																Average daily number.	Cost per occupied bed.	Wines, spirits, &c., cost per head (included in foregoing column).				
				Typhoid Fever.		Variola.		Measles.		Scarlet Fever.		Whooping Cough.		Diphtheria.		Influenza.		Typhus.					Erysipelas.		Other Epidemic Diseases.	
				Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.				Admissions.	Deaths.	Admissions.	Deaths.
1885	1,204	37.05	7.05	285	50	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	150.05	51 16 8	1 11 2	
1886	1,278	41.06	9.38	392	53	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	146.33	52 0 8	1 10 0	
1887	1,726	42.45	9.21	286	36	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	198.56	42 14 1	0 10 9	
1888	1,694	42.23	5.55	241	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	197.12	41 13 2	0 8 8	
1889	1,813	39.00	5.44	342	24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	198.00	44 17 4	0 6 4	
1890	1,520	42.00	7.03	140	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	178.00	55 7 5	0 5 11	
1891	1,748	40.00	3.23	88	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	193.00	50 2 6	0 5 2	
1892	1,644	44.06	4.04	61	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	200.03	44 17 1	0 7 6	
1893	2,274	32.08	4.05	83	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	193.03	47 8 0	0 10 1	
1894	2,168	27.06	4.03	143	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	176.04	55 7 4	1 3 6	
1895	2,451	24.06	3.07	96	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	204.03	59 1 1	1 1 6	
1896	2,213	31.03	5.04	236	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	51 6 1	1 4 4	
1897	2,307	32.06	5.05	128	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	231.00	64 14 10	1 13 10	
1898	2,694	31.04	5.38	163	18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 14 3	
1899	2,359	36.30	4.79	148	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1900	2,513	30.10	5.20	247	25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1901	2,688	31.24	5.75	214	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1902	2,672	30.94	4.67	144	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1903	3,359	31.72	4.07	166	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1904	3,430	30.94	5.17	178	24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1905	3,298	31.81	5.20	139	20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1906	2,965	37.03	3.56	84	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1907	3,051	37.16	5.93	101	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1908	3,147	32.89	5.44	114	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1909	2,971	31.13	5.53	96	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1910	3,538	30.52	5.39	85	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1911	3,474	29.19	5.32	66	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1912	4,170	29.54	5.76	67	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1913	3,702	31.83	5.13	77	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1914	4,032	32.35	3.81	73	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1915	4,808	30.09	4.12	123	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1916	4,018	32.29	3.07	59	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1917	4,320	36.49	3.73	16	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1918	4,556	39.60	4.20	31	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1919	5,556	20.67	8.13	25	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1920	5,945	29.72	7.37	61	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1921	6,450	29.3	5.6	49	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1922	6,804	27.54	5.6	33	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1923	8,289	34.38	6.37	48	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1924	8,171	24.35	5.31	51	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1925	8,458	23.61	6.41	50	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1926	10,175	29.74	5.9	60	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1927	10,163	27.8	5.6	33	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1928	10,102	24.5	6.5	15	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	
1929	10,454	24.1	6.8	53	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	224.04	50 19 2	1 13 10	



## 2.—LEPER LAZARET.

REPORT ON LEPROSY IN NEW SOUTH WALES FOR THE YEAR ENDED  
31st DECEMBER, 1929.

The Medical Superintendent of the Coast Hospital to the Director-General of Public Health.

The Coast Hospital, Sydney, N.S.W.

Sir,

On 1st January, 1929, 20 persons remained under detention at the lazaret. (See Appendix A.)

During the year 1 person was reported to the Board under the Public Health Act, 1902, Part III, as being a suspected leper, and after careful inquiry was duly certified as suffering from leprosy, and admitted to the lazaret by warrant of the Board.

One death occurred during the year, viz.:—J.C., Case CXXIII.

The total number of persons admitted since 1883, when patients first began to be received (though the notification of leprosy was first made compulsory and the detention of lepers provided for by law only towards the end of 1890), is 179.\* Distributed under nationalities, the account stands as follows:—

	Admitted.	Readmitted.	Discharged.	Repatriated.	Died.	Remaining in at 31 Dec., 1929.
Whites, of European descent—						
New South Wales .....	46	3	15	.....	26	8
Victoria .....	2	.....	.....	.....	2	.....
Queensland .....	4	.....	1	.....	1	2
Northern Territory .....	1	.....	1	.....	.....	.....
New Zealand .....	1	.....	.....	.....	1	.....
Fiji .....	2	.....	1	.....	1	.....
England .....	12	.....	3	.....	9	.....
Ireland .....	8	.....	2	.....	5	1
Scotland .....	1	.....	1	.....	.....	.....
Germany .....	4	.....	1 absconded.	1	2	.....
Belgium .....	1	.....	.....	.....	1	.....
U.S. America .....	1	.....	.....	.....	1	.....
Greece .....	2	.....	.....	1	.....	1
Malta .....	2	.....	1 absconded.	.....	1	.....
Sweden .....	1	.....	.....	.....	.....	1
France .....	1	.....	.....	.....	1	.....
Mauritius .....	1	.....	1	.....	.....	.....
Coloured patients—						
New South Wales .....	3	.....	1	.....	.....	2
West Indies .....	1	.....	1 (in 1885).	.....	.....	.....
India .....	4	.....	1 absconded.	1	2	.....
China .....	57	.....	2	33	19	3
Java .....	1	.....	.....	.....	1	.....
New Caledonia .....	1	.....	.....	.....	1	.....
Pacific Islands .....	18	.....	.....	5	11	2
Egypt .....	1	.....	.....	1	.....	.....
Zanzibar .....	1	.....	1 (to Hong Kong at own request).	.....	.....	.....
Syria .....	2	.....	1	1	.....	.....
	179	3	34	43	85	20

\* This is the number of persons admitted; it does not agree with the highest number given in Appendix B in Roman numerals which indicates the number of cases observed, whether admitted or merely described and recorded.



Thus the number remaining in the lazaret on 31st December, 1929, was 20 persons; 15 males and 5 females.

Appendix A shows particulars of each case under detention since the year 1912\*, and in Appendix B are given the usual notes of the new patients received during 1929, of patients discharged or died during the year, and a survey of the condition of patients remaining in at the end of the year.

Every opportunity has been offered to members of the medical profession to visit the lazaret for the purpose of seeing such patients as were formerly under their care, or for study of the disease.

The following statements show the expenditure for the year, and the sources from which it has been defrayed :—

STATEMENT showing the Working Expenses of the Lazarets (for men and for women) at Little Bay for the year 1929.

	£	s.	d.
Salaries ... ..	2,158	14	6
Provisions ... ..	916	3	2
Fruit and vegetables ... ..	113	17	0
Uniforms, clothing, &c. ... ..	138	0	1
Printing and stationery ... ..	4	1	0
Fuel and light ... ..	177	5	4
Wines, ales, &c. ... ..	95	8	6
Ironmongery, brushware, &c. ... ..	25	10	10
Drugs ... ..	138	18	10
Sundries ... ..	276	1	4
	£3,984	0	7

Average number of patients resident, 19·6, being equal to an average of £202 11s. 7d. per inmate per annum.

STATEMENT showing the total Expenditure of the Lazarets (for men and for women) at Little Bay during the year 1929, and from what sources the amounts were paid.

EXPENDITURE.	£	s.	d.	HOW PAID.	£	s.	d.
To working expenditure, as per statement.	3,984	0	7	From vote—Maintenance of lepers by Department of Public Health	3,222	8	7
				Transfers from Coast Hospital stock	761	12	0
Total .....	£ 3,984	0	7	Total .....	£ 3,984	0	7

The needs of the patients have been carefully supplied by experienced attendants and nurses, under direct supervision of the Medical Superintendent and the Matron of the Coast Hospital, and, as in the past, every means have been adopted to alleviate their sufferings and to mitigate the hardships of their detention.

I have, &c.,

R. J. MILLARD,

Medical Superintendent.

\* For particulars of cases under detention from 1883 see Annual Reports 1913–1928.



## APPENDIX A.

RETURN showing Particulars of Lepers admitted to Little Bay, New South Wales, since the year 1912.

Name.	Sex.	Native of—	Occupation.	Admission.		Where from.	No. of Case in Clinical Notes.	Died or Discharged.
				Age on.	Date of.			
S.C.	Male	China	Cabinet-maker	40	21 May, 1912	Boolaroo, N.S.W.	CXXVIII	
L.J.T.	"	N.S.W.	School	12	14 Aug., "	Lismore	CXXIX	Discharged, 21 July, 1916.
S.M.	"	Mallicolo	Labourer	50	27 "	Maclean	CXXX	Died, 23 April, 1919.
J.F.	"	N.S.W.	Van-driver	28	19 Sept., "	Glebe	CXXXI	Discharged, 1 January, 1920.
W.D.	"	"	Fisherman	22	24 June, 1913	Ulladulla, S. Coast	CXXXII	Readmitted 7 Nov., 1927.
J.M.	"	New Hebrides	Labourer	60	28 Nov., "	Tweed River	CXXXIII	Discharged, 10 Feb., 1921.
J.C.M.	"	N.S.W.	Miner	26	28 Jan., 1914	Homeville, W. Maitland	CXXXIV	Died, 17th March, 1917.
W.B.	"	England	Dealer	33	4 Mar., "	Sydney	CXXXV	Died, 17th June, 1915.
A.C.P.	"	N.S.W.	School	15	23 June, "	Lismore	CXXXVI	Died, 14th August, 1915.
E.W.	"	South Sea Islands	Labourer	50	17 Nov., "	Cudgen	CXXXVII	Discharged, 12 October, 1922.
H.H.	"	England	Labourer	36	19 May, 1915	Hornsby	CXXXVIII	Readmitted 16 Jan., 1925.
A.D.	Female	New Hebrides	Domestic	19	1 Sept., "	St. Kilda, Victoria	CXXXIX	
C.F.	Male	China	Cabinet-maker	50	18 Dec., "	Waterloo, N.S.W.	CXL	Died, 7 January, 1924.
L.F.	"	England	Showman	45	9 Mar., 1916	Campbelltown	CXLI	Died 18th July, 1923.
F.H.	"	China	Gardener	48	25 May, "	Sydney	CXLII	Discharged, 10 March, 1917.
D.M.	"	N.S.W.	Publican	46	25 "	Armidale	CXLIII	Discharged, 2 June, 1917.
W.J.P.	"	"	School	12	25 Nov., "	Lismore	CXLIV	Died, 15 June, 1916.
E.L.P.	"	"	"	11	25 "	"	CXLV	Discharged, 19 May 1917.
E.M.	"	Germany	"	56	3 April, 1917	Liverpool, N.S.W.	CXLVI	Disch. 5 November, 1924.
C.W.	"	England	"	80	14 "	Sydney	CXLVII	Readmitted 1 July, 1927.
C.D.	Female	N.S.W.	Domestic	54	30 Oct., "	Casino, N.S.W.	CXLVIII	Died, 27 December, 1922.
P.P.	Male	Greece	Café-proprietor	33	21 Feb., 1918	Melbourne, Vic.	CXLIX	Repatriated as Prisoner of War, 27 May, 1919.
J.C.	"	Ireland	Miner	84	5 Feb., 1919	"	CL	Died, 18 February, 1923.
M.T.	Female	Victoria	Housewife	63	25 Feb., "	Sydney	CL(A)	Discharged, 12 June, 1920.
J.P.	Male	Malta	Labourer	23	18 June, "	"	CLI	
J.S.	"	"	"	30	22 Dec., "	Kempsey	CLII	Died, 19 November, 1920.
A.S.	"	China	Gardener	64	3 Aug., 1920	Kandos N.S.W.	CLIII	Died, 1 May, 1919.
C.T.P.	"	"	Labourer	30	19 Oct., "	Nauru Island, S. Pacific	CLIV	Absconded, 14 Sept., 1919.
E.T.D.	"	N.S.W.	Teamster	32	10 Nov., "	Bellingen, N.S.W.	CLV	Died, 29 July, 1921.
T.F.	"	Ireland	Civil servant	57	20 Dec., "	Hobart, Tas.	CLVI	Died, 2 August, 1923.
A.W.	Female	Sweden	Seamstress	62	18 Feb., 1921	Newcastle	CLVII	Discharged, 25 April, 1921.
D.A.	Male	N.S.W.	Teamster	71	26 May, "	Newcastle	XC	Discharged 1 Dec., 1925.
J.C.	"	N.S.W.	Fisherman	22	18 Aug., "	Tilba Tilba	CLVIII	Discharged, 18 June, 1921.
A.S.	Female	Queensland	Domestic	20	19 Jan., 1922	Redfern	CLIX	
Y.M.B.	Male	France	Labourer	67	7 June, 1922.	Hunter's Hill	CLX	Returned to Peel Island, Queensland, 20 March, 1922.
E.	"	Ceylon	Sailor	24	13 Dec., "	Not fixed	CLXI	Died, 12 August, 1922.
R.B.	"	N.S.W.	Coach-painter	42	18 June, 1923.	Taree, N.S.W.	XCX	Repatriated, 26 June, 1923.
C.E.B.	"	Northern Terr.	Garage-proprietor	35	11 Aug. 1924.	Darwin, N.T.	CLXII	Died, 5 August, 1923.
H.L.S.	"	N.S.W.	Invalid-pensioner	37	26 Oct., "	Liverpool Asylum	CLXIII	Discharged 16th Sept., 1925.
J.B.	"	Ireland	Bush worker	61	28 Jan., 1925.	Liverpool	CLXIV	
A.C.	"	Germany	Importer	45	6 Mar., "	Sydney	CLXV	Absconded, 21 August, 1925.
K.	"	Hawaii	Musician	"	7 "	"	CLXVI	Repatriated, 11 March, 1925.
A.M.	"	China	School	12	12 "	"	CLXVII	Repatriated, 16 December, 1925.
A.D.	"	N.S.W.	"	7	21 April, "	"	CLXVIII	Discharged, 1 Dec. 1925.
Wong Toe	"	China	Gardener	46	22 Nov., "	Clarence River	CLXIX	
H.P.	"	N.S.W.	Farmer	39	14 Dec., "	Queensland	CLXX	Discharged, 9 Sep., 1926.
G.T.	"	Scotland	Chemist	56	8 May, 1926.	Sydney	CLXXI	Discharged, 21 July, 1926.
E.S.G.	Female	Queensland	Domestic	33	27 April, 1927.	Hunter's Hill	CLXXII	
A.R.B.	Male	N.S.W.	Farm labourer	41	6 July, "	Croydon	CLXXIII	Died, 26 November, 1928.
W.C.	Male	Mauritius	Sugar-worker	47	7 Feb., 1928	Queensland	CLXXIV	Discharged, 4th July, 1928
D.E.O.	Female	Queensland	Domestic	31	29 Mar., 1928	Northern Territory	CLXXV	
Ah Hoey.	Male	China	Gardener	49	28 May, 1928	Liverpool	CLXXVI	
P.T.L.	"	N.S.W.	Labourer	17	9 Dec., 1928	Tweed River	CLXXVII	
J.L.	"	"	"	47	22 Dec. 1928	Macksville	CLXXVIII	
L.M.	Female	"	Domestic	59	14 Sept., 1929	Lismore	CLXXVIII	

NOTES.—(a) The cases of a few other persons who, for one reason or other, were never admitted to the lazaret, have been mentioned in the course of this series of Reports, and are additional to those shown in this Table. (b) On comparison with the reports for early years, differences in ages or dates of admission of some coloured patients will be observed. Those now given are the correct ages and dates. Patients remaining under treatment have their initials shown in black-faced type.

RETURN showing admissions, discharges, &amp;c., of Patients suffering from leprosy for the years 1917-1929.

	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
In Lazaret on 1st January	25	24	24	24	24	22	21	16	15	17	15	17	20
Admitted during the year	3	1	4	4	3	3	1	2	8	1	4	5	1
Died during the year	1	...	2	1	2	2	5	2	...	1	2	1	1
Discharged	3	1	2	3	1	2	...	1	4	2	...	1	...
Repatriated	...	...	...	...	2	...	1	...	2	...	...	...	...
Total	24	24	24	24	22	21	16	15	17	15	17	20	20
Remaining in Lazaret on 31st December	19	19	19	20	17	16	12	11	13	11	14	16	15
Males	5	5	5	4	5	5	4	4	4	4	3	4	5
Females	5	5	5	4	5	5	4	4	4	4	3	4	5

Birthplaces of Lepers.—The inmates of the Lazaret at the close of the year 1929 were of the following nationalities:—New South Wales, 6; Australian aboriginals, 2; Queensland, 2; Ireland, 1; Sweden, 1; Pacific Islands, 2; China, 3; Greece, 1. Total, 20.

Working Expenses of Lazaret.—During the year 1929 the total cost of the management of this Institution was £5,639 5s. 7d. Calculated on the average number of inmates, the average cost per inmate per annum was £202 11s. 7d.



## APPENDIX B.

## I.—New Cases.

CASE CLXXVIII.—L.M., f., born 1870; admitted 14th September, 1929.

*History.*—Was born in the Hunter River district, and has lived all her life in New South Wales. In the Richmond River district since about 1910—part of the time on a dairy farm. Two years ago suffered from a "breakdown," with bodily weakness. After this, left index finger became swollen and numbed. Probably these symptoms were due to leprosy, but the disease was not recognised till recently.

On admission—In good general health. Weight, 12 st. 6 lb.

Face—Blotchy areas of redness and thickening of skin of forehead, cheeks, chin and ears.

Trunk—Similar areas on front and back of chest.

Upper limbs—Similar areas. Partial anaesthesia of hands.

Lower limbs—Some anaesthesia of feet.

Films from left eyebrow, chin, left earlobe, back and nasal mucus—All contain *B. Leprae*.

*Treatment.*—Sodium Hydnocarpate 70 grains daily.

## II.—Discharges.

None.

## III.—Death.

CASE CXXIII.—J.C., m., born 1862; admitted 15th November, 1910; died, 13th May, 1929.

Last year's report described a steady decline. This continued till his death on 13th May, 1929. The immediate cause of death was septic pneumonia following ulceration of the larynx. This was confirmed by autopsy, which showed much ulceration of the epiglottis and of the larynx. Mucopus from the larynx contained acid fast bacilli very abundantly.

## IV.—Progress Report on Patients remaining in on 31st December, 1929.

CASE LXXXVII.—F.E.B., m., born 1876; admitted 25th November, 1903.

Condition of eyes has become worse. There is ectropion of both eyes. Left eye is quite blind owing to Keratoiritis. Right eye had fair vision at the beginning of the year, but in October an ulcer of right cornea had begun. Lot. Quinine and Atropin drops were prescribed, but he declined the treatment.

Right foot developed a perforating ulcer in May, which heals and breaks out again. Weight has remained about 10 st. 5 lb.

CASE LXXXVIII.—G.M.S., f., born 1885; admitted 9th February, 1904.

Eyes remain about the same. Left anterior chamber is filled with exudate. Right has perception of light. In May was feverish on account of osteo-myelitis of left big toe.

Weight in December, 13 st. 10 lb.

Takes Hydnocarpate 72 grains and 3 Strychnine pills daily.

CASE CI.—T.A., m., born 1870; admitted 11th July, 1905.

No leprosy changes. Cataract left eye.

CASE CXXVIII.—S.C., m., born 1872; admitted 21st May, 1912.

No leprosy changes. He is in very good condition, but bedridden on account of deformity of his legs.

Takes Ol. Chaulmoogra regularly.

CASE CXXXI.—J.F., m., born 1884; admitted 19th September, 1912; discharged on parole, 1st January, 1920; readmitted, 7th November, 1927. Has become steadily worse throughout the year. Larynx is involved—voice is reduced to a whisper, and he cannot swallow solids. In bed continuously at end of year.

CASE CXXXVI.—A.C.P., m., born 1898; admitted 23rd June, 1914. Bodily health fairly vigorous, but vision has failed and he is now quite blind in left eye and can just count fingers with right eye. Krysolgan intravenous injections were given every two weeks from January to November, the dose at first .015 grain, and later .75 grain. No definite result was observable. Locally Atropin and Dionin were applied. Weight varied from 9 st. 8 lb. to 10 st.

CASE CXXXVII.—E.W., m., born 1864; admitted 17th November, 1914. No leprosy changes.

CASE CLIV.—W.J.P., m., born 1904; admitted 25th November, 1916; discharged 5th November, 1924; readmitted 1st July, 1927. Eye condition has become gradually worse. In October—left pupil small, some light reaction still, but lymph exudate in pupil. Krysolgan intravenous injections every two weeks, .375 grain to .75 grain, January to November, produced no perceptible result.

CASE CXLIX.—P.P., m., born 1887; admitted 21st February, 1918.

There have not been any exacerbations of the disease. On the contrary, his general condition has improved and his weight increased 13 lb. in the last five months of the year to 8 st. 9 lb. on 2nd December.

CASE CLVII.—A.W., f., born 1859; admitted 18th February, 1921.

The leprosy has become more marked and her general health feeble, but her weight remains about the same—8 st. 7½ lb. on 1st December.

CASE CLVIII.—J.C., m., born 1899; admitted 18th August, 1921.

No obvious leprosy manifestations during the first nine months. Towards the end of the year began to develop nodules again. Took no treatment from 1st April till 13th November, when he resumed Chaulmoogra. Weight increased from 9 st. 3 lb. to 9 st. 12 lb., then fell to 9 st. 6 lb.



**CASE CLXIII.—H.L.S., m., born 1887; admitted 22nd October, 1929.**

In July there appeared a nodule like a phlyctenule on the right conjunctiva, bordering on the cornea at its lower and outer quadrant. This grew steadily but painlessly, and now has invaded the adjoining iris. Also two small nodules have formed in the upper part of the iris. He firmly declines any treatment, operative or other. Weight remains same—10 st. 3 lb.

**CASE CLXIV.—J.B., m., born 1864; admitted 28th January, 1925.**

In November he suffered an exacerbation of the disease with pains in legs and an outcrop of many small pinkish nodules. Feet became swollen. By the end of the year this exacerbation had subsided. Weight increased during the year from 9 st. 9 lb. to 10 st. 12 lb.

*Treatment.*—Mostly he refuses treatment.

**CASE CLXIX.—Wong Toe, m., born 1879; admitted 22nd November, 1928.**

No fresh manifestations during the year. Weight increased from 9 st. to 9 st. 8 lb.

*Treatment.*—Ol. Chaulmoogra by mouth.

**CASE CLXXI.—E.S.G., f., born 1894; admitted 27th April, 1927.**

In March there was an acute recrudescence of the disease, with outcrop of painful nodules on face and limbs. Since then she has been mostly in bed suffering much pain in hands, arms, shoulders, and elsewhere, especially at night.

Some relief was obtained from Opiates and Ephedrine. She continued to take Sodium Hydnocarpate.

**CASE CLXXIV.—D.E.O., f., born 1897; admitted 29th March, 1928.**

Much improved during the year. Weight has increased from 6 st. 4 lb. in March to 9 st. in December, and the eruption has faded in all parts. In January the right musculo-spiral nerve became thickened and right wristdrop developed. This was corrected by a metal cock-up splint. Later, right footdrop developed, and was corrected by use of a side-iron fitted to the shoe. Throughout the year she has taken Sodium Hydnocarpate, 70 grains daily, and Pil. Strych. gr. 1/60th three times a day.

**CASE CLXXV.—Ah Heoy, m., born 1879; admitted 28th May, 1928.**

In August he developed a large abscess on each side of the neck, and was temporarily very ill, but subsequently recovered well.

*Treatment* included Krysolgan by intravenous injection for ten months, in addition to Chaulmoogra Oil by mouth.

Weight remained the same—9 st. 1 lb.

**CASE CLXXVI.—P.T.I., m., born 1911; admitted 9th December, 1928.**

His condition has become worse. In January he developed left Keratoiritis, and also some lesser inflammation of the right eye, and the leprous nodules on his face and elsewhere have become larger and more numerous. Krysolgan injections were given for the first ten months, also Chaulmoogra by mouth. Since the end of June he has declined all treatment. Weight on 2nd December, 6 st. 3 lb.

**CASE CLXXVII.—J.L., m., born 1881; admitted 22nd December, 1928.**

In January the eye condition was: Right Iridocyclitis, active; left, old Keratoiritis. Pupil contracted and filled with exudate. Most of the cornea opaque. He was treated with Krysolgan injections .75 grain every fourteen days from 4th February to 5th November, as well as Atropin locally and Chaulmoogra Oil by mouth. The active inflammation subsided, but his vision remains very defective. For pains in legs and arms he was given Tab. Ephedrine gr.  $\frac{1}{2}$  three times a day, apparently with benefit. Weight increased from 9 st. 6 lb. in January to 11 st. 3 lb. in December.

### 3.—DAVID BERRY HOSPITAL.

Berry, New South Wales.

REPORT of the Secretary for the year ending 31st December, 1929.

*Administrative Staff.*—Visiting Medical Officer, Dr. A. L. Stafford (resigned February), succeeded by Dr. H. M. Hollingworth; Matron, Miss D. G. Cawood; Secretary, A. F. Hale.

*Resident Staff.*—Matron, 1 Sister, 1 Staff Nurse, 5 Pupil Nurses, Cook, Laundress, 2 Housemaids, 2 Male Attendants, 1 inmate worker.

*Number of Wards and Beds.*—Wards, 6; Beds, 22; cots, 4.

*General Cases.*—20 beds, 2 cots.

*Infectious Cases.*—2 beds, 2 cots.

Sir,

I have the honor to submit herewith the annual report of this hospital for the year 1929:—

*Admissions and Discharges.*—Remaining in on 1st January, 1929, 10; admitted during year, 335; births, 1; discharges, 316; deaths, 18. Remaining in on 31st December, 1929, 12. Annual cost of maintenance, £4,810. Average cost per bed, £267 4s. 5d.

*In-patients.*—The total number of patients treated was 346, compared with 337 for the previous year. Daily average number resident, 18, as against 17 in 1928.



*Out-patients.*—The number of out-patients attended to was 109, compared with 108 for 1928.

*Infectious Cases.*—Eleven infectious cases were admitted, viz., diphtheria, 3; scarlet fever, 4, measles, 4.

*Anæsthetics.*—The total number of operations performed was 167 (major 66, minor 101), and 51 visits were made by the Nowra doctors in connection with these operations: Dr. Ryan, 20; Dr. Rodway 12; Dr. Cook, 15; Dr. Foy, 4.

*Collections.*—The collections for the year totalled £454 12s. 1d., compared with £421 19s. 11d. for 1928.

*Medical Officer.*—Dr. Stafford resigned his position as Visiting Medical Officer on 1st February, and was succeeded by Dr. H. M. Hollingworth.

*Wireless.*—The citizens of the district presented the hospital with an excellent wireless equipment, fully installed at a cost of £228—this generous gift is much appreciated by the patients and staff.

*Buildings.*—The buildings were in course of renovation and repairs at the end of the year.

*Staff.*—The institution is in charge of Dr. Hollingworth, Visiting Medical Officer, and Miss D. G. Cawood, Matron, and the work has been carried out most harmoniously throughout the year.

A. F. HALE,  
Secretary.

#### 4.—MONTROSE MATERNITY HOSPITAL.

Lucas-road, Burwood.

ANNUAL REPORT FOR 1929.

*Honorary Medical Officers.*—G. R. Walker, M.B., Ch.M.; G. C. Harper, M.B.; J. H. R. McCutcheon, M.B., Ch.M.; W. M. A. Fletcher, M.B., Mast. Surg.

*Matron.*—Miss E. M. Copeman. *Staff Nurses.*—Two; trainees, 5; domestic staff, 2. It has been difficult to obtain experienced double certificated nurses for the positions of staff nurse.

*Number of Wards, 2; Beds, 12; cots, 12.*

*Admissions and Discharges.*—Remaining in hospital on 31st December, 1928, 5; admitted, 323; discharged, 324; died, 1 (infant); remaining in hospital on 31st December, 1929, 4. Daily average number resident, 8. Out-patients treated, 365. Annual cost of maintenance, £1,885 14s. 8d.; average cost per bed, £253 13s. 1d. £208 9s. 6d. was received in donations.

Work at Montrose has been carried on as usual. There were 290 births, and no maternal deaths. There were 6 still births, and one infant died.

365 out-patients were medically examined, and over 1,000 specimens of urine were tested.

All nurses who were receiving training in obstetric nursing successfully passed their hospital and Nurses Registration Board examinations.

Only the most necessary minor repairs have been carried out at Montrose during the year, as arrangements are being made for the closing of the hospital early in the new year.

E. M. COPEMAN,  
Matron.

#### 5.—FERNLEIGH PRE- AND POST-MATERNITY REST HOME.

Victoria-street, Ashfield.

ANNUAL REPORT FOR 1929.

*Honorary Medical Staff.*—G. R. Walker, M.B., Ch.M.; J. H. R. McCutcheon, M.B., Ch.M.; G. C. Harper, M.B.; W. M. A. Fletcher, M.B., Ch.M.

*Resident Staff.*—Matron, Miss L. D. Meares; Head Nurse, Miss H. Alcock.

*Number of Wards, 3; beds, 17; cots, 9.*

*Annual Return of Admissions and Discharges.*—Remaining in on 31st December, 1928, 9 mothers, 4 babies; admitted during year, 229 mothers, 139 babies; discharged, 228 mothers, 139 babies; died, 1 baby; remaining in on 31st December, 1929, 10 mothers, 3 babies. Daily average number resident, 9 mothers.

Annual cost of maintenance, £1,437 9s. 7d. Average cost per occupied bed, £159 14s. 5d.

Sufficient eggs and vegetables were produced at the institution for its own needs, and any surplus was used at Montrose Maternity Hospital.

General regret was expressed when it was decided to close the home, which had done excellent service in conjunction with the Montrose Maternity Hospital. The property was sold during the year to the Freemasons, and the home was vacated on 31st January, 1930.

L. MEARES,  
Matron.



## 6.—LADY EDELINE HOSPITAL FOR BABIES, GREYCLIFFE, VAUCLUSE.

Annual Report for Year ended 31st December, 1929.

*Visiting Medical Officer.*—Dr. L. R. Parker.

*Honorary Staff of Consultants.*—Sir Charles Clubbe, Consulting Surgeon; Dr. T. Storie Dixon, Consulting Physician; Dr. R. Norman Paul, Consulting Dermatologist; Dr. Cyril Shepherd, Consulting Ophthalmic Surgeon; Dr. R. S. Godsell, Consulting Ear, Nose and Throat Surgeon.

*Resident Staff.*—Matron, Miss H. J. Turner; 2 Staff Nurses and 10 Pupil Nurses.

*Number of Wards.*—General, 6; (52 cots, 4 beds). Isolation 1; (1 cot, 1 bed). Total 53 cots, 5 beds.

*Return of Admissions and Discharges.*—Remaining in hospital on 31st December, 1928, 27 babies, 10 mothers; admitted during 1929, 138 babies; discharged, 129; died, 10; total number treated, 165. Remaining in hospital on 31st December, 1929, 26 babies and 10 mothers. Daily average number of cots occupied, 22. Out-patients treated, 49. Mothers admitted, 37. Annual cost of maintenance and treatment, £3,001 17s. 2d. Average cost per occupied bed, £136 9s.

### VISITING MEDICAL OFFICER'S REPORT.

There were 138 admissions to "Greycliffe" in 1929, while the total number treated was 165. Only 10 deaths occurred during the year, which represents a 7 per cent. ratio on the numbers admitted, or a 6 per cent. ratio on the numbers treated. These percentages are the lowest that have been achieved by "Greycliffe" since its inception nearly seventeen years ago.

L. R. PARKER, V.M.O.

### MATRON'S REPORT.

The following table shows the ages on admission of all babies treated during 1929, the number of deaths and duration of stay in hospital of fatal cases:—

	3 months.	3-6 months.	6-9 months.	9-12 months and over.	Total.
	56	50	40	19	165
Died .....	5	2	1	2	10
Duration of stay in hospital of fatal cases.....	2 days ...1 7 " ...1 17 " ...1 21 " ...1 2½ months 1	7 days ...1 14 " ...1	5 days ...1	13 days ...1 3 months.. 1	
	5	2	1	2	10

*Nature of Cases under Treatment.*—Acute gastro-enteritis, 15 (3 deaths); acute enteritis, 14 (1 death); chronic enteritis, with malnutrition, 16 (1 death); malnutrition, 45 (1 death); bronchitis and enteritis, 12; broncho-pneumonia, 12 (3 deaths); ileo-colitis, 8; marasmus, 10; marasmus with congenital heart-disease, 1 (1 death); prematurity, 6; purulent ophthalmia, 6; whooping cough, 6; convulsions, 2; intussusception, 1; eczema, 10; 1 case of laryngeal diphtheria occurred, and was sent to the Children's Hospital for tracheotomy. Total cases treated, 165; deaths, 10.

The hospital was handicapped for two months, owing to an outbreak of whooping cough, introduced by a case diagnosed as broncho-pneumonia. Measles also occurred through admission of infected babies, and cases were nursed in the Isolation Ward.

The "Sun" Toy Fund again supplied the hospital with useful toys and presents at Christmas, which added much to the happiness of the little patients.

Carrara Convalescent Home adjoining continues to supply sufficient milk for the use of the babies and frequently for general use as well.

1929 has been a quiet year and results are gratifyingly good.

H. TURNER,  
Matron.

## 7.—STRICKLAND CONVALESCENT HOSPITAL FOR WOMEN, CARRARA, ROSE BAY.

Report of the Matron for the Year ended 31st December, 1929.

*Visiting Medical Officer.*—Dr. L. R. Parker.

*Resident Staff.*—Matron, Miss S. G. Hartley; 1 Senior and 1 Junior Nurse; 1 Attendant.

*Number of Wards, 9; number of beds, 32.*

This hospital is utilised for women convalescent after severe illnesses.

*Annual Return of Admissions and Discharges.*—Number of patients remaining in on 1st January, 1929, 29; admitted 625; discharged, 632; remaining in on 31st December, 1929, 22. Total number treated during 1929, 654. Average daily number of beds occupied, 32. Annual cost of maintenance, £3,157 2s. 10d. Average annual cost per bed, £98 13s. 2d.



The year's work has been satisfactory. The beds were fully occupied, and patients showed a marked improvement.

The daily average has been satisfactory, and the improvement in the health of most of the patients is very marked. No serious illnesses have occurred, though it has been necessary for several patients to return to hospital. The shelter shed has been a great benefit, and when the croquet lawn in front is completed it should prove a happy pleasure resort for patients.

The dairy herd, which is pastured on portion of the grounds, supplies milk for the infants at the Lady Edeline Hospital for Babies, and also part of the supply required for "Carrara." Fresh eggs, sufficient poultry for Christmas, Easter, &c., and part of the vegetable supply are produced at the hospital.

S. H. HARTLEY,  
Matron.

## S.—DENISTONE HOUSE CONVALESCENT HOSPITAL FOR MEN, EASTWOOD.

Annual Report for the Year ended 31st December, 1929.

*Visiting Medical Officers.*—Drs. D. Guthrie Hunter and Stewart Oag.

*Staff.*—Acting-Matron, Miss M. A. Hall; 1 Nurse; 1 Attendant.

Number of rooms used as wards, 7; indoor beds, 29.

*Annual Return of Admissions and Discharges.*—Patients in hospital, 31st December, 1928, 24; admitted during 1929, 342; discharged, 339; remaining on 31st December, 1929, 27; average daily number of occupied beds, 24. Annual cost of maintenance, £2,512 19s. 4d. Average annual cost per bed, £104 14s. 2d.

Miss I. M. Shiell retired from the position of Matron in February, 1929.

The pleasant surroundings of Denistone House are ideal for convalescents, and since its opening in 1915, some 4,600 patients have greatly benefited during their stay.

Sufficient eggs, milk and vegetables are produced to meet requirements.

M. A. HALL,  
Acting-Matron.

## 9.—WATERFALL SANATORIUM.

Report of the Medical Superintendent for the year 1929.

*Honorary Consulting Physicians.*—Dr. Cecil Purser, Dr. E. W. Fairfax.

*Resident Staff.*—Medical Superintendent, Dr. H. W. Palmer; Senior Medical Officer, Dr. E. L. Fitzgerald; Junior Medical Officer, Dr. O. W. Mater; Manager, Mr. R. C. Rowe; Matron, Miss K. Walsh; 1 Sub-matron, 33 Nurses; Clerk and Storekeeper; 15 Male Attendants; 5 Cooks; and 9 Artisans.

*Bed Accommodation.*—There are 292 beds for males and 136 for females. Total, 428 beds.

*Number of Patients Dealt with during 1929.* 915.—Number remaining in on 1st January, 1929, 378; admitted during 1929, 537; total under treatment, 915; discharged, 417 (arrested, 29; much improved, 61; improved, 215; unimproved, 112); died, 126; remaining in residence on 31st December, 1929, 372. Average daily number of beds occupied, 388. Total maintenance and cost, £41,969 12s. Average annual cost per patient, £108 3s. 4d., or patients plus 134 inmates, £80 8s.

CONDITION on discharge and average residence in days of the 417 discharged patients—(average period of residence of all patients was 299 days.)

Condition on Discharge.	No. of Patients.	Average Residence in days.
		Days.
Disease arrested .....	29	981
Much improved .....	61	324
Improved .....	215	212
Unimproved.....	112	338
Total.....	417	299

CONDITION of Patients on admission and discharge during 1929.

Condition on Admission.	Arrested.	Much Improved.	Improved.	Unimproved.	Died.	Total.
Incipient .....	...	9	15	7	...	31
Fairly Early .....	20	26	93	30	15	184
Advanced .....	9	26	107	75	85	302
Far Advanced .....	...	...	...	...	26	26

*Arrested Cases.*—Have no signs of active disease, temperature normal, no sputum, and able to do light work.

*Much Improved Cases.*—Have slight signs of disease, normal temperature, may have slight sputum, but can do light work.

*Improved Cases.*—Are better than on admission, but disease still active.

*Unimproved Cases.*—Have the disease progressing.



## AGES of Patients Discharged or Died during 1929.

Years, 1 to 9	Years, 10 to 19	Years, 20 to 29	Years, 30 to 39	Years, 40 to 49	Years, 50 to 59	Years, 60 to 69	Over 69.
5	40	126	125	124	78	37	8

## OCCUPATIONS of Patients Discharged or Died during 1929.

Occupation.	Number.	Occupation.	Number.	Occupation.	Number.
Labourers .....	122	Seamen .....	18	Cooks .....	10
Housewives .....	98	Mechanics .....	17	Engineers .....	8
Home duties .....	66	Factory hands .....	16	Motor Drivers .....	8
Clerks .....	40	Children .....	16	Railway men .....	7
Farm hands .....	27	Indoor trades .....	12	Hairdressers .....	6
Shop assistants .....	27	Miners .....	11	Police .....	2
Building trades .....	20	Carters .....	10	Postal employees .....	2

## BIRTHPLACES of Patients Discharged or Died during 1929.

Country.	Number.	Country.	Number.
New South Wales .....	310	British Dominions .....	19
Other States of the Australian Commonwealth ...	69	European countries .....	12
Scotland .....	25	United States of America .....	1
England .....	80	China .....	1
Ireland .....	23	Africa .....	1
Wales .....	2		

## TABLE of Yearly Results for ten years—1920 to 1929.

Total patients treated :—

Year.	Total Patients Treated.		Total Discharges.				Died.
	In Residence beginning of year.	Admitted during year.	Arrested.	Much Improved.	Improved.	Unimproved.	
1920 ...	356	480	77	80	112	41	150
1921 ...	376	556	59	107	147	67	190
1922 ...	362	548	63	111	102	114	164
1923 ...	356	569	42	78	159	83	167
1924 ...	396	598	43	70	203	90	192
1925 ...	396	587	47	115	195	31	158
1926 ...	437	548	53	69	212	32	187
1927 ...	432	537	22	109	223	33	173
1928 ...	409	522	29	78	199	121	127
1929 ...	378	537	29	61	215	112	126

## GENERAL REVIEW OF THE YEAR'S WORK.

During the year there were 915 patients under treatment, namely, 612 males and 303 females. At the beginning of the year there were 257 male and 121 female patients in residence, and during the year 355 male and 182 female patients were admitted, 285 males and 132 females were discharged, while 59 male and 67 female patients died.

There remained in residence on 31st December, 1929, 372 patients (268 male and 104 female patients).

Of the 417 patients discharged, 29 were arrested cases, having no signs of active disease; 61 were much improved, and able to return to ordinary life with light work; 215 were somewhat improved; while 112 were not apparently benefited by their stay.

These results compare favourably with those of previous years, for there is little improvement in the type of case admitted during recent years, and till patients present themselves for treatment in the early stages of the disease, satisfactory results will not be obtained in the majority of cases. Had the many advanced cases been admitted months sooner, many of them could have received greater help.

Treatment was mainly along ordinary sanatorium lines, while heliotherapy and tuberculin were used in a few suitable cases. Several suggested new remedies were tested, including Zasmur, a preparation containing some New Zealand drug, Cumol, a cod-liver oil preparation, Mutton Bird oil (similar in its action to the cod-liver oil preparations), and Kalzana (a calcium salt preparation).

In each test special patients were taken as control cases, and each preparation was given a thorough trial, but, unfortunately, not one proved superior to the ordinary preparations in general use.

Casualty work has, at times, been a serious problem, owing to increasing motor traffic, the Woronora Dam and Main Roads Board constructions.

The treatment among the children has been most successful, and every effort should be made to send such children to the sanatorium as soon as tuberculosis is diagnosed.



The children have their own schoolmistress, so that, as soon as they are able, their education is provided for while here.

In June, a ward of 30 beds was opened at the Coast Hospital Auxiliary, Randwick, for women patients in the advanced stages of tuberculosis, and 24 women were transferred there. Unfortunately, a large number of very sick patients remain.

A number of men patients, in good health, were sent to the Red Cross Southern Hospital, at Exeter, as vacancies occurred, and it has been arranged that every patient who is admitted there shall do light work, and, when fit, return to his ordinary life outside. Under such conditions, the Red Cross work at Exeter should be very successful.

The opening of the Picton Lakes T.B. Village Settlement took place during the year, and several patients from Waterfall were accepted. The Foreman Instructor in carpentry was chosen from the Waterfall patients.

*X-Ray Plant.*—During the middle of the year an up-to-date X-ray plant was installed, and has proved of great help with many difficult cases, and in our casualty work. Unfortunately, no provision has been made for screening, thereby limiting its value considerably. It has also greatly increased the work of the Medical Staff, but if the best results are to be obtained, a fully-competent radiologist should be appointed.

*New Buildings and Improvements.*—Extensive additions were made to the nurses' home; the sterilising plant has finally been placed in satisfactory order; the morgue was moved to a more suitable position and greatly improved; motor machinery was installed in the carpenter's shop, and the workshops for the different trades enlarged and made more convenient.

*Electric Sterilisers.*—Several electric sterilisers were obtained and distributed to special wards and to the surgery.

Special attention has been given to the kitchens and dining-rooms, the renovation of staff buildings, nurses' quarters and wards, and the elimination of the mosquito and fly nuisance by provision of screens.

*Bequest of the late Ellen M. Logan.*—The late Miss Logan devised the residue of her estate in trust, to be expended for the benefit of the women patients. As suggested by her, outside venetian blinds were installed on the sleeping-out verandahs, and the remainder of the money was expended in supplying a number of squatter chairs, which are greatly appreciated by the patients.

*Amusement and Recreation.*—As in previous years the patients have been well catered for in both indoor and outdoor games. Besides the library, billiards and other indoor games for both men and women patients, the cinema provides amusement every week. Our warmest thanks are especially due to the Hon. R. B. Orchard and Mr. R. Lawson and the many friends who have so often assisted in providing many enjoyable entertainments during the past twelve months.

The bowling green and croquet lawns have been kept in good order and are largely made use of.

*Visiting Dentist.*—The dental surgeon has visited the sanatorium every fortnight attending to the requirements of the patients.

*Patients' Vegetable Gardens.*—For some years ten garden plots have been reserved for patients, sufficiently recovered, to grow vegetables in, such vegetables being bought by the sanatorium at current market rates. Not only have such patients the opportunity of earning money, but they greatly establish their health and feeling of confidence in themselves by the exercise in the gardens. In all nine patients worked in the gardens, and produced vegetables to the value of £482.

With the provision of beds at the Coast Auxiliary Hospital, Randwick, for both male and female advanced cases, and with the Picton Lakes Settlement for quiescent cases, there is ample accommodation for all cases applying. It now rests with the body of general medical practitioners to see that all cases suitable for sanatorium treatment are given the opportunity of receiving such treatment at the earliest possible time.

*Age Periods at which Tuberculous Infection occurs.*—The question of when tuberculosis infects the individual has long been disputed by investigators. As 8,423 separate persons have been treated for tuberculosis, it was considered that special investigation into each case, as to the age at which the first symptom of tuberculosis occurred, should give valuable information, from the Australian aspects. A report of these results is attached.

H. W. PALMER,  
Medical Superintendent.

#### INVESTIGATION AS TO THE AGE PERIOD AT WHICH TUBERCULOUS INFECTION OCCURED AMONG 8,423 CASES TREATED AT THE WATERFALL SANATORIUM, NEW SOUTH WALES.

(H. W. PALMER).

It has been so frequently stated that tuberculous infection takes place in childhood, and is even accepted as a fact in legal evidence, that it seemed to me a full review of our cases might be of value, as our experience has been against childhood infection in the large majority of cases. Tuberculosis among children in Australia is not common if we disregard those diagnoses based only on tuberculin tests.

In carrying out these investigations, only tuberculous cases were included, and all re-admissions were excluded, so that each case is only dealt with on its first admission.

The total number of individual cases investigated was 8,423, being 5,743 male patients and 2,680 female patients.

Of the male patients, 2,812, or 49 per cent., were married, and 1,276, or 47.5 per cent., of the female patients.

In every case the patient's history has been investigated, and the disease considered to have started, that is, that infection took place on the occurrence of the very first symptom that could be suggestive of tuberculous disease. In every case the time that has elapsed from the earliest symptom appearing till the admission of the patient to Waterfall has been deducted from the age on admission, and the resulting age taken as the age at which tuberculous infection took place in that individual. In no case has less than one year been deducted.



While admitting that tuberculous children are not always sent to sanatoria, we can claim to have had quite a fair percentage, if one compares such cases admitted to city hospitals, and the death statistics, especially if one excludes deaths from tubercular meningitis.

As it is so generally accepted that children are specially susceptible to tuberculous infection, the age period of 1 year to 19 years has been divided into three periods, instead of ten-year periods after 20 year of age.

TABLE showing the age periods, when infection is supposed to have taken place in the 8,423 cases admitted to Waterfall and the number of males and females infected in each period :—

Year periods.	Years 1 to 9.	Years 10 to 15.	Years 16 to 19.	Years 20 to 29.	Years 30 to 39.	Years 40 to 49.	Years 50 to 59.	Over 59.
Male cases .....	63	115	279	1,433	1,552	1,294	748	309
Female cases ...	66	143	320	997	685	311	115	43

From the above table, it would appear that with males, the period of greatest infection risk is between 30 and 39, and that from 20 years there is a marked increase of risk, over that of childhood. Even in the age between 50 and 59, though the risk of infection is rapidly falling, it is still double that of the age periods of 1 to 19.

With female patients the greatest incidence is between 20 and 29, falling slightly to 39, then more rapidly. We have had more female patients under 19 years of age, but the relative figures in each age group are almost exactly the same.

In only 8.8 per cent. of all these cases was a family history obtained of any relative being tuberculous.

TABLE showing the relative incidence of infection among the different members of families giving tuberculous family histories.

Members in family infected.	Female Patients.	Male Patients.
Mother .....	74 cases or 20.9 per cent.	44 cases or 11.1 per cent.
Father .....	29 cases or 8.2 per cent.	42 cases or 10.5 per cent.
Sister .....	59 cases or 16.6 per cent.	39 cases or 10 per cent.
Brother .....	28 cases or 8 per cent.	106 cases or 26.7 per cent.
Mother and father .....	10 cases or 2.8 per cent.	12 cases or 3 per cent.
Mother, father, brother and sister .....	10 cases or 2.8 per cent.	10 cases or 2.5 per cent.
Brother and sister .....	10 cases or 2.8 per cent.	16 cases or 4 per cent.
Father and brother .....	10 cases or 2.8 per cent.	19 cases or 4.8 per cent.
Mother and brother .....	2 cases or .5 per cent.	6 cases or 1.5 per cent.
Mother and sister .....	8 cases or 2.3 per cent.	6 cases or 1.5 per cent.
Father and sister .....	3 cases or .8 per cent.	10 cases or 2.5 per cent.
Mother, brother and sister .....	14 cases or 4 per cent.	1 case or .2 per cent.
Father, brother and sister .....	1 case or .3 per cent.	1 case or .2 per cent.
Husband or wife .....	25 cases or 7 per cent.	31 cases or 7.8 per cent.
Husband or wife, with son .....	4 cases or 1.1 per cent.	8 cases or 2 per cent.
Husband or wife, with daughter .....	11 cases or 3.1 per cent.	2 cases or .5 per cent.
Daughter .....	17 cases or 5 per cent.	8 cases or 2.1 per cent.
Son .....	6 cases or 1.7 per cent.	8 cases or 2.1 per cent.
Other relatives affected .....	33 cases or 9.3 per cent.	28 cases or 7 per cent.
Total .....	354 females.	397 males.

## 10.—LIDCOMBE STATE HOSPITAL AND HOME FOR MEN.

Report of the Medical Superintendent for the year ended 31st December, 1929.

### Honorary Visiting Staff.

Honorary Staff Surgeon, H. C. Rutherford Darling, M.D., M.S., M.R.C.S.; Honorary Assistant Surgeon, J. A. Lawson, M.B., Ch.M.; Honorary Ear, Throat, and Nose Surgeon, W. A. Dunn, M.R.C.S., Eng.; Honorary Ophthalmic Surgeons, Falkner J. Blaxland, M.D.; A. L. North, M.B., Ch.M.; Honorary Neurologist, Andrew Davidson, M.D.; Honorary Dermatologist, A. Chapman, M.B., Ch.M.

### Administrative Staff.

Medical Superintendent, H. V. D. Baret, B.A., M.B.; Senior Medical Officer, Vacant; Junior Medical Officer, J. McManamey, M.B., B.S.; Manager, R. J. Brown; Matron, Miss E. M. E. Mance.

Dr. R. A. Fox, who for twenty-four years had occupied the position of Medical Superintendent, entered on annual leave on 1st July, prior to his retirement on 8th September, 1929.

Dr. E. J. Brooks, Senior Medical Officer, temporarily filled the position as Acting Medical Superintendent from 1st July until the appointment of Dr. H. V. D. Baret on 18th November. On the same date (18th November) Dr. Brooks was promoted from this institution to the position of Medical Officer, Government Insurance Office, and the position of Senior Medical Officer remained vacant at the end of the year.

### Constitution of Hospital Staff on 31st December, 1929.

Medical Superintendent, Resident Medical Officers, 2; Dispenser, Manager, Clerks, 2; Matron, Sub-matron, Nurses, 43; Attendants, 68; other male staff, 18.



## Number of Wards and Beds.

Hospital Division.		General Division.		Total Accommodation.	Number of Beds.
Ward No.	Number of Beds.	Dormitories.	Number of Beds.		
4	25	9	92	Hospital Division .....	845
5	40	12	90		
6	50	21	70		
7	50	22	70		
10	80	23	70		
11	60	24	70		
14	60	25	70		
15	50	26A	26		
16	50	26B	34	General Division.....	607
17	50	29	36		
18	50	30	36		
19	50				
20	50	Emergencies			
27	100	(Casuals). Out-			
28	80	side Locations ...	35		
15	845		607	Total .....	1,452

The foregoing figures represent the normal standard capacities of the various hospital wards and dormitories. These figures show a standard accommodation for 845 patients and 607 inmates, a total of 1,452.

As the average population throughout the year was 1,639—the peak number reaching 1,720—the excess number above the bed standard had to be accommodated by interposing extra beds in all wards and on verandahs, and also in some buildings which are normally devoted to special purposes, such as the diet mess room, billiard and recreation room, and general shelter shed. The extra beds in the wards and on the ward verandahs have seriously reduced the cubic space for each bed in the ward, and the seating and exercise room on the verandahs. Withdrawal from their proper uses of the special diet mess room and the recreation rooms also caused much inconvenience to the staff and discomfort to the inmates. To meet the ever constant pressure of overcrowding in all sections additional hospital wards and dormitories are urgently needed.

*Diets.*—In addition to the diets provided in accordance with the approved scale the medical officers lists have been sufficiently liberal to satisfy the full requirements of all who were unable to partake of the scale allowance.

*Admissions and Discharges for year ended 31st December, 1929.*—Remaining in on 31st December, 1928, 1,509; admitted, 3,801; discharged, 3,122; died, 605. Remaining in on 31st December, 1929, 1,583: hospital division, 923; dormitories, 661.

Average daily number of persons resident in 1926, 1,457; 1927, 1,490; 1928, 1,514; 1929, 1,639.

Total cost of maintenance and treatment of patients and inmates for 1929, £98,676 15s. 4d. Average annual cost per head of patients and inmates, £60 4s. 1d. Total contributions received towards cost of maintenance, £16,439 6s. Total proceeds of sales, as live stock, &c., £2,291 0s. 4d.

*Work of Honorary Medical Officers.*—The various honorary surgeons continue to do excellent work, but more help is needed.

The position of Honorary Dermatologist is now vacant owing to the resignation of Dr. A. J. P. Chapman.

The volume of ear, nose and throat work is such that the assistance of an honorary assistant surgeon is necessary.

The services of an honorary physician are also very desirable, and would tend to raise the standard of diagnosis and treatment of the patients.

*Work of the Staff.*—The staff does excellent work and is imbued with a spirit of service for the patients, many of whom are naturally very trying on account of their various disabilities, both mental and physical. In fact, a spirit of helpfulness pervades the whole staff, a spirit to which I gladly pay tribute as it has made for the new Superintendent a pleasure and a delight of what would otherwise have been a most difficult task.

*Operations.*—The following operations were carried out during the year—Dr. Darling, 97; Dr. Lawson, 22; Dr. Blaxland, 23; Dr. North, 58; Dr. Dunn, 11.

The resident Medical Staff performed 116 major and minor operations.

*Massage Department.*—The massage department has done valuable service during the year. 369 individual patients received treatment, of whom 150 can be classed as recovered, 164 relieved, and 12 unrelieved; 43 were still under treatment at the end of the year.

*Recreation for the Inmates.*—The cinema installed some years ago continued to give most popular service, and the generosity of the Universal Film Manufacturing Co. (Australasia) Ltd. in providing free of cost a weekly programme is greatly appreciated.

In addition to the picture shows a large number of first-class concerts have been provided, and special thanks are due to the many kind friends who have attended, often at much inconvenience to themselves, to give pleasure to our patients.

We are deeply indebted also to the "Smith Family" for their annual distribution of Christmas cheer to the whole of our patients and inmates.



**Wireless Installation.**—From the funds provided by the generosity of the late Mr. James Hennessy, a former patient of this institution, radio equipment has been installed in our hospital wards and general recreation rooms. With the installation previously supplied by the Smith Family and the Auburn Auxiliary of the Returned Soldiers and Sailors League in Wards 27 and 28 respectively, a full radio equipment is now provided in all sections of the institution, much to the enjoyment of patients and inmates.

The billiard room in the main division of the institution still continues a very popular source of pleasure to the inmates; unfortunately it was found necessary early in the year, in the urgent need to find additional bed space, to take over the billiard and recreation room in Division 28 for ward purposes. Another building is urgently required in that division to provide shelter and recreation space for the men located there.

#### OUT-DOOR SECTION.

In the farm and out-door sections of the institution the year's work has been one of steady progress.

The standard of our milking herd has been well maintained by introduction of young stock from tested strains and judicious culling out of inferior production cows.

The reputation of our Friesians and Jerseys has been again enhanced by further honours gained at the last Sydney Royal Show, the money value of the prizes gained there amounting to £57.

The health conditions of our dairy herd continues excellent; for the sixth successive year in the regular tuberculin tests by the department's dairy inspectors, the herd was declared 100 per cent. free from that disease. 79,197 gallons of milk were produced during the year, fully providing for the needs of our largely increased hospital and general inmate population.

123 tons of green forage were produced from the cultivation areas, thus materially reducing the cost of hand feeding.

**Piggery.**—The return from the piggery section continued good throughout the year, and yielded a profit of £1,543 1s. 9d. as compared with £1,448 7s. 5d. in 1928.

**Vegetable garden.**—During the year 114,583 lb. of vegetables were produced in the vegetable garden.

Improved modern systems of irrigation are being installed by which means it is hoped to increase the production to meet the full requirements of the institution.

H. BARET,  
Medical Superintendent.

### 11.—LIVERPOOL STATE HOSPITAL AND HOME FOR MEN.

#### Report of Medical Superintendent for year ended 31st December, 1929.

**Honorary Visiting Staff.**—Honorary Ear, Nose, and Throat Surgeon, Arthur Lynton Clowes, M.B., Ch.M., Syd., F.R.C.S. Edin.; Honorary Dermatologist, W. A. McDonald, B.A., M.B., Ch.M.; Honorary Medical Officer, J. Pirie, L.R.C.P., L.R.C.S., Edin., L.F.P.S., Glas.

**Staff.**—Medical Superintendent, Donald Wallace, M.A., M.B., Ch.M.; Junior Medical Officer, C. R. O'Brien, M.B., Ch.M.; Manager, J. J. Ranshaw; Matron, L. W. McIntosh.

**Constitution of Hospital Staff on 31st December, 1929.**—Medical Superintendent, Junior Medical Officer, Manager, Matron, Sub-matron, Nurses 10; Clerk, Storekeeper, Dispenser, Male attendants 21; Other Male Staff 9.

#### Number of Wards and Beds.

Hospital Division.		General Division.		Total Accommodation.
Wards.	Beds.	Dormitories.	Beds.	
13	287	13	456	743 beds.*

\* This total does not include 19 inmate workers' beds located in outbuildings.

#### Admissions and Discharges for Year ended 31st December, 1929.

Number of persons in residence on 1st January, 1929, 770; admitted, 2,567; total, 3,337; discharged, 2,384; died, 166; in residence on 31st December, 1929, 787; average daily number, 812. Total cost of maintenance and treatment (of patients and inmates), £42,768 10s. 6d. Average cost per head £52 13s. 5d.

#### Summary of Patients treated in the various Wards during 1929.

Hospital Section.	In Hospital, 1st January, 1929.	Admitted during year.	Discharged during year.	Died during year.	In Hospital, 31st December, 1929.
Cancer Wards.....	29	133	71	57	34
General „ .....	219	801	706	80	234
Totals.....	248	934	777	137	268
District Ward.....	14	266	232	29	19
Grand Total .....	262	1,200	1,009	166	287



*Out-Patients.*—The number of district patients seeking relief in the out-door department shows an increase—2,250—on last year's figures. There were recorded 7,602 attendances, including 2,056 dressings and operations in the district ward. The services of the Honorary Medical Officer (Dr. Pirie) have been available from time to time as required.

*Inmate Accommodation.*—The number of inmates in July attained the grand total of 893, which exceeds by 102 the highest record of any previous year. The accommodation in the home section was greatly overtaxed on several occasions, necessitating the provision of emergency beds on the verandahs and in the corridors. A sleeping gallery providing accommodation for an additional thirty beds in this section was erected with inmate labour during the year.

*Hospital Wards.*—The general hospital accommodation was again fully utilised. During the year verandahs and balconies with extra lavatory accommodation, bathrooms, slop sinks, pan sterilisers, &c., were erected at five of the wards, including the District Ward. In addition, the work of installing a hot and cold water service with sterilisers, sinks and basins in the various wards was completed. The provision of these additional facilities is of inestimable benefit to the patients and those in attendance on them.

*Recreation for Inmates.*—In addition to the regular entertainments provided by "Wireless," concerts have been arranged at frequent intervals by persons interested in the institution. In this connection special mention should be made of the splendid entertainment provided for the patients and inmates by the "Smith Family" at Christmas time.

*Farm and Dairy.*—The need for green and uncooked vegetables and fresh milk as a corrective of the regulation institutional diet has been kept in view in directing the operations of the vegetable garden and dairy.

#### URGENT IMPROVEMENTS REQUIRED.

*Accommodation for Nursing Staff.*—The question of the erection of quarters for the matron and nursing staff is still in abeyance. It is regretted that this matter has not been finalised, as no institution can function as an up-to-date hospital without a resident nursing staff.

*Residence for Manager.*—The question of erecting a residence for the manager within the grounds of the institution is still under consideration. This provision is essential to efficiency in administration, and the matter is therefore regarded as urgent.

D. WALLACE,  
Medical Superintendent.

#### *Manager's Review of the Out-door Work for the Year ended 31st December, 1929.*

The supply of inmate labour was fairly well maintained throughout the year, and satisfactory progress was made with the out-door work.

*Dairy Farm.*—The quantity of milk produced was 29,781 gallons. The appointment of a herdsman to this section is an urgent necessity.

*Piggery.*—The operations in this section were satisfactory. The sales during the year amounted to £346 18s. 7d. In addition, compensation amounting to £304 10s. 3d. was received in respect of pigs killed and condemned in consequence of the outbreak of swine fever in 1927.

*Farm, Vegetable Garden, and Orchard.*—Owing to continued adverse weather conditions there was a reduction in the output in this section. The yield of vegetables was 51,977 lb.; fruit, 9,819 lb.; and green feed, 24 tons.

*Bakery.*—The usual high standard of quality was maintained. The total bread consumption was 246,683 lb.; buns, 250 doz.; cake, 23,756 lb.

*Condition of Buildings.*—All institution buildings were maintained in a reasonable state of efficiency.

*Garden and Grounds.*—The condition of the gardens and grounds has been well maintained throughout the year.

J. J. RANSHAW,  
Manager.

## 12.—NEWINGTON STATE HOSPITAL AND HOME FOR WOMEN.

### Annual Report for the year ended 31st December, 1929.

*Honorary Medical Staff.*—Hon. Surgeon, Walter A. Ramsay Sharpe, M.B., M.S., F.R.C.S., Edin.; Hon. Ophthalmic Surgeon, L. Stanton-Cook, M.B., Ch.M.; Hon. Neurologist, Andrew Davidson, M.D.

*Staff.*—Visiting Medical Officer, Francis H. Furnival, M.R.C.S., Eng., L.S.A., Lond.; Resident Medical Officer, Lottie Sharfstein, M.B., Ch.M.; Manager, William Megarvey; Matron, Emily Wood; Dispenser; Sub-Matron; Nurses, 41; other female staff, 5; Clerk and Storekeeper; Clerk; other male staff, 11.

A dentist visits the Institution weekly.

*Admissions and Discharges.*—Number of inmates on 1st January, 1929—643; admitted 1,599; discharged, 1,369; died, 228; remaining on December, 31st 1929, 635. Average daily number resident, 664.

Total Expenditure £38,179 8s. 10d. Average cost per bed £57 10s. 0s.

*Number of Wards and Beds.*—Hospital Division—Number of wards, 14; beds, 369. Yard Division—dormitories, 8; beds, 319.



*Hospital Division Statistics.*—Patients in hospital January, 1st 1929, 285; admitted during the year, 765; discharged, 741; recovered, 250; relieved, 326; unrelieved, 36; died, 228.

*Classification of Diseases Treated.*—General diseases, 214; alimentary, 27; circulatory, 109; respiratory, 86; genito-urinary, 33; nervous, 85; osseous and arthritic, 6; skin and glands, 68; wounds, fractures, &c., 44; miscellaneous, 38; senility, 131.

#### REVIEW OF YEAR'S WORK.

The erection of nurses' quarters, for which plans and specifications have been prepared by the Public Works Department, is still in abeyance. It is anticipated that tenders will be called for at an early date.

By inmate labour, additions have been made to some of the wards, which enables them to be also used as dining rooms. This adds considerably to the comfort of the inmates.

The Works Department has installed ward basins and sinks and electric sterilizers throughout the hospital division; and a tender has been accepted for provision of bath-rooms and lavatories in Ward "D."

Tenders have been called by the Works Department for erection of a shelter shed and library for the use of the women in the General Division.

Four hospital wards have been painted throughout.

*Entertainment of Patients and Inmates.*—The patients have been regularly entertained by Concert Parties. Monthly dances have also been held for the inmates, and are greatly appreciated.

Special thanks are due to Messrs. Rowe and Williams, who have, in the past ten years, provided a picture show each fortnight. The films have been loaned by the Australasian Films Limited, and their action has been greatly appreciated.

The "Smith Family" continued their usual visits, and at Christmas time distributed cakes and fruit to all the patients.

*Farm and Dairy Operations.*—Vegetables produced, 59,067 lbs.; milk, 155,175 gallons. Revenue collected for the year amounted to £580 7s. 8d., comprising sale of pigs, £219 17s. 9d., cows, calves, &c., £222 0s. 1d., tallow, £137 19s. 10d.

W. MEGARVEY,  
Manager.

### 13.—STATE HOME FOR AGED AND INFIRM MEN, GEORGE-STREET, PARRAMATTA.

Report of the Officer-in-Charge for the year ended 31st December, 1929.

#### Staff.

Visiting Medical Officer, Dr. W. S. Brown.

Officer-in-Charge, G. M. Strange. Attendants, 5.

Number of beds in hospital, 39; in dormitories, 307 total, 346.

*Admissions and Discharges.*—Remaining in on 31st December, 1928, 263; admitted during year, 2,228; discharged, 2,194; died, 9; remaining in on 31st December, 1929, 297; average daily population, 300. Annual cost of maintenance, £10,191 2s. 10d. Average cost per inmate, £33 19s. 5d.

*Hospital Division Summary.*—Number in hospital on 31st December, 1928, 20; admitted during year, 75; discharged, 63; died, 9. Remaining in hospital on 31st December, 1929, 23. Number of visits made by Visiting Medical Officer during 1929, 250; inmates seen by Visiting Medical Officer, 2,853; transferred to other institutions, 207.

*General.*—During the year the Public Works Department extended the hot water service in the mess-room; installed a new range in the kitchen, and provided a wooden floor in No. 7 dormitory. General repairs, etc., have been attended to by inmate labour.

*Amusements.*—Inmates have been entertained by various concert parties during the year. At Christmas time fifty inmates were entertained at the Methodist Church, and the "Smith Family" and the officers of the Salvation Army visited the institution and distributed gifts to the inmates.

G. M. STRANGE,  
Officer-in-Charge.

### 14.—STATE HOME FOR THE BLIND AND MEN OF DEFECTIVE SIGHT AND SENILITY, MACQUARIE-STREET, PARRAMATTA.

#### Staff.

Visiting Medical Officer, Dr. W. S. Brown.

Officer-in-Charge, Mr. H. A. Pyne.

Attendants, 4; Bakers, 2.

*Total Number of Beds.*—228.

*Admissions and Discharges.*—Remaining in on 31st December, 1928, 205; admitted during 1929, 948; total, 1,153. Discharged, 928; died, 5; remaining in on 31st December, 1929, 220; Daily average number resident, 220. Annual cost of maintenance, £6,475 5s. 11d. Average cost per inmate, £29 8s. 8d.

Dental work is carried on by a qualified dentist, who visits the institution monthly.

*Bakery.*—1,061,850 lb. of bread and 52,786 lb. of currant cake were baked, the whole of which was distributed to the State Hospitals at Waterfall, Lidcombe, and Newington and the George-street and Macquarie-street Homes. 800 dozen buns were also distributed at Easter.



*General.*—Inmates' clothing, bedding, &c., with the exception of boots and hats, are made in the Home, and all carpentry work, repairs to buildings, painting, bricklaying, &c., are carried out by inmate labour under the supervision of the Officer-in-Charge.

*Recreation and Amusements.*—Inmates have been entertained by various concert parties during the year. At the Methodist Church on the 19th December a tea was given to fifty inmates. At Christmas the Salvation Army distributed gifts to the inmates; and the Smith Family presented books, playing cards and cakes and fruit.

H. A. PYNE,  
Officer-in-Charge.

### 15.—STATISTICAL SUMMARY.

TABLE I.—Summarised Statement of Expenditure:—Montrose Maternity Hospital, Fernleigh Rest Home, Lady Edeline Hospital for Babies, and Strickland and Denistone Convalescent Homes, for the year ended 31st December, 1929.

Head of Expenditure.	Montrose Maternity Hospital.	Fernleigh Rest Home.	Lady Edeline Hospital for Babies.	Strickland Convalescent Hospital.	Denistone Convalescent Hospital.	Totals.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Salaries .....	1,120 0 3	897 2 7	1,322 8 0	1,046 14 9	987 0 11	5,373 6 6
Gratuities .....	42 18 0	18 5 0	188 10 0	214 18 0	194 13 0	659 4 0
Provisions .....	469 17 3	338 1 3	875 12 4	1,179 15 4	847 5 11	3,710 12 1
Drugs, dressings, &c. ....	28 5 2	0 15 9	60 14 1	12 2 2	6 2 6	107 19 8
Fuel and lighting .....	119 1 2	75 4 9	344 4 6	142 13 0	131 9 10	812 13 3
Forage .....		42 2 10		264 4 11	162 13 7	469 1 4
Materials for repairs and renewals.....	17 0 8	25 14 8	47 18 3	67 10 5	30 18 3	189 2 3
Transport expenditure .....	23 17 6	3 12 6	37 4 8	29 16 11	81 19 11	176 11 6
Insurances .....	21 8 2	13 10 5	28 0 1	19 0 10	17 15 6	99 15 0
Clothing and drapery .....		1 13 6	42 2 10	83 12 2	4 7 7	131 16 1
Hardware, ironmongery, &c. ....	6 0 11	3 1 0	18 7 10	37 18 10	16 3 9	81 12 4
Telephone charges .....	20 13 9	8 17 6	28 17 9	19 11 8	17 10 11	95 11 7
Miscellaneous .....	16 11 10	9 7 10	7 16 10	39 3 10	14 17 8	87 18 0
<b>Total .....</b>	<b>1,885 14 8</b>	<b>1,437 9 7</b>	<b>3,001 17 2</b>	<b>3,157 2 10</b>	<b>2,512 19 4</b>	<b>11,995 3 7</b>
Average daily number of patients .....	8	9	22	32	24	95
Average cost per occupied bed .....	235 13 1	159 14 5	136 9 0	98 13 2	104 14 2	126 5 4

## 15. STATISTICAL SUMMARY—(Continued.)

TABLE II.—SUMMARY STATEMENT of Expenditure, State Hospital and Homes of Lidcombe, Liverpool, and Newington, Parramatta Homes (George Street and Macquarie Street), and Waterfall Sanatorium, for the year ended 31st December, 1929.

Head of Expenditure.	Lidcombe.	Liverpool.	Newington.	Waterfall Sanatorium.	Parramatta.		Total.
					Macquarie street.	George street.	
Salaries and Payments in the nature of Salaries .....	£ s. d. 35,725 0 4	£ s. d. 15,376 7 7	£ s. d. 12,974 13 9	£ s. d. 16,164 4 8	£ s. d. 2,588 1 5	£ s. d. 2,357 4 9	£ s. d. 85,187 12 6
Gratuities to inmates .....	5,846 7 8	3,195 1 2	2,164 4 8	2,259 1 3	507 7 11	491 13 5	14,463 16 1
Workers' Compensation Insurance Premiums .....	338 17 4	131 4 2	149 2 5	176 7 4	93 8 7	93 19 8	842 19 6
Provisions .....	29,688 17 6	13,366 3 6	11,692 3 6	15,360 19 8	7,378 11 7	4,282 9 5	81,769 5 2
Drugs, Dressings, Surgical Appliances, &c. ....	4,076 9 10	1,569 18 3	1,480 6 7	818 9 9	203 1 0	130 3 1	8,278 8 6
Fuel and Lighting .....	4,203 13 2	1,419 1 8	2,674 14 6	2,328 14 2	694 15 8	391 18 7	11,712 17 9
Forage .....	4,312 11 10	1,954 13 11	2,256 5 11	346 0 4	11 2 3	42 13 0	8,923 7 3
Materials for Minor Repairs, Additions and Renewals to Buildings and Plant .....	1,434 13 5	601 9 11	834 10 0	702 11 1	71 18 0	96 2 6	3,741 4 11
Fire Insurance Premiums .....	199 2 1	17 16 0	57 9 8	133 16 0	7 19 0	12 16 1	428 18 10
Transport Expenditure (including Freight and Cartage) .....	2,154 2 9	1,803 15 1	850 14 11	1,297 8 0	276 2 3	295 17 11	6,678 0 11
Clothing and Drapery .....	6,105 14 6	2,936 17 1	2,120 15 6	1,101 7 8	455 18 3	1,038 19 1	13,759 12 1
Hardware, Ironmongery and General Stores .....	1,185 16 10	308 18 1	656 15 8	509 1 11	39 17 9	107 8 9	2,807 19 0
Furniture .....	733 15 2	289 5 1	44 4 9	17 17 3	.....	.....	1,085 2 3
Office Expenses (Telephones, Stationery and Printing) .....	254 9 7	102 10 9	159 18 3	151 9 0	22 14 8	28 0 4	719 2 7
Live Stock and Farm and Garden Requisites .....	414 0 2	212 5 6	342 3 3	173 18 9	8 1 3	1 19 6	1,152 8 5
Miscellaneous .....	639 4 0	134 13 8	136 10 7	77 16 0	51 5 7	73 3 2	1,112 13 0
Add Exchange .....	97,312 16 2	43,420 1 5	38,594 13 11	41,619 2 10	12,340 5 2	9,374 9 3	242,661 8 9
Deduct Exchange .....	3,794 10 2	237 10 7	1,433 13 4	837 10 0	379 6 5	1,150 16 8	7,743 7 2
Total .....	101,017 6 4	43,657 12 0	40,028 7 3	42,456 12 10	12,719 11 7	10,525 5 11	250,404 15 11
Stock on hand 31st December, 1928 .....	341 6 3	.....	1,446 2 11	.....	5,806 16 4	329 2 9	7,923 8 3
Grand Total .....	109,676 0 1	43,657 12 0	38,582 4 4	42,456 12 10	6,912 15 3	10,196 3 2	242,481 7 8
	9,254 5 1	4,711 2 5	2,673 19 10	3,203 6 10	847 3 10	837 17 9	21,557 15 9
Deduct—	109,960 5 2	48,368 14 5	41,256 4 2	45,659 19 8	7,759 19 1	11,034 0 11	264,039 3 5
Stock on hand 31st December, 1929 .....	8,992 9 6	4,533 18 2	2,344 3 9	2,610 14 11	1,097 2 9	752 13 2	20,331 2 3
Proceeds of Sales, etc. ....	2,291 0 4	1,066 5 9	732 11 7	1,079 12 9	187 10 5	90 4 11	5,447 5 9
Total Deductions .....	11,283 9 10	5,600 3 11	3,076 15 4	3,690 7 8	1,284 13 2	842 18 1	25,778 8 0
Total Cost .....	98,676 15 4	42,768 10 6	38,179 8 10	41,969 12 0	6,475 5 11	10,191 2 1	238,260 15 5
Average daily population .....	1,639	812	664	522*	220	300	4,157
Average annual cost per inmate .....	60 4 1	52 13 5	57 10 0	80 8 0	29 8 8	33 19 5	57 6 4
Annual contributions towards maintenance .....	16,439 6 0	5,209 19 4	9,637 4 11	3,891 9 9	1,863 18 9	948 11 4	37,990 10 1

\* Patients, 388; inmates, 134.



Summary of Results									
Year	Month	Day	Time	Location	Observer	Weather	Wind	Temp	Remarks
1901	Jan	1	8:00	Station	J. H. Smith	Clear	SW 10	45	First observation of the year.
1901	Jan	2	8:15	Station	J. H. Smith	Clear	SW 12	46	Continued observations.
1901	Jan	3	8:30	Station	J. H. Smith	Clear	SW 15	47	Wind increased.
1901	Jan	4	8:45	Station	J. H. Smith	Clear	SW 18	48	Temperature rising.
1901	Jan	5	9:00	Station	J. H. Smith	Clear	SW 20	49	Strong wind.
1901	Jan	6	9:15	Station	J. H. Smith	Clear	SW 22	50	Very strong wind.
1901	Jan	7	9:30	Station	J. H. Smith	Clear	SW 25	51	Storm approaching.
1901	Jan	8	9:45	Station	J. H. Smith	Clear	SW 28	52	Heavy rain.
1901	Jan	9	10:00	Station	J. H. Smith	Clear	SW 30	53	Thunder and lightning.
1901	Jan	10	10:15	Station	J. H. Smith	Clear	SW 32	54	Storm passing.
1901	Jan	11	10:30	Station	J. H. Smith	Clear	SW 30	55	Clearing.
1901	Jan	12	10:45	Station	J. H. Smith	Clear	SW 28	56	Wind decreasing.
1901	Jan	13	11:00	Station	J. H. Smith	Clear	SW 25	57	Temperature falling.
1901	Jan	14	11:15	Station	J. H. Smith	Clear	SW 22	58	Wind light.
1901	Jan	15	11:30	Station	J. H. Smith	Clear	SW 20	59	Clear sky.
1901	Jan	16	11:45	Station	J. H. Smith	Clear	SW 18	60	Temperature rising.
1901	Jan	17	12:00	Station	J. H. Smith	Clear	SW 15	61	Wind light.
1901	Jan	18	12:15	Station	J. H. Smith	Clear	SW 12	62	Clear sky.
1901	Jan	19	12:30	Station	J. H. Smith	Clear	SW 10	63	Temperature rising.
1901	Jan	20	12:45	Station	J. H. Smith	Clear	SW 8	64	Wind light.
1901	Jan	21	13:00	Station	J. H. Smith	Clear	SW 6	65	Clear sky.
1901	Jan	22	13:15	Station	J. H. Smith	Clear	SW 4	66	Temperature rising.
1901	Jan	23	13:30	Station	J. H. Smith	Clear	SW 2	67	Wind light.
1901	Jan	24	13:45	Station	J. H. Smith	Clear	SW 1	68	Clear sky.
1901	Jan	25	14:00	Station	J. H. Smith	Clear	SW 0	69	Temperature rising.
1901	Jan	26	14:15	Station	J. H. Smith	Clear	SW 0	70	Wind light.
1901	Jan	27	14:30	Station	J. H. Smith	Clear	SW 0	71	Clear sky.
1901	Jan	28	14:45	Station	J. H. Smith	Clear	SW 0	72	Temperature rising.
1901	Jan	29	15:00	Station	J. H. Smith	Clear	SW 0	73	Wind light.
1901	Jan	30	15:15	Station	J. H. Smith	Clear	SW 0	74	Clear sky.
1901	Jan	31	15:30	Station	J. H. Smith	Clear	SW 0	75	Temperature rising.

Summary of Results

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## SECTION IV.

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# Report of the Microbiological Laboratory (Government Bureau of Microbiology) for the Year 1929.

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## SECTION IV.

## Microbiological Laboratory.

## Report of the Principal Microbiologist to The Director-General of Public Health for the Year ended 31st December, 1929.

## Staff.

*Principal Microbiologist.*—Ernest Leslie Morgan, M.B., Ch.M.

*Assistant Microbiologists.*—Elsie Jean Dalyell, M.B.; Marie Montgomerie Hamilton, M.B., Ch.M.; Stanley William Milton King, M.R.C.S., L.R.C.P.; Isobel May Brown, M.B., B.S.; Muriel Constance Letchford, B.Sc.

*Senior Laboratory Assistant.*—John Owen Sergeant. Laboratory Assistants, 6; Junior Assistants, 2; Attendants, 4.

*Clerk and Librarian.*—Florence Stuart Wearne. Shorthand-writers and Typists, 3; Temporary Messenger, 1.

Sir,

I have the honor to submit the accompanying report dealing with the work performed in the Microbiological Laboratory during 1929.

There has been a further definite increase in the number of specimens submitted during the year. The examinations in 1929 numbered 43,817 compared with 42,677 in 1928.

*Plague.*—Immunity of the State from plague has continued during the year; the number of rats examined was 5,110 as against 5,976 in 1928.

Amongst the rats brought in two were found to be affected with rat leprosy.

As mentioned in the 1928 report, which completed a twenty years' survey, examination of ectoparasites from rats has been discontinued.

*Tuberculosis.*—The number of specimens of sputa and other material examined for tubercle bacilli increased from 3,847 in 1928 to 4,060 in 1929.

The presence of living tubercle bacilli in septic tank effluent was investigated during the year, and a report of the work carried out will be found on p. 112.

*Diphtheria.*—There was a slight decrease in the number of swabbings examined (4,334) as compared with the figures for the previous year (4,429). A slight increase occurred in the number of tests for toxicity.

*Typhoid.*—Notifications of typhoid fever (433) were still lower than the previous record low number (453) in 1928, and the number of samples of blood on which Widal reactions were performed decreased from 604 in 1928 to 505 in 1929. In certain cases agglutination tests against *Brucella abortus* and *B. proteus* X19 were also carried out.

Specimens of urine and faeces examined for typhoid bacilli show a decided increase, largely to be accounted for by a typhoid outbreak in the Auburn-Granville portion of the metropolitan area. In the vicinity of Sydney it is customary not to discharge patients from hospital until their excreta are free from typhoid bacilli.

In connection with the isolation of *B. typhosus* in specimens from the country a short note appears on p. 112.

*Veneral Diseases.*—Examinations for syphilis and gonorrhoea show no great variations from the previous year.

*Milk Examinations.*—Milk examinations for the presence of tubercle bacilli were continued throughout the year, and 152 samples of mixed milk from metropolitan dairy herds were tested, but in no instance were tubercle bacilli demonstrated.

It is interesting to note that guinea-pigs inoculated from three samples of milk developed lesions identical with those produced by *Brucella abortus*, and a note in this connection appears on p. 115.

*Waters, Effluents, &c.*—Samples of water submitted for examination increased from 143 in 1928 to 271 in 1929. These were mainly received in connection with a general survey of the water supplies of country towns; 33 samples of water from swimming baths were also tested.

One hundred and seventy-three samples of sea water were examined in connection with harbour and beach pollution, and on p. 116 the results are given of a series of samples taken at varying distances from the sewer outfall at the Merewether Beach, Newcastle.

## Staff Changes.

Drs. S. W. M. King and Isobel M. Brown joined the staff during the year, the former in April, and the latter in November.

*Retirement of Mr. Robert Grant, F.C.S.*—Mr. Robert Grant, who joined the Microbiological Laboratory in 1898 shortly after it was expanded and established in its present quarters, reached the retiring age in August and severed his connection with the department.

During his many years of service Mr. Grant rendered valuable assistance, especially in connection with the epidemics of plague, smallpox and influenza.



**PART I.—TABLE showing the Routine Examinations made for the Various Branches of the State Department of Public Health, other Government Departments, Subsidised Hospitals, &c.**

	Number of Examinations. Comparative Statement.	
	1928.	1929.
<b>Department of Public Health—</b>		
Head Office, Director-General .....	1,462	839
Coast Hospital .....	3,967	4,977
" " (Night Clinic) .....	1,486	1,801
David Berry Hospital, Berry .....	59	49
Lady Edeline Hospital for Babies .....	3	5
Lidcombe State Hospital and Home .....	821	1,060
Liverpool State Hospital and Home .....	979	548
Newington State Hospital and Home .....	208	196
Strickland Convalescent Home .....	9	.....
Waterfall Sanatorium .....	2	10
Medical Officer of Health, Metropolitan Districts .....	.....	10
" " " Newcastle .....	20	40
<b>Commonwealth Government .....</b>	<b>463</b>	<b>486</b>
<b>State Departments—</b>		
Agriculture and Stock .....	1	.....
Chief Secretary (Fisheries) .....	8	3
Child Welfare Department .....	2	.....
Education Department .....	77	86
Government Stores Department .....	25	21
Hunter District Water and Sewerage Board .....	30	12
Metropolitan Meat Board .....	1	.....
Police Department .....	50	41
Prisons (Long Bay Gaol, &c.) .....	600	441
Public Works Department .....	31	230
Railways and Tramways Department .....	15	10
State Insurance Office .....	4	3
Sydney Harbour Trust .....	.....	30
Taronga Park Trust .....	.....	10
Water Conservation and Irrigation Commission .....	1	.....
Workers' Compensation Commission .....	35	49
<b>Private Practitioners .....</b>	<b>23,323</b>	<b>22,362</b>
<b>Public Hospitals and Institutions other than State Hospitals .....</b>	<b>8,932</b>	<b>10,383</b>
<b>Municipal and Shire Councils .....</b>	<b>63</b>	<b>115</b>
	<b>42,677</b>	<b>43,817</b>
<b>Total Examinations—</b>	<b>1928.</b>	<b>1929.</b>
General .....	42,677	43,817
Rate for Plague .....	5,976	5,110
<b>Grand Total .....</b>	<b>48,653</b>	<b>48,927</b>

In the following Statement the Routine Work is divided into sections to disclose the purposes for which the various examinations were made :—

	Number of Examinations. Comparative Statement.	
	1928.	1929.
<b>A.—Microbiological Examinations.</b>		
<b>1. Of materials from diseased persons and animals—</b>		
Actinomycosis .....	16	23
Bilharzia .....	2	.....
Diphtheria (swabbings) .....	4,420	4,334
" (toxicity) .....	225	247
" (Schick tests) .....	23	.....
Dysentery .....	1	11
Favus (Mouse) .....	2	.....
Filaria .....	8	.....
Gonorrhoea (smears and urine) .....	4,669	4,924
" (complement deviation test) .....	3,811	3,737
Hydatids (sputa, smears, &c.) .....	26	35
" (complement deviation test) .....	61	54
Leprosy (human) .....	3	4
" (rat) .....	1	2
Malaria .....	22	12
Meningitis .....	97	120
Mastitis (bovine) .....	12	4
Syphilis (Wassermann reactions) .....	9,072	9,180
" (Kahn's flocculation test) .....	8,380	8,249
" (Spirochaetes) .....	36	43
Tetanus .....	.....	6
Tinea .....	15	10
Tuberculosis (human) .....	3,847	4,060
" (bovine) .....	4	.....
Typhoid (Widal reactions) .....	604	505
" (urine and faeces) .....	310	673
" (miscellaneous, water, milk) .....	.....	7
Unclassified, "No growths" from pus, &c. ....	1,197	1,316
Typhus .....	4	.....
Vincent's Angina .....	46	35
	<b>36,923</b>	<b>37,511</b>
<b>2. Examinations for Anthrax—</b>		
Human beings .....	2	4
Shaving brushes .....	.....	.....
Animals (sheep, cattle, &c.) .....	.....	.....
	<b>2</b>	<b>4</b>



	Number of Examinations. Comparative Statement.	
	1928.	1929.
Brought forward .....		
A.—Microbiological Examinations—continued—		
3. Of Materials, &c.—		
Chemical closet contents .....	4	2
Cotton wool .....		13
Disinfectants .....	37	23
Filter .....		1
Lubricant .....		1
Rag flock .....	17	
Rat poison .....		1
Sewage, effluents, &c. ....	27	173
Soil .....	7	4
Water .....	143	271
Water from swimming baths .....		33
	235	522
4. Examinations of Foods for bacterial contamination—		
Bread .....		2
Butter .....	1	
Chocolate .....		1
Corned Beef .....	6	
Cream .....	2	
Fish .....		1
Flour .....		3
Milk—		
Special bacterial counts, Sydney Milk Supply, including examination for tubercle bacilli .....	142	152
Miscellaneous milks for bacterial counts, &c. ....	66	12
Meat .....		1
Mussels .....		1
Oysters .....	6	6
Tomato pulp .....	5	
Wholemeal .....		1
	228	180
5. Examinations for Food Poisoning .....	2	6
	2	6
B.—Pathological Examinations.		
1. Of Animals—		
Mammals .....	8	19
Birds .....	1	1
Fish .....	1	2
	10	22
2. Of Body Fluids—		
Blood for full and differential count .....	499	596
Blood for blood typing .....	20	
Blood—coagulation time .....	2	3
Chemical Examinations—		
Bloods for sugar .....	312	519
„ urea .....	181	279
„ „ and creatinin .....	20	19
Urines for sugar .....	71	188
„ urea .....	179	255
Miscellaneous .....	18	58
Urine (general examinations) .....	966	1,078
Faeces .....	59	52
Test meal .....	43	188
Calculus .....		9
	2,370	3,244
3. Of Tissues—		
Malignant tumours .....	427	464
Leprotic .....	1	
Tubercular .....	23	26
Other conditions .....	947	1,046
	1,398	1,536
C.—Examinations of Parasites.		
Ecto-parasites (fleas, ticks, &c.) .....	618	1
Endo-parasites (round and flat worms) .....	10	7
Insects (including flies and mosquitoes) and spiders .....	82	11
Worm nodules .....		1
	710	20
D.—Medico-Legal Examinations.		
Examination of Exhibits for—		
Blood stains .....	7	12
Gonococci .....	6	5
Seminal stains .....	39	28
Spermatozoa .....	17	9
Other examinations .....	3	5
Poison tests .....	3	8
	75	67
E.—Examination of Specimens for Preparation of Vaccines.		
Preparation of Autogenous Vaccines from sputa, urine, acne pustules, boils, wounds, and other septic conditions .....	700	625
Special Investigation—		
Seasonal prevalence of flies .....	24	
	724	625
Total .....	42,677	43,817

## ROUTINE EXAMINATION OF RATS FOR THE PRESENCE OF PLAGUE.

TABLE showing the Number and Species of Rodents Examined in Sydney and Newcastle each month during the year ended 31st December, 1929.

1929.	Sydney.				Newcastle.			
Month.	<i>R.R. Rattus.</i>	<i>Rattus Norvegicus.</i>	<i>M. Musculus.</i>	Total.	<i>R.R. Rattus.</i>	<i>Rattus Norvegicus.</i>	<i>M. Musculus.</i>	Total.
January .....	341	48	22	411	30	6	...	36
February .....	279	114	18	411	88	12	...	100
March .....	243	44	14	301	96	9	...	105
April .....	420	69	27	516	64	1	...	65
May .....	509	140	46	695	41	2	...	43
June .....	317	88	43	448	4	...	...	4
July .....	312	115	46	473	69	4	3	76
August .....	341	65	36	442	40	7	...	47
September .....	329	78	18	425	58	...	3	61
October .....	287	43	30	360	72	9	2	83
November .....	269	104	8	381	37	1	...	38
December .....	205	36	6	247	39	5	...	44
Total .....	3,852	944	314	5,110	638	56	8	702

Rats have been trapped and examined for the presence of plague practically continuously since the first occurrence of that disease in Sydney in 1900.

For the twenty years, 1909-1928, a table and graph were published annually in this report showing the species of fleas collected from rats brought in for examination. This record was discontinued at the end of 1928.



## PART II.—REPORTS OF INVESTIGATIONAL WORK, 1929.

1. DETECTION OF *B. TYPHOSUS* IN SPECIMENS OF URINE AND FÆCES FROM THE COUNTRY.

(E. L. MORGAN.)

When the detection of *B. typhosus* in specimens of urine and fæces from the country is required it is impossible to obtain fresh material for examination. Owing to the postal facilities it is doubtful if a country specimen is ever under twenty-four hours old when received at the laboratory, and quite frequently it is two or three days in transit.

From time to time various methods of preservation of fæces for examination have been advocated, of which probably the commonest is the addition of various percentages of glycerine. This, however, does not always prove successful, and in a certain percentage of cases the bacilli cannot be recovered except from the fresh specimens.

In the experience of this laboratory it was such a rarity to obtain a positive culture from a country specimen that when a medical officer in the country reported that he was dealing with a small outbreak, which he believed was due to a carrier in a certain house, it was decided to forward materials for direct culture.

The materials forwarded comprised a platinum loop, a sterile test tube and six tubes of agar for each case to be examined, and the following directions were enclosed:—

- (a) Boil about 5 c.c. of tap water in one of the test tubes and allow to cool.
- (b) Sterilise platinum loop in a flame.
- (c) Take a platinum loopful of fresh fæces and emulsify in the test tube of boiled water.
- (d) Sterilise the platinum loop again.
- (e) Take a loopful of the emulsion and smear well over the surface of an agar slope.
- (f) Without sterilising the loop smear a second agar slope.
- (g) As in (f) smear a third agar slope.  
By this means attenuated cultures can be made and should not be overgrown.  
N.B.—The fæces must be fresh.
- (h) Treat urine similar to emulsion of fæces.
- (i) Label tubes.
- (j) Forward all cultures without delay and return platinum loop. Quote age of patient and duration of illness of patient from whom specimens are taken.

The medical officer followed out the directions with the result that *B. typhosus* was isolated from one of the suspected individuals.

Since then another similar case has arisen, and again a carrier has been detected. This method has undoubtedly proved efficacious in the two instances in which it has been tested out. It is to be noted that even medical men who should be familiar with bacteriological methods do not successfully inoculate the whole surface of each agar slope, our experience being that growth only occurred on a small portion of one of the culture tubes.

## 2. DETECTION OF LIVING TUBERCLE BACILLI IN SEPTIC TANK EFFLUENT.

(E. L. MORGAN.)

Lab. 7975-77; H.O. 29/39630.

In a recent article,\* Professor S. Lyle Cummins, Professor David Davies and Miss C. M. Acland showed that living tubercle bacilli could be recovered from a septic tank effluent.

As the Director of Tuberculosis desired that this finding should be checked locally samples of septic tank sludge were obtained from the Medical Superintendent of Waterfall Sanatorium.

Three specimens of effluent from the septic tank area were forwarded for examination. The specimens were marked as follows:—

- (1) Collected at outlet from septic tank; (2) collected at outlet from filter beds; (3) collected at drain beyond filter beds, 150 yards distant.

Smears from each of the specimens were stained by Ziehl Neelsen's method and in each case numerous acid fast bacilli were found, many of which had the typical appearance of tubercle bacilli. Two guinea-pigs were then inoculated subcutaneously with  $\frac{1}{2}$  c.c. of sediment from each specimen, one with untreated sediment and one with sediment treated with antiformin.

In the case of specimen No. 3 an additional guinea-pig was included. This pig was drenched with 1 c.c. of antiformin treated sediment.

All the guinea-pigs were killed thirty-two days later. Of the seven guinea-pigs six showed no evidence of tuberculosis post-mortem. The remaining guinea-pig which was inoculated with untreated sediment from specimen No. 3 developed typical tuberculosis. The glands at the site of inoculation, the

\* Tubercle, Vol. X, 1928, 312.



lumbar and the inguinal glands were enlarged and caseous, and small white tubercles were scattered through the spleen. The liver, lungs and prescapular glands were not affected. Smears from all the caseous lesions showed the presence of acid fast bacilli. Cultures were made on Dorset's egg media from the lumbar and inguinal glands, and in each case a typical growth of tubercle bacilli occurred. The colonies appeared as round raised colonies resembling the human strain, a point which it is proposed to investigate further by rabbit inoculation.

The presence of living tubercle bacilli in septic tank effluent therefore has been confirmed.

One point which seems to require further comment is the enormous number of acid fast bacilli seen in smears from the sediment. Many of these acid fast bacilli were indistinguishable from tubercle bacilli. It is obvious that they were not living tubercle bacilli as in that event all the guinea-pigs receiving untreated sediment would certainly have developed tuberculosis. There remain the two possibilities—(a) that they were dead tubercle bacilli, or (b) that they were other acid fast bacteria.

(a) It has been proved that living tubercle bacilli can pass through a septic tank, and it does not appear likely that amongst such large numbers of dead bacilli sufficient living bacilli should not be present to cause with certainty typical tubercular lesions in all guinea-pigs.

(b) That they are other acid fast bacteria appears more likely. It is possible that the effluent from all septic tanks contains large numbers of acid fast bacilli whether tubercular material passes into them or not, but as yet I have had no opportunity of confirming this point. It is interesting to note that specimen No. 3 was taken from a drain beyond the filter beds, 150 yards distant. The question of danger arising from the presence of living bacilli in the sludge is bound up with the ultimate disposal of the sludge. The Medical Superintendent of Waterfall states that it is well distributed over the surface of a large area of ground so that the full action of the sun may be obtained to destroy the bacilli.

### 3.—DENGUE (?): REPORT ON AN UNUSUAL EPIDEMIC IN THE MURRUMBIDGEE RIVER BASIN.

(E. L. MORGAN.)

The main symptoms of Dengue as described by recent reporters on the subject <sup>(1)</sup> <sup>(2)</sup> <sup>(3)</sup> <sup>(4)</sup> <sup>(5)</sup> are as follows:—

*Incubation Period.*—2-15 days, usually 3-8.

*Onset* often sudden—or prodromal symptoms of headache, chilly feeling, pains in back, lack of appetite, &c.

*Fever.*—Temp. 102-105, falls by fourth day or rises again after an interval of one to several days, giving saddle back appearance.

*Rash.*—Primary—during first day or two, usually congestion of skin of head, chest, neck and arms, an appearance likened to that associated with an alcoholic debauch. Secondary—present in 10 to 100 per cent.; begins usually on fourth or fifth day during the second rise of fever; first appears on hands, forearms and feet. It may remain confined to these parts or spread to the chest, forehead and remainder of the body; often morbilliform or just as often scarlatiniform; occasionally it may be urticarial or papular—may be followed by fine furfuraceous desquamation or occasionally peeling.

*Pains.*—Headache, backache and fever are described as ever present at the onset. Headache behind eyes or all over head. Pains in back, loins, muscle and about the joints are severe in many cases. Acute periarticular pains usually located in the smaller joints, later in the larger ones, are features of some outbreaks.

*Gastro-Intestinal.*—Furred tongue, anorexia, nausea often accompanied by vomiting.

*Leucopenia* with relative lymphocytosis.

*Nervous Symptoms.*—Insomnia, loss of taste, photophobia, itching, mild mental confusion, drowsiness or somnolence.

*Relapses* are not uncommon; convalescence may be protracted, and there may be a recurrence after a short interval. The period of immunity following an attack is therefore exceedingly variable in length, and an individual may have several attacks in the course of a few years.

#### *The Disease on the Murrumbidgee River, N.S.W.*

In the Medical Journal of Australia of 5th May, 1928, p. 549, under the heading "An Unusual Epidemic," Dr. J. R. Nimmo described an outbreak of disease in the Riverina District of New South Wales. The epidemic commenced at Hay and subsequently spread to Leeton and Narrandera. Dr. Nimmo's description is as follows:—

There are three main symptoms; pain, skin eruption and general manifestations.

Painful swelling of the joints is the chief characteristic of the disease. The onset is usually sudden and any of the joints may be affected. Sometimes the patient complains of pain in the wrist and hand, then in twenty-four to forty-eight hours the pain extends to other joints. In slight attacks it extends to one or two, and in severer cases to most of the joints of the body. Pain may be present without visible swelling and there is no "heat and redness" such as is manifested in acute rheumatism. The arthritic manifestations commence to subside after three or four days, but pain may remain or recur in one or more joints for three to four weeks. Usually the patient returns to work at the end of a week, and then experiences a recurrence of pain in one or more joints. This is relieved by rest, only to recur again slightly on the exertion of work.



There is usually a herpetic eruption on the arms and legs. The rash appears suddenly, sometimes twenty-four hours before and sometimes almost simultaneously with the arthritic symptoms. Usually no more than a score of these herpetic spots appear, although the rash may extend on to the neck and body. The vesicles generally dry up and disappear in five or six days. In one case there was an erythematous rash with subsequent complete and rapid desquamation. (This patient never felt indisposed, but "was worried about his skin.") In a few cases the rash has closely resembled a measles eruption, but the spots have been comparatively few and distributed on the limbs and chest. The rash is sometimes itchy but more often quite painless.

In regard to general symptoms, in the severer cases there have been nausea, vomiting and general alimentary disturbance. In the milder (usual type) forms there is almost a complete absence of general constitutional disturbance. In fact, the patient complains only of "soreness in the joints." In a few cases in which it has been possible to examine the urine no abnormality was detected. There is usually no rise of temperature. On a conservative estimate there must have been over one hundred (perhaps many more) cases of this disease hereabouts in the last six weeks, yet only an insignificant number of patients have been ill enough to seek hospital treatment. All the practitioners (four in number) in this town have treated a number of patients, and from careful inquiries there is an equal number of affected persons who have considered the thing too slight to consult their doctor. Nevertheless, many individuals have been unable to carry on their employment for periods up to three weeks from this cause.

On May 26th a letter from Dr. A. M. Edwards (Hay) was printed in the same journal, in which he expressed the opinion that the disease was undoubtedly "dengue," as a traveller from Queensland, where dengue was prevalent, arrived in Hay and developed a typical attack of dengue, and the epidemic was traceable from this area in a gradually increasing circle. Dr. Edwards further pointed out that the swelling of the joints was in reality peri-arthritis.

Letters were subsequently written to the nine doctors who were practising in the area, and I am indebted to them for the following additional information:—

*Dr. C. S. Molesworth* (Leeton)—"The patients had a temperature varying from 99 to 103° F. The rash was sometimes like measles, sometimes like papular urticaria, sometimes marked skin irritability was present, sometimes epigastric pain and vomiting. Headache was variable. The smaller joints of the fingers and hands were mostly picked out."

*Dr. J. R. Nimmo* (Narrandera)—"The severity of the pain and general prostration of dengue were entirely lacking. If the disease was dengue all the cases were aberrant or atypical. The patients were not ill enough to be sent to hospital and consequently research into blood counts was not carried out."

*Dr. C. D. Batemen* (Leeton) mentioned ileo-colic symptoms, cramps in the abdomen, rash with general pains (not really severe) and mild pyrexia.

*Dr. A. F. Jolley* (Leeton)—"Most of the cases commenced with intestinal symptoms—vomiting, colic or diarrhoea, a rash like measles—a dry red tongue furred at the edges, temperature sometimes rising to 102°. The joint pains were most marked, the majority suffering from arthritis of the ankle joint. Many complained of intense backache and a few of pains on one side of the face. In two cases the rash developed—(1) on the second day and lasted two days, (2) on the fourth day and lasted about five days. Some patients after the temperature became normal on the fourth or fifth day relapsed."

*Dr. Grenville Waine* (Narrandera)—"The only slight resemblance to dengue was pain in the limbs (nearly all articular) and a rash which varied in the extent of its distribution, mostly on the arms and face. The rash has not the irritability of dengue rash."

"There did not appear to be the typical onset of symptoms followed by a remission and then return of symptoms in a more marked manner."

*Dr. A. M. Edwards* (Hay)—"The patients complained of a shivering attack followed by pain all over the body, in some cases vomiting and diarrhoea, and, in practically all, intense prostration."

"Fever was present, and in two cases went as high as 105 deg. F. Two distinct rashes occurred, one scarlatiniform and the other very closely resembling measles."

"All had a remission of temperature at times up to seven days from the onset and a relapse in two or three days."

*Dr. John Keiran* (Narrandera)—"The joint pains were more particularly confined to the wrists. People in the country were attacked more frequently than people living in the towns."

"The rash was morbilliform or petechial. The morbilliform type predominated and occurred mainly on the face and flexor surfaces of the forearms, with scattered petechiae on the chest and abdomen, and occasionally on the extensor surfaces of the thighs."

"Malaise and anorexia were slight, fever was not marked, and temperatures higher than 101 deg. F. were not recorded. The tongue was slightly coated. Pains and periarticular swellings appeared—a few cases had pains in the back and thighs. Wrists were the joints mostly involved, next in frequency being the ankles."

"Adults formed the majority of cases, and school children were not seriously enough affected for their parents to seek medical aid. Many cases came from large households in which the remaining inmates escaped."

Practically all the doctors reported plagues of either flies or mosquitoes. Many mentioned the persistence of joint pains for some weeks. In answer to a direct question as to whether the disease was dengue or not, five doctors considered it was dengue, and four that it was not. The latter four all resided in one town (Narrandera), and it is interesting to note from their letters that the illness was undoubtedly milder than in other towns where the disease was considered to be dengue.

This disease corresponded closely in its symptoms with dengue, though this disease has not been previously recorded in this area. Practically all the symptoms of dengue have been mentioned by one or other doctor with the exception of leucopenia, and blood counts do not appear to have been undertaken. The main essential difference lies in the mildness of the symptoms and the mode of infection.



From time to time epidemics of diseases in their clinical manifestations resembling dengue fever (6) (9) (10) are reported as occurring in temperate zones, where the possibility of *Aedes argenteus*, the known vector of dengue fever, (2) (5) being the transmitting agent is most unlikely.

In the present epidemic the district where it occurred is approximately 250 miles further south than the lowest southern limit at which *Aedes argenteus* has been found to occur in New South Wales (7). Owing to the extensive irrigation carried out on this area mosquito surveys have been made at various times, and an employee of the Irrigation Commission is continually watching the mosquito problem, yet no examples of *Aedes argenteus* have been taken there. The mosquitoes recorded from this area are *Anopheles (Myzomyia) annulipes* Skuse; *Aedes (Finlaya) notoscriptus* Skuse; *Aedes (Finlaya) alboannulatus* Macquart; *Aedes (Ochlerotatus) theobaldi* Taylor; *Aedes (Ochlerotatus) vittiger* Skuse; *Culex annulirostris* Skuse; *Culex fatigans* Wiedemann; *Mucidus alternans* Westwood.

*Aedes argenteus* is the accepted vector of dengue fever, but it is not the only mosquito capable of spreading the infection, as has been shown by Simmons, St. John and Reynolds (8) in experiments at Manila in 1929, where *Aedes albopictus* also has been proved to be a vector of dengue. The initial and subsequent cases in this epidemic in their severity more resembled dengue than the later cases. When this point is considered, together with the symptoms above recorded, it is difficult to suggest any other diagnosis than that of dengue. In this as well as other epidemics slight variations from typical dengue occur. (4)

Further, the patient from Queensland could have been the source of an outbreak of dengue, and it appears possible that an unusual vector could account for the modification of the severity of the symptoms noted in the later cases of the disease.

I am indebted to Drs. C. D. Bateman, A. M. Edwards, A. F. Jolley, J. B. Keiran, H. O. Lethbridge, C. S. Molesworth, J. R. Nimmo, J. G. Waite, and Eric Woods for their assistance in obtaining the data used for this report.

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 (3) Cleland, J. B., The Practice of Medicine in the Tropics. Byam & Archibald (1923), 2164-2182.  
 (4) Manson-Bahr, P., Manson's Tropical Diseases, 8th Ed. (1925), 125-187.  
 (5) Siler, Hall & Hitchens, Philippine Jnl. Science, vol. 29 (1926), 1-304.  
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 (9) Jorge, R., Bull. Off. Hyg., Int. Pub. XXI (1929), 1531-451. Ext. Rev. App. Entom. XVIII, Ser. B. (1930), 84.  
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#### 4. INFECTION OF MILK BY *BRUCELLA ABORTUS*.

(L. 29/3466; H. 30/60134.)

(E. L. MORGAN.)

During the routine examination of milk for the presence of tubercle bacilli the milk from three dairies was found to be infected by *Brucella abortus*. As has been indicated in the Annual Report for 1923, p. 142, in order to avoid any possibility of missing a tubercular infection of guinea-pigs inoculated with samples of milk it was decided to keep the pigs about ten weeks before killing them, so that an early infection of tuberculosis would not be overlooked.

This time interval also allows infection with *Brucella abortus* to become established.

In the case of the first dairy where the infection was found, *abortus* infection was not at first suspected. Further samples of milk were obtained and the inoculation repeated, and again a similar lesion developed in the inoculated pigs. The lesions in the spleen resemble those of tuberculosis, there being well defined granulomatous foci, composed of epithelioid cells with a few polymorphonuclear leucocytes and giant cells. The typical necrosis of tuberculosis, however, is not present, nor is the local lesion at the site of inoculation, and provided these two facts are borne in mind the lesions of the two diseases should not be confused. Further, in lesions caused by *Brucella abortus* no acid fast bacilli can be found. In the case of this dairy, as the lesion was not recognised, the tuberculin test was applied to the herd, and, although two reacting cows were found, they were not in the herd at the time the milk samples had been obtained, hence further confirmation was had that the lesion was not tubercular.

Subsequently guinea-pigs inoculated with samples of milk from two other dairies developed similar lesions of the spleen. In one case the spleen was enormously enlarged, but still showed no caseation. In addition, however, the uterus showed large inflammatory foci in the fornices, thus affording the key to the nature of the lesion, namely, that it was due to infection by *Brucella abortus*.

An emulsion of the spleen from one of these latter cases was injected into a further guinea-pig, along with a control guinea-pig inoculated with a culture of *Brucella abortus*. The lesions in both guinea-pigs were identical, and on culture from the spleen of the first pig an organism was isolated morphologically, culturally and serologically identical with *Brucella abortus*.

In the *Medical Journal of Australia* of 29th June, 1929, p. 863, there is an article by H. E. Albiston on the occurrence of *Brucella abortus* in market milk in Melbourne. He found that 24.5 per cent. of farms examined were supplying milk infected by *B. abortus*.

During the present investigation the incidence of *abortus* infection was only 1.97 per cent. (three cases 152 samples of dairy milk examined during 1929).



It is possible that a few cases might have been missed, but as the first case occurred at the beginning of 1929, and similar lesions were sought for throughout the year, it is unlikely that any definite infection was overlooked. On reference to the Chief Dairy Inspector I find that some years ago *abortus* infection was very prevalent in Sydney dairy herds, but at present it is at a minimum. Careful inquiry is made by the dairy inspectors into this question, and the figures obtained from the milk investigations are in accord with the known condition of the dairy herds.

The presence of *Brucella abortus* in milk calls attention to the possibility of human infection from this source, and in any cases of long continued or obscure fevers agglutination tests are being carried out.

#### 5.—NEWCASTLE SEWAGE AMPLIFICATION SCHEME.

##### BACTERIOLOGICAL EXAMINATION OF SAMPLES OF SEA WATER FOR SEWAGE POLLUTION, 1929 (30/57885).

(E. L. MORGAN.)

The discharge of raw sewage into the ocean is an effective and convenient method for its disposal, and usually there is no objection to such a procedure. However, in New South Wales during the summer months surf bathing is very popular, and the possibility of bathers contracting disease if the water along the beaches is polluted is frequently brought up for consideration.

At Newcastle, Merewether Beach is a popular bathing resort adjacent to a sewage outfall. The beach is about 2 miles long and runs approximately north-east and south-west. The sewage outfall is on some rocks at the south-west end.

Samples of sea water were taken close to the beach every 200 yards north-east of the outfall.

The bacterial counts on the first seven series of samples submitted varied considerably, so, with subsequent samples notes as to the direction of the wind, the tide, and the state of the sea were obtained.

The specimens were packed in ice and when received were approximately twenty-four hours old. The total number of colonies was estimated by counting agar plates; lactose fermenters were determined by inoculating dilutions of sea water into lactose peptone water tubes, with litmus as an indicator. The results are expressed in the table given below:—

Date.	Wind.	Tide.	Sea.	Distance from Rocks at which Sewage Outfall is Situated Measured along the Beach.											
				200 yards.		400 yards.		600 yards.		800 yards.		1,000 yards.		1,200 yards.	
				Sample 1.		Sample 2.		Sample 3.		Sample 4.		Sample 5.		Sample 6.	
				Lactose fermenters.	Total Colonies.	Lactose fermenters.	Total Colonies.	Lactose fermenters.	Total Colonies.	Lactose fermenters.	Total Colonies.	Lactose fermenters.	Total Colonies.	Lactose fermenters.	Total Colonies.
17-7-29	S.S.W.	Running in.	Very rough.	-0001	85,000	-001	9,600	-001	17,400	-01	9,900	...	...	-001	9,600
18-7-29	S.W.	Rising	Moderate	-0001	105,000	-001	8,800	-01	14,200	-001	15,000	-001	3,000	-01	3,500
23-7-29	S.W.	Low	Smooth	-0001	51,200	-0001	9,400	-001	4,800	-01	2,900	-01	11,200	-001	4,100
25-7-29	S.W.W.	Falling	Calm	-0001	7,200	-01	5,200	-001	4,400	-0001	7,400	-001	4,100	-001	3,900
6-8-29	S.W.	Low	Calm	-0001	23,600	-0001	16,600	-0001	8,800	-001	3,300	-0001	15,000	-0001	13,500
8-8-29	N.E.	Falling	Moderate	-0001	55,200	-01	3,200	-01	1,100	-001	1,000	-01	490	-001	1,700
13-8-29	W.	Rising	Very calm.	-0001	14,800	-0001	17,200	-0001	17,600	-1	300	-1	33,200	-1	48
15-8-29	N.W.	Rising	Calm	-001	4,100	-1	9	-1	36	-1	24	1	4	Nil	Nil
20-8-29	N.	Low	Smooth	-0001	91,000	-1	900	-01	690	-01	720	-01	2,900	-01	350
22-8-29	W.	Low	Calm	-0001	43,250	-0001	7,800	-01	1,400	-0001	3,700	-01	1,800	-001	3,200
27-8-29	N.E.E.	Full	Rough	-0001	62,000	-001	2,400	-01	1,100	-01	208	Nil	18	Nil	4
29-8-29	S.E.	Rising	Moderate	-001	3,100	-01	144	-01	52	5	488	5	6	Nil	6
3-9-29	...	...	...	-0001	4,600	-01	106	-01	268	-01	336	-01	352	-0001	124
5-9-29	...	...	...	-0001	8,600	-0001	170	-01	216	-1	100	-1	15	-1	10
15-9-29	S.E.	High	Very rough.	-01	1,040	-001	1,200	-1	720	1	80	1	20	1	180
17-9-29	W.	Low	Calm	-0001	18,000	-001	500	-001	200	-0001	200	-01	160	-01	140
26-9-29	S.E.	Full	Very rough.	-0001	640	-001	600	-0001	1,740	-001	1,000	-001	720	-0001	2,000
1-10-29	N.	Rising	Moderate	-1	100	-1	40	1	44	1	24	1	46	1	40
7-10-29	N.N.E.	Low	Smooth	-001	1,040	-001	520	-001	110	-1	80	1-0	50	-1	30
15-10-29	S.E.E.	Rising	Rough	-1	400	1	240	-001	2,000	-1	400	1	240	-1	300

\* In May and June, 1929, a series of seven samples were examined, but in the absence of notes re wind, tide and sea, counts on these have not been included. These samples were taken up to a mile from the sewer outfall, and in every instance the counts on the 7th (1,450 yards) and 8th samples (1,700 yards) corresponded with those of the 5th (1,050 yards) and 6th samples (1,200 yards).

The examinations were carried out from May to October, 1929, and though this period does not include the hottest summer months it is probable that the number of bacteria in summer would be greater than in winter.

The counts show definite evidence of sewage pollution at the sewer outfall and along the beach as far as the examinations extended. The pollution is most pronounced with southerly winds, and there is apparently little or no effect from the tide or state of the sea.

It will be noticed that in one or two cases the direction of the wind is not such as would be expected from the count, but in the absence of definite information as to how long the wind has blown in the direction indicated this aspect cannot be further discussed.

In view of the bacteriological findings it is proposed to institute proper screening of the sewage; and, if that is not sufficient, chlorination of the effluent will be considered.

[1 photo.; 16 graphs.]





