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

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

REPORT

OF THE

DIRECTOR-GENERAL OF PUBLIC HEALTH

NEW SOUTH WALES,

FOR THE YEAR 1934.

PRESENTED BY THE MINISTER FOR PUBLIC HEALTH
(THE HON. HERBERT PATON FITZSIMONS, M.L.A.)

Ordered by the Legislative Assembly to be printed, 3 *March*, 1936.

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

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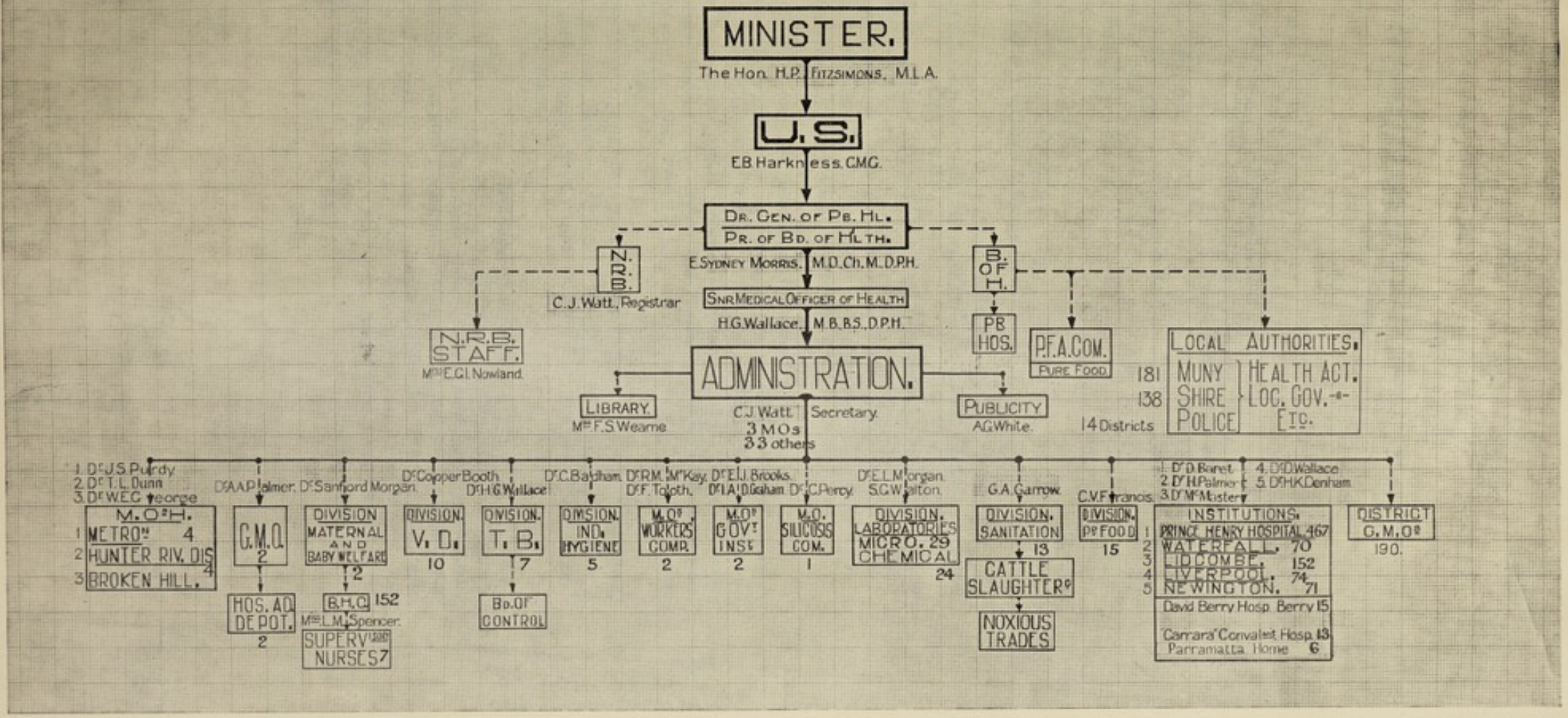
HEALTH DEPARTMENT.

OFFICE OF THE DIRECTOR GENERAL OF PUBLIC HEALTH.



Office of the Director-General of Public Health, 93 Macquarie-street, Sydney.

Members of the State Board of Health, 1934—

Robert Dick, M.B., Ch.M., D.P.H. (President). (*Retired*, 15–10–1934).
E. Sydney Morris, M.D., Ch.M., D.P.H. (President from 15–10–1934).
Cecil Purser, M.B., Ch.M. ... ... Member, Board of Health.
R. M. Clark (President, Chamber of Commerce) ... ... do do
William George Armstrong, M.B., D.P.H. ... ... do do
The Hon. Frank Edgar Wall, M.D., M.L.C. ... ... do do
B. G. Littler, Esq. ... ... do do
Mrs. Euphemia Jean Maincke ... ... do do
Mrs. Emma Linda Palmer Littlejohn ... ... do do
Sir Alfred Parker (Lord Mayor of Sydney) ... ... do do

Administrative Staff.

Director-General of Public Health and Commissioner for Venereal Diseases: E. Sydney Morris, M.D., Ch.M., D.P.H.

Senior Medical Officer of Health and Director of Tuberculosis: Hugh Gilmour Wallace, M.B., B.S., D.P.H.

Director of Maternal and Baby Welfare: Elma Sandford Morgan, M.B., Ch.M.

Assistant Medical Officer of Health: Bruce Robson Overend, M.B., Ch.M., D.P.H.

Secretary: James J. Potter (*Died*, 31–12–1934).

Divisions and Branches.

The following Divisions are controlled by the Director-General of Public Health:—Maternal and Baby Welfare; Tuberculosis; Venereal Diseases; Industrial Hygiene; Government Medical Officers for Sydney; Medical Officers of Health, Metropolitan, Newcastle and Broken Hill Districts; Microbiological Laboratories, Sydney and Broken Hill; Chemical Laboratory; Pure Food; Cattle Slaughtering; Sanitation; Publicity, etc.

The Hospital Division comprises The Prince Henry Hospital, the David Berry Hospital, five State Hospitals and Homes, Waterfall Sanatorium (Tuberculosis), Lady Edeline Babies Hospital (closed November, 1934), Strickland Convalescent Hospital, and the Leper Lazaret.

Legislative Enactments.

The Minister for Health is charged with the administration of the following Acts, execution of which is left to the Director-General of Public Health and the staff working under his control:—Cattle Slaughtering and Diseased Animals and Meat Acts, 1902–1932; Food Preservation by Sulphur Dioxide Enabling Act, 1920; Noxious Trades Act, 1902; Private Hospitals Act, 1908; Public Health Acts, 1902–1932; Pure Food Act, 1908; Wine Adulteration Act, 1902. Burials in closed cemeteries and the exhumation of bodies for the purpose of re-interment, etc., are also dealt with.

CONTENTS.

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 1934.

Dr. Robert Dick, who had held the position of Director-General of Public Health and Commissioner under the Venereal Diseases Act from 1st June, 1924, attained the statutory retiring age on 15th October, 1934, and I was appointed as his successor from that date.

Dr. Dick was one of the two first whole time medical officers of health appointed under the State's first Public Health Act in April, 1898, and held the post of Medical Officer of Health for the Hunter River Combined Sanitary District until he was appointed Senior Medical Officer of Health and subsequently Director-General of Public Health in 1924. Dr. Dick rendered distinguished service to the State in the development of public health work during his long period of continuous service. He also served continuously in France during the period of the Great War.

Consequent upon my appointment to the post of Director-General of Public Health, Dr. Hugh Gilmour Wallace, who had held the appointment of Medical Officer of Health for the Hunter River District from 14th April, 1924, was appointed to the vacant position of Senior Medical Officer of Health for the State.

Vital Statistics, 1934.—Apart from epidemics of diphtheria and whooping cough the health of the State throughout the year was generally satisfactory, as will be seen from the Extract from the Government Statistician's Report on the Vital Statistics for the year on page 8. The population at 31st December, 1934, was 2,636,460, an increase of 22,684 over 1933. Of this number, 19,861 was due to the excess of births over deaths, and 2,823 to the excess of arrivals over departures. The birth rate was equivalent to 16·52 per 1,000 of population and the death rate to 8·95 per 1,000 of population.

There were 2,009 deaths of children under one year of age, equivalent to a rate of 46·36 per 1,000 births; the increase in the infantile death rate was due mainly to a very severe epidemic of whooping cough which caused the deaths of 171 children under the age of one year.

Health Legislation during 1934.—Apart from a few minor alterations to existing regulations and ordinances for the purpose of simplifying procedure, etc., no legislation directly affecting public health was passed in 1934. An amended Public Health Act is greatly needed, and examination is now being made of all recent public health legislation passed by other States and elsewhere with a view to the preparation and introduction at the earliest opportunity of a comprehensive measure to consolidate the existing health legislation and to furnish the department with means for protection of and promotion of health in various directions in which its powers at present are either inadequate or entirely lacking, as for instance, in connection with the framing of safety regulations for control over fumigation with cyanide, and other dangerous or hazardous precedures.

A draft Bill has been submitted for the amendment and consolidation of the Pure Food Laws, including provisions for the suppression of false and misleading advertisements for various " cures " and other forms of quackery and misrepresentations.

Amendments to the Cattle Slaughtering and Diseased Animals and Meat Act have been drafted and submitted for presentation to Parliament; and amendments to the Private Hospitals Act have also been drafted.

Maternal and Baby Welfare Division.—It is pleasing to record improved attendances at the ten ante-natal clinics established by the Department. At Newtown, the first established and largest clinic, there were over 1,000 attendances in 1934, and the average individual attendances of expectant mothers increased from 2·5 to 4; a greater number of patients are also attending for post-natal examination.

During the year, 24 new Baby Health Centres were opened, of which 22 were in country districts, and 2 in the metropolitan area. There were over 544,000 attendances in 1934 at the 130 centres now in operation.

A Baby Welfare Film has been locally produced, which stresses particularly the importance of ante-natal care; this automatically screened film is being shown in turn in all the centres.

Instruction in mothercraft was given in 27 metropolitan and 21 country domestic science schools; there was an attendance of over 2,300 girls at the metropolitan classes.

Publicity booklets issued during the year comprised " Health Week " with a separate edition issued by the Country Women's Association; " Safety and Health " in conjunction with the Safety League; and a third edition of " Our Babies," the instructional booklet used by the Maternal and Baby Welfare Division.

An innovation in local publicity was a poster competition. The entries (of which there were over a hundred) were displayed in Farmer's Blaxland Galleries, and attracted considerable attention. About £50 was distributed in prizes, and a dozen good designs, which are now being printed, were secured.

Maternal Mortality—Investigation of 1,073 *Puerperal Deaths.*—The special report on the investigation of 1,073 puerperal deaths (pages 35 to 78) will, it is hoped, prove of interest to all concerned with the problems of maternal welfare. In it will be found much information relating to the causes of maternal mortality in this State over a period of five years.

No assessment of blame or responsibility has been attempted, but the actual facts are stated impartially.

Those facts were obtained only with great difficulty and by persistent effort, especially in the case of maternal deaths in widely scattered country districts.

The tabulation of the data and the compilation of the report could only be carried out under pressure as time and opportunity permitted in the course of other active official duties.

These circumstances are mentioned in extenuation of any shortcomings in the presentation of the report which it is hoped may, nevertheless, prove of some utility.

Issue of Booklet on Food and Nutrition.—A special booklet dealing with food and nutrition was published, at the direction of the Minister for Health, for the information of the general public. It explains in language, devoid as far as possible of technical terms, the fundamental principles of nutrition. The actual food requirements of the body are described simply, the various classes of foodstuffs briefly considered, and the method shown for compiling a suitable balanced dietary at a reasonable cost.

Such information is eagerly sought by the public, and it is essential, in the interests of public health, that it should be provided.

It is gratifying to know that the booklet is appreciated by teachers of domestic science, many of whom have been supplied with sufficient copies for each of their pupils.

There is probably no human requirement which is more subject to psychological factors than practical dietetics. Appetite is not only a question of bodily needs, but also a response to mental attitudes. Prejudices, theories, fads, fallacies and mystical conceptions may all play a part in establishing dietary habits. The constant propaganda by commercial interests in the press, over the air, and through every other available channel has an influence on the diet of the nation which is not always beneficial. Too often the public is stampeded into a fashion to consume large quantities of alleged concentrated vitamin preparations which are not required by the body, and whose cost is out of all proportion to any merit possessed by the commodity.

It is one thing to start a craze, whether for vitamins or against deficiency diseases; it is quite another problem to educate the public with accurate knowledge without emotional appeal.

Too many individuals are prone to become food cranks, swayed by phobias of some dread disease which may result from the breaking of a rule or the lack of meticulous care in regard to every dietetic detail.

Sweet reasonableness and common sense are, perhaps, greater assets in connection with food and nutrition than with most other subjects.

Bacteriological and Chemical Supervision of the Milk Supply.—Systematic examinations for the Milk Board were carried out throughout 1934, at Sydney, and intermittently at Newcastle; 304 milk samples were examined to ascertain the number of bacteria present; and 241 samples of mixed milks from suburban dairies for detection of tubercle bacilli by guinea-pig inoculation; five of these samples were found to contain tubercle bacilli. This is a much higher percentage of infection than has been found during any previous investigation of the Sydney milk supply.

Between July and December, 104 samples of mixed dairy milk were also examined for *Brucella abortus*, Bang, and this organism was recovered from fifteen samples.

In the Chemical Laboratory 22,366 milk samples were examined; of these 18,061 were submitted from metropolitan and country districts by inspectors authorised under the Pure Food Act, and 4,305 samples were received from officers of the Milk Board. 376 of the samples (1·68 per cent.) were found to be adulterated.

Milk Survey.—In the report of the Government Analyst (p. 20) details are given of an investigation initially undertaken to determine the freezing point of genuine milk. The survey was begun in July, 1933, and was continued during every month until October, 1934; it therefore covers all seasons of the year. The opportunity was taken to record at the same time the solids-not-fat of all samples, morning and evening milkings; milk-fat solids; and the breeds and number of cattle from which the bulk samples were collected.

Condensed Milk.—It was found necessary to seize and destroy 136,368 tins of locally prepared condensed milk. This milk was found to have deteriorated, and to be unfit for human consumption.

Dusting of Fresh Meat with Preservatives.—Use of preservative dusting powders on fresh meat has been continued by a number of butchers despite departmental activity for its suppression. Heavier penalties were pressed for in 1934, and the fines and costs imposed amounted to £1,182. In all 6,341 samples were examined, of which 851 contained preservative.

Sale of Raw Meat in Department Stores.—This subject, to which attention has been previously directed is still a matter of contention. Several conferences of the parties concerned were held at the Director-General's Office in an endeavour to arrive at a workable agreement, but did not meet with success. More recently the Master Butchers' Association prosecuted certain of the large " department stores " for selling meat on premises not exclusively used as butchers' shops, and a " department stores " representative prosecuted the licensee of a model up-to-date butcher's shop for selling food other than meat.

The changed conditions of trade have produced numerous difficulties and it is a problem to find a solution which, whilst satisfactory from the public health view point, will be equitable to all interests concerned.

To depart from the prescribed standard for a butcher's shop would be a retrogressive step though it is difficult, under the altered circumstances, to classify a section of a departmental store as a butcher's shop merely because joints of meat, etc., cut up elsewhere, are sold therein.

It appears to be inevitable in order to retain the present satisfactory standard for a butcher's shop—a standard arrived at as the result of many years experience—that all premises wherein butcher's meat is sold, should conform to the standard prescribed by the Pure Food Regulations.

Suppression of Practice of locally relabelling Inferior Grades of Imported Tinned Salmon.—The arrangement made between the Commonwealth Customs authorities and the Canadian Government for the code branding of containers in accordance with the grade of salmon each contained appears to have been successful in preventing the former unscrupulous practice of locally relabelling inferior grades with choice grade names.

Jam Adulterated with Apple Pulp.—Lengthy, but successful, litigation took place in connection with jam manufactured in another State, not labelled in accordance with the New South Wales Pure Food regulations. Following the prosecutions all the jam was either returned to the place of manufacture or relabelled with the words " and apple jam " following the name of the fruit already on the label.

Flour Accelerators.—In 1929-30 some fifty cases of dermatitis were investigated by the Industrial Hygiene Branch, and found to be due to the use of ammonium persulphate as an accelerator in flour; and bread manufacturers agreed to discontinue its use.

No further cases of dermatitis in dough-makers were met with until late in 1933 and 1934, when further affected persons were seen by the Industrial Hygiene Officers. A number of samples of flour, collected and analysed, were found to contain persulphate, and action was taken to forbid its use.

Use of Arsenical Sprays for Control of Insect Pests on Fruits and Vegetables.—Presence of arsenious oxide on fruits and vegetables sprayed too close to maturity has necessitated action in some cases for their seizure and destruction. The permitted maximum of arsenious oxide is 1/100 grain per lb. Cabbages and cauliflowers, particularly the outer leaves, are prone to be most heavily contaminated; and removal of these before marketing would tend largely to reduce the lead arsenate content. The present permitted maximum does not appear to be effective in controlling insect pests, and search for a more effective spray is being made by the Department of Agriculture.

Infectious Diseases.

Diphtheria was present in epidemic form from the end of December, 1933, until September, 1934. The notifications for 1934 totalled 6,311 compared with 3,935 in 1933.

In March it was decided that immunisation should be recommenced, and Dr. H. G. Wallace, Senior Medical Officer of Health, visited Brisbane to obtain details of the technique in use there and to observe the results obtained. At the end of June a public clinic was opened at the Department on two mornings a week; the response has been somewhat disappointing.

The following table shows the incidence and mortality of diphtheria in New South Wales since the disease first became notifiable in 1898 :—

Year.	Population.	Cases Notified.	Deaths.	Mortality per 100 Cases.	Incidence per 100,000 Population.	Death Rate per 100,000 Population.
1898	1,323,130	1,493	169	11·3	112	12·7
1899	1,344,080	741	60	8·1	55	4·4
1900	1,364,590	726	63	8·6	53	4·6
1901	1,376,199	922	131	14·2	67	9·5
1902	1,397,858	757	74	9·7	54	5·3
1903	1,416,879	1,214	134	11·0	86	9·4
1904	1,440,919	1,584	156	9·8	109	10·8
1905	1,469,153	1,118	102	9·1	76	6·9
1906	1,498,609	1,219	100	8·2	81	6·6
1907	1,531,980	1,376	133	9·6	89	8·0
1908	1,560,026	2,001	123	6·0	128	7·8
1909	1,596,685	2,419	166	6·8	151	10·4
1910	1,638,220	4,989	207	4·1	304	12·8
1911	1,698,735	4,784	226	4·7	281	13·3
1912	1,778,962	5,440	253	4·6	305	14·2
1913	1,832,546	6,380	310	4·9	349	16·4
1914	1,862,028	5,831	247	4·2	313	13·2
1915	1,868,644	5,838	264	4·5	312	14·1
1916	1,846,736	6,588	309	4·6	356	16·7
1917	1,886,701	5,805	247	4·2	307	13·1
1918	1,928,174	5,151	221	4·2	267	11·4
1919	2,000,173	2,826	114	4·0	141	5·6
1920	2,099,763	5,043	263	5·2	240	12·5
1921	2,128,786	6,854	306	4·4	321	14·3
1922	2,174,688	4,904	207	4·2	225	9·5
1923	2,211,106	3,480	176	5·0	157	7·9
1924	2,256,649	4,364	222	5·0	193	9·8
1925	2,300,081	3,004	118	3·9	136	5·1
1926	2,349,401	3,579	147	4·1	152	6·2
1927	2,401,884	4,059	179	4·4	168	7·4
1928	2,446,874	3,835	168	4·3	156	6·9
1929	2,479,147	4,274	215	5·0	172	8·7
1930	2,502,039	4,051	176	4·3	161	7·0
1931	2,519,300	4,432	168	3·8	175	6·6
1932	2,542,034	4,310	160	3·7	169	6·2
1933	2,613,776	3,912	169	4·3	149	6·4
1934	2,636,460	6,311	193	3·0	239	7·3

It will be seen from the table given above that the incidence of diphtheria remained comparatively low during the first few years and thereafter rapidly rose to its greatest incidence in 1916, since when it has remained at a higher level, with fluctuations from year to year. The fatality rate fell between 1898 and 1910 but has remained approximately at the same level since then, with minor fluctuations. The early fall was probably due to the increasing use of anti-toxin, and the slight tendency for a further fall in recent years is probably due to the administration of larger doses of anti-toxin.

It has been said that Australia has the highest incidence rate for diphtheria of any country in the world, and according to the numbers of cases notified it appears that this is so. At the same time it must be remembered that it has one of the lowest case mortality rates in the world. The reason for this, it is suggested, is twofold. First, it is probable that many cases notified as diphtheria are not diphtheria at all. The doctor finds a case of suspicious sore throat, and without waiting for the results of throat swabbings, gives anti-toxin on the "safety-first" principle and notifies the case as one of diphtheria. This affords one explanation of the low mortality figures. The second reason is that it has become customary to give larger doses of anti-toxin than formerly, probably larger doses than are given in most other countries, and to give it early. This would also account in part for the comparatively low mortality figures.

Nevertheless the incidence rate is higher than it was thirty years ago, and the death rate shows that the number of deaths from diphtheria per million of population has not decreased, that is to say, the danger of contracting a fatal attack of diphtheria is if anything a little higher than it was at the beginning of the century.

The cost of diphtheria to the community, owing to the increased incidence, is greater than formerly. Inquiries made by this department show that the average cost of treatment is a little over £6 per patient, and in some cases it is much higher. During the past ten years the cost of treatment has been between £25,000 to £30,000 per annum, in addition to the incalculable loss due to the deaths.

Diphtheria is a preventible disease. Experience in other countries has shown that by the use of anatoxin as an immunizing agent up to 95 per cent. of susceptible children can be rendered immune, and that where at least half the children of school age, together with one-third of those under school age, are immunized a definite reduction in the incidence of diphtheria and in the mortality rates can be confidently anticipated. The cost of material for immunization is in the vicinity of one shilling and sixpence per head. That is to say, the cost of treating one case of diphtheria would provide material for immunizing from eighty to one hundred children. In other words, the amount now being spent annually on the treatment of diphtheria in New South Wales would provide material for permanently protecting 350,000 children against the disease.

Hitherto, immunization campaigns in this State have been conducted by the Councils as local health authorities, with some assistance from this department. It is felt, however, that to make any adequate reduction in the incidence of diphtheria, a State-wide campaign should be conducted by the central health authorities. This would involve the appointment of at least two medical officers to be specially instructed in this work and who would devote their whole time to it. By such means the annually recurring cost of treating diphtheria could be progressively reduced, and the ultimate objective of stamping out diphtheria could be brought within the range of practical achievement.

Immunization against diphtheria has been widely used in other parts of the world during the past twenty years. In some European countries it is at present compulsory. The method has been proved to be both effective and harmless when used with proper precautions, and it appears that the time is ripe for its scientific application in this State.

Typhoid Fever.—1934 was fortunately free of any serious epidemic of this disease and notifications were lower by 45 than in any previous year; 49 of the 143 cases were notified from the metropolitan area (population 1,319,850); 50 cases were distributed among 108 country municipalities (population approximately 400,000); the highest incidence being 10 cases at Broken Hill (population 27,000), and 5 cases at Hay (population 3,200); 22 cases were notified among 132 country shires (population approximately 670,000); and 18 cases from the Hunter River Sanitary District (population approximately 211,000).

The great reduction during the past quarter of a century in the incidence of typhoid fever is an indication of the marked improvement in general sanitation in the community. In 1910 there were 165 cases of typhoid fever notified for each 100,000 of the population. In 1934 only 5 cases per 100,000 population were notified. The reduction is not confined to the metropolitan area where extensive sewerage facilities have helped to bring about improvement. The country districts throughout the State also show a corresponding improvement which is due, in great measure, to the development of a communal conscience which is intolerant of lack of sanitation. This progress is an indication of the persistent efforts made in the interests of public health.

Hospital authorities are circularised every two years and advised that all hospital personnel should receive protection with T.A.B. vaccine, which is supplied free of charge by the department.

Poliomyelitis.—An epidemic of infantile paralysis which began in October, 1934, continued until May, 1935, during which period 247 cases were notified. The highest incidence was in the months of November (33 cases), December (32), January (46), February (43) March (40) and April (29). Practically the whole of the first hundred cases were notified from the metropolitan area; but from the middle of January cases were notified from widely separated country centres. Fortunately the epidemic was comparatively mild, with a mortality rate of about five per cent., and there have been only a few patients who are not expected ultimately to recover satisfactorily.

It is hoped that time will permit of preparation for the 1935 Report of a detailed analysis of the epidemics of 1931–32 (463 cases and 63 deaths) and of the present epidemic. In respect of the present epidemic the New South Wales Infantile Paralysis Committee in its report for 1934–35 states that "The results of this epidemic have been such that the Committee considers an advance has been made in the treatment of this condition, mainly due to earlier diagnosis and more scientific treatment . . . there have been a great number of total recoveries and fewer patients have suffered the severe crippling that has been associated in the past with infantile paralysis."

Typhus Fever.—During 1934 six cases of endemic typhus fever were notified, of which two were in the Metropolitan area, and four in the North Coast district. Of the fifteen cases reported from 1928 to 1934 inclusive, seven were resident in the North Coast area, where there appears to be an endemic centre.

Hookworm Prevention Campaign.—In August and September a Departmental Nurse Inspector visited Murwillumbah Municipality and Tweed Shire. Lectures were given at some fifty schools, and literature distributed. Supplies of containers were left at each school, and arrangements made for specimens of faeces collected to be sent to the Commonwealth Laboratory at Lismore for examination for hookworm infection. Six Aborigines' Settlements were visited, and containers left at the huts with instructions for the specimens collected to be sent to Lismore for examination.

In all, 2,173 specimens were examined in the Commonwealth Laboratory at Lismore, of which 104, or 4·7 per cent., showed hookworm infection. Of the specimens, 217 were from the residents of the six Aborigines' camps, 88 (40·5 per cent.) of which were infected with hookworm. In the other 1,956 specimens 16 only (0·8 per cent.) were infected.

Hookworm in this North Coast area was thus over fifty times more prevalent at the Aborigines' stations than among the general population, and practically every one of the 217 aborigines was infected with some form of intestinal parasite.

The attention of the Aborigines Protection Board was specially directed to the result of the examinations, and to the need for urgent remedial measures.

In all other cases recommendations as to the action necessary were forwarded through the school authorities.

Anthrax-infected Imported Hair.—An investigation made in connection with an anthrax case at Tamworth at the end of 1933, resulted in the finding of large stocks of infected shaving brushes made in New South Wales from imported (imitation badger) hair. A second case of anthrax was reported from one of the large metropolitan hospitals, the shaving brush used being similar in type to that submitted from the Tamworth case. In connection with inquiry into the source of infection of the above patients, 2,170 shaving brushes, all of which were believed to have been made from the same consignment of hair, were seized and burned.

At a conference of officers of the Commonwealth and State Health Departments, and the Brush Manufacturers, arrangements were made for all future consignments of imported hair to be disinfected under Federal supervision, irrespective of any overseas certificates of sterility which might be furnished.

Fatalities following Fumigation by Hydrocyanic Acid Gas.—Up to the end of 1934 ten fatal cases of poisoning by hydrocyanic acid gas had been recorded in New South Wales. Four of these occurred in connection with fumigation of ships, the remainder following fumigation of dwellings. The danger arising from the use of poisonous substances for fumigating purposes has already been recognised, and draft regulations under the Public Health Act were framed with a view to instituting methods of control. It was found, however, that the existing Public Health Acts did not confer the power to make such regulations, and that an amendment of the Principal Act would be required.

At present any person calling himself a fumigator may apparently obtain cyanide from the suppliers and may or may not employ adequate precautions in its use. It has been suggested that every person using cyanide or other dangerous substances for fumigating purposes should be licensed, and that the license should be issued only after the applicant has given satisfactory proof of his practical and theoretical knowledge of the methods of fumigation and the dangers associated therewith.

Until some adequate method of control is instituted there will remain an element of risk to the public from the use of dangerous fumigants by ignorant or unskilful persons, and a suitable amendment of the Public Health Act is a matter of urgent necessity.

Prince Henry (formerly Coast) Hospital.

To commemorate the visit of His Royal Highness The Duke of Gloucester to this State in 1934 the Coast Hospital was renamed The Prince Henry Hospital.

Very marked improvements to the buildings were made throughout 1934. Rebuilding of this hospital was begun during the Great War*, but for various reasons the work had to be discontinued for several years. Consequent upon the urgent need for additional hospital beds, money has been made available during the past year to carry out the remodelling of the hospital, and to expand its capacity to over 1,000 beds. It is anticipated that the whole of the rebuilding will be completed by the end of 1936, when this splendid hospital should have a capacity of 1,080 beds in the following classifications :—

Medical Section—Three blocks containing 484 beds.

Surgical Section—Six wards containing 300 beds.

Infectious Section—Four blocks containing 300 beds.

* The foundation stone of the first unit of the new hospital was laid on 7th November, 1914, by the then Premier (the late Hon. W. A. Holman) and three wards each designed to hold 42 beds were constructed and opened early in 1917.

The building programme includes provision of adequate accommodation for the Nursing Staff; as well as an adequate out-patients department; a dispensary, and an administrative block. For public convenience these last three sections will be erected near the main entrance gates to the hospital.

In 1934, 9,833 patients received treatment (males 4,299, females 5,534) of whom 6,382 were discharged as cured. The average daily number of occupied beds was 684.

A detailed report by the Medical Superintendent will be found on p. 132.

Division of Industrial Hygiene.

Dust Diseases of the Lungs.—The investigational work on the lungs of miners who died from dust diseases, begun some years ago, is nearing completion, and it is anticipated that a monograph on the subject will shortly be issued.

The dusting experiments on guinea pigs with Sydney sandstone alone and with quartz free from sericite, is proceeding, and the results are being carefully recorded for publication as soon as sufficient data are available.

Lead Poisoning.—Eighty-three persons were examined for lead poisoning in 1934, of whom 28 were determined as suffering from lead poisoning with disability; and 55 to be either not so suffering or to be without disability. The occupations of the 83 persons examined are shown in table 1, p. 115.

Arsenical Poisoning.—In this section of the report the dangers of handling arsenic ore are discussed, and in view of the increased use of arsenic in agricultural and stock work generally attention is directed to the danger that exists in handling the concentrated solutions of arsenic that are now commonly used for pest sprays and for dipping stock, etc. The symptoms of arsenic poisoning are described, and directions are given for the preparation of two mixtures (p. 118) which it is strongly urged should be kept in readiness as antidotes for use wherever men are engaged working with arsenic.

Possibility of Infection by Tetanus in Sorting Dead Wool.—Attention is directed on p. 117 to six cases of illness connected with one establishment. The cases occurred over a period of seven years, and were either diagnosed as tetanus, or an examination of the clinical and pathological notes left little doubt as to the illness being tetanus. Recommendations have been drawn up for prevention of tetanus among persons engaged in sorting dead wool.

Venereal Diseases Clinics.

The important seaport of Newcastle has at last been provided with an up-to-date venereal diseases clinic in the new out-patient's department of the Newcastle General Hospital. The clinic, which has been in operation since June, 1934, is open daily for both men and women patients.

At the department's continuous male clinic in Sydney 2,403 patients were registered in 1934; of these 1,297 (53·97 per cent.) were found to be suffering from venereal disease; and 1,106 (46·03 per cent.) were non-venereal cases. Of the total cases of venereal disease (4,721) notified in New South Wales in 1934, 27·5 per cent. were treated at this clinic.

The report of this Division contains a paper by Dr. Abbott on gonococcal infection in the male in which the data concerning 539 cases attending at the departmental clinic have been carefully analysed (p. 105).

Tuberculosis Division.

Familial Transmission of Pulmonary Tuberculosis.—An investigation likely to prove of interest was begun by the Tuberculosis Division during the year. In the first instance it was arranged that four members of the staff should question very carefully the first fifty consecutive, unselected, tubercular patients with whom they came in contact. In this first series 232 patients were questioned, of whom 22 had no knowledge of their family history. Excluding these 22 persons, analysis of the information obtained from the remaining 210 tubercular patients yielded the following results:—

86 or 40·95 per cent. had a definite family history of tuberculosis.

54 or 25·71 per cent. had a definite family history of chest complaints.

70 or 33·35 per cent. gave a verbal history of no family chest complaints.

As two-thirds of the series questioned furnished a definite or suspicious history of tuberculosis, it was decided that a "genealogical" case record should be kept of all patients examined by officers of the Tuberculosis Division, for the purpose of accumulating data for further investigation.

During the year an informal arrangement was entered into with the Education Commission of the Repatriation Department so that strict supervision of children of tuberculous soldiers might be effected. This arrangement is proving very satisfactory and should be of great advantage from the preventive viewpoint.

A somewhat similar co-ordination has been effected with the Silicosis Commission which is resulting in the supervision of dependants of any person who is suffering from silicosis complicated by tuberculosis.

The enlargement of the Prince Henry Auxiliary (Randwick) by thirty female beds, making a total of 120 beds for advanced cases of tuberculosis, has been a great boon by providing accommodation for this class of patient and by allowing a more satisfactory classification of patients in other institutions. The demand for such beds still remains unsatisfied.

The Queen Victoria Homes for Consumptives have inaugurated a very desirable dental service for patients who propose to enter any of the institutions under the control of that organisation.

Anti-tuberculosis Dispensary, Newcastle.—This dispensary was first established in 1915 under the supervision of a local committee, and with its own secretary and medical officer. It was not under the control of the local branch of the Health Department, but the nurse-inspector attached to that office attended at the Dispensary on two days a week to assist the medical officer-in-charge; she also visited patients and contacts of notified cases where the notifying doctor desired that this should be done. In 1933 the Dispensary was established as part of the Out-patient's section of the Newcastle General Hospital, and it is now co-ordinated with the work of the Tuberculosis Division of this Department on the same lines as other anti-tuberculosis dispensaries.

Sanitation.

Household Refuse and Garbage Disposal in the Metropolitan Area.—Very considerable press publicity has been given to this subject during 1933–1934 in connection with organised agitations against alleged nuisance from incinerators in operation, or against erection of incinerators on selected sites. The City Council's destructors have been for many years located at Moore Park, but successful action was recently taken to prevent erection of a more modern type of incinerator there, and it is being constructed at Pyrmont.

Complaints against the incinerator in the Woollahra Municipality were so persistent that the Local Government Department held an enquiry; although thirty-two witnesses gave evidence for the complainants, the department decided that no objectionable nuisance existed.

Successful action having been taken to prevent the Mosman Council erecting an incinerator near the foreshores of Middle Harbour, it purchased land for the purpose in the Warringah Shire, near the border of the Manly Municipality. Access to this site can only be obtained through the Manly Municipality. after traversing the Spit Bridge; and strong local opposition is being organised against erection of the destructor.

An incinerator of an up-to-date type has recently been erected in the Willoughby Municipality with which is combined a sanitary depot. Power generated by the incinerator is utilised for a mechanical device which empties the contents of the sanitary pans into the sewer, and cleanses the pans by steam. The method is working satisfactorily.

Action is being taken by the Leichhardt Council for erection of an up-to-date destructor for that municipality.

Industrial Wastes.—Investigations have been made by departmental officers during the year for effective methods of disposal of wastes from canning factories, and an experimental plant has been designed by officers attached to the Chief Sanitary Inspector's branch.

Similar investigations are in progress for dealing with wastes from woolscours.

Death of Secretary—James Julius Potter.

I have to record with very deep regret the death on 31st December, 1934, of Mr. James Julius Potter, the department's much esteemed and valued secretary.

Mr. Potter had been continuously associated with the Board of Health for a period of 47 years, having joined the staff five years after the Board was constituted in 1882. He became Secretary in February, 1933, and had acted in that position on numerous occasions previously. He was one of the last surviving links with the early days of public health administration in New South Wales.

He was a loyal and zealous servant of the State, gave himself unsparingly to his work, and carried out his duties faithfully and well. He was always ready and willing to assist in every way he could, and by his quiet and courteous manner he gained the respect of all with whom he came into contact.

Owing to his unique experience, sound administrative capacity and judgment, and undoubted general ability, the loss of his services will be greatly felt in the public health administration of the State.

E. SYDNEY MORRIS,
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 1934.

Population.—The population at the end of 1934 was 2,636,460, of whom 1,335,380 were males and 1,301,080 females, the proportion being 103 males to 100 females. During the year the population increased by 22,684, or 0·87 per cent., of which 19,861 was due to the excess of births over deaths, and 2,823 to the excess of arrivals over departures. The mean population was 2,623,817.

Births.—The total number of births was 43,335, equivalent to 16·52 per 1,000 of population, which is 12·7 per cent. below the average rate of the previous five years. Of this number, 22,104 were males and 21,231 females, the proportion being 104 males to 100 females.

Dividing the State into the Metropolis and Remainder of the State, there were 16,538 births in the former and 26,797 in the latter, corresponding to rates of 13·30 and 19·41 respectively.

Deaths.—The deaths during the year numbered 23,474, equivalent to a rate of 8·95 per 1,000 of the population. This rate is 3·11 per cent. above the average of the previous five years.

The total includes 13,173 males and 10,301 females, equivalent to rates of 9·91 and 7·96 respectively per 1,000 of population. The rate in the metropolis was 9·53 per 1,000, and in the remainder of the State 8·42.

Of the 23,474 people who died during the year, 2,777 were under 5 years of age, 10,141 were aged from 5 to 64, and 10,552 were 65 and over; the ages of 4 were not stated. The rates per 1,000 living in the main groups under and over 5 years were 12·24 and 8·63 respectively, as compared with 12·66 and 8·25, the average of the previous five years.

Infantile Mortality.—The number of children under 1 year of age who died was 2,009, equal to 46·36 per 1,000 births. To this total, the metropolis contributed 731, or 44·20 per 1,000 births, and the remainder of the State 1,278, or 47·69 per 1,000 births. The rate for 1934 is 0·34 per cent. below the average of the previous five years. Of the deaths under 1 year of age, 1,041, or 51·82 per cent. occurred under 1 week; 1,263, or 62·87 per cent. under 1 month; and 1,477, or 73·51 per cent. under 3 months.

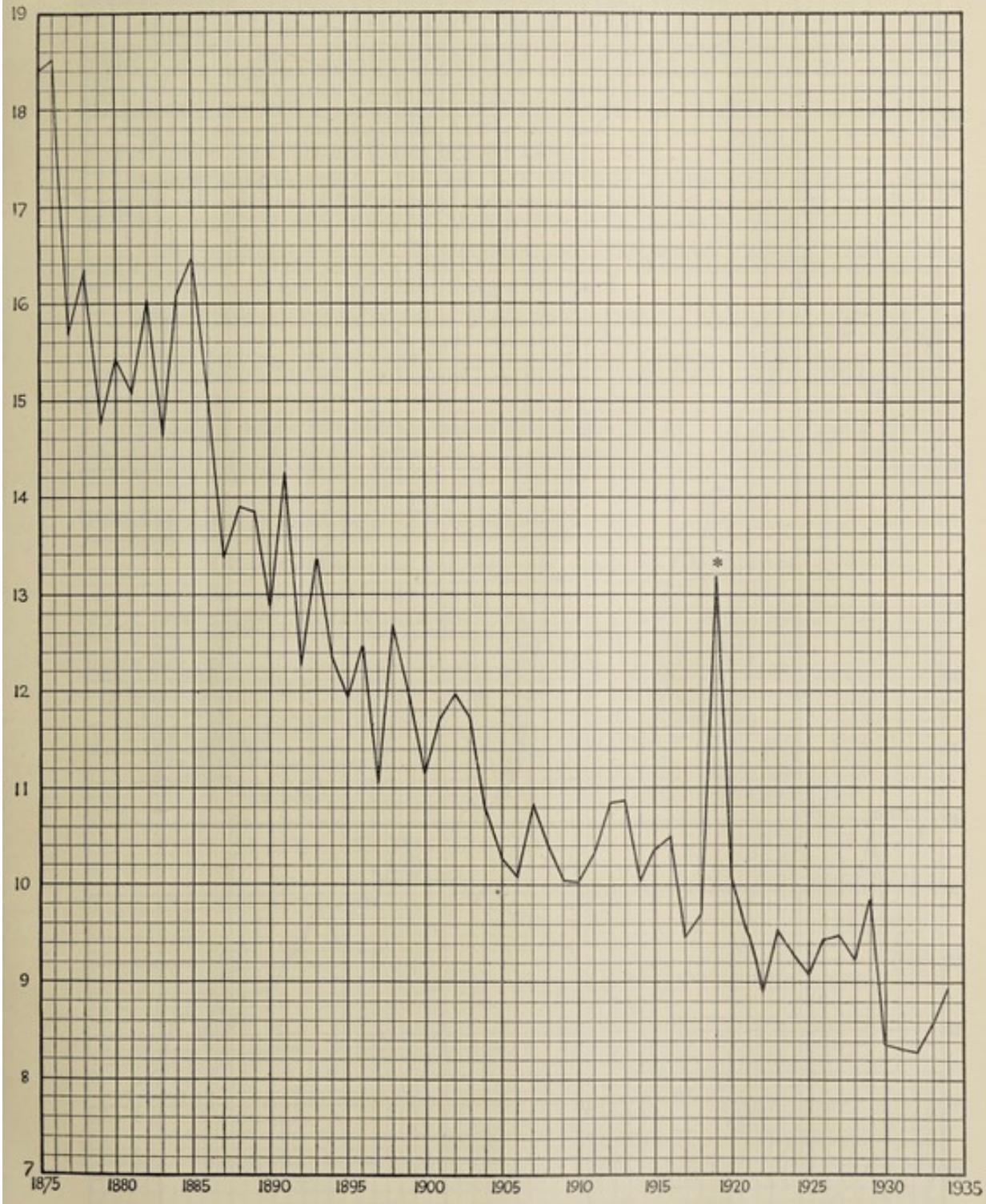
Causes of Death.—Of the deaths during the year, the most important causes were as shown in the following statement, which for purposes of comparison also gives the average number of deaths during the preceding five years, due allowance having been made for increase in population :—

Causes of Death.	Number 1934.	Average Number 1929-33.	Increase (+) or Decrease (—) in 1930-34.	Causes of Death.	Number 1934.	Average Number 1929-33.	Increase (+) or Decrease (—) in 1930-34.
			per cent.				per cent.
Typhoid Fever	19	38	— 50	Diseases of the Arteries, Atheroma, etc.	1,119	994	+ 13
Measles	34	52	— 35	Other Diseases of the Circulatory System	38	27	+ 41
Scarlet Fever	19	58	— 67	Bronchitis	297	387	— 13
Whooping Cough	286	133	+115	Pneumonia	1,532	1,545	— 1
Diphtheria and Croup	193	182	+ 6	Other Diseases of the Respiratory System	316	272	+ 16
Influenza	287	286	...	Diseases of the Stomach	118	132	— 11
Plague	...	...	...	Diarrhoea and Enteritis (under 2 years)	138	337	— 59
Erysipelas	10	36	— 72	Diarrhoea and Enteritis (2 years and over)	100	147	— 32
Infantile Paralysis	13	22	— 41	Appendicitis	236	216	+ 9
Lethargic Encephalitis	15	20	— 25	Hernia, Intestinal Obstruction	231	205	+ 13
Epidemic Cerebro-spinal Meningitis	7	9	— 22	Cirrhosis of the Liver	90	99	— 9
Other Epidemic Diseases	25	31	— 19	Other Diseases of the Digestive System	372	381	— 2
Tuberculosis, Respiratory System	955	1,049	— 9	Bright's Disease (Acute and Chronic)	1,531	1,385	+ 11
Tuberculosis, Meninges and Nervous System	40	49	— 18	Other Genito-urinary Diseases	354	401	— 12
Other Tuberculosis Diseases	50	75	— 33	Puerperal Septicaemia	63	75	— 16
Cancer	2,662	2,507	+ 6	Other Puerperal Diseases	200	211	— 5
Diabetes	412	362	+ 14	Malformations	282	244	+ 16
Other General Diseases	558	590	— 5	Congenital Debility	65	141	— 54
Diseases of the Blood	261	236	+ 11	Premature Birth	626	753	— 17
Chronic Poisonings and Intoxications	25	37	— 32	Other Developmental Diseases	334	298	+ 12
Meningitis	111	112	— 1	Senility	713	830	— 14
Cerebral Haemorrhage and Apoplexy	826	854	— 3	Suicide	349	317	+ 10
Insanity	73	92	— 21	Accident	1,048	1,220	— 14
Convulsions of Infants	11	19	— 42	All other Causes	361	321	+ 12
Other Diseases of the Nervous System	665	567	+ 17				
Diseases of the Heart	5,404	4,411	+ 23	Total	23,474	22,765	+ 3

Epidemic Diseases.—The deaths from epidemic diseases numbered 908. As compared with an average of 845 during the previous five years, the rate increased by 4·5 per cent. The deaths from scarlet fever numbered 19, an experience which was 68·2 per cent. less than the average rate of the previous five years.

Tuberculosis of the Respiratory System was the cause of 955 deaths in 1934, the rate 364 per million living, being 9·0 per cent. below the average rate of the previous five years. The deaths of males numbered 567 and of females 388, and the rates per million living were 426 and 300 respectively. The mortality rate from other tuberculous diseases was 27·7 per cent. below the average of the previous five years.

ANNUAL DEATH RATE PER 1,000 OF THE POPULATION IN NEW SOUTH WALES, 1875-1934.



* 1919—Influenza Epidemic (deaths 6,387).

CANCER, TUBERCULOSIS, AND HEART DISEASE.

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1934.

Cancer.—The deaths from cancer numbered 2,662, equal to a rate of 1,015 per million living and 6·3 per cent. above the average rate of the preceding quinquennial period. The deaths of males numbered 1,369 and of females 1,293, the rates for each sex being 1,030 and 999 per million respectively. The death-rate from this disease has been increasing steadily for a number of years.

Cerebral Hæmorrhage.—To cerebral hæmorrhage and apoplexy during 1934 were ascribed 826 deaths, of which 397 were those of males and 429 of females. The rate was 315 per million living, or 299 for males and 331 for females. The rate for 1934 is 3·1 per cent. lower than that for the previous quinquennium. In addition to these cases, there are others in which the cerebral hæmorrhage was combined with arterio-sclerosis. Such deaths are classified to these joint causes.

Diseases of the Heart were the cause of 5,404 deaths, the rate being 2,060 per million. The apparent increase in these deaths during the last twenty-five years is probably the result of the greater attention given to pathological diagnosis. Furthermore, in combination with other diseases, where precise information is lacking, diseases of the heart are given precedence over many other diseases. The rate for deaths from heart diseases in 1934 was 22·5 per cent. above the average rate of the preceding five years. Of the total deaths, 3,147 were of males and 2,257 females, the corresponding rates per million living of each sex being 2,367 and 1,744.

Bronchitis and Pneumonia.—Bronchitis with 297 deaths, equal to a rate of 113 per million living, showed a decrease of 23·1 per cent., and pneumonia, with 15,32 deaths or 584 per million, a decrease of 0,9 per cent. as compared with the experience of the previous five years.

Of the deaths from bronchitis, 154 were of males and 143 of females, or 116 and 110 per million living respectively. Of the persons who died from pneumonia, 863 were males and 669 were females, and the rates were 649 and 517 per million living of each sex.

Bright's Disease.—During 1934 there were 1,885 deaths due to diseases of the genito-urinary system, of which 1,531 were caused by acute nephritis and Bright's disease. The rate for nephritis (acute and chronic) was 584 per million living; for males 631 per million and for females 535 per million. In 1934 the rate was 10·6 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 626, other developmental diseases 632, diarrhœa and enteritis 110, pneumonia 216, whooping cough 171, bronchitis 31, measles 5, convulsions 7, and diphtheria 12.

The following statement shows the causes of deaths of children under 1 year of age per 1,000 births, during 1934, in comparison with the preceding five years :—

Causes of Death.	Males.		Females.		Total.	
	1934.	1929-33.	1934.	1929-33.	1934.	1929-33.
Epidemic Diseases	4·43	2·93	4·80	3·09	4·61	3·01
Tuberculous Diseases	·09	·28	·14	·31	·11	·29
Syphilis	·23	·31	·19	·26	·21	·29
Meningitis	·91	·48	·52	·30	·72	·39
Convulsions	·13	·29	·19	·31	·16	·30
Bronchitis	·86	·77	·57	·67	·72	·72
Pneumonia	5·16	5·24	4·80	4·25	4·98	4·76
Diarrhœa and Enteritis	2·49	5·86	2·59	4·19	2.54	5·05
Premature Birth	15·83	16·95	13·00	13·30	14·45	15·18
Other Developmental Diseases	16·97	15·20	12·10	11·05	14·58	13·18
Other Causes	3·71	3·79	2·83	2·89	3·28	3·35
All Causes	50·81	52·10	41·73	40·62	46·36	46·52

SECTION I.

A.—PUBLIC HEALTH ADMINISTRATION.

CHEMICAL LABORATORY.

REPORT OF THE GOVERNMENT ANALYST FOR THE YEAR ENDED 31ST DECEMBER, 1934.

Staff.

Government Analyst	Sidney G. Walton, F.A.C.I.
Second Government Analyst	Harold B. Taylor, M.C., V.D., D.Sc., F.I.C., F.A.C.I.
Senior Assistant Government Analyst	Arthur D. Dibley, A.S.T.C., A.A.C.I.
Assistant Government Analyst	Robert G. O'Brien, A.S.T.C., A.A.C.I.
Analysts	Ernest S. Ogg., B.Sc., A.A.C.I.
	W. F. Fisher, A.S.T.C., A.A.C.I.
	R. C. Sparks, A.S.T.C.
	T. A. McDonald, A.S.T.C.

Three laboratory assistants; 1 laboratory attendant; 1 clerk (Grace McGlynn); 1 shorthand-writer and typist.

A total of 32,029 samples were received for examination in the chemical laboratory during the year 1934, representing 29,773 samples submitted in connection with the administration of the Pure Food Act, and 2,256 examined for the Public Services of the State. This total represents an increase of between 4,000 and 5,000 samples over the highest number ever examined in the laboratory previously, and an increase of 10,000 samples over the highest number recorded in any year up to and inclusive of the year 1930.

Pure Food Act.

Milk.—The total milks examined for the purposes of the Pure Food Act during the year amounted to 22,366, including 15,332 samples collected in the metropolitan area by food, municipal and shire inspectors, 2,729 samples collected in country districts by the same authorities, and 4,305 samples submitted by the Milk Board. The number of milks received from the food, municipal, and shire inspectors is over 1,600 less than the number submitted in the previous year, but the number received from the Milk Board is more than four times greater than that of 1933.

Of the total milks collected in the metropolitan area by food, municipal and shire inspectors, 1·06 per cent. failed to conform to the legal standard as compared with 1·46 per cent. in 1933. The proportion of adulterations in the country milks is also less than in 1933, being 3·07 per cent. as against 3·46 per cent., while the proportion of adulterated milks received from the Milk Board was less than half that of the previous year, viz., 2·97 per cent. as compared with 6·03 per cent. The proportion of adulterations in the whole of the milks examined amounted to 1·68 per cent. in comparison with 1·96 per cent. in 1933. The following table gives particulars of the adulterations recorded :—

Particulars of Milk Adulterations.

	Samples deficient in Fat.		Samples containing added Water.		Samples deficient in Fat and containing added Water.		Total.	
	No.	Proportion per cent.	No.	Proportion per cent.	No.	Proportion per cent.	No.	Proportion per cent.
Collected in the Metropolitan Area	63	0·41	86	0·56	15	0·09	164	1·06
Collected in Country Districts..	39	1·42	36	1·31	9	0·32	84	3·07
Submitted by the Milk Board	95	2·20	23	0·53	10	0·23	128	2·97
	197	0·88	145	0·64	34	0·15	376	1·68

In addition to the above, three samples were coloured with annatto.

Consequent upon the amendment of Regulation 24 (1) of the Pure Food Act in 1931 to provide a freezing point standard for milk, the first opportunity available was taken to make a survey of the milk produced in the Milk Board zone. The analyst in charge of the survey, Mr. R. G. O'Brien, was personally responsible for the collection of the whole of the milks examined, and all milking was carried out under his supervision to ensure that the milk taken for analysis should be truly representative of that obtained from the cow, and to obviate the possibility of the adulteration, accidental or otherwise, of the milk. The full details of this investigation and of the conclusions arrived at will be found in the Appendix to this report.

The samples other than milk submitted for analysis in connection with the Pure Food Act amounted to 7,407, 96 of which were drugs.

Processed Bread.—There has recently been marketed in Sydney a special type of bread to which, it is claimed, a considerable quantity of gluten has been added. The addition of gluten has the effect of strengthening the dough and causing the final product to have a much greater loaf volume. This results in a much better quality of bread being produced. An additional charge of 1d. per 1 lb. loaf is usually made to the public for this specially-processed bread, and the daily sale from one bakery alone is said to amount to about 2,000 loaves. In view of the commercial importance which bread of this character is likely to assume, it will probably be found desirable to provide a standard under the Pure Food Act prescribing a minimum gluten content, with the object of covering those cases in which special claims as to the gluten content of the bread are made. Under present circumstances, the addition of minute quantities of gluten, undetectable by analysis, is sufficient to enable special claims to be made on the label. In order to ascertain if the special claims made on behalf of the processed bread were justified, an investigation as to the composition of the flours, prepared doughs, and final products was made. The whole of the process of manufacture was observed by the analyst making the investigation, and the following tables give a comparison of the processed bread with bread baked with the same flour but without the addition of gluten :—

(1) *Wet Gluten and Dough.*

Nature of Sample.	Water.	Protein (N x 5·7).	Carbohydrates, etc.
	%	%	%
Wet gluten	56·8	22·1	21·1
Processed white dough	44·7	8·0	47·3
Processed wholemeal dough	47·8	9·7	42·5

(2) *Flour.*

Kind of Flour.	Water.	Protein (N x 5·7).	Carbohydrates, etc.	Ash.
	%	%	%	%
White flour	10·2	10·5	78·8	0·5
Wholemeal flour	10·2	12·7	75·8	1·3

(3) *Bread.*

Kind of Bread.	Loaf Volume.	Water.	Protein (N x 5·7).	Ether Extract (crude fat).	Ash.	Carbohydrates, etc.	Ratio of Protein to Carbohydrates.
	ml.	%	%	%	%	%	
Ordinary white bread	1270	37·1	8·1	1·2	1·7	51·9	1 : 6·4
Processed white bread	1550	35·2	9·0	1·5	1·8	52·5	1 : 5·8
Ordinary wholemeal bread	1010	37·6	8·0	1·5	2·0	50·9	1 : 6·3
Processed wholemeal bread	1595	38·4	10·4	2·1	2·2	46·9	1 : 4·5

NOTE.—The above analyses represent the average of the whole loaf.

Cider.—Samples of "cider" purchased on the market were found in some instances to be unfermented apple juice, and, therefore, not strictly in accordance with Regulation 64. Traces of alcohol, however, were present, and as the standard does not prescribe the degree of fermentation, it was decided that the article might be correctly described as "non-alcoholic cider." Other samples, however, labelled "unfermented apple juice, 20 per cent. dilution" contravened the standard, which does not permit the addition of water.

Arsenical Contamination of Meat.—During the year attention was drawn to the possibility of meat becoming contaminated by the presence of arsenic. This contamination was thought likely owing to the practice of slaughtering calves in the Byron Bay and Grafton districts and trucking the unskinned carcases to the Pyrmont Meat Depot, in some instances using trucks which contained a proportion of skinned carcases. As Byron Bay and Grafton are situated in the tick area, the presence of arsenic on the skins would be due to the use of a spray or dip to destroy the ticks. The reason given by the carcase butchers for transporting unskinned carcases to Pyrmont for skinning, in preference to skinning at the place of slaughter, was that the carcase when unskinned retained the natural bloom, and did not materially darken during transport. As the result of a special investigation carried out in conjunction with officers of the Pure Food Branch, it was established that, providing adequate precautions were taken during the trucking, there was little liklihood of the contamination of the meat by arsenic from the spray or dip present on the skin. The method of skinning adopted at the Pyrmont Meat Depot was such that it was practically assured that arsenic, even if present on the skin, would not be transferred to the skinned carcase by handling. The

authorities concerned undertook that for the future special precautions would be taken to ensure that skinned and unskinned carcases would be despatched separately, thus obviating the danger of contamination from contact in transport. The following figures were obtained during the investigation :—

Carcase No.	Description of Sample.	Arsenic (calculated as $As_2 O_3$) Grain per lb.
1	Hair from belly	0·27
	Trimmings from belly	Nil.
	Swabbing and trimmings after skinning	Nil.
2	Hair from buttock	1·39
	Trimmings from belly	0·02
	Swabbing and trimmings after skinning	Nil.
3	Hair from buttocks	0·67
	Trimmings from belly	0·04
	Swabbing and trimmings after skinning	Nil.
4	Hair from buttocks	1·48
	Trimmings from belly	0·04
	Swabbing and trimmings after skinning	Nil.
5	Hair from buttocks	0·81
	Trimmings from belly	Nil.
	Swabbing and trimmings after skinning	Nil.
6	Hair from buttocks and belly	Nil.
	Trimmings from belly	Nil.
	Swabbing and trimmings after skinning	Nil.
7	Hair from buttocks and tail	Nil.
	Trimmings from belly	Nil.
	Swabbing and trimmings after skinning	Nil.

Nut Butter.—A sample examined was found to contain a proportion of paraffin, added for the purpose of giving an improved consistency. There would appear to be no objection to permitting the addition of a small percentage of an edible oil or fat to nut butter, if it is the opinion of the trade that such an addition is desirable. If allowed, both the nature and the proportion of the added fat or oil should be declared on the label, thus bringing the article into conformity with the intention of Regulation 22 (2) for edible fats and oils.

Rennet for Culinary Purposes.—On an examination of samples of junket tablets it was found that all imported tablets contained boric acid. In view of this, and of the fact that boron compounds may be naturally present in small amount in rennet, it has been recommended that the standard under the Pure Food Act, which permitted boron compounds to be present in rennet intended for cheese-making only, should be amended to allow junket essence to contain boron compounds (calculated as boric acid) not exceeding 2 grains per pint, and junket tablets to contain not more than 5 grains of boron compounds (calculated as boric acid) per lb.

Tobacco.—The attention of the Department was drawn to the alleged use of excessive quantities of lead arsenate for the destruction of parasites on tobacco leaf. A number of samples were collected and examined, with the result that an excessive amount was found on one sample of prepared tobacco, although none was present on the particular samples of leaf examined. The attention of the tobacco companies was drawn to this adulteration, and a promise was given that every precaution would be taken in future to ensure that the leaf used in the manufacture of tobacco would not be contaminated in this way.

Cotton Wool.—A sample of " cotton wool " prepared from artificial silk was submitted for examination. It was found that, although the water-absorbing power of the article was only slightly inferior to samples examined which were prepared from cotton, it was not altogether suitable owing to its ease of disintegration. The inherent properties of the fibre used in the manufacture of absorbent " wool " from artificial silk render it less satisfactory than a " wool " prepared from cotton, the natural spiral-like twist of the latter being particularly suitable for the purpose. It is, therefore, considered desirable that absorbent wool made from fibre other than cotton should be labelled to clearly indicate the nature of the material used in manufacture-.

Particulars of Adulterations.—A total of 1,056 (14·4 per cent.) of the foods other than milk contravened the requirements of the Pure Food Act, while 26·0 per cent. of the drugs did not conform to standard. The following table gives the details of the adulterations :—

Particulars of Adulteration.

Nature of Sample.	No.	Particulars of Adulteration.
Bread, " Diabetic "	1	Title, " diabetic " bread, not justified.
,, " Gluten "	2	Misnamed; amount of gluten present insufficient to affect protein-carbohydrate ratio.
Brine, Pumping	4	Contained foreign matter and impurity.
,, (for Bacon Curing)	2	Contained thymol.
Butter	3	Contained excess water.
,,	1	Deficient in fat and contained excess water.
,,	1	Very rancid.
Coffee	1	Contained 50 per cent. sugar.
,,	1	Contained 50 per cent. sugar and 2 per cent. malt extract.

Particulars of Adulteration—continued.

Nature of Sample.	No.	Particulars of Adulteration.
Coffee and Chicory Essence	1	Deficient in caffeine.
Colouring (for Food)	1	Not a permitted colour.
Confectionery	1	Contained 5 per cent. uncooked grain.
Cordials	7	Illegally preservatised.
,,	1	Contained excess of permitted preservative.
,,	1	Artificially-coloured and not so labelled.
,,	7	Deficient in fruit juice.
,,	2	Deficient in fruit juice and artificially coloured.
,,	1	Deficient in fruit juice and contained added pectin.
,,	5	Deficient in fruit juice and contained saccharin.
,,	1	Contained added pectin.
,,	2	Contained added pulp.
,,	3	Contained saccharin.
,,	2	Unfit for human consumption.
,,	1	Fermented and contained 1·4 per cent. proof spirit.
Cream	1	Deficient in fat.
Essence, Lemon	2	Deficient in citral.
,, Vanilla	1	Imitation essence.
Fish, Smoked	2	Illegally preservatised.
,, ,,	1	Artificially coloured with aniline colour.
,, Container	1	Contained a harmful colouring matter.
Flour	2	Contained persulphates.
,, Self-raising	13	Deficient in carbon dioxide.
Fruit, Fresh	2	Contained excess arsenic.
Ice Cream	3	Contained starch.
,,	2	Deficient in fat.
Ices, Flavoured	2	Contaminated with nickel ($\frac{1}{10}$th grain per lb.).
Salt for packing Ice Cream	1	Impurities present: offensive odour.
Jams	15	Contained considerable proportions of foreign pulp.
Junket Tablets	6	Contained boron compounds.
,, Essence	2	Contained boron compounds.
Meat	240	Illegally preservatised.
,, Minced	416	Illegally preservatised.
Tripe	16	Illegally preservatised.
Sausages	246	Contained excess of permitted preservative.
Smallgoods	3	Contained excess nitrate.
,,	3	Artificially coloured.
Milk	197	Deficient in fat.
,,	145	Contained added water.
,,	34	Contained added water and deficient in fat.
,,	3	Coloured with annatto.
Nut Butter	1	Contained soft paraffin.
Pepper	1	Small amount of pea starch.
Tobacco (Cut)	1	Contained 0·12 grain of arsenate of lead per lb.
Tomato Sauce	4	Excessive mold content.
,,	1	Excessive mold content and artificially coloured.
,,	3	Artificially coloured.
,,	1	Thickened with starch.
Vegetables, Fresh	2	Excess arsenic.
Vinegar	6	Deficient in acetic acid.
Yeast Food	1	Contained 5 per cent. bromates.
Wines	3	Contained flavouring essence, a prohibited addition.
Drugs—		
Malt Extract	1	Low diastasic value.
Boric Acid	1	Contained excess sulphates.
Cod Liver Oil and Malt Extract	1	Low diastasic value.
Epsom Salts	5	Turbid and contained fibrous matter.
Iodine, Tincture of	2	Deficient in iodine.
,, Paint	1	Deficient in iodine.
Medicines (Patent)	1	Proof spirit less than amount declared on label.
,, ,,	1	Active principle not declared.
,, ,,	1	Claims of therapeutic value unjustified.
Paraffin, Liquid	1	Gravity high.
,, ,,	1	Viscosity and gravity low.
,, ,,	3	Viscosity low.
Wine, Medicated	6	Proportions of drugs present not in accordance with amounts declared on labels.
Total	1,460	

Samples Submitted for the Public Services of the State.

A total of 2,256 samples were examined for the Public Service of the State, particulars of which are shown hereunder.

Subsidised Institutions submitted 247 samples for examination, including foods, drugs, disinfectants, milk for control of dairy herds, human milk, etc.

Government Stores Department.—The Government Stores Department forwarded 721 samples for examination in connection with the control of supplies made under contract, and the formulation of specifications for the various articles required.

Police Authorities submitted 356 exhibits relating to criminal investigations, 58 exhibits in connection with the administration of the Dangerous Drugs Act, and 2 exhibits of animal viscera.

Criminal Investigations.—An interesting case of counterfeit coining was brought under notice. The coins were apparently made with an efficient plant, being stamped out, and the composition of the alloy used approximating to that of the genuine Australian currency. The weights also deviated but little from those of genuine coins, and there was very little to arouse suspicion. The counterfeiters were apparently content to derive their profit from the price of silver. The coins were manufactured abroad, and suspicion was only aroused by the continuous depositing of large numbers of these coins in a local bank by foreigners. On detailed examination, it was found that there were very slight defects in the design. One hundred coins of one shilling denomination, being portion of a seizure, were submitted to examination with the following results :—

Weight of Coins.—Twenty-two were within the prescribed limits of the Coinage Act; 38 slightly exceeded the prescribed weight; and 40 were slightly less than the prescribed weight.

Specific Gravity.—The specific gravity of the counterfeit coins varied from 10·17 to 10·31, in comparison with the specific gravity of 10·36 of a genuine coin of the same date.

Fineness.—The fineness of the silver alloy used in the manufacture of the counterfeit coins varied from 803 to 897, as against a fineness of genuine coins of 925.

These were the first counterfeit coins received in this laboratory which in composition and appearance closely approached those of genuine coins.

Alleged Doping of a Racing Dog.—A gelatin capsule, alleged to contain dope and taken from the mouth of a greyhound prior to racing on a country course, was submitted for examination, and was found to contain quinine bisulphate and caffeine citrate. The intention was evidently to administer a stimulant.

Supposed Poisoned Marrow.—On a number of occasions complaints have been made regarding the bitterness of vegetable marrow, in two instances the matter being brought under the notice of the police, who submitted exhibits for examination. It was thought by the consumers that the marrow contained strychnine, whether accidently present or otherwise. On examination, it was found that the flavour which gave rise to the complaints was due to a bitter principle which is a natural constituent of the marrow, although it occurs only rarely among the vegetables grown here. An external examination of the marrow affords no indication of the presence of the bitter principle, which, however, gives a fine red colour with sulphuric acid, and is extractable by chloroform from acid solution.

Fraud on Gold Buyers.—Specimens of alleged alluvial gold were submitted for examination in connection with a fraud on gold buyers. This material was in some instances purchased by gold buyers as genuine gold, evidently because of its resistance to the usual acid tests. The appearance of the substance suggested very strongly that of genuine gold, but on examination it was found to consist of brass filings which had been coated with lacquer.

Dangerous Drugs Act.—Twenty-five apparently unopened bottles, branded cocaine hydrochloride and bearing the label of a well-known firm of manufacturers, were submitted for examination with a view to action being taken under the Dangerous Drugs Act. Upon examination the bottles were found to contain novocaine. As this is not a prohibited drug, no action could be taken under the Act, though a charge for fraud could be sustained, more particularly as the bottles closely resembled in appearance a genuine article on the market prepared by a well-known firm, both the labels and the capsules covering the corks being clever forgeries.

Animal Viscera.—Two exhibits of animal viscera were received, the chemical examination yielding negative results in one case and in the second cyanide was found to be present.

The following are the details of the exhibits submitted by police authorities :—

Criminal Investigations.

Uncertified deaths	277	exhibits.
Attempted poisoning	21	,,
Food poisoning	5	,,
Incendiarism	5	,,
Administration of abortifacients	4	,,
Breaking and entering	6	,,
Indecent assault	6	
Counterfeit coining	20	
Fraudulent practice	4	,,
Doping racing greyhound	1	,,
Doping racehorse	3	,,
Laying poison bait	1	,,
Illtreating child	1	,,
Supplying intoxicants to aborigines	1	,,
Attempting drugging	1	,,
	356	,,

Dangerous Drugs.

Cocaine	5	exhibits.
Morphine and atropine	1	,,
Morphine	1	,,
Diamorphine hydrochloride	2	,,
Opium	49	,,
	58	,,

Coroners' Enquiries.—Coroners forwarded 81 exhibits of human viscera, and 8 exhibits of blood for examination in connection with 89 uncertified deaths. Two unusual cases of poisoning occurred during the year. In one case death was due to sodium nitrite, a large quantity of which was found to be present in the stomach. In the second case, potassium permanganate was the poison used, a considerable amount of oxide of manganese being found in the stomach, whilst manganese was also present in the other organs submitted for analysis. A very determined case of suicide was recorded, in which the deceased must have taken large quantities of nicotine and Paris green, considerable quantities of both these substances being found in the stomach. A case of interest was that in which death was due to cocaine poisoning. The deceased had had an operation for the removal of tonsils, which was followed by a considerable amount of

bleeding. A pad containing large proportions of cocaine and adrenalin solution was applied. Apparently the patient swallowed sufficient cocaine to cause death, 0·2 grain of cocaine being found in the stomach and 0·04 grain in the organs.

Chemical examination of the exhibits submitted yielded negative results in 39 cases (including 2 exhibits of blood), while in the remaining 50 cases death was attributed to the following poisons :—

Human Viscera.

Arsenic	2	deaths.
Arsenic and copper compound	1	,,
Barbitone	2	,,
Chloral hydrate	1	,,
Cocaine	1	,,
Cyanide	1	,,
Potassium permanganate	1	,,
Mercury	1	,,
Morphine	1	,,
Morphine and atropine	1	,,
Nicotine	1	,,
Nicotine and Paris green	1	,,
Oxalic acid	2	,,
Sodium nitrite	1	,,
Strychnine	26	,,
Sulphuric acid	1	,,
	44	,,

Blood.

Drowning (fresh water)	2	heaths.
Carbon monoxide	4	,,
	6	,,

Waters and Sewages.—Departmental and municipal authorities submitted 359 samples of water in connection with the control and chemical treatment of country water supplies, swimming pools, etc., and 54 samples of sewerage in connection with the supervision of sewage installations and the discharge of drainage and trade wastes into public places, etc.

Industrial Hygiene.—Industrial hygiene authorities submitted 239 specimens for examination in connection with claims under the Workers' Compensation Act, and the diagnosis of illness due to occupational causes. The usual routine examination of urine, faeces, etc., for the presence of lead has been continued in connection with the incidence of lead poisoning, while hair, nails, urine, etc., have been examined for the presence of arsenic in connection with cases of arsenical poisoning contracted as a result of conditions of employment. A considerable amount of investigational work in connection with silicosis has been carried out, a report in connection with which is incorporated with the report of the Medical Officer of Industrial Hygiene.

Miscellaneous.—Miscellaneous authorities submitted a total of 131 samples for examination, including foods, medicines, disinfectants, animal viscera, exhibits *re* alleged cases of poisoning, etc.

General Remarks.—Since my last report a considerable quantity of new equipment has been received which was purchased from a sum of money made available during 1933. Although this has been of considerable assistance in replacing obsolete apparatus, there is still a necessity to continue the purchase of modern instruments in order that the laboratory should be kept up to date in this respect.

The staff continued to work under most crowded and difficult conditions during the past year, but a measure of relief is now being provided in the way of extra accommodation. Although this is far from adequate, it will allow the Branch to function in a more satisfactory manner than hitherto.

At the present time the work of the laboratory is increasing, both in the number of samples submitted for examination and in the amount of work required to be performed on each sample. The additions which have been made to the Regulations under the Pure Food Act, and other legislation which has been enacted, entail much extra work, involving further specific tests being made to individual samples, as, for example, the freezing-point determination of milk; the minimum fruit requirements of jam; fruit cordials and fruit juices; wholewheat bread; diabetic bread; tomato sauce; the increased time required for the determination of benzoic acid, which is now permitted alternatively with sulphur dioxide; the lead number and non-sugar solids determination of vanilla essence; the enlarged list of permitted food colours, etc. Owing to the greater detail required in modern standards to cope with adulteration, these is also a constant necessity for investigation into the composition of natural products. Because of lack of staff, this work must be neglected to a large extent, and it is only by the provision of additional analysts that the work of the Branch can be carried out in a satisfactory manner.

Full particulars of all samples examined are given in the attached Tables.

Appended hereto also is a report of an investigation into the freezing-point of genuine milk.

S. G. WALTON,
Government Analyst.

85383—B

TABLE I.—Samples examined during the year 1934 for the purposes of the Pure Food Act, 1908.

Nature of Sample.	Submitted by—	Samples.	
		No. Examined.	No. Adulterated or Falsely Described.
Baking powder	Food Inspectors	13	0
Beer	" "	28	0
Boric acid	" "	6	1
Bread	" "	11	3
Brine	" "	6	6
Butter	" "	41	5
Cheese	" "	13	0
Cocoa	" "	1	0
Cod liver oil and malt extract	" "	6	1
Coffee	" "	3	2
Coffee and chicory essence	" "	26	1
Colouring (for foods)	" "	1	1
Confectionery	" "	1	1
Cordials	" "	74	36
Crayon	" "	1	0
Cream	" "	146	1
"	Milk Board	15	0
Cream of tartar	Food Inspectors	5	0
Disinfectants	" "	11	0
Dripping	" "	1	0
Epsom salts	" "	6	5
Essences (flavouring)	" "	5	3
Fish—Smoked, canned, etc.	" "	47	4
Flour	" "	14	2
" self-raising	" "	37	13
Fruits, fresh	" "	36	2
Glauber salts	" "	1	0
Hair preparation	" "	1	0
Honey	" "	16	0
Hydrogen peroxide	" "	2	0
Ice cream and ices	" "	129	7
Iodine tincture	" "	8	3
Jam	" "	47	15
Junket essence	" "	2	2
" tablets	" "	6	6
Lemon peel	" "	2	0
Malt extract	" "	6	1
Margarine	" "	3	0
Meat—Fresh	" "	1,106	239
" Fresh	Municipal Inspectors, Country Districts	1	1
" Tripe	" " " "	7	0
" "	Food Inspectors	504	16
" Minced meat	" "	1,774	413
" "	Municipal Inspectors, Country Districts	20	3
" Sausages	" " "	62	8
" "	Food Inspectors	2,771	238
" Smallgoods	" "	179	6
" "	Municipal Inspectors, Country Districts	1	0
Medicines (patent)	Food Inspectors	6	3
Milk—*re* standard	Food Inspectors, Metropolitan District	12,407	144
" "	Municipal and Shire Inspectors, Metropolitan District.	2,925	23
" "	Food Inspectors, Country Districts	817	42
" "	Municipal and Shire Inspectors, Country Districts.	1,912	42
" "	Milk Board	4,305	128
" Condensed	Food Inspectors	10	0
" Dried	" "	7	0
Mustard	" "	7	0
Nut butter	" "	1	1
Olive oil	" "	8	0
Paraffin, liquid	" "	12	5
Pepper	" "	1	1
Preservative tablets	" "	1	0
Rum	" "	1	0
Salt (ice cream packing)	" "	1	1
Sauce	" "	2	0
Soap	" "	17	0
Soup	" "	1	0
Tea	" "	7	0
Tobacco (leaf and plug)	" "	10	1
Tomato sauce, etc.	" "	41	9
Tooth paste	" "	2	0
Tragacanth	" "	2	0
Vegetables—*re* spray	" "	17	2
Vinegar	" "	37	6
Wine, medicated	" "	13	6
Yeast food	" "	1	1
	Total	29,773	1,460

TABLE II.—Samples examined during the year 1934 for the Public Services of the State.

Authority Submitting.	Nature of Sample.	No. of Samples.
Subsidised Institutions.	Apples, *re* spray	1
,, ,,	Baking powder	1
,, ,,	Beans	1
,, ,,	Bread	18
,, ,,	Disinfectants	4
,, ,,	Jam	1
,, ,,	Meats	62
,, ,,	Milk, *re* standard	111
,, ,,	,, for infant feeding	1
,, ,,	,, human	37
,, ,,	Morphine hydrochloride	1
,, ,,	Oatmeal	4
,, ,,	Pepper	1
,, ,,	Sago	3
,, ,,	Tea	1
Government Stores Department.	Acetic acid, glacial	1
,, ,,	Acetyl-salicylic acid	1
,, ,,	Adrenalin hydrochloride	3
,, ,,	A.P.C. tablets	4
,, ,,	Barium sulphate	1
,, ,,	Blacking	1
,, ,,	Camphor liniment	1
,, ,,	Cascara tablets	1
,, ,,	Chicory	39
,, ,,	Cleansers	3
,, ,,	Cod liver oil and malt extract	3
,, ,,	Coffee	1
,, ,,	Cordials	37
,, ,,	Cornflour	1
,, ,,	Digitalis tincture	1
,, ,,	Disinfectants	119
,, ,,	Essences, flavouring	2
,, ,,	Glycerine and borax	1
,, ,,	Gum	1
,, ,,	Heshcen	1
,, ,,	Inks and ink powders	71
,, ,,	Jam	1
,, ,,	Junket tablets	4
,, ,,	Lubricants	234
,, ,,	Magnesium carbonate	1
,, ,,	Meat	4
,, ,,	Ointment	2
,, ,,	Olive oil	2
,, ,,	Paint	6
,, ,,	Pan oil	3
,, ,,	Paste, adhesive	5
,, ,,	Pickles	1
,, ,,	Plaster of paris	2
,, ,,	Putty	1
,, ,,	Rum	2
,, ,,	Sago	2
,, ,,	Sauce	2
,, ,,	Silver nitrate	1
,, ,,	Soap	81
,, ,,	Sodium chloride	3
,, ,,	Sodium hyposulphite	1
,, ,,	Solder	2
,, ,,	Tannic acid	1
,, ,,	Tar	5
Government Stores Department	Tragacanth	1
,, ,,	Water, distilled	2
,, ,,	Waterproof cloth	59
Pharmacy Board	Strychnine	1
Police Department	Criminal investigations	414
,, ,,	Human viscera	89
,, ,,	Animal viscera	2
Municipal and Departmental Authorities.	Water	359
,, ,,	Drainage and effluents	54
Industrial Hygiene Authorities.	Animal viscera	1
,, ,,	Blood	1
,, ,,	Bronzing powder	2
,, ,,	Dust	1
,, ,,	Flour	1
,, ,,	Flue gas	2
,, ,,	Human hair	49
,, ,,	Post-mortem specimens	22
,, ,,	Human nails	12
,, ,,	Solder	2
,, ,,	Urine	142
Miscellaneous Authorities.	Algae	1
,, ,,	Butter	6
,, ,,	Caustic soda	5
,, ,,	Celery	1
,, ,,	Cider	4
,, ,,	Coffee	2
,, ,,	Cotton wool	4
,, ,,	Disinfectants	5
,, ,,	Faeces	1
,, ,,	Flock, feathers, etc.	32
,, ,,	Flour	2
,, ,,	Foods *re* poisons	5
,, ,,	Gravel	1
,, ,,	Hair for mattress making	3
,, ,,	Hair preparations	3
,, ,,	Metallic particle removed from man's hand.	1
,, ,,	Medicines, patent	14
,, ,,	Mice exterminator	1
,, ,,	Milk, condensed	2
,, ,,	,, dried	2
,, ,,	Paper	1
,, ,,	Pitchblende	1
,, ,,	Rubber solution	3
,, ,,	Salt	1
,, ,,	Sand (*re* contamination of enclosed bathing areas).	16
,, ,,	Soil	5
,, ,,	Sulphuric acid	1
,, ,,	Tea	1
,, ,,	Vomit	1
,, ,,	Viscera animal	1
,, ,,	Wadding	3
,, ,,	Water	4
,, ,,	Water pipe *re* corrosion	1
	Total	2,256

A Survey of Genuine Milk Samples collected during the period July, 1933, to October, 1934, in the Metropolitan Milk Board Producing Districts.

By R. G. O'Brien, A.S.T.C., A.A.C.I.

Introduction.—In 1931, Regulation 24 (1) of the "Pure Food Act, 1908," was amended to incorporate a freezing point range whereby it was prescribed that the freezing point of milk "shall not lie between zero centigrade and -0·55 deg. centigrade as determined in the Hortvet cryoscope." In practice it has been customary to allow a tolerance of 3 per cent. to cover working conditions and the slight variations found in genuine milks. The figure adopted under the New South Wales standard was similar to that prevailing in Queensland, Western Australia, Tasmania, and New Zealand.

Certain local bodies protested that the prescribed freezing point range was too wide, and that the freezing point of many genuine milks would lie between -0·53 deg.C. and -0·55 deg. C. It was therefore decided to make a survey of the freezing point of known genuine milks produced in the Milk Board Zone, in order to ascertain if the New South Wales standard was reasonable. The work was commenced in July, 1933, and was continued systematically until October, 1934. During the progress of this work, a paper recording the examination of 1,000 milks by the Hortvet Freezing Point process was published by J. R. Stubbs and G. D. Elsdon in "The Analyst" for March, 1934. This investigation was carried out in England. As the results obtained by these investigators are very similar to those obtained in the investigation carried out in this State, it is evident that the freezing point is a reliable guide to the presence of added water in milk, and that the variation for cattle in different countries is insignificant.

The analyst in charge of the survey was personally responsible for the collection of all milk samples examined, and all milking was carried out in his presence thus obviating the adulteration of the milk, whether accidentally or otherwise, and ensuring that the milk when analysed would be truly representative of that obtained from the cow.

Scope of Survey.—The survey was limited to the area of the Metropolitan Milk Board Zone, and samples were collected from the following producing districts:—Newcastle, Singleton, Morpeth, Bowral, Moss Vale, Camden, Picton, Windsor, Penrith, Nepean, Illawarra Central, Illawarra North, Wollongong, Berry, Geringong, Jamberoo, Kiama, Nowra, Shoalhaven South, Bulli, Alexandria, Ashfield, Auburn, Bankstown, Bexley, Botany, Canterbury, Concord, Drummoyne, Fairfield, Hunters' Hill, Hurstville, Ingleburn, Kogarah, Kuring-gai, Lane Cove, Lidcombe, Liverpool, Manly, Mosman, North Sydney, Parramatta, Waverley, Willoughby, Hornsby, Sutherland, and Warringah. The survey embraced the various breeds of milch cattle, the feeding of which was carried out under all conditions, from purely stall-fed animals to those existing almost exclusively on natural pasturage. The investigation was carried out monthly, embracing the four seasons of the year, and including morning and evening milking of different breeds of cattle of all ages and periods of lactation. It also included the milk of individual cows and the mixed milk of herds. In many cases the same individual cattle were milked both morning and evening in order to ascertain if there was any appreciable difference in the freezing point of the morning's as compared with the evening's milk. In every case, the cattle were milked by the persons usually attending them in order that milking conditions should follow the usual routine.

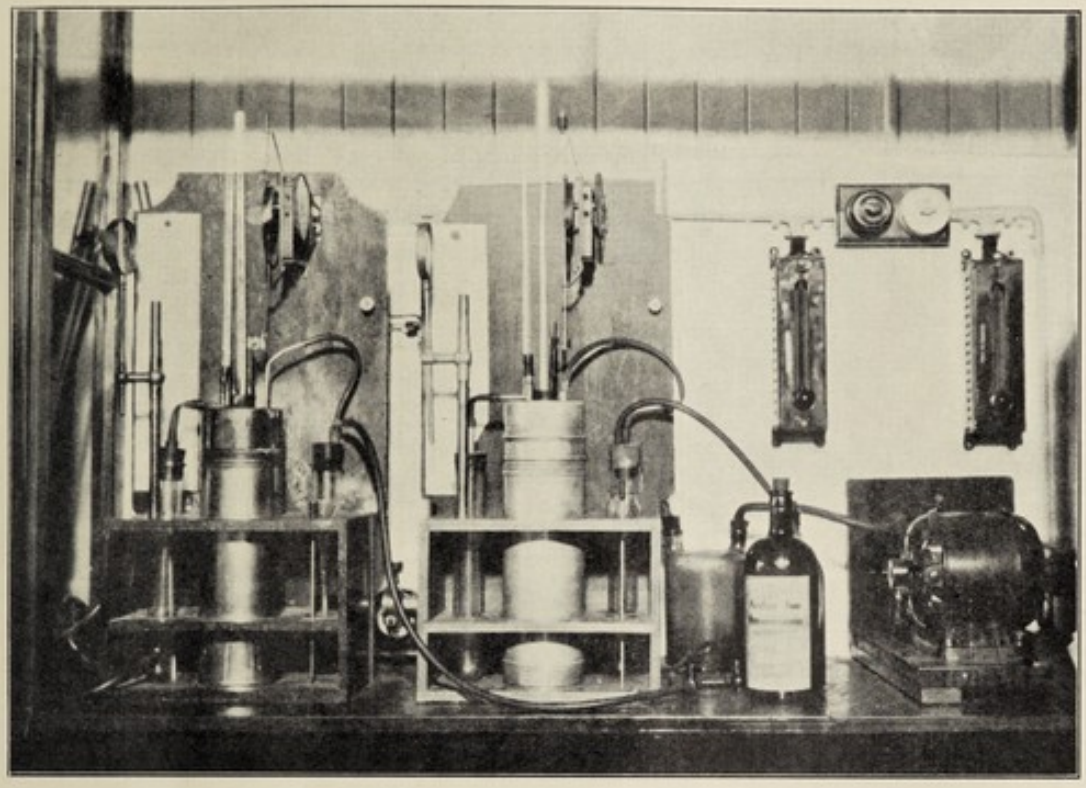
It will be observed that although 907 samples were obtained from evening milkings, only 380 represented the morning milkings. This is due to the much greater difficulty in obtaining morning milk under the analyst's supervision. In the metropolitan district it is quite usual to commence milking at midnight for the morning's supply. This necessitated the analyst and supervising staff being on duty all night. Conditions operating in the country districts render the obtaining of morning milks under absolute supervision a difficult matter also.

Collection of Samples.—Milking, with one exception, was carried out by hand, the exception being a machine-milked herd of Holstein cows at Camden. Buckets, strainers, cans, vats, and all utensils used in connection with the milking were subjected to rigorous inspection to see that no adulteration could take place. After milking, the milk was weighed and the quantity obtained calculated into gallons, 10¼ lbs. being taken as the weight of a gallon. The milk was thoroughly mixed by being poured from bucket to bucket three or four times, and then sampled into a half-pint container. In the case of bulk milk the milk was thoroughly stirred before sampling. During the operations of milking and sampling, two officers (Inspectors of the Pure Food Branch of this Department, or of the Milk Board) assisted the analyst in supervising. After collection, the milk sample was at once placed in a specially-designed box containing an adequate ice chamber, and then conveyed without delay to the chemical laboratory for immediate analysis.

Testing of Samples.—The investigation was initially instituted to make a survey of the freezing point of genuine milk. Whilst the opportunity offered, it was thought desirable to record other analytical data. The following tests were therefore carried out on all samples collected—specific gravity at 60 deg. F.; fat (Leffman-Beam method); percentage of total solids and solids-not-fat calculated by means of the Richmond dairy scale; acidity; and the freezing point as determined by the Hortvet method. In every case in which the calculated percentage of solids-not-fat was lower than the legal standard of 8·5 per cent., the solids were determined accurately by weighing. In determining the freezing point by the Hortvet method, the exact details as described in the official methods of the Official Association of Agricultural Chemists, 1930 edition, p. 219, were used.

Equipment.—The equipment used for making the freezing point test conformed exactly with the A.O.A.C. requirements. An electric blower was used for maintaining the ether bath at the necessary temperature, and a mechanical stirring device, operated by an electric motor with a suitable reduction

gear was employed. The whole of the blowing and stirring equipment was designed and constructed by officers of the New South Wales Department of Public Works, and it gave every satisfaction throughout the investigation. A photograph of the equipment is given below.



The Hortvet thermometer was checked daily with water as described in the A.O.A.C. methods, and each week it was further checked by means of the prescribed sugar solutions. Throughout the whole of the work the thermometric corrections remained practically constant. The freezing points and averages are given to the nearest third decimal place. The acidity in each case was sufficiently low to be without material effect on the freezing point determination.

TABLE 1.—Freezing Point Depressions of all Samples, Morning Samples and Evening Samples.

Freezing Point Depressions.	All Samples.	Morning Samples.	Evening Samples.
Number of Samples	1287	380	907
Average	0·545	0·542	0·547
Extremes	0·524	0·524	0·527
	0·575	0·569	0·575

Although there is no significant difference between the freezing point depressions of the morning and evening milks, the latter shows a slightly greater average depression, amounting to 0·005° C.

TABLE 1A.—Freezing Point Depressions of all Bulk Samples, Morning Bulk Samples and Evening Bulk Samples.

Freezing Point Depressions.	All Bulk Samples.	Morning Bulk Samples.	Evening Bulk Samples.
Number of Samples	137	29	108
Average	0·547	0·543	0·548
Extremes	0·535	0·535	0·537
	0·562	0·554	0·562

The evening bulk milks show a slightly greater average depression than the morning, amounting to 0·005° C.

Monthly Variation.—It has been suggested that food changes such as occur in the less nutritive spring growths as compared with the richer autumn grasses may affect the freezing point depressions. Buchanan and Lowman ("World's Dairy Congress," 1928, p. 725), judging from the examination of a limited number of samples support this suggestion. Elsdon and Stubbs, examining 1,000 samples, find the variations insignificant, and any differences that occur do not appear to follow any definite rule. The winter in 1934 in New South Wales was abnormally wet, and many milks examined in the present survey, especially those collected in the South Coast districts, were obtained from cows in very poor condition. The freezing point depressions are tabulated in Table 2, for morning and evening milking.

TABLE 2.—Freezing Point Depressions, Monthly Variations—All Samples, Morning and Evening, Bulk Samples, Morning and Evening.

Month.	All Samples.								Bulk Samples.							
	Morning.				Evening.				Morning.				Evening.			
	No. of Samples.	Average.	Least.	Greatest.	No. of Samples.	Average.	Least.	Greatest.	No. of Samples.	Average.	Least.	Greatest.	No. of Samples.	Average.	Least.	Greatest.
1933.																
July	...	...	...	...	29	0·547	0·536	0·563	...	...	...	...	6	0·546	0·539	0·551
August.....	...	...	...	...	60	0·551	0·529	0·574	...	...	...	...	16	0·548	0·540	0·561
September	...	...	...	...	50	0·551	0·540	0·571	...	...	...	...	8	0·550	0·542	0·561
October ...	...	...	...	...	57	0·554	0·538	0·575	...	...	...	...	7	0·550	0·540	0·562
November	20	0·555	0·538	0·569	55	0·547	0·531	0·567	2	0·552	0·550	0·554	9	0·548	0·540	0·558
December	...	...	...	...	48	0·550	0·533	0·567	...	...	...	...	6	0·548	0·544	0·552
1934.																
January ...	15	0·539	0·532	0·549	42	0·551	0·534	0·572	1	0·540	...	...	9	0·547	0·540	0·558
February	20	0·543	0·528	0·549	20	0·547	0·540	0·558	1	0·540	...	...	1	0·548	...	...
March	20	0·545	0·533	0·559	56	0·550	0·528	0·566	1	0·548	...	...	6	0·551	0·545	0·558
April	22	0·548	0·540	0·557	44	0·545	0·533	0·559	3	0·547	0·546	0·548	4	0·544	0·540	0·550
May	22	0·539	0·532	0·550	70	0·547	0·532	0·573	4	0·543	0·540	0·550	7	0·547	0·542	0·554
June.....	20	0·538	0·527	0·551	46	0·544	0·531	0·560	1	0·540	...	...	4	0·547	0·542	0·551
July	20	0·538	0·530	0·553	43	0·550	0·537	0·570	1	0·539	...	...	4	0·546	0·540	0·556
August.....	24	0·541	0·530	0·560	60	0·545	0·527	0·566	5	0·541	0·539	0·543	7	0·544	0·537	0·553
September	79	0·541	0·530	0·559	107	0·543	0·530	0·574	4	0·542	0·540	0·544	8	0·545	0·540	0·557
October ...	118	0·539	0·524	0·560	120	0·549	0·530	0·568	6	0·539	0·535	0·542	6	0·549	0·539	0·558

NOTE.—The above tabulation agrees with the results obtained by Elsdon and Stubbs, and it would seem there are no appreciable differences in the freezing point depressions due to the monthly variation of the milk.

Frequencies.—For statistical purposes, extremes and averages have only a limited value. It is generally a much more desirable and more complete record if the results are tabulated to show how often a particular figure has been found in the investigation. Table 3 shows the frequencies of all samples, morning and evening, and bulk samples, morning and evening.

TABLE 3.—Freezing Point Depressions—Frequencies—All Samples, Morning and Evening, Bulk Samples, Morning and Evening.

All Samples.				Bulk Samples.			
Freezing Point Depressions.	Total Samples.	Total Morning.	Total Evening.	Freezing Point Depressions.	Total Samples.	Total Morning.	Total Evening.
Below 0·530	13	8	5	.....			
0·530–0·535	142	60	82	.....			
0·536–0·541	294	164	130	0·535–0·541	28	12	16
0·542–0·547	241	67	174	0·542–0·547	26	9	17
0·548–0·553	371	42	329	0·548–0·553	65	7	58
0·554–0·560	175	30	145	0·554–0·560	15	1	14
0·561–0·566	35	8	27	Above 0·560	3	0	3
Above 0·566	16	1	15	.....			

From the freezing point depressions recorded above, it will be seen that the greatest frequency for morning milk occurred within the range 0·536–0·541, whilst the greatest frequency for evening milk occurred within the range 0·548–0·553.

Solids-not-fat.—It is generally accepted that the freezing point is independent of the solids-not-fat content. It would be quite possible for a milk to contain from 10 to 15 per cent. of added water, and still retain a solids-not-fat content above the minimum legal standard of 8·5 per cent. Table IV sets out the freezing point depressions and solids-not-fat relationship. It will be observed that the freezing point depression is independent of the solids-not-fat content.

TABLE IV.—Freezing Point Depressions and Solids-not-fat—All Samples, Morning and Evening—Bulk Samples, Morning and Evening.

S.N.F.	All Samples.								Bulk Samples.							
	Morning.				Evening.				Morning.				Evening.			
	No. of Samples.	Average.	Least.	Greatest.	No. of Samples.	Average.	Least.	Greatest.	No. of Samples.	Average.	Least.	Greatest.	No. of Samples.	Average.	Least.	Greatest.
%																
7·4 to 7·9	4	0·540	0·533	0·548	12	0·542	0·530	0·550	...	...	...	...	...	...	...	...
8·0	2	0·535	0·529	0·540	5	0·540	0·530	0·550	...	...	...	...	...	...	...	...
8·1	2	0·532	0·524	0·540	6	0·547	0·540	0·559	...	...	...	...	...	...	...	...
8·2	3	0·536	0·530	0·540	6	0·545	0·537	0·558	...	...	...	...	...	...	...	...
8·3	5	0·537	0·530	0·546	9	0·542	0·537	0·549	...	...	...	...	...	...	...	...
8·4	24	0·538	0·525	0·547	30	0·542	0·528	0·558	...	...	...	...	...	...	...	...
8·5	30	0·539	0·530	0·551	55	0·545	0·530	0·570	2	0·540	0·539	0·541	4	0·547	0·541	0·550
8·6	33	0·541	0·528	0·560	70	0·545	0·527	0·572	4	0·545	0·540	0·550	13	0·546	0·538	0·561
8·7	34	0·539	0·530	0·550	75	0·545	0·529	0·570	3	0·541	0·540	0·541	11	0·548	0·539	0·560
8·8	44	0·541	0·528	0·561	76	0·545	0·530	0·568	4	0·540	0·535	0·543	13	0·550	0·540	0·557
8·9	34	0·543	0·532	0·560	79	0·547	0·531	0·567	5	0·546	0·540	0·554	12	0·546	0·537	0·562
9·0	40	0·542	0·530	0·560	83	0·547	0·531	0·564	5	0·545	0·540	0·550	10	0·546	0·541	0·551
9·1	36	0·543	0·533	0·557	82	0·546	0·533	0·565	1	0·540	...	...	13	0·550	0·544	0·559
9·2	33	0·545	0·530	0·560	71	0·546	0·534	0·560	1	0·550	...	...	10	0·548	0·540	0·560
9·3	16	0·545	0·527	0·561	60	0·548	0·527	0·570	2	0·545	0·540	0·550	9	0·546	0·540	0·556
9·4	15	0·544	0·538	0·560	47	0·550	0·540	0·568	1	0·539	...	...	4	0·545	0·540	0·550
9·5	10	0·538	0·531	0·550	41	0·548	0·532	0·566	1	0·543	...	...	2	0·551	0·550	0·552
9·6	5	0·547	0·536	0·569	30	0·548	0·538	0·570	...	...	...	...	2	0·555	0·550	0·560
9·7	2	0·545	0·540	0·550	27	0·552	0·535	0·575	...	...	...	...	3	0·546	0·540	0·551
9·8	2	0·542	0·540	0·543	15	0·554	0·539	0·571	...	...	...	...	1	0·540	...	...
9·9	1	0·551	...	...	12	0·553	0·540	0·574	...	...	...	...	1	0·549	...	...
10·0	1	0·532	...	...	3	0·553	0·549	0·560	...	...	...	...	...	...	...	...
Over 10·0	4	0·550	0·540	0·553	13	0·553	0·538	0·570	...	...	...	...	...	...	...	...

Breed of Cow.—Table V shows the relationship of the freezing point depression to the breed of cow. Although in many cases the samples examined were obtained from pure bred cattle, in the cases of cross breeds the classification is based on the predominant strain. It will be observed that there is no significant difference in the freezing point depressions of the milk yielded by the various breeds of cattle.

TABLE V.—Freezing Point Depressions of Milk of Individual Cows of Varying Breed.

Breed of Cow.	Morning.				Evening.			
	No. of Samples.	Average.	Least.	Greatest.	No. of Samples.	Average.	Least.	Greatest.
Guernsey	13	0·539	0·532	0·556	49	0·549	0·527	0·574
Shorthorn (Illawarra)	227	0·541	0·525	0·569	352	0·547	0·530	0·575
Friesian (Holstein)	41	0·540	0·524	0·555	88	0·547	0·530	0·570
Ayrshire	35	0·543	0·530	0·561	147	0·548	0·530	0·570
Jersey	35	0·541	0·530	0·562	163	0·547	0·527	0·569

Lactation Period.—Table VI shows the relationship between the freezing point depression and last calving (lactation period). The dairymen were responsible for the information regarding the lactation period. It will be observed that there is no significant difference in the freezing point depressions of milk obtained during lactation periods of varying duration.

TABLE VI.—Freezing Point Depressions of Milk obtained during varying Lactation Periods.

Lactation Period.	Morning.				Evening.			
	No. of Samples.	Average.	Least.	Greatest	No. of Samples.	Average.	Least.	Greatest.
1 month or under	40	0·540	0·527	0·555	83	0·548	0·530	0·569
2 months	65	0·539	0·524	0·560	104	0·545	0·530	0·566
3 ,,	49	0·539	0·527	0·563	116	0·545	0·530	0·562
4 ,,	34	0·542	0·530	0·569	81	0·547	0·529	0·570
5 ,,	39	0·543	0·530	0·562	90	0·547	0·531	0·568
6 ,,	41	0·541	0·530	0·560	109	0·549	0·531	0·575
7 ,,	17	0·542	0·529	0·556	62	0·547	0·532	0·562
8 ,,	22	0·542	0·530	0·560	45	0·549	0·527	0·572
9 ,,	10	0·543	0·535	0·555	33	0·550	0·539	0·570
10 ,,	13	0·541	0·531	0·551	31	0·551	0·538	0·574
11 ,,	7	0·542	0·535	0·552	11	0·552	0·542	0·569
12 ,,	13	0·542	0·531	0·560	27	0·553	0·539	0·572
Over 12 months	2	0·546	0·540	0·553	7	0·555	0·546	0·570

Quantity of Milk Yielded.—Table VII shows the relationship of the freezing point depression to the quantity of milk yielded, the samples examined representing the yield of individual cows. (The milk was weighed and 10¼ lb. was taken as being the equivalent of 1 gallon.)

TABLE VII.—The Relationship of Freezing Point Depression to Quantity of Milk Yielded.

Yield.	Morning.				Evening.			
	No. of Samples.	Average.	Least.	Greatest.	No. of Samples.	Average.	Least.	Greatest.
¼ gallon	2	0·543	0·537	0·550	29	0·552	0·532	0·566
½ ,,	17	0·541	0·527	0·556	169	0·549	0·529	0·575
¾ ,,	30	0·542	0·530	0·560	173	0·547	0·530	0·570
1 ,,	45	0·540	0·527	0·557	181	0·546	0·528	0·572
1¼ ,,	41	0·541	0·528	0·560	104	0·546	0·527	0·570
1½ ,,	67	0·540	0·530	0·558	67	0·546	0·530	0·569
1¾ ,,	55	0·541	0·524	0·560	21	0·547	0·532	0·566
2 ,,	31	0·541	0·530	0·569	39	0·550	0·532	0·570
2¼ ,,	17	0·540	0·530	0·550	5	0·544	0·531	0·556
2½ ,,	19	0·546	0·530	0·560	3	0·551	0·540	0·570
2¾ ,,	3	0·545	0·532	0·553	...	...	...	...
3 ,,	5	0·542	0·530	0·560	3	0·554	0·548	0·568
3¼ ,,	3	0·536	0·530	0·540	...	...	...	...
3½ ,,	2	0·549	0·540	0·558	...	...	...	...

It will be observed from the above figures that there is no significant difference between the freezing point depression and the quantity of milk yielded.

TABLE VIII.—Solids-not-fat of All Samples, Morning and Evening, and Bulk Samples, Morning and Evening—Monthly Variation.

Month.	All Samples.								Bulk Samples.							
	Morning.				Evening.				Morning.				Evening.			
	No. of Samples.	Solids-not-fat.			No. of Samples.	Solids-not-fat.			No. of Samples.	Solids-not-fat.			No. of Samples.	Solids-not-fat.		
		Average.	Least.	Greatest.		Average.	Least.	Greatest.		Average.	Least.	Greatest.		Average.	Least.	Greatest.
1933.		%	%	%		%	%	%		%	%	%		%	%	%
July	...	...	...	...	29	9·13	8·6	10·1	...	...	...	...	6	9·1	8·9	9·4
August.....	...	...	...	...	60	9·19	8·5	10·0	...	...	...	...	16	9·1	8·6	9·6
September	...	...	...	...	50	8·85	8·5	10·3	...	...	...	...	8	8·8	8·6	9·1
October ...	...	...	...	...	57	8·98	8·5	10·2	...	...	...	...	7	8·9	8·7	9·2
November	20	9·02	8·6	9·6	55	8·93	8·03	9·5	2	9·0	8·9	9·1	9	8·9	8·6	9·0
December	...	...	...	...	48	9·01	8·31	9·7	...	...	...	...	6	9·0	8·6	9·4
1934.																
January ...	15	8·60	8·16	9·0	42	8·74	7·74	9·5	1	8·7	...	...	9	8·8	8·5	9·0
February	20	9·21	8·5	10·3	20	9·13	8·5	10·7	1	9·4	...	...	1	9·1	...	...
March	20	8·82	8·5	9·4	56	8·76	8·10	9·6	1	8·6	...	...	6	8·8	8·5	9·0
April	22	9·00	8·6	9·7	44	8·97	8·36	10·1	3	9·0	8·6	9·3	4	8·9	8·7	9·2
May	22	8·96	8·6	9·4	70	9·29	8·5	11·2	4	8·9	8·8	9·0	7	9·2	8·8	9·4
June.....	20	8·79	8·5	9·3	46	9·22	7·65	10·8	1	8·9	...	...	4	9·4	8·9	9·8
July	20	9·47	8·9	10·3	43	9·48	8·8	10·3	1	9·5	...	...	4	9·4	9·3	9·7
August.....	24	8·75	8·38	9·4	60	9·29	7·9	10·6	5	8·7	8·5	9·1	7	9·3	8·8	9·9
September	79	8·77	7·70	9·9	107	9·08	7·52	9·9	4	8·8	8·6	9·0	8	8·9	8·5	9·1
October ...	119	8·85	8·02	9·6	120	8·88	7·9	9·8	6	8·9	8·7	9·0	6	8·9	8·6	9·3
Whole Period	380	8·91	7·70	10·3	907	9·05	7·52	11·2	29	8·89	8·5	9·5	108	9·00	8·5	9·9

TABLE IX.—Milk-fat of All Samples, Morning and Evening, and Bulk Samples, Morning and Evening—Monthly Variation.

Month.	All Samples.								Bulk Samples.							
	Morning.				Evening.				Morning.				Evening.			
	No. of Samples.	Milk-fat.			No. of Samples.	Milk-fat.			No. of Samples.	Milk-fat.			No. of Samples.	Milk-fat.		
		Average.	Least.	Greatest.		Average.	Least.	Greatest.		Average.	Least.	Greatest.		Average.	Least.	Greatest.
1933.		%	%	%		%	%	%		%	%	%		%	%	%
July	...	...	...	...	29	4·98	3·3	6·6	...	...	...	...	6	5·0	4·2	5·7
August.....	...	...	...	...	60	4·59	3·3	6·3	...	...	...	...	16	4·5	3·8	5·8
September	...	...	...	...	50	4·04	2·2	6·3	...	...	...	...	8	4·1	3·5	4·6
October ...	...	...	...	...	57	4·32	3·2	6·4	...	...	...	...	7	4·4	3·8	4·9
November	20	3·55	2·8	5·0	55	4·54	3·1	6·0	2	3·35	3·2	3·5	9	4·5	3·9	5·1
December	...	...	...	...	48	5·06	3·5	6·4	...	...	...	...	6	5·0	4·6	5·5
1934.																
January ...	15	3·62	2·8	4·7	42	4·69	3·5	6·0	1	3·4	...	...	9	4·3	3·8	5·0
February ..	20	3·93	2·9	5·0	20	4·38	3·2	5·8	1	4·3	...	...	1	4·2	...	...
March	20	3·77	3·0	4·3	56	4·69	3·4	6·4	1	3·7	...	...	6	5·0	4·3	6·0
April	22	4·45	3·2	5·9	44	4·81	3·0	6·1	3	4·3	4·2	4·5	4	4·6	4·5	4·9
May	22	3·65	3·1	5·0	70	5·29	3·7	6·7	4	3·7	3·4	4·0	7	5·1	4·3	5·6
June.....	20	4·23	2·1	6·4	46	4·6	3·2	7·1	1	4·0	...	...	4	4·8	3·5	5·5
July	20	4·75	3·3	6·1	43	5·18	3·8	6·7	1	4·9	...	...	4	5·1	4·5	5·6
August.....	24	3·48	2·7	4·4	60	4·76	3·7	6·5	5	3·6	3·4	4·0	7	4·7	4·2	5·5
September	79	3·25	1·9	5·0	107	4·35	2·8	6·3	4	3·4	3·3	3·5	8	4·5	3·6	5·0
October ...	119	3·17	2·3	5·0	120	4·07	2·6	6·0	6	3·2	2·9	3·5	6	4·1	3·5	4·4
Whole Period	380	3·55	1·9	6·4	907	4·58	2·2	7·1	29	3·6	2·9	4·5	108	4·6	3·5	6·0

Some of the variations in the milk-fat of the bulk milks recorded in Table IX will be explained by referring to Table X, which gives the numbers and breeds of cattle from which bulk milks were collected monthly. For example, in January, 1934, the milks were collected principally from Holsteins, whilst in October, 1934, Shorthorns were the predominant breed milked.

TABLE X.—Breeds and Number of Cattle from which Bulk Samples were Collected Monthly.

Month.	Morning.						Evening.					
	Total.	Breeds of Cattle.					Total.	Breeds of Cattle.				
		Holsteins.	Ayrshires.	Shorthorns.	Jerseys.	Guernseys.		Holsteins.	Ayrshires.	Shorthorns.	Jerseys.	Guernseys.
1933.												
July	...	...	...	...	...	...	46	8	17	6	8	7
August	...	...	...	...	...	...	213	20	41	88	43	21
September	...	...	...	...	...	...	70	26	5	14	20	5
October	...	...	...	...	...	...	108	3	25	52	21	7
November	24	...	10	8	6	...	101	1	55	18	23	4
December	...	...	...	...	...	...	54	5	10	18	15	6
1934.												
January	25	25	...	...	...	...	123	90	2	11	18	2
February	19	1	12	6	...	...	19	1	12	6	...	...
March	25	...	...	25	...	...	94	4	20	52	11	7
April	25	1	3	15	4	2	50	1	10	24	12	3
May	35	...	2	8	10	15	138	15	19	50	33	21
June	48	5	9	15	19	...	77	7	17	20	28	5
July	30	...	6	2	18	4	81	...	17	13	47	4
August	40	...	...	40	...	...	113	...	2	70	34	7
September	166	2	9	146	7	2	245	17	26	174	21	7
October	270	46	2	220	2	...	270	46	2	220	2	...
Whole period	707	80	53	485	66	23	1,802	244	280	836	336	106

Conclusion.—As the result of this survey, it appears that the present New South Wales standard, requiring that the freezing point of milk shall not lie between zero Centigrade and—0·55 degree Centigrade, as determined in the Hortvet cryoscope, is reasonable for bulk milk, providing a 3 per cent. tolerance is allowed as suggested in the A.O.A.C. methods of analysis. This tolerance has always been observed in the administration of the standard. In fact no prosecution has been issued unless the freezing point lay between zero Centigrade and—0·52° Centigrade.

Considering the milks obtained from individual cows, of 1,150 samples of known genuine origin examined, the freezing point of 155 samples was found to lie between—0·524 and—0·535° Centigrade, thirteen of which were between—0·524 and—0·530° Centigrade. In view of the tolerance allowed, as stated above, it will be seen that in no instance would any of the milks from individual cows examined during the course of this survey have been the subject of a prosecution for added water.

Judging from the results obtained, it would probably be advisable to amend Regulation 24 (1) of Pure Food Act to provide that the freezing point of milk shall not lie between zero Centigrade and—0·535° Centigrade. Assuming in practice that a further tolerance of 2 per cent. is allowed to cover all circumstances, there seems to be no likelihood of even the milk of a single cow being deemed to contain added water when this is not the case.

Regarding the solids-not-fat as disclosed by this survey, it was found that during the spring of 1934 (September and October) the South Coast milks were strikingly low. In fact, the milk of many of the individual cows possessed a solids-not-fat well below the legal standard of 8·5 per cent., although not one of the bulk milks collected from this area fell below this figure. Further detailed investigation limited to this zone may disclose the source of this deficiency, and permit of remedial measures being taken. At present, it is thought that the poorness of feed, due in part at least to the lack of systematic top-dressing of the pastures, many of which have been used as grazing lands for a very long period, is responsible for the inferior quality of the milk.

The fat content of the milks examined, in the main, appears to be satisfactory, although the spring morning milks of the South Coast area showed an average of only 3·25 per cent. of fat for September, and 3·17 per cent. for October. This again may be attributed to the poorness of pasture, although in some instances uneven milking periods may be a contributing factor. Most of the cows from which the milk was collected in this area were in poor condition following a severe and wet winter.

In conclusion, I desire to thank all those who collaborated with me in this work, particularly the inspectors under the Pure Food Act and the supervisors under the Milk Act, who assisted in the collection of the samples and the supervision of the milking, the members of the Government Analyst's Branch who assisted in the analyses, the Chairman of the Metropolitan Milk Board, the Chief Food Inspector, and the Government Analyst, who so readily placed their staff at my disposal.

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, 1934.

Staff.

Chief Inspector, CHARLES V. FRANCIS, M.R. San. I. Senior Inspector, G. A. GRIFFIN. 10 Metropolitan Inspectors, 2 Country Inspectors and 1 Assistant.

I herewith submit particulars of the work performed by the Pure Food Branch for the year ended 31st December, 1934. This work includes the supervision of all places where food or drugs are prepared, stored or exposed for sale, together with the incidental duties required to be carried out in order to secure the wholesomeness, cleanliness and freedom from contamination of food and drugs, and compliance with the legal provisions as set out in the Act and regulations thereunder.

Milk.—13,119 samples of milk were purchased for analysis by departmental officers, and 4,811 by local authorities, making a total of 17,930 for the year; 209 of the samples were not in accordance with the standard; 69 warnings were issued, and 141 traders were prosecuted, the fines and costs imposed amounting to £433 8s. Enforcement of the freezing point test has brought about a decided improvement in the solids-not-fat content of milk sold for human consumption.

Meat.—Further efforts were made throughout the year to lessen the use of prohibited preservatives on fresh meat, and to this end no less than 6,341 samples were purchased from butchers' shops and purveyors of meat, and analysed. Of the 6,341 samples, 851, or 13·4 per cent., did not comply with the law; 397 warnings were issued, and 454 prosecutions were carried out, an amount of £1,182 8s. being collected in fines and costs.

It is satisfactory to note that the percentage of traders using a preservative is gradually decreasing, the increase of £395 3s. in the penalties being due to heavier fines being imposed on some old and persistent offenders.

Condensed Milk.—It was found necessary to seize and destroy 136,368 tins of locally prepared condensed milk, which was found to have deteriorated and to be unfit for human consumption.

Accelerators in Flour.—Following a recurrence of several cases of dermatitis among bake-house workers, samples of flour were taken from bakeries and flour mills, and it was found that in some instances persulphate of ammonia was again being mixed with the flour. Legal proceedings were instituted, and convictions obtained for the sale of flour containing this prohibited substance.

Adulterated Jam.—Lengthy, but successful, litigation took place in connection with jam manufactured in another State, not labelled in accordance with the N.S.W. Pure Food Regulations. Following the prosecutions, all the jam was either returned to the place of manufacture, or relabelled with the words "and apple jam" following the name of the fruit already on the label.

Salmon.—The arrangement made between the Commonwealth Customs authorities and the Canadian Government for the code branding of containers in accordance with the grade of salmon each contained, appears to have been successful in preventing the former unscrupulous practice of locally relabelling inferior grades with choice grade names.

Arsenical Sprays.—Presence of arsenious oxide on fruits and vegetables, sprayed too close to maturity, has necessitated action in some cases for their seizure and destruction. The permitted maximum of arsenious oxide is 1/100 grain per lb. Cabbages and cauliflowers, particularly the outer leaves, are prone to be most heavily contaminated; and removal of these before marketing would tend largely to reduce the lead arsenate content. The present permitted maximum does not appear to be effective in controlling insect pests, and search for a more effective spray is being made by the Department of Agriculture.

Use of Printed Paper for Food Wrapping Purposes.—It was found necessary during the year to institute legal proceedings against offenders who were wrapping food for sale in such a manner that it came into contact with printed matter on the wrapping paper. Bread, chipped potatoes, and other foods eaten in the state in which they are sold were found to be wrapped in this illegal and otherwise objectionable manner. As a result of departmental action the practice is rapidly decreasing. Suitable wrapping material costs very little more than second-hand printed paper.

Food and Drug Samples in General.—Of a total of 957 samples (excluding milk and meat) submitted for analysis, 62 were found to be below standard; 41 warnings were issued, and 21 prosecutions instituted. The fines and costs imposed amounted to £54 8s.

Seizure and Destruction of Food.—During the year it was found necessary to seize a large quantity of foodstuffs. The seizure comprised 143,408 tins (136,308 of which contained deteriorated condensed milk), 946 packets, and 1,028 bottles, in addition to 120 tons 5 cwt. of loose foods. These were destroyed under departmental supervision.

General Breaches of the Act and Regulations.—67 prosecutions were instituted, resulting in collection of penalties amounting to £106 6s.; 30 convictions were also obtained against offenders for failing to keep their food premises clean, and fines and costs amounting to £107 5s. were imposed. 11,431 food premises were inspected in 1934.

Legal Proceedings.—The attached summary indicates the amount of work carried out in prosecuting offenders for breaches of the Pure Food Act and the Regulations thereunder. Officers of the Branch were concerned with the prosecution of 685 offenders, upon whom fines and costs were imposed amounting to £1,836 13s.

Milk Bars.—During the past year, particularly within the metropolitan area, several new and attractively fitted milk bars have been opened for public use, at which milk and beverages containing milk are extensively sold. A special feature about these bars is the fact that almost every phase of the preparation of the drinks sold is carried out within sight of the public, and the general conditions, from a structural and maintenance point of view, are hygienic and satisfactory. The bars are popular, and appear to have resulted in a considerable increase in the consumption of milk by the public. In a few cases where milk did not comply with the standard, it was necessary to take action, but on the whole the quality of the drinks were found to be quite satisfactory.

Shaving Brushes.—During the year two cases of anthrax were caused through the use of infected shaving brushes. Action was taken to prevent sale of similar brushes and the use of suspected hair (imitation badger) which had been used for their manufacture. 2,170 brushes, believed to have been made from the same consignment of hair as the infected brushes, were seized and subsequently destroyed. Some of the brushes were tested on guinea pigs and caused anthrax.

A conference between the Brush Manufacturers and officers of the Commonwealth and State Health departments discussed the precautions necessary to prevent use of infected hair, and arrangements have been made for all future consignments of hair to be fumigated under Federal supervision, irrespective of any overseas certificates of fumigation which may accompany a consignment.

Health Week.—The usual annual display was made by the Branch during Health Week, in addition to the exhibit on similar lines at the yearly conference of the Health Inspectors' Association, held at the Sydney Technical College. Both displays created great interest, and conveyed in a small measure an idea of the varied activities of the Department.

Prohibition of Statements or Claims in Labels or Advertisements relating to Drugs or Medicines.—It is most essential from a public health point of view, that legislation be provided on the lines adopted in other States of the Commonwealth, to prohibit certain statements or claims being made in labels or advertisements relating to drugs or medicines for sale, where such statements or claims directly or by implication indicate or suggest that the drug or medicine will remedy or cure certain diseases, such as cancer, consumption, etc., or are a universal panacea—cure for baldness, etc., etc. Even a cursory glance at the daily newspaper will convince any intelligent person of the need of such power. The better type of newspaper is in the unhappy position of having to accept such advertisements, knowing that were it to reject same, the less particular paper would without hesitation accept the advertisement. The most effective way of preventing money from flowing into the hands of the manufacturers of useless nostrums is to prohibit certain forms of advertising.

Medical Treatment by other than Qualified Persons.—As usual many enquiries were made into allegations concerning the treatment of the sick by unqualified persons, and the subsequent action taken by the department resulted, in some cases, in certain changes being effected in the public interest. One so-called herbalist was persuaded to leave the country.

Dentists' Act, 1934.—Many enquiries were made, and a considerable amount of work carried out in order to secure compliance with the requirements of the Act and Regulations thereunder.

Venereal Diseases Act, 1918.—At the request of the Commissioner, several special investigations were made concerning breaches of the Act. In this connection attention was given to the question of certain forms of advertising, and several convictions for breaches of the law were obtained. Constant attention is necessary to curb the advertising activities of vendors of substances alleged to alleviate female irregularities and sexual impotence. Many imported publications were dealt with in this connection.

Details of inspections made, samples taken, and other work performed, are given in attached tables.

C. V. FRANCIS,
Chief Food Inspector.

TABLE I.—Summary of Work performed by Pure Food Officers for the year ended 31st December, 1934.

Analysis of Samples of Milk.	Samples taken by—		
	Departmental Officers.	Municipal and Shire Council Inspectors.	Total.
Number of samples taken from all parts of the State	13,119	4,811	17,930
Number of samples below standard	153	56	209
Number of warnings	45	23	68
Number of prosecutions	108	33	141
	£ s. d.	£ s. d.	£ s. d.
Amount of fines and costs	332 6 0	101 2 0	433 8 0

*Foods and Drugs, other than Milk.** (See Table I, p. 18.)

Number of samples taken from all parts of the State	7,298
Number of samples below standard	913
Number of warnings	438
Number of prosecutions	475
Amount of fines and costs	£1,236 16s.

* 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.

The seizures comprised over 120 tons of foodstuffs, 136,308 tins of deteriorated condensed milk, and 9,074 packages of assorted foods.

Number of prosecutions	2
Amount of fines and costs	£22 16s.

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

Number of premises inspected in all parts of the State	11,431
Number of notices issued	605
Number of prosecutions	30
Amount of fines and costs	£107 5s.

TABLE 2—Summary of Legal Proceedings for Breaches of the Pure Food Act and Regulations, 1934.

	Prosecutions.	Fines and Costs.
		£ s. d.
Adulterated milk	108	332 6 0
Adulterated foods and drugs	475	1,236 16 0
Food unfit for human consumption seized and destroyed	2	22 16 0
Unclean premises	30	107 5 0
General breaches of Act and Regulations	67	106 6 0
Breaches of Venereal Diseases Act and Regulations	3	31 4 0
Grand Total	685	£1,836 13 0

TABLE 3.—Summary of work carried out under the Pure Food Act, 1908, from the date of its operation (October, 1910) to 31st December, 1934.

	No. of Premises Inspected.	No. of General Breaches.	Total number of samples taken.	Total below standard.	Prosecutions undertaken.	Amount of Fines and Costs.
						£ s. d
Premises inspected	200,008	.....	.....	.....	2,337	11,863 3 0
General breaches of Act	.....	2,006	.....	.....	1,635	5,382 11 0
No. of milk samples	.....	.....	192,524	8,183	4,241	20,638 13 0
No. of food and drug samples	.....	.....	40,009	6,730	3,946	12,178 10 0
Total	200,008	2,006	232,523	14,913	12,159	50,022 17 0

REPORT OF THE ACTING CHIEF SANITARY INSPECTOR FOR THE YEAR ENDED 31ST DECEMBER, 1934.

Staff.—Chief Sanitary Inspector, T. A. W. Curry, M.R. San. Inst. (*died* 30th June, 1934); Acting Chief Inspector, G. A. Garrow, M.R. San. Inst.; 7 other certificated inspectors, and 1 certificated inspector and licensed surveyor.

On 30th June, 1934, the Department lost by death the services of a valuable and esteemed officer when its Chief Sanitary Inspector, Mr. Tom A. W. Curry, died from pneumonia after a brief illness. The Senior Staff Inspector, Mr. G. A. Garrow, has carried out the duties of Chief Inspector since the date of Mr. Curry's death.

Routine and General.

Inspection of Country Towns.—In 1934 this work comprised the re-inspection of 46 towns in reference to their general sanitary condition, and to ascertain whether recommendations made at previous inspections had been satisfactorily carried out. Owing to depletion of the inspection staff by retirement and death, and to certain additional work which this branch was called upon to undertake, no primary inspections were made of country towns in 1934.

Outbreaks of Infectious Diseases.—Three outbreaks of infectious diseases were investigated, and recommendations made relative to preventive measures. In an outbreak of scarlet fever at Moss Vale, it was found that the probable source of infection was the milk supply. When the dairy concerned was voluntarily closed, the outbreak terminated.

Sanitary and Garbage Depot Sites.—53 inspections of sanitary and garbage depot sites were made, and 17 proposed depot sites were examined. Five recommendations were made during the year for disposal of nightsoil by burial in ploughed furrows instead of in trenches.

Insanitary Buildings.—154 insanitary buildings were inspected. The conditions existing in 31 of the premises were such as to render them unsuitable for human habitation. Closing order certificates were issued and local authorities advised to take action to close the buildings. In the other cases, recommendations were made as to the improvements necessary to place the buildings in a habitable condition.

Meat Inspection.—Efforts were continued throughout the year for systematic inspection of animals slaughtered for human food in country districts, and 378 inspections were made of slaughtering premises.

In the existing Cattle Slaughtering Act, no satisfactory provision was made to enable local authorities to collect fees for payment of a qualified inspector in country killing centres. Investigations were made in 11 districts to ascertain the expenses incurred by local authorities in inspecting carcases slaughtered for human consumption, and scales of inspection fees were submitted for gazettal.

In order to provide the necessary legal basis for such policy, the Cattle Slaughtering and Diseased Animals and Meat Act has been completely revised, and comprehensive draft amendments have been formulated and submitted.

Theatres and Public Halls.—53 inspections of theatres and public halls were made and recommendations forwarded to the Chief Secretary's Department. Plans of two new theatres were also examined and air tests made.

Unhealthy Building Land.—Extensive surveys were made in 1934 of lands at Swansea, Goulburn and Belmont, proposed to be notified under section 55 of the Public Health Act, 1902, as unsuitable for building purposes. A proclamation has been issued in respect of the land at Swansea, and similar action is in progress in regard to the areas at Goulburn and Belmont.

A large number of routine inspections were carried out, and, in many instances, buildings have been erected on lands which have been improved in accordance with the proclaimed requirements and rendered suitable for building purposes.

Fees of 2s. 6d. each, amounting to £180, were collected for searches and replies furnished to 1,440 inquiries from solicitors and others relative to building restrictions on land.

Bedding.—Special attention was again given to the nature of the filling materials used in bedding, cushions, upholstery, etc., and to the source of rags intended to be used for the manufacture of flock. This work involved many inspections and inquiries, and the taking of many samples for analysis. Draft regulations prepared for issue under the Public Health (Amendment) Act, 1921, are under consideration.

Swimming Pools.—The sanitation of public baths and swimming pools continues to occupy active attention; and many samples of water were collected for chemical and bacteriological examination. 49 inspections were also made, and 15 plans examined.

Beach Pollution.—At the request of the Shark Menace Advisory Committee, data is being collected as to the likelihood of beach pollution arising from concentration of bathers upon shark-proof enclosures. Samples of sand from beaches and enclosures are being collected and submitted for analysis.

Cook's River Pollution.—Extensive investigations were made concerning statements that the waters of Cook's River were being polluted by the discharge of sewage into the river from the main western sewer carrier.

Dead Wool.—The probability of the handling of dead wool being a contributing factor in the spread of anthrax and tetanus has been investigated, and measures for regulation and control of the conditions under which it is handled are under consideration.

Industrial Wastes.—In connection with wastes from canning factories, investigations were made as to effective methods of disposal, and to that end samples of wastes were collected and analysed, and an experimental plant was designed. Similar investigations were made in regard to wastes from wool-scours.

Burial of Still-born Infants.—Regulation of the burial of still-born and infant corpses has been satisfactorily finalised.

General Inspections and Investigations comprised :—

Septic tank sites, examination of plans, etc.	453
Sewage treatment works	4
Pollution of bathing beaches	8
Unemployed and other camps	17
Sale-yards	10
Mosquito-infested areas	6
Noxious trades	629
Bedding factories	200
Recreation grounds	28
Cemeteries	8
Food premises, including 8 butchers' shops	92
Barbers' shops	93
Public hospitals	20
Private hospitals	13
Public and private schools	53
Hotels	122
Swimming pools	64
Rat and vermin-infested areas	9
Water supplies—public and private	41
Complaints *re* drainage	50
Samples for analysis, including water, soils, flock, etc.	312

Ordinances.—Several minor amendments proposed to the Local Government Ordinances have been considered and reported upon.

Health Week.—Several models of sanitary appliances, together with arresting notices and slogans, and exhibits relating to personal and public hygiene, were displayed in shop windows during "Health Week." These exhibits attracted much public attention.

Prosecutions.—Prosecutions instituted by officers of this branch for breaches of the various Health Acts, Regulations and Local Government Ordinances, resulted in the collection of £181 8s. in fines, costs, etc.

During the year the officers of this branch have been working under heavy pressure owing to depletion of staff by the retirement of one officer and by the death of another. These vacancies have not yet been filled.

GEO. A. GARROW,
Acting Chief Sanitary Inspector.

PRIVATE HOSPITALS ACT, 1908.

REPORT on the operations of the Act for the year ended 31st December, 1934, by Dr. H. G. WALLACE, Senior Medical Officer of Health.

The number of private hospitals licensed in the State as at 31st December, 1934, was 707, having a total of 5,998 beds. There was an increase of two licenses and a decrease of 6 beds compared with the previous year.

Of the 707 licensed private hospitals, 266, with a total of 3,155 beds, were located in the metropolitan area, and 441, having a total of 2,843 beds, were situated in country districts.

There was a decrease of three licenses, and of 36 beds, in the metropolitan area, and an increase of five licenses, and of 30 beds in country districts, as compared with the previous year.

Most of the private hospitals are small, only 43 having over 20 beds, while in 543 the accommodation did not exceed 10 beds. 342 hospitals are licensed for the reception of midwifery cases only, 40 for medical and surgical cases only, and 325 for medical, surgical and lying-in cases.

Inspection of Private Hospitals.—The five Supervisory Nurses carried out systematic inspections of all licensed private hospitals during the year, in addition to other duties performed by them in connection with the Nurses' Registration Act. This enabled each private hospital to be inspected, on an average, twice during the year. In cases where further advice was needed, a departmental medical officer or a sanitary inspector made special inspections.

The standard of previous years was well maintained during 1934, but a number of the smaller hospitals are still of poor type. No power exists under the existing Private Hospitals Act to prescribe furnishings or equipment. A survey of the equipment of private hospitals licensed for the reception of surgical cases was made during the year, with a view to providing a basis for any further action that may be required.

The excellent services rendered by the Bush Nursing Association and Country Women's Association in maintaining hospitals in remote country districts was continued during the year.

Rest Homes.—During the year a survey was made of all the known "Rest Homes" in the State. With one exception, they are all in the metropolitan area. From the information obtained, it appears desirable that these premises should be licensed and supervised as institutions distinct from private hospitals, with which they often have little in common. There can be no doubt that they serve a useful purpose, but special attention is required in order to ensure satisfactory conditions.

Puerperal Sepsis in Private Hospitals.—Of the 238 cases of puerperal sepsis notified during 1934, 62 were notified from private hospitals compared with 59 in the previous year. In all cases they were isolated occurrences and investigation made into each case showed no connection with other infected patients. The existing procedure with regard to such cases, therefore, appears to be effective as far as private hospitals are concerned.

Private Hospitals Legislation.—As an outcome of Departmental investigations into the working of the existing "Private Hospitals Act, 1908," it has been found that the Act is deficient in several important respects, among which are absence of adequate provision for prescribing furnishings and equipment, number of domestic and other staff, sanitary appliances, fire escapes and the like, quarters for nurses and other staff, laundries, kitchens, nurseries, operating theatres and numerous other items.

It is hoped that it will be found possible to bring forward amending legislation during the coming year, with a view to supplying certain deficiencies in the Act, and to procuring more uniformity than is at present possible, particularly in the matter of buildings and of the equipment and staffing of private hospitals.

TABLE I.—Showing the Classification of Private Hospitals Licensed at 31st December, 1934, according to nature of cases received, and the total number of beds provided by each class of hospital.

District.	Medical, Surgical and Lying-in.		Medical and Surgical only.		Lying-in only.		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	106	2,090	28	530	132	535	266	3,155
Country Districts	219	1,855	12	157	210	851	441	2,843
Total	325	3,945	40	667	342	1,386	707	5,998

TABLE II.—Showing Classification of Private Hospitals Licensed at 31st December, 1934, 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	18	21	35	47	50	58	37	266
Country Districts	33	55	57	98	129	63	6	441
Total	51	76	92	145	179	121	43	707

Comments on Tables I and II.

It will be seen from the figures given in Table I that private hospitals licensed for the reception of lying-in cases only constitute the greater proportion of those licensed, amounting to 48·3 per cent. of the total, compared with 48·4 per cent. in 1933. Those private hospitals licensed for the reception of medical and surgical cases only constituted 5·6 per cent. of the total, and private hospitals licensed to receive all three classes formed 46·1 per cent. of the total.

On the other hand, the number of beds available was greatest in those private hospitals licensed for the reception of all classes of cases, amounting to 65·7 per cent. of the total beds, compared with 23·1 per cent. for beds in purely midwifery hospitals.

It is evident that there are a number of small private hospitals devoted to the reception of one or two lying-in cases only. It is frequently the custom for a midwifery nurse doing outdoor nursing in the district to have one or more rooms in her residence licensed for the reception of midwifery cases. The equipment and attendance is often poor, and, owing to other calls being made on the licensee's time, she is unable to give full attention to indoor patients. For this and other reasons, any increase of these very small private hospitals is, in general, not in the patients' interests at present.

Table II.—The number of hospitals containing 4–10 beds is still largest in proportion of all those licensed, being 45·8 per cent. of the total in 1934.

Private hospitals of this size apparently not only fulfil a public need, but are of a convenient size to be run with the aid of a small staff. The development of private hospitals of this type, with adequate equipment and staff, will probably play an important role among private hospitals in the future.

HOSPITAL ADMISSION DEPOT; MEDICO-LEGAL SECTION, ETC.

REPORT OF THE GOVERNMENT MEDICAL OFFICER FOR SYDNEY FOR THE YEAR ENDED 31ST DECEMBER, 1934.

Medical Staff.

DR. ARTHUR PALMER, Government Medical Officer for Sydney; Dr. C. E. Percy, Medical Officer.
Depot Assistants, 2; *Night Officer*, 1.

MEDICAL WORK.

Arrangement of Admissions to Hospitals and Homes and Outdoor Treatment.—The Depot is open for this purpose from 9 a.m. to 5 p.m., Monday to Friday, and from 9 a.m. to 12 noon on Saturday. At all other times a Night Officer is available.

During the year ending 31st December, 1934, 12,048 persons were admitted through the Depot to the various Metropolitan hospitals. In 1934, 7,206 were admitted to the State Hospitals and Homes at Lidcombe, Liverpool, Newington, George-street and Macquarie-street, Parramatta; 1,061 to the Convalescent Homes at Camden and Vaucluse; and 2,098 persons were referred to the Metropolitan hospitals for outdoor treatment.

The examinations of persons entering convalescent homes, orphanages, etc., are carried out.

Applications by persons living in the country for admission to Metropolitan or Base Hospitals are dealt with.

Medical Examinations for State Government Departments.—These examinations were made as follows:—

(*a*) of persons claiming or receiving aid from the Child Welfare Department;
(*b*) for retirement from the Public Service on account of invalidity;
(*c*) pensioners under the Superannuation Act;
(*d*) of Pilots;
(*e*) to ascertain the fitness of officers to continue duty after reaching 60 years of age;
(*f*) examination of applicants for the Widows' Pension and for renewals of pensions;
(*g*) examination of boys for fitness to undergo courses of farm training;
(*h*) examination of returned soldier applicants referred by the Premier's Department for travelling concessions;
(*i*) examination of applicants for surgical appliances referred by the Chief Secretary's Department;
(*j*) examinations for fitness to hold Motor Driver's Licence (on behalf of the Transport Board).

Some of the above persons were visited in their own homes by the Medical Officers.

Medical Examination of Police Recruits.—595 recruits (probationary constables and police cadets) were examined during 1934. 221 were classed as fit at the first examination, and an additional 108 were eventually classed as fit when their defects were remedied or when they reached the required physical standards. (Appendix I).

On completion of twelve months' service all probationary constables are again examined at the Police Headquarters. 52 such examinations were performed in 1934.

Medical Supervision of Sick Police.—This is carried out daily by the Government Medical Officer at the Police Headquarters. The sick or injured members of the Force attend for treatment or for the purpose of reporting the progress of their illness. The average daily number of police on sick report for 1934 was 69·37.

Any other matters concerning the health of the Police Force are also attended to.

MEDICO-LEGAL WORK.

Examination of Alleged Rape and Criminal Assault Cases and Examination of Criminals.—These cases are examined at all hours, as it is usually desirable that they be examined as soon as possible after the offence. Examinations are made to determine any injury or to ascertain the mental condition of these persons. 101 examinations were made in 1934.

In addition, exhibits connected with these cases or with poisoning cases, etc., are seen before being sent to the Microbiological or Chemical Laboratory.

This work entails the attendance of the medical officers at the lower courts in the city and suburbs and at the Central Criminal Court and the Quarter Sessions, for the purpose of giving evidence.

Work for the Coroner's Court entails the daily attendance of the Government Medical Officer at the City Morgue for the purpose of examining dead bodies in connection with suicides, murders, violent and uncertified deaths, and the giving of evidence at the Coroner's Court.

During 1934, 343 examinations of dead bodies were carried out; the figures for 1933 being 339.

Lunacy Work.—The Reception House at Darlinghurst is visited daily by a medical officer for the purpose of examining persons detained there. 1,036 persons were certified as insane in 1934.

In addition, arrangements were made for the transfer of suitable cases to State Hospitals and Homes.

Vaccinations.—Members of the Police Force are vaccinated at the Police Depot during their course of instruction, and members of the general public at the Hospital Admission Depot. 131 vaccinations were performed in 1934.

The medical officers attached to this Branch are on duty at all hours and are liable to be called upon at any time by the Police Department for any urgent work of a medico-legal nature.

Ambulance Removals.—The Hospital Admission Depot arranges for the transport of patients to the various Metropolitan hospitals and to the State Hospitals and Homes. This work is carried out by the Central District Ambulance by means of its own ambulances or those of adjacent districts.

Ambulance Removals during 1932, 1933 and 1934 :—	1932	1933 *	1934.*
Departmental ambulances	2,000	.....	.....
Central District ambulances	8,112	11,974	12,836
Total removals	10,112	11,974	12,836

* An arrangement was come to with the Central District Ambulance during 1933, under which all ambulance work required by the department was taken over by the Central District Ambulance from the beginning of July, 1933.

Appendix I.

RESULTS OF MEDICAL EXAMINATIONS OF APPLICANTS FOR ADMISSION TO THE N.S.W. POLICE FORCE AS PROBATIONARY CONSTABLES.

(Covering a period of 5 years from February, 1930, to January, 1935).

Total number of Applicants examined: 1,479.

Number rejected at first examination: 1,209.

Reasons for Rejection—

*Defective Vision (Form)	247
*Defective Colour Vision	55
Overweight	24
Under Weight	87
Under Chest Measurement	144
Under Chest Measurement and Underweight	215
Albuminuria and Under Chest and/or Underweight ...	19
Albuminuria	30
Glycosuria	4
Varicose Veins	34
Varicocele	52
Hæmorrhoids	1
Deformities of the Spine	13
Deformities of the Chest	2
Deformities of the Arms and Hands	21
Flat Feet	32
Other Deformities of the Legs and Feet	37
Diseases of the Knee Joint	3
Scars of the Legs and Feet	19
Scars of other parts	2
Diseases of the Ear and Defective Hearing	13
Disease of the Eye...	2
Deformities and Diseases of the Nose	11
Diseased Tonsils	16
Dental Defects	15
Diseases of the Heart	12
Diseases of the Lung	8
Diseases and Deformities of the Testicles	9
Diseases of the Urinary System	2
Diseases of the Skin	7
Nævi	2
Herniæ (Inguinal)	11
Operations for Hernia	8
Unacceptable Appendix Scars or Operations	26
Empyema Operations	3
Other Operations	5
Diseases of the Thyroid Gland	3
History of Various Diseases	15

*Candidates are first examined for form and color vision in this order, and should they fail in either of these tests they are not otherwise examined.

Applicants for admission as Cadets are not included in these figures.

SECTION I—B.

DIVISION OF MATERNAL AND BABY WELFARE.

PART I.

An investigation of 1,073 Maternal Deaths in New South Wales during the years 1929-33. E. Sydney Morris, M.D., Ch.M., D.P.H. (Director-General of Public Health), and Elma Sandford Morgan, M.B., Ch.M. (Director, Division of Maternal and Baby Welfare).

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*(3) This class includes such complications as haemorrhage and toxaemia where the patient did not die directly from the complications, but from subsequent sepsis. The term "abnormal labour" includes such conditions as previous vaginal discharge, precipitate labour before arrival of attendant, macerated foetus, etc.—not definable as "complicated," but of such a nature as to render the subsequent occurrence of sepsis accountable or probable.

STATISTICAL CONSIDERATIONS.

A comparison of the maternal mortality rate of Australia with the rates of other countries is not a simple matter of comparing published statistics.

To be comparable, figures and data must obviously be based upon entirely similar calculations. This is probably not the case in any two countries.

This lack of comparability may arise in connection with any of several factors:—

(*a*) Difference of certification and classification of deaths. In connection with the investigation carried out by the British Departmental Committee on Maternal Mortality and Morbidity† (whose Final Report was published in 1932), and in view of the fact that the statistics dealing with the mortality rates for Holland, Denmark, and Sweden are frequently quoted as being particularly low, certain members of the Committee visited these countries in order "to find out, if possible, what discrepancies there might be in the practice of the three countries as compared with England and Wales in regard to the recording of maternal deaths and the computation of the maternal death rate."

After full investigation they arrived at the opinion that, whereas in the Netherlands the methods of certification and classification follow the same lines as in England and Wales, "certain causes of death, which in the English returns are classed to childbirth, were habitually excluded from this category in Denmark, and also that in both these countries (Denmark and Sweden) the method of classification where more than one cause of death appears on the certificate diminishes the number of cases which would in England have been ascribed to maternal deaths. . . . In consequence of these discrepancies the official figures, as they stand, do not give a true idea of the relative maternal mortality, and if the rates in these countries were computed upon the English basis they would approach more closely to that of England and Wales. In all the countries there has been a definite rise in the recorded maternal mortality rates in recent years. Different reasons for this were given in each country, but it would seem that in all the greater care now exercised in death certification has been an important factor in bringing about this result."

†Ministry of Health, England: Final Report of Departmental Committee on Maternal Mortality and Morbidity, H.M. Stat. Office, London, 1932.

Furthermore, many deaths which in Australia are included in our maternal figures, are excluded from the maternal mortality rate in England and Wales by being tabulated as "Deaths of women not classed to pregnancy and childbearing, but returned associated therewith."

As an example, pneumonia following childbirth would be classed as "pneumonia" in England, and excluded from the maternal mortality rate, whereas, in Australia, such a death would almost certainly be ascribed to puerperal ~~cases~~ causes.

(*b*) Deaths from illegal operations are generally included in the maternal mortality rate in Australia while in all other countries they are classified—according to the International Classification of causes of Death—as homicide.

(*c*) In some countries, including Great Britain and Australia, the maternal mortality rate is calculated in terms of every 1,000 live births; in others the rate is calculated per 1,000 live- and still-births.

To quote one example: In New York City the puerperal death rate is calculated per 1,000 live births, while in New York State it is calculated per 1,000 births live and still.

Moreover, abortions, ectopic gestations and other conditions which vary in different countries, although included amongst the deaths, are not included among the births, on which the rate is calculated.

(*d*) Multiple births are not classified according to the number of infants registered, but as one birth.

(Still-births are not registered in most Australian States, and were not registrable in New South Wales until after this investigation was completed.)

TABLE I.—Maternal Deaths—New South Wales—1929-1933. (Government Statistician's Classification.)

	1929.	1930.	1931.	1932.	1933.	Total.
Accidents of pregnancy	...	9	...	...	...	
Ectopics	29	17	13	15	16	136
Abortions	...	7	11	9	10	
Puerperal haemorrhage	34	36	33	39	31	173
Puerperal septicaemia	49	42	41	26	34	192
Puerperal septicaemia after abortion	30	38	41	33	32	174
Phlegmasia alba dolens, embolism and sudden death	26	4 / 20	5 / 18	2 / 14	16	105
Albuminuria and convulsions	48	41	53	61	51	254
Other casualties of childbirth	29	46	28	27	22	152
Total	245	260	243	226	212	1,186
Maternal mortality rate	4·6	4·9	5·1	5·0	4·8	...
Illegal operations	33	44	45	50	34	206

Total (excluding illegal operations)	1,186
Total (including illegal operations)	1,392

TABLE II.—Histories obtained—New South Wales—1929-1933. (Classified according to British investigation).

			Figures from British investigations.
1. Sepsis	167	15·6 per cent.	37·5
2. Eclampsia	136	12·7 ,,	12·1
3. Operative shock, etc.	86	8·0 ,,	9·7
4. Ante partum haemorrhage	91	8·5 ,,	8·0
5. Post partum haemorrhage	64	6·0 ,,	6·2
6. Other toxaemias	132	12·3 ,,	6·0
7. Embolism and sudden death	101	9·4 ,,	6·9
8. Extra-uterine gestation	71	6·6 ,,	1·5
9. Abortions	201	18·7 ,,	12·0
10. Unclassified	24	2·2 ,,	...
	1,073	100·0	
Illegal operations	198		

METHOD OF CLASSIFICATION.

I. Sepsis—
  (1) Following normal labour.
  (2) Following low forceps.
  *(3) Following complicated or abnormal labour.
II. Eclampsia.—All toxaemias where fits occurred.
III. Operative Shock, etc.—Includes rupture of uterus, death under anaesthetic, etc.
IV. Ante-partum haemorrhage—
  (1) Placenta praevia.
  (2) Accidental haemorrhage.
    This class does not include cases dying from later complications, or cases of abortion, nor fatal haemorrhages occurring before the foetus was viable.
V. Post-partum haemorrhage.
VI. Other Toxaemias.—Includes albuminuria where fits did not occur, mania, hyperemesis; gravidarum, chorea, etc., also abortions (therapeutic or otherwise) on account of toxaemia.
VII. Embolism and Sudden Death.—Does not include embolism after abortion. It includes some indefinite cases where, in the absence of a medical attendant, or of post-mortem examination the diagnosis was not confirmed.
VIII. Extra-uterine gestation.
IX. Unclassified.—Includes cases of pneumonia, myocarditis, breast abscess, etc., in which it is doubtful to what extent childbirth contributed to or hastened the fatal termination.
X. Abortions—
  (1) Septic.
  (2) Non-septic.
XI. Illegal operations (*addendum*).

METHODS OF INVESTIGATION OF PUERPERAL DEATHS IN NEW SOUTH WALES.

This investigation was carried out by officers of the New South Wales Department of Public Health over the years during which the deaths occurred.

During those years (1929–1933) 1,186 puerperal deaths occurred in the State—classified by the Government Statistician according to the International Classification of Causes of Death.

Complete histories relating to 1,073 of those deaths were obtained. The youngest woman was 15 years and the oldest 48 years.

Upon receipt of a death certificate where there is any possibility that pregnancy existed and might be the primary or a contributory cause of death, the Statistician communicates with the medical practitioner who issued the certificate and ascertains whether there was any association with pregnancy and whether or not the case should be regarded as a puerperal death.

There is no doubt that these precautions, while ensuring efficiency and accuracy in the classification of deaths, may result in some deaths being classified as puerperal which in earlier years or in other countries would not be so classed. This is probably the chief factor which tends to make the New South Wales figures not comparable with those of other countries and to give an impression of a rising maternal mortality rate in this State which may not be strictly warranted.

In carrying out this investigation, it was possible to obtain a complete history of every case which occurred in the Metropolitan Area. One of us (E.L.S.M.) interviewed the medical attendant or obtained the information from the staff and records of the public maternity hospitals while the departmental Supervisory-Nurses interviewed midwives and obtained data from private hospital records. In addition, they visited the homes and relatives of the patients—so that a very complete history, not only of the fatal illness, but of home conditions, early life, previous health and other relevant factors was obtained, which amplified the medical history.

TABLE III.

	Metropolitan.		Country.		Total.	
		per cent.		per cent.		per cent.
I. Sepsis—						
(1) Following normal labour	33	3·1	28	2·6		
(2) Following low forceps	2	0·2	4	0·4	167	15·6
(3) Following complicated or abnormal labour	64	6·0	36	3·3		
II. Eclampsia	58	5·4	78	7·3	136	12·7
III. Operative shock, etc.	39	3·6	47	4·4	86	8·0
IV. Ante-partum haemorrhage	42	3·9	49	4·6	91	8·5
V. Post-partum haemorrhage	35	3·3	29	2·7	64	6·0
VI. Toxaemias	60	5·6	72	6·7	132	12·3
VII. Embolism	42	3·9	59	5·5	101	9·4
VIII. Extra-uterine gestation	43	4·0	28	2·6	71	6·6
IX. Unclassified	14	1·3	10	0·9	24	2·2
X. Abortion—						
(1) Septic	112	10·4	57	5·3	201	18·7
(2) Non septic	12	1·1	20	1·9		
	556	51·8	517	48·2	1,073	100·0
XI. Illegal operations (*addendum*)	147	...	51	...	198	...
					1,271	

* This class includes such complications as haemorrhage and toxaemia where the patient did not die directly from the complication, but from subsequent sepsis. The term "abnormal labour" includes such conditions as previous vaginal discharge, precipitate labour before arrival of attendant, macerated foetus, etc.—not definable as "complicated" but of such a nature as to render the subsequent occurrence of sepsis accountable or probable.

In country cases, the information was generally obtained by letter from the medical attendant and the thanks of the Department are due to the practitioners who so willingly co-operated and supplied such full notes on request.

Most of the histories which, for one reason or another, have not been obtainable, are of country cases.

Only complete histories have been tabulated.

The classification of the completed histories adopted in this Report is similar to that adopted by the British Investigators in the Report of the Departmental Committee on Maternal Mortality and Morbidity referred to above. It is based upon clinical rather than upon pathological considerations.

It will be seen that, owing to the different methods of grouping, Tables I and II are not in any way comparable, apart from the fact that Table I deals with all puerperal deaths which occurred during the five years and Table II only with the actually completed histories.

In a certain number of cases, moreover, when full clinical data had been obtained, conclusions were arrived at whereby those deaths were assigned to other causes than those entered on the certificates.

For the purposes of this Report, deaths from illegal operations (this includes self-induced abortions) were investigated, in order that no cases of spontaneous or accidental abortion might be overlooked, and a summary of these cases has been appended.

GROUP I.—PUERPERAL SEPSIS (167 deaths).

Sepsis after full-time (*or premature*) labour accounted for 167 (*i.e.*, 15·6 per cent.) of the 1,073 cases investigated.

This is in marked contrast to the 37·5 per cent. of total deaths due to puerperal sepsis among the cases investigated by the British Committee.

Following the method of classification adopted by those investigators, low forceps cases are grouped separately from normal cases. As only 6 such cases, however, occur in our investigation, they will be considered along with the normal cases.

Table IV.

Puerperal Sepsis—167 deaths.

Class I.—Following normal labour.
,, II. ,, low forceps.
,, III.—Complicated or abnormal labour.

	Metropolitan.			Country.		
	Class 1.	Class 2.	Class 3.	Class 1.	Class 2.	Class 3.
Day of onset of pyrexia—						
Under 3 days	15	1	29	12	3	18
3-7 days	9	...	9	8	...	6
Over 7 days	6	...	5	6	1	6
Prior to delivery	1	1	9	1	...	3
Not known	2	...	12	1	...	3
	33	2	64	28	4	36
Duration of illness—						
Under 1 week	3	...	11	1	...	8
1-2 weeks	12	...	13	9	1	8
Over 2 weeks	15	2	39	11	2	16
Not known	3	...	1	7	1	4
	33	2	64	28	4	36
Duration of labour—						
Under 12 hours	21	1	17	22	3	10
12-24 hours	6	1	12	2	1	4
Over 24 hours	...	...	26	1	...	15
Not known	6	...	9	3	...	7
	33	2	64	28	4	36

Complication of labour or abnormality preceding sepsis (class 3).

Placenta praevia	9	Macerated foetus and retained placenta	1
Disproportion	8	Rigid perineum	2
Contracted pelvis	9	Vaginal discharge	2
P.O.P. and adherent placenta	3	Premature rupture of membranes	3
Manual removal of retained placenta	10	Multiple pregnancy	2
Malpresentation	7	Rigid cervix	3
Post partum haemorrhage	4	Precipitate labour before arrival of attendant	2
Macerated foetus	3	Surgical induction	2
Delayed labour	4	Post-maturity	1
Uterine inertia	1	Ovarian cyst obstructing labour	1
P.O.P. presentation	12	Not stated	6
Inversion of uterus	1		
Impacted breech	4		100

Bacteriological investigation carried out. Total 34 deaths.

Results—			
Haemolytic streptococci	14	Gram positive coccus	1
B.C.C.	1	Gram negative bacillus	1
B. tetanus	1	B. welchii	1
Staphylococcus (various)	3	Negative	11
Non-haemolytic streptococcus	1		34

Where Confined.	Metropolitan.*			Country.		
	Class 1.	Class 2.	Class 3.	Class 1.	Class 2.	Class 3.
Home	15	2	16	15	...	14
Private Hospital	9	...	19	11	3	12
Public hospital throughout labour	9	...	18	2	1	5
Transferred to public hospital during labour	...	...	11	...	...	4
Not stated	...	...	...	...	...	1
	33	2	64	28	4	36

*Including sent down to Metropolis from country with complications—6.

Medical practitioner present—

Metropolitan 84

Country 58

(This includes cases occurring in public maternity hospitals where medical practitioner may not actually attend labour but is on the premises and readily available.)

Sepsis after Normal Labour.

Thus 67, *i.e.*, Classes I and II, of the 167 deaths from sepsis may be said to have followed normal labours, and are more or less evenly distributed between the metropolis and country districts (metropolitan 35, country 32).

In some cases, poor or squalid surroundings, frequent child-bearing or lack of proper nourishment or attention can be assumed to have played a large part in the production of a septic state, but in many cases sepsis occurred when the circumstances were all that could be desired.

The following notes will illustrate these points:—

Case 3.—Age of patient, 32; 8 children, eldest only 10 years of age. Poor and filthy home, with very few facilities. Rags for pads. Doctor only just arrived in time to deliver infant, and nurse did not arrive until afterwards, so that there was no preparation of patient.

Case 6.—Twelfth pregnancy. All previous labours had been abnormal. Patient suffered from myocardial disease and fibroids, and had been warned against further pregnancies, yet sought no ante-natal care.

Case 11.—Patient only 17 years of age, and already had a 2-year-old child. Home was a shearer's filthy hut. Doctor states that "conditions were dirty, and there were myriads of flies on all hands, patient's perineum, and on-coming head of child."

As a contrast:—

Case 51.—Particularly healthy young primipara. Confined under ideal conditions in private hospital, with doctor in attendance. Labour perfectly normal, with no vaginal examinations and no interference of any kind. Within 17 hours she developed pyrexia and malaise and was seen then and later by several consultants. Nothing abnormal was ever found in the pelvis, but anti-streptococcal serum was given as a precautionary measure. In spite of everything, and with no definite diagnosis, she died within 60 hours of delivery.

Of the 67 women, 19 were primiparae. Four were aboriginals, one of whom was confined in a hut by other aboriginals, one in hospital, but removed on the seventh day against advice, and one suffered from syphilis and pulmonary tuberculosis.

In many cases no vaginal examinations were made. Gowns and gloves were generally worn by the attendants, but in one case three examinations were made by doctor and nurse, neither wearing gloves nor gown.

One baffling case is worthy of description:—

Case 9.—Patient aged 29. III para. Had become "septic" after both previous labours. Husband a timber-getter, and they lived in a comfortable hut in the bush. Delivered in a private hospital in adjacent township, after full preparation, with all aseptic and antiseptic facilities, by doctor. Labour normal, except for very slight, easily-controlled post partum haemorrhage. Avertin amnesia. There was no pyrexia, but on the sixth day the patient complained of stiffness of the jaws and on the seventh day was seized with a typical tetanic fit, followed by two more twelve hours later, and death. Towelling pads were used which had been boiled and dried in the sun. The source of infection was not traced.

Haemolytic Infection.—In several cases there was a close association between the puerperal infection and other haemolytic infections—mainly scarlet fever—occurring in relatives or contacts of the deceased women.

In others, no such association was traced, but the disease ran a typical scarlet fever course.

Case 19.—This patient died of puerperal sepsis on the seventh day after confinement in a private hospital. Meanwhile, two days after she had left home, her 3-year-old child developed scarlet fever. The infant died of erysipelas when 5 weeks old.

Case 27. Normal labour in private hospital. No interference. About eighth day a scarlatiniform rash and pyrexia developed, and skin peeled. Temperature rose again on thirteenth day and disease ran a typical septicaemic course. There were no pelvic symptoms and blood culture yielded negative result.

Case 41.—Patient confined in private block of a public maternity hospital. A nurse in the hospital had been off duty with what was afterwards decided to have been a mild attack of scarlet fever, and on her return nursed the patient. The latter developed puerperal septicaemia, and trainees who attended her alone subsequently developed tonsillar infection in their turn. No other patients became infected.

The next two cases belong to Class III, having followed abnormal labours :—

Case 97.—Apparently infected before labour, having a very rapid pulse (120). Primipara. Forceps delivery with perineal tear. Two days after labour developed rash, "strawberry" tongue, etc., and, ultimately, ulcerative endocarditis.

Case 166.—Primipara. Early rupture of membranes. Confined in public maternity hospital. There were pre-eclamptic symptoms which had not quite cleared up when the patient was discharged on the ninth day with a cloud of albumen still in urine and the uterus retroverted and large with os admitting one finger. She complained of feeling unwell when she left hospital. Two days later patient developed a rash, and local doctor diagnosed the case as one of scarlet fever and sent her to Infectious Diseases Hospital. Positive streptococcal blood culture obtained there, and the patient died 11 days later. Meanwhile her (single) sister developed scarlet fever.

Possible Endogenous Infection.—In several cases no source of infection was ever traced, but it was thought to have been endogenous, as in all of them there was marked dental caries and pyorrhoea alveolaris. Recent investigation, however, shows that such auto-infection is extremely unlikely to occur, although it has been suggested that in a few instances the patient's fingers may carry infection from her mouth to the vulva.

In some cases investigated the history given by the nurse did not coincide with that supplied by the doctor. This was generally due to vagueness and guesswork, as it would appear that often no written record is kept, and information given from memory tends to be unreliable. The same criticism, unfortunately, can be made of certain public hospitals whose records are often very incomplete.

Infection prior to Labour.—It will be seen from the tables that in three cases infection had occurred prior to delivery. Two of these were city patients, confined in public hospitals, and all had raised temperatures and felt ill before the onset of labour.

Infection and Mental Aberration.—It is interesting to note that many pyrexial cases were associated with mental symptoms—such symptoms often preceding the pyrexia.

Case 35.—Showed mental confusion from the second day, but no pyrexia or signs of sepsis till fourth day.

Case 40.—Also became mentally confused during puerperium (though not until some days after onset of hyperpyrexia and signs of sepsis). Finally became maniacal. Was IV-para and had become mentally unbalanced after first labour but not after second and third.

Case 46.—Patient had an extremely foul dental condition but refused all advice and treatment. Developed delusions on fourth day, but no pyrexia or other signs of sepsis until she had left hospital and returned home in the care of two nurses (*i.e.*, two weeks after delivery). Disease then ran a pyaemic course, though the focus was never located. and she died two months later.

The following cases are interesting :—

Case 31 was that of a woman who had had some nursing experience and was said to be "germ-mad." She prepared and sterilized all dressings herself and was confined at home under excellent conditions. Labour was quick and normal. Infection developed within 48 hours and the patient finally died of sub-phrenic abscess.

Case 44.—Confinement occurred in a metropolitan public maternity hospital, where the patient had been admitted one week prior to labour. II-para. Labour normal with no interference or vaginal examination. Septicaemia supervened and blood culture yielded streptococcus. Empyaema and arthritis of knee developed in the course of the disease. Although the placenta and membranes were believed to have been complete, an intra-uterine douche given on the third day yielded pieces of placenta and membrane.

Case 60.—Healthy young unmarried girl of 19. Admitted to hospital at 7½ months on account of faint cloud of albumen in urine. B.P. 130/90. Normal, spontaneous labour few days later. On eighth day temperature rose suddenly with rigor. Albumen (which had cleared up) reappeared in urine. Later there was suppression of urine. The patient died within 48 hours of the onset of symptoms and an almost pure culture of *Bacillus Coli Communis* was obtained from the interior of the uterus.

Case 65.—This was a very rapid and virulent staphylococcal infection which commenced about 28 hours after delivery in the special maternity block of a district (country) hospital. Death occurred on the eighth day. The source of infection was never traced. All the usual aseptic and antiseptic precautions were taken. As there had been two serious cases of maternal morbidity during the previous month, the hospital committee closed the block for three weeks and thoroughly renovated and repainted it. No further pyrexial cases occurred subsequently.

Some patients left hospital well but showed signs of infection later—one a month later.

Two cases of erysipelas occurred in well-conducted private hospitals where there were no other infected cases :—

Case 55.—Normal labour. Patient perfectly well until tenth day, when she developed septicaemia. Erysipelas, beginning on buttocks, supervened in the last three days of life. She died four weeks after delivery.

Case 64.—Low forceps on account of delayed second stage. Breast abscess developed two weeks afterwards. Drained. Another abscess drained a month later, followed a week later still by erysipelas around the wound. The patient died of acute haemorrhagic nephritis two months after labour. Meanwhile the infant had died when three weeks old of Cavernous Sinus Thrombosis.

The last case (67) in this group is an example (fortunately rare) of a medical practitioner who refuses to co-operate in any way with this Department. He made no attempt to report the case and, when interviewed insisted that the infection—though death was certified as being due to septicaemia—was not of puerperal origin. No blood culture was done, though haemolytic streptococci were found in the pus evacuated from the empyaema with which the infection finally terminated. The patient was a primipara and died six weeks after delivery.

Summary.—The proportion of deaths from sepsis following normal labour will be seen from Table IV to be highest among patients confined in their own homes, next highest in private hospitals and lowest in public hospitals.

It may be asked why eleven deaths occurred after normal labour in public maternity hospitals—where everything in the way of equipment and skilled attention is available.

Of the country cases, both were the aboriginals referred to above.

Of the nine metropolitan cases, all, strangely enough, occurred in the one institution. Two of them doubtless were infected before admission (*Cases* 32 and 34), one was re-admitted infected (*Case* 61) and one was a single girl who had made repeated attempts to procure abortion and had succeeded in doing so on at least two previous occasions (*Case* 29).

One woman (*Case* 57) was suspected of being tuberculous and finally died of infective endocarditis, one had solid albuminuria on admission (*Case* 45) and of the remaining three, two (*Cases* 44 and 60) have already been fully reported above and all three are unaccountable.

Sepsis following Abnormal Labour.

In Class III of this group—Sepsis following complicated or abnormal labour—there were 100 deaths (M. 64 C. 36).

This considerable preponderance of abnormal cases in the city cannot altogether be explained by the fact that potentially difficult cases tend to gravitate to the city, as only 6 cases were actually sent down to Sydney because difficulties were anticipated.

It can only be inferred that factors operate among city cases which are absent to a large extent among country ones. Generally speaking, there is more personal contact between the doctor and his patients in the rural than in industrial areas; he has probably attended the woman on frequent previous occasions, both at childbirth and in illness, and is therefore more likely to be cognisant of any abnormality and to be consulted early when any untoward symptoms manifest themselves. Births in New South Wales are, roughly, equally divided between the metropolitan area and the country districts.

Probably country doctors, midwives and Bush Nurses are all in a better position for maintaining continuous and watchful care over the expectant mother.

Beyond these facts, no satisfactory explanation can be offered as to the preponderence of fatal complicated (infected) cases among metropolitan women.

Economic conditions would not account for this difference. Although poverty is perhaps less likely to affect the resistance and nutrition of country mothers as compared with city ones, there are avenues of help during pregnancy and institutional accommodation during parturition open to the latter which should balance this.

The fact that the history was not obtainable in all country cases might offer some explanation, but of all deaths (192) from puerperal sepsis occurring during the five years, in all classes of the group, there were more metropolitan than country cases—(M.110 C.82).

The most likely explanation is that there tends to be more interference (such as premature application of forceps) and consequently more trauma, in metropolitan cases.

" There is evidence that trauma is the most important cause of the death rate from sepsis." (Young B.M. Journal 9/6/28, p. 967.)

As previously stated, this Class III includes definitely complicated and difficult labours and also labours which, though uncomplicated in the strictest sense, were yet not classifiable in Classes I and II.

Among them are included such cases as that of a macerated still-born foetus, profuse offensive vaginal discharge, rigid perineum or cervix causing protracted labour and severe bruising, precipitate labour occurring in the absence of any attendant—where the infant was born on the floor and remained attached to the placenta until the doctor arrived—and other abnormalities which would render the subsequent occurrence of sepsis almost inevitable.

No doubt in many of these deaths the fatal issue was determined by the fact that 30 of the 100 cases were conducted (many under great disadvantages, with no proper equipment or assistance) in private homes, while others were removed from such conditions to public or private hospitals during labour.

Of the 31 cases confined in private hospitals, 12 occurred in small country towns—where there is often no public hospital accommodation—and 19 in metropolitan private hospitals. The term " private hospital " is a very loose one, covering a great diversity of accommodation ranging from excellently-equipped and thoroughly up-to-date metropolitan institutions (generally under the auspices of religious bodies) down to one- or two-bed nursing homes conducted by single-certificated nurses. In between are all grades and degrees of accommodation.

In country districts, in particular, private hospital equipment often leaves much to be desired.

Many cases confined elsewhere were admitted to public hospitals for treatment when sepsis developed —often too late. Fifteen cases were actually delivered in public hospitals after admission on account of " failed forceps " and other unsuccessful treatment outside the hospital or of lack of proper facilities elsewhere for coping with such complications as ante-partum haemorrhage, and were almost certainly infected before admission. Twenty-three cases were in public hospitals from the time when labour commenced.

It will be seen from Table IV that in 12 instances in Class III there was pyrexia prior to delivery. In the majority of the remaining cases it developed during the first 48 hours.

It will also be noted that in Class III labour was quick in 27 cases and of normal duration (24 hours or less) in about half of the total cases.

The great majority of the women (142) in the whole group were, as would be expected (in complicated cases at any rate) attended at delivery by a medical practitioner.

It was not always possible to ascertain, in the case of public maternity hospitals, whether the doctor was actually present—and in normal cases he possibly was not—but as one was always on the premises, and readily available, these cases are included in that number.

It will be seen that in the city the number of patients dying after delivery in private homes, private hospitals and public hospitals respectively, was about equal. This does not take into account the 11 cases transferred to public hospitals as emergencies. In the country there is, of course, less public hospital accommodation for maternity cases, and, owing to distance, many country cases were not seen until in labour, when removal to more suitable surroundings was not always practicable or considered to be in the patient's best interest.

As was seen in considering Classes I and II, it appears from the investigations made that, generally speaking, public hospitals are the safest places for delivery. Among "booked" cases—*i.e.*, cases not rushed in when abnormalities are suspected—there were few deaths from puerperal sepsis.

There is no doubt that much valuable material is lost through so little pathological investigation being carried out in cases of sepsis. In all the 167 cases, such investigation was only carried out in 34 cases, and the fact that 11 of these yielded negative results, though the clinical evidence all pointed to infection having occurred, suggests that either the investigation was not properly timed, or that possibly the technique employed could have been more efficient.

Blood Cultures were made in most of these 34 cases, but in others smears were taken of cervical or intra-uterine discharges. In the majority of cases where organisms were isolated, they were haemolytic streptococci, though there was the one case of tetanus (case referred to above) and one of *Bacillus Welchii* (Case 123).

Lack of Investigation of Cause of Sepsis.—It is realised from these investigations that there may at times be epidemics of puerperal infection in public hospitals (in which no fatal case occurs, and possibly of a mild nature) where thorough pathological investigation is carried out; but, unfortunately, the valuable information obtained on such an occasion has not been made available to the profession generally.

It is obvious, however, that many promising avenues of investigation are never explored at all, and this Department has never been called upon to carry out any such investigation. In particular, it is realised that much more intensive pathological research into puerperal sepsis and other abnormal puerperal conditions (*e.g.*, toxaemias) should be carried out in our large public maternity hospitals, but in practically every case the staff and the equipment for the performance of such work is totally inadequate.

Lack of Ante-natal Care.—A detailed study of the histories obtained for the purposes of this Report emphasises greatly how many complications could have been avoided, or, at least, anticipated, if the women had been less ignorant or indifferent, and had sought pre-natal advice. The following cases illustrate this:—

Case 68.—Patient had given birth to six abnormally large babies. All had been delivered instrumentally. Warned that another pregnancy would probably prove fatal, yet did not consult doctor, or seek any ante-natal treatment. Doctor called in urgently and found cord prolapsed and shoulders impacted.

Case 72.—In a large city with an excellent public maternity hospital and ante-natal clinic. II para. First baby had "been removed in pieces," yet woman sought no advice during second pregnancy and had had labour pains every day for three weeks. Unregistered nurse called in and examined patient P.V. When doctor was finally summoned Caesarean section was decided upon and sepsis developed in a few hours.

Case 69.—Full time, VI para. No preparations whatever had been made. Filthy home in a country town (though the husband was in employment). There was no proper bedding, no sheets, and not even a jug in the house. Twins (second, transverse), had to be manually extracted. Post-partum haemorrhage. Manual removal of placenta.

Case 98.—Elderly primipara—post-mature. Had not reported since engaging doctor at sixth month. Arrived in hospital after thirty-six hours in labour. After seventy-two hours, pubiotomy and episiotomy performed, followed by instrumental delivery. P.P.H.

Errors of Judgment.—On the other hand, one feels that "errors of judgment" (amounting sometimes to gross carelessness and ignorance) on the part of the medical attendant or nurse contributed to the fatal result in not a few cases. "Failed forceps," with the foetal head unfixed and unrotated, and the cervix only partially dilated. Other evidences of bad obstetrics, and of ignorance of the ordinary laws of physiology and mechanics were, unfortunately, not lacking.

The histories of the following cases speak for themselves:—

Case 80.—Slow labour owing to posterior position, but eventually delivered easily by forceps. Confined in a private hospital (country) which had been closed on account of another death from puerperal septicaemia four days previously, and admitted against orders (nurse's registration cancelled).

Case 83.—Said to have been easy forceps delivery. Followed by acute inversion of uterus, from which placenta was stripped off. Patient was then left by both doctor and nurse and uterus replaced later by doctor's partner. Patient " much shocked " and developed sepsis.

Case 91.—Patient, primipara with small pelvis, seen for first time at beginning of labour. Difficult forceps delivery at home (described as " hard pull ") without any colleague and with patient collapsed, after fifty-two hours' labour. Considerable post partum haemorrhage. " Usual treatment for shock " ordered by doctor, who then left, followed, shortly, by nurse. Recalled one and a half hours later to find patient in extremis. Revived. Sepsis supervened, and so on fourth day patient removed to hospital for currettage. Patient died same day.

Case 119.—Dirty home, in metropolis, with no nursing facilities available, though patient in comfortable circumstances financially, and in easy reach of public and private hospitals. Manual removal of membranes without gloves after instrumental delivery.

Case 120.—No gloves worn, but several vaginal examinations made. Forceps were boiled in a saucepan, the boiling water was then poured off, and the instruments placed in a wash basin and cooled by having cold unboiled water poured over them.

(The sterilisation of instruments is a question which is often solved in a very unsatisfactory manner, if it is solved at all. It would appear from enquiries made, that many practitioners do not carry their own instrument sterilisers, and that even such efficient substitutes as half petrol tins are seldom utilised. The result is that a domestic saucepan is generally commandeered for the purpose, and is not large enough to accommodate the handles of the forceps, which may, in turn, be immersed in the boiling water for a few moments while the blades are cooling off.)

Case 123.—Primipara aged 37 years. Had been in labour for two days in private hospital " Failed forceps," obstruction being discovered at sacral promontory. Transferred to public hopsital, where cervix was found to be very oedematous and lacerated, only half dilated and not taken up, and foetal head not in the pelvis. Temperature, 99 deg. F., which began to rise. Pains became regular and interference was not indicated. Suddenly, twenty-one hours after admission, pains ceased, and patient complained that " something had snapped." Rapid collapse. Abdomen became very tense. Immediate Caesarean section performed, and, on opening both abdomen and uterine cavity, loud reports were heard and foul gas escaped. Patient died five hours later. Hysterectomy had been performed and a culture of *Bacillus Welchii* was grown from a section of the muscle.

Case 127.—Multipara. " Failed forceps," admitted later to public hospital P.O.P. Head not engaged and overlapping. Caesarean section performed. Urine found in peritoneal cavity, with a tear of peritoneum at reflection from bladder on to uterus.

Case 154.—Sent down from large country town to metropolitan hospital in labour, after various attempted manipulations to deliver frank breech. Delivered by R.M.O. at hospital.

Case 156.—Primipara. Full ante-natal treatment and examination. Measurements said to be " on small side." Instrumental delivery at term. Torn high up under the cervix into rectum. Faeces passed per vaginam, and tear not found until patient was transferred (" septic ") to public hospital fourteen days later.

Case 138.—V para. Ante-partum haemorrhage at eight months. Treated by midwife, who packed vagina with cotton wool which was in the house, and refused to send for doctor. Packing left in for thirty-six hours, then removed by nurse and saline douche given. Another haemorrhage six days later. Nurse again summoned, and again plugged patient and left. Bleeding continued; pad applied over packing. Nurse again summoned, removed packing and gave hot douche and enema. Patient collapsed. Doctor called in, diagnosed placenta praevia, and sent patient straight to hospital. Nurse did not wear gloves at any time. Septicaemia followed delivery. Patient died ninth day.

Necessary Manipulation a Causative Factor.—Many of the patients developed sepsis after necessary extensive interference, with every regard for a septic and antiseptic requirements for conditions such as ante-partum haemorrhage, mal-presentation, and retained placenta. In other cases such interference was essential, although the circumstances as regards cleanliness, trained assistance, etc., were very unfavourable.

Three patients were undergoing treatment for syphilis.

Eight cases followed surgical induction of labour.

Case 149.—Great deal of leucorrhoea ante-partum. Thought afterwards to have had infected cervix before labour, and that surgical induction, with introduction of bougies, to relieve hydramnios and allow head to engage, carried the infection into the uterine cavity. Vaginal swabs and blood culture yielded staphylococcal growth.

In two cases labour was obstructed by an ovarian cyst. One cyst was drained and labour then proceeded naturally, but general peritonitis supervened, and, in the other case, salpingo-oophorectomy was necessary.

One woman, suffering from peri-onychia, was admitted to hospital for her second Caesarean section; the wound became infected, and general peritonitis followed.

In two cases, mal-presentation was due to previous operation of ventro-fixation. In consequence, surgical induction of labour on account of albuminuria was found to be impossible in one of the patients, and, after full-time delivery was finally accomplished, the placenta had to be removed manually. In the other patient, delivery by embryotomy being impossible, Caesarean section was undertaken. Both women had had children previously.

One case presented unusual features .—

Case 131.—Married 19 years. Salpingostomy performed for sterility. Delivery 13 months later, by Caesarean section of a living child. Post-operative vomiting led to rupture of abdominal sutures. Re-sutered, but acute general peritonitis supervened.

Deaths from Sepsis after Caesarian Section.—Thirteen women whose deaths were classified as due to puerperal sepsis after complicated labour (Class III) were delivered by Caesarian section.

Parity in relation to Puerperal Sepsis.—Of the total 167 deaths from all classes of puerperal sepsis, 61 occurred in primiparae. Twenty-one multiparae had undergone 6 or more labours. There were also 5 aboriginals who were multiparae.

Endogenous Infection.—The work of Leonard Colebrook, J. Smith, of Aberdeen, and others, would suggest that endogenous infection from the patient's own throat or gums is very unlikely to occur, but there is a steady growth of evidence that the pathogenic haemolytic streptococci are usually transferred to the woman from an outside source, the most common source being probably the noses or throats of those in attendance on the patient.

Moreover, cases in which there has been no interference or vaginal examination are frequently cited as being examples of necessarily autogenous infection. But recent work has also brought to light definite evidence of cases where infection has been introduced in the post-natal period. It would seem that such infection would be particularly liable to occur where a woman is confined at home, and such nursing as she receives during the puerperum is limited to the administrations for a short period daily of a visiting nurse all other attention being given by relatives or neighbours with no ideas of antisepsis.

Such post-natal infection might explain those cases which occur after discharge from hospital on the tenth day, but actually in this series of cases investigated few such cases occurred, and none arose in which infection would appear to have been introduced by ministering friends and relatives.

Professor Munro Kerr, in his recent publication, "Maternal Mortality and Morbidity," writes as follows:—

> "The problem of puerperal infection is most elusive. We know it is wound infection. The principal organisms causing it have been identified, but much still requires elucidation. . . . The problems unsolved in 1910 still, for the most part, await solution. With the exception of the knowledge gained from the recent discoveries regarding scarlatina, and the epoch-making contribution made by those who have been specially concerned in demonstrating the importance of 'droplet' and 'spray' infection, comparatively little has been added to our knowledge of puerperal infection, and the conditions which favour its occurrence. We are convinced, however, that the coming decade will tell a different story, for it appears that the most important existing uncertainties are on the verge of being cleared up. We do not imply by this that all the problems connected with immunity, virulence, variations in virulence, conditions which affect virulence, will be completely solved. These and other questions will require prolonged investigation by bacteriologists and biochemists."

GROUP II.—ECLAMPSIA—136 Deaths.

There were 136 deaths in this class, which only includes those cases where actual fits occurred. Many cases of pre-eclampsia are classed in Group VI (Toxaemias).

Country cases predominated, being 78 as against 58 metropolitan.

TABLE V.—ECLAMPSIA—136 Deaths.

	Metropolitan.	Country.
Where confined—		
At home	4	10
Private hospital	14	27
Public hospital throughout	11	6
Public hospital after onset of fits	11	17
Not stated	...	1
Undelivered	18	17
	58	78
Method of delivery—		
Spontaneous	18	28
Forceps	9	9
Caesarean section	4	8
Accouchement forcé	2	5
Undelivered	18	17
Induced	7	10
Not stated	...	1
	58	78
Previous history of albuminurea or eclampsia—		
Albuminuria	4	5
Eclampsia	2	6*
		(*1 patient twice.)
Onset of eclamptic fits—		
Ante-partum	36	42
Intra-partum	4	8
Post-partum	18	20
Not stated	...	8
	58	78
Ante-natal supervision—		
Adequate	27	27
Inadequate	16	25
None	13	21
Not known	2	5
	58	78

Ante-natal Care.—There is no doubt that inadequate ante-natal care was a very important factor in deciding the issue of many cases of albuminuria. Nevertheless, as will be seen, in many cases where such care was quite adequate and rest in bed and eliminative treatment were carried out thoroughly as soon as pre-eclamtic sysmoms appeared, fatal eclampsia supervened.

Unfortunately, there is no means of ascertaining how many women in the community obtain ante-natal supervision, and so how many cases of pre-eclampsia are arrested and how many cases of eclampsia recover under treatment. It would seem, from such figures that are obtainable, that at last the propaganda which has been carried out over several years is beginning to bear some fruit and that some slight headway has been made against the ignorance and carelessness of the average expectant mother, though the majority of pregnant women still will not avail themselves of ante-natal care and supervision, no matter how easily it is obtainable.

It is probable that the reduction of the maternal death rate, in so far as eclampsia is concerned, depends more upon prevention by successful educational propaganda than upon medical treatment of the symptoms when they occur.

This is proved in hospitals and communities where thorough ante-natal care is carried out. Under such conditions eclampsia is practically eliminated.

Owing to the unfortunate lack of co-operation between different departments of the same hospitals in this State at least, which has been brought to notice frequently during these investigations, it is impossible to say with certainty to what extent co-ordination of ante-natal treatment in the out-patient (and when necessary) with the in-patient departments of these institutions has reduced the incidence of eclampsia.

For instance, it is very difficult to find out from the hospital records whether a patient who died from eclampsia there had been attending the out-patient pre-natal clinic during pregnancy. Except in the case of one institution where the record system is admirable and complete, when the histories are filed after the patient has died (or been discharged), the out-patient history is not filed with the ward history, but is presumably left in the out-patient department, where its usefulness is limited.

Moreover, as a rule, when a patient is admitted to hospital it is not the practice for the out-patient papers to be attached to the ward papers, with the result, in several cases investigated, that the resident medical staff did not know what out-patient treatment had been given. In one case, there was no record that the patient was undergoing treatment for syphilis throughout pregnancy in the Venereal Diseases Out-patient Clinic.

As a result of these unsatisfactory methods of recording and filing there is, in most cases, no means of computing the results obtained in the treatment of " booked " cases as compared with emergency cases. A proper " follow-up " system would yield much useful information.

Until some means of getting in touch with expectant mothers early in pregnancy and of overcoming the usual prejudice on the part of such women to place themselves under supervision can be devised, our hospitals will continue to be receiving-stations for women in eclamptic convulsions and coma.

An effort has been made to tabulate the cases in this group according to what degree of ante-natal care was received.

Cases have been classed as " adequate " where the patient reported reasonably early in pregnancy, attended for urine and blood pressure tests at least monthly during the earlier months and fortnightly during the last three months, was measured and palpated and, when abnormalities arose, underwent prompt and adequate treatment.

In these investigations it is considered that 27 of the 58 fatal metropolitan cases may be regarded as having received adequate ante-natal treatment and 27 out of the 78 country cases.

Even during the comparatively short period of five years over which the investigation was carried out a definite increase in the amount of ante-natal supervision given was noted, showing that medical practitoners and midwives, and also patients themselves, are becoming increasingly aware of the necessity for such supervision.

A study of the cases investigated in this group brings to light some interesting facts.

Eclampsia seems to be a disease of young primiparae. The youngest women in all the deaths investigated occur in this class—20 of them were under 20 years of age (the youngest being 15) and 82 under 30 years of age.

Altogether 71 primiparae died of eclampsia. Two of the 136 deaths were aboriginals.

Several patients gave history of chronic nephritis, or diagnosis of that condition was established by blood urea estimations. Doubtless in other countries such cases would not have been classified as puerperal deaths at all. One of these chronic nephritic patients gave a family history of renal disease, her mother having died of eclampsia at the same age (43 years). One case was probably an acute fulminating pyelo-nephritis.

Several gave history of " kidney trouble " in childhood with institutional treatment.

Two women had had nephrectomy performed since previous labours (*Cases* 183 and 196) and two others were said to have been subject to " fits " as children.

In some cases eclampsia developed very early—one died at 6 weeks, one at 3 months, and several others at 5½ or 6 months.

Altogether 35 patients died undelivered (metropolitan 18, country 17).

Apathy of Patients an Important Factor.—As already stated many deaths could undoubtedly have been averted, the women often being their own enemies and ignoring such obvious symptoms as severe headaches, partial blindness, oedema, dyspnoea, etc. Sometimes they would report with such symptoms but even then would fail to carry out instructions or to report again.

The following histories will illustrate these points:—

Case 184.—A double-certificated nurse. Husband afterwards informed doctor that his wife had said that she "thought she had albuminuria," but she did not call him in until she was in labour. Post partum eclampsia.

Case 186.—IV para. Aged 22. First labour was Caesarean, subsequent two very difficult instrumental deliveries, yet the patient did not again report for ante-natal supervision after engaging doctor at 4 months. Would not even send along specimens of urine, though urged to do so. Child was large and Caesarean section again necessary. Sudden eclamptic fit 12 hours later.

Case 192.—III para. Aged 29. Eclamptic fit and loss of memory for 5 days at previous confinement. During fatal pregnancy was under medical supervision and developed albuminuria at about 7 months. Patient was supposed to be following out eliminative and dietetic treatment in bed thenceforth, but it was afterwards elicited that she had not obeyed orders. Eclampsia supervened on spontaneous labour at 8 months.

Case 195.—Also gave history of previous eclampsia, four years previously (6th labour). Since then had one confinement without eclampsia—but had sought no ante-natal supervision—and even during fatal, eighth, pregnancy sought no advice when oedeme developed. Doctor was not called in until patient was in labour and was already comatose. One fatal convulsion occurred.

Case 203.—II para. Aged 29. First seen by doctor when she was 7 months' pregnant. Urine then clear. Patient failed to send regular specimens for examination, though she was constantly reminded and lived right in the (country) town. One week before term sought advice because of excessive amount of oedema, and urine was found to contain a heavy cloud of albumen. Treatment was ordered, but the condition did not clear up satisfactory. Patient refused to obey instructions, and, though she told the doctor she was not eating meat, she was surreptitiously doing so. Also refused to go into hospital for intensive treatment. Delivery complicated by twins. Fits commenced during labour, and in spite of vigorous treatment with two nurses in constant attendance, death occurred 2 days later.

Case 220.—Patient had herself been a nurse before marriage, and owing to distance from her medical adviser arranged to test her own urine. When last seen by her doctor, at seven months, urine was normal. A month later gross oedema developed, with loss of vision, and yet the patient did not communicate with the doctor, merely giving instructions to her people as to how to act if she should have a convulsion. It was two weeks before the doctor saw her—close on term—and by that time she had been completely blind for two days and the urine was solid upon boiling. Delivery was by accouchement forcé, and the case terminated fatally in a few hours.

Case 234.—Primipara, aged 19. Did not consult doctor until oedema developed at 8 months, when she sent a specimen of urine for examination. Solid albumen on boiling. Even then the patient disregarded all advice and treatment. Fits supervened on labour complicated by ante-partum haemorrhage.

Case 248.—II para, aged 44. Consulted doctor at fourth month, but did not report again, though instructed to do so. Did not tell husband she was pregnant and made no preparations. Doctor summoned at term, to find her comatose. Taken to hospital but died undelivered 1½ hours after arriving there, not responding to treatment.

Case 249.—III para. Albuminuria during first pregnancy. Ante-natal care was irregular, patient having to be "chased up" by doctor. At 7½ months she sent for him, having neglected advice regarding diet, etc., and urine was solid on boiling. Concealed haemorrhage and four fits occurred, so patient was sent into public hospital, in early stages of labour. After spontaneous labour next day condition improved considerably until eighth day when twitchings and coma ushered in fatal termination.

Case 256.—Aged 43. Eleventh pregnancy—last three having been albuminuric—yet no ante-natal treatment was sought and even when patient had a convulsion at a picnic at seven months she did nothing about it. Two days later ante-partum haemorrhage forced her into hospital. Urine contained half albumen, and, after labour next day, more fits and complete anuria supervened.

Case 260.—This patient came to the local (suburban) Paby Health Centre to apply for some extra nourishment. She was a multipara. The sister-in-charge was struck by the marked oedema of her face, hands, and feet, and urged her to attend the ante-natal clinic that afternoon or to see a doctor privately. She was at term. She refused medical advice, on the grounds that she did not hold with "these modern ideas," and refused even to allow the sister to test her urine. Immediately upon her return home she began to have eclamptic fits, was removed hurriedly to a public hospital but died, at the moment of admission. Post-mortem Caesarean section was performed and a living child was delivered. The patient was found to have had pre-eclamptic symptoms—violent headaches, disturbances of vision, etc.,—for about a week.

Indications of Toxaemia in Previous Labours.—There were 17 patients who gave a history of albuminuria with previous pregnancies, 8 of these had been eclamptic before—one of them twice.

In spite of this, some sought no ante-natal advice at all—as seen in case 195—others sought advice but did not follow it, and the remainder who did report to the medical attendants, did not do so until late in pregnancy. Exception may be made in the following cases, where eclampsia occurred again in spite of treatment:—

Case 170.—II para. Aged 40. Previous eclampsia. During fatal pregnancy received ante-natal care from fifth month until seven months, when (after urine being normal previously) pre-eclamptic symptoms, with ¼ albuminuria, developed. Full eliminative and dietetic treatment was given, but fits occurred and she died undelivered.

Case 196.—Two previous labours were marked by eclampsia. Since second labour nephrectomy had been performed. Ante-natal treatment in fatal pregnancy from four months, but albuminuria and eclampsia developed in spite of careful dieting and treatment.

Association with Ante-partum Haemorrhage, etc.—Many cases were associated with ante-partum haemorrhage, and, in others, an unfortunate train of circumstances weighed the balance against the patient's chances. The following histories may be quoted :—

Case 207.—Hard-working woman of 39, living on a farm. During six years had had three live births, three miscarriages, and the fatal labour (four labours in less than three years). Suffered with albuminuria through all previous pregnancies, and knew that she was ill this time but postponed reporting to doctor (7 miles away) because it was shearing-time and she had to cook for sixteen people. About two weeks before term had a fall and had to go to bed. Next day husband rang doctor, and said she was "flooding," this being the first intimation the doctor had that she was pregnant. Was brought in to hospital and baby was born immediately. Condition was very weak, and urine contained a heavy deposit of albumen. Although patient's weak condition prevented vigorous eliminative treatment, she gradually improved. Last seen by doctor late on fifth evening of puerperium reading a paper and feeling well. A fatal and sudden fit occurred without warning at 2-30 a.m.

Case 209.—III para, with chronic interstitial nephritis. Eclampsia four years before with first labour. During second pregnancy, two years later, had severe toxaemic symptoms, necessitating treatment in hospital for last two months of pregnancy. During early part of fatal pregnancy was one week in hospital with pernicious vomiting. Was a trained nurse and examined her own urine. Doctor suggested termination of pregnancy, but patient placed herself under the care of a doctor in another town, and was not seen by her first medical attendant until in labour at six months with pre-eclamptic symptoms. Convulsions and anuria occurred six hours later.

Case 255.—Primipara, aged 41. Albuminuria appeared early in pregnancy, and, in spite of eliminative treatment, eclampsia developed at six months. Caesarean section was performed, and the patient's albuminuria cleared up, but she died of intestinal obstruction following the operation.

Case 272.—VIII para. Aged 38. Very poor—husband having been unemployed for three years. Eclampsia with first labour and "kidney trouble" with subsequent pregnancies. Sought no ante-natal treatment. Patient had an attack of influenza with revealed accidental haemorrhage, so stopped in bed—still with no medical attention. Seized with dyspnoeic attack one night, but later felt better, so husband went to bed, but awoke in the morning to find his wife in a convulsion.

Case 282.—Primipara, 28. Recent immigrant. Attended pre-natal clinic at public maternity hospital three times, but (according to husband's statement) could not find money for further attendances and was too shy to ask for free advice and did not know where else to turn, so did not attend again. Was admitted to hospital at term with solid albuminuria. Numerous convulsions occurred during first and second stages of labour, which was complicated (breech delivery with post-partum haemorrhage). Died four hours after delivery.

According to Professor Munro Kerr "the most frequent grave haemorrhage associated with toxaemia (apart from 'accidental haemorrhage' which also is frequently toxaemic in origin) is 'cerebral haemorrhage.' Many of the fatalities from eclampsia and pre-eclamptic toxaemia are the result of cerebral haemorrhage." Instances of this will also be considered among "Other Toxaemia" (Group VI of this Investigation).

Failure of Ante-natal Care and Treatment.—In most of the cases where death from eclampsia occurred in spite of ante-natal care, pre-eclamptic symptoms were late in onset and failed entirely to respond to treatment.

In most of the cases where death from eclampsia occurred in spite of ante-natal care, pre-eclamptic symptoms were late in onset and failed entirely to respond to treatment.

Case 176.—Primipara, 30. Seen regularly from sixth month. Three weeks before due date albuminuria appeared, with no pre-eclamptic symptoms, however. Patient put to bed and given routine treatment, but did not respond. Sent to private hospital, where medical induction was attempted. Labour did not follow, but as urine had cleared and patient was symptomless and a second attempt at induction was fruitless, it was decided to wait. Suddenly, without warning, the patient had a convulsion, from which she did not regain consciousness until after delivery by Caesarean section. She appeared well at first, but albuminuria returned, and she died on the fourth day of puerperium.

Case 187.—II para. Frequent attacks of nephritis since scarlet fever as a girl. Previous labour very difficult, owing to contracted pelvis, baby being still-born. Throughout fatal pregnancy had received careful ante-natal supervision and treatment, dieting, etc., but albuminuria increased. Caesarean section at term on account of pelvic contraction. Albuminuria increased after operation and eclampsia supervened, patient dying forty-eight hours after.

Case 242.—Primipara. Aged 27. Under observation for last three months of pregnancy Was in and out of hospital thereafter with albuminuria, which would clear up under treatment and then recur. General condition of patient remained good until at eight and a half months sudden fits occurred and she died undelivered.

Case 277.—Healthy primipara of 34. Regular ante-natal care. At six months (solid) albuminuria suddenly developed, with B.P. of 250 mm. Hg. Put into hospital at once and eliminative treatment carried out. Seen by several consultants, and, as condition became progressively worse, after twenty-three days labour was induced. Eclamptic seizures followed delivery, and she died four hours later.

Fulminating Eclampsia.—In ten cases there was no warning whatever of impending disaster, and although treatment was immediately instituted when fulminating eclampsia did occur, it was unavailing. All were primiparae. All histories are worth quoting :—

Case 212.—Primipara, 21. Regular ante-natal treatment from third month and urine was clear throughout—even a specimen examined during labour, which occurred spontaneously at-term. Without apparent cause, eclampsia suddenly manifested itself two nights later. Patient was sent into hospital unconscious and died there next morning.

Case 222.—Primipara, 19. Lived in country. Seen by doctor three or four times during last three months of pregnancy. Urine clear and health good throughout. No oedema or any pre-eclamptic symptoms. Spontaneous labour at term, chloroform administered. Quite recovered from anaesthetic when, two hours after delivery, fits occurred. Immediately sent to District Hospital, where she remained in the same condition, in spite of treatment, until death five days later. Her medical attendant stated that he had never seen a case give so little indication of impending trouble.

Case 224.—Primipara, 21. Good health throughout pregnancy. Urine was examined only four or five times, as she lived 15 miles from country town, and there were no travelling facilities. Came into hospital at expected date, and in the evening of the date of onset of illness had been shopping in the town. Was perfectly well when seen by doctor at 9·30 p.m. when he was visiting another patient at the hospital. Sudden eclamptic fit at 11 p.m. Did not regain consciousness. Normal labour ensued, but patient died at 9 p.m. next evening.

Case 240.—Primipara 19. Constant ante-natal care throughout. Extremely healthy—though a heavy meat-eater. When seen ten days before term urine was clear. After that oedema of the feet developed and patient was admitted to hospital two days later. Eclamptic fits two hours after admission. B.P. 200 mm Hg. Death followed twenty-two hours after normal labour.

Case 243.—Urine was examined regularly throughout pregnancy and contained no albumen at any time. Last examination was made two weeks before pregnancy terminated at eight months. No oedema. Sudden eclamptic fit. Patient was rushed to hospital unconscious and on admission a catheter specimen of urine boiled solid. " Rotunda " treatment given and infant was born same day. Fits recurred and patient died that night.

Case 254.—Primipara 16. Regular ante-natal supervision from seventh week at public hospital clinic. At thirty-four weeks retired to bed at night perfectly well and read in bed for some time. An hour or two later her relatives heard a fall and went in and found her in an eclamptic seizure. Sent in to the hospital. B.P. 200. After twenty-four fits had occurred, Caesarean section was decided upon, but she died next day. *At no time* was there any albumen in the urine.

Case 275.—Primipara 25. Regular ante-natal care from early in pregnancy. Weekly examination of urine—on Mondays. One Sunday, a few days before term, she was reported to have a slight " show " and headache. Doctor went to the house and found patient with B.P. of 200, becoming drowsy and urine solid on boiling. She was sent straight to public hospital in ambulance and must have had her first fit on the way as she arrived at hospital with some teeth broken. She did not respond to treatment and died four hours after admission. Post mortem examination revealed huge haemorrhages in the brain and sub-capsular haemorrhages all over liver.

Case 284.—Primipara 23. Ante-natal care at public maternity hospital from fourth month. Normal except for oedema of the feet. She walked to hospital at term, had an eclamptic fit early next morning and died in the fit, undelivered.

Case 293.—Primipara. General trained nurse, exceptionally healthy. Ante-natal supervision by doctor and frequent urine examinations by patient herself, who also voluntarily limited her intake of meat. Except for some oedema of feet and hands there were no pre-eclamptic symptoms. Eclampsia at term, with numerous fits. Patient was sent into private hospital and delivered four days later of a macerated foetus. Death from exhaustion, with terminal cardiac complications, on day of delivery.

Case 298.—Primipara 27. Regular ante-natal care and no toxaemic symptoms whatever. Seen by medical attendant four days before due date and was quite well. One day after due date Ol. Ricini was given by relatives and epigastric pain and vomiting which ensued were thought to be due to the medicine—so that doctor was not called until a fit occurred. The urine only contained the faintest cloud of albumen and B.P. was 150–170 mm. Patient was sent into hospital, where three or four more fits occurred and she died undelivered two days later.

Albuminuria not always evident.—Three cases of fatal eclampsia followed pregnancies which were not marked by albuminuria but by other toxic symptoms. They were :—

Case 181.—Under treatment and observation throughout pregnancy. Intractable neuritis of arms, which was considered to be of toxic origin, and treated accordingly. At seven months the patient felt " off colour " and complained of headache. Urine had been normal up to last testing—four days previously—but now boiled solid and was accompanied by high blood pressure. In spite of intensive treatment, eclampsia developed and patient was very restless. Labour had commenced and the foetal head was on the perineum and was easily extracted with low forceps. Urine then cleared up and patient became conscious, but her temperature gradually rose, and a condition of acidosis set in which resisted treatment and proved fatal on the third day.

Case 239.—Primipara 18. Vomited throughout pregnancy. No other toxaemic symptoms. At eight months oedema of feet developed. Urine was still clear—but scanty. Eclamptic fits then occurred and patient died undelivered.

Case 244.—Primipara 25. Hyperemesis early in pregnancy necessitated five weeks' treatment in bed. Ante-natal supervision was continued throughout and no further suspicion of toxaemia was entertained until twitchings occurred and disorientation was noticed just before delivery. Labour was long, owing to rigidity of the cervix. Low forceps delivery under chloroform anaesthesia. Sudden convulsion thirty hours after delivery, followed by death.

Unusual Features.—In one case of eclampsia the medical attendant was undecided whether the fatal convulsion was a true eclamptic one, though he finally decided to certify it as such in view of the previous history of albuminuria.

Case 188. III para. Aged 38. Albuminuria during two previous pregnancies. Consulted doctor at seven months and urine then contained a cloud of albumen, but there were no toxic symptoms. Patient was told to send specimens of urine regularly (she lived 16 miles out of the town), but the doctor himself became ill shortly afterwards and did not again see her until he was called in when she was in labour. On arrival he found her advanced in labour, talking normally, and apparently perfectly well. He left the room for a moment to give directions to his driver and was hastily recalled—to find the woman in a fit and obviously dying. Child expressed by pressure on abdomen about two minutes before mother died.

The following cases presented somewhat unusual features :—

Case 210.—Primipara 29. Admitted to hospital, vomiting, when only six weeks pregnant. Urine clear. Had one convulsion and died.

Case 247.—III para. Eclampsia at last labour. During present pregnancy was out-patient at public maternity hospital and had albuminuria. At six and a half months she developed pre-eclamptic symptoms, and precipitate labour at seven months was marked by concealed and revealed accidental haemorrhage. Eclamptic fits did not occur until the twentieth day of the puerperium. Death one month after labour.

Interference and Errors of Judgment.—In a few cases in this Group it would appear that drastic interference with labour on account of other complications (such as mal-presentation) or accouchment forcé as a mode of treatment of eclampsia, may have contributed towards the fatal issue.

Munro Kerr states : " We are convinced the interference employed is in many cases too drastic (accouchement forcé or Caesarean section). The Departmental Committee (Final Report) again call attention to the danger of accouchement forcé as a method of treatment. They might also have included in their criticism Caesarean section, which is too often employed, although the operation has certainly a place in well-selected cases of pre-eclamptic toxaemia."

As shown in Table V, delivery of 101 women (35 patients died undelivered) was by Caesarean section in twelve cases and accouchement forcé in seven cases.

In other cases " errors of judgment " led to a state of eclampsia when early, vigorous, eliminative treatment might reasonably be expected to have averted the condition.

The Human Factor.—Yet again the human factor has to be taken into consideration and a train of unfortunate circumstances through misunderstanding or mis-judgment on the patient's part occurred in some cases.

The histories of the following patients are illustrative of the above points :—

Case 246.—II para, 43. Attack of acute nephritis twelve years ago. Last labour ten years ago. Good ante-natal care throughout present pregnancy. A cloud of albumen appeared a few days before term—treated with rest and diet. When patient came into labour, however, four days later, she had solid albuminuria, with casts, and B.P. 180. After one fit occurred the cervix was manually dilated and the patient delivered instrumentally. Numerous further fits, with death, three days later.

Case 253.—II para, aged 25. Previous labour normal. Three weeks before term eclampsia occurred but cleared up after treatment in hospital. At term, there was mal-presentation, the presenting part being high up, and meconium was draining. Caesarean section was performed but the patient appeared very toxic afterwards and died six hours later.

Case 281.—Primipara, 18. No ante-natal care at all. Developed pre-eclamptic symptoms with anuria at six and a half months and accouchement forcé—at home—was performed. Fit followed delivery. Removed to public hospital at once but did not respond to treatment and died next day.

Case 262.—Multipara (six labours) 38. Considered to be a chronic nephritic. Had eclampsia and was in public maternity hospital five years before, when she nearly lost her life. Was warned against danger of further pregnancies by consultant and when pregnancy again occurred she consulted private practitioner who is alleged to have told her " not to worry." When urine became solid and pre-eclamptic symptoms developed—at five months—husband alarmed and called in consultant, who admitted patient to hospital and induced labour surgically. Post partum eclampsia, however, supervened and she died two days after delivery.

Case 274.—Primipara, 34. Frequent examination of urine by medical adviser from second month. At thirty-four weeks had three eclamptic fits, and was treated at home with light diet and mixture—no nurse being on the case and no eliminative treatment administered. A few days later she became unconscious and was sent to hospital. The bowels had not been opened for two days. Died undelivered soon after arrival at hospital.

GROUP III.—OPERATIVE SHOCK, COLLAPSE AFTER DIFFICULT LABOUR, ETC.—86 Deaths.

TABLE VI.—Operative Shock, etc. 86 deaths.

Includes :—	
Acute inversion of uterus	5
Collapse after dystocia	32
Paralytic ileus, shock, etc., after Caesarean section	23
Ruptured uterus	10
Ruptured bladder	1
Ruptured vaginal vault	1
Ruptured hydatid cyst	1
Ruptured fibroid	1
Shock	6
Under anaesthetic	6
	86

Where confined—	Metropolitan.	Country.
At home	8	9
Private hospital	13	22
Public hospital	9	7
Sent into public hospital with complication	5	5
Undelivered	4	4
	39	47

This group consists of a large variety of cases (86 in number : 39 metropolitan, 47 country), including shock or paralytic ileus after Caesarean section (23), collapse after dystocia (32), rupture (10), or acute inversion (5) of the uterus, and deaths under anaesthetic (6).

There were also six sudden deaths from "shock" following normal delivery.

The majority of the women were confined in hospital (35 private, 26 public). Eight died undelivered.

Of the seventeen who were delivered in their own homes, it is possible that in some instances the outcome might have been different if delivery had been effected in a hospital. As will presently be seen, this applies especially to two cases (341 and 350) where extremely difficult operative deliveries were undertaken under adverse conditions and without even the help of a medical colleague.

Death following Spontaneous Delivery.—In the great majority of cases, labour was complicated, although in the following instances death followed spontaneous delivery :—

Case 314.—VIII para. About five years previously collapsed after normal labour and was restored with difficulty. On present occasion only the midwife was present at the birth of twins, of 7 lb. each. One hour after delivery, when told that she had given birth to twins, she collapsed. Doctor summoned and administered saline and restoratives without avail.

Case 337.—Aboriginal, ninth labour. Had never been attended by a doctor. Confined by another aboriginal. Labour was long. A few hours later medical help was called in because the patient complained of feeling weak and faint. There was no evidence of haemorrhage. The woman died the same day.

Case 339.—Aged 43. Thirteenth labour. Patient had exophthalmic goitre, with bad cardiac condition. Gave birth to twins, and heart failed during labour.

Case 351.—Previous labours normal. Aged 27 years. Rigorous treatment for pyelitis during fatal pregnancy. Twins. Appeared very collapsed and complained of faintness on coming out of anaesthetic after delivery. A rapid pulse-rate suggested haemorrhage, but no tear was found on examination. The vagina was packed, however. In spite of the administration of saline, drugs, etc., death occurred the same day.

Case 354.—III para. Labour was quick and spontaneous, the medical attendant arriving in time to deliver the placenta. Patient collapsed immediately afterwards and did not recover.

Case 376.—Primipara. Five hours after the onset of labour the midwife sent for doctor because patient "looked tired." As the os was fully dilated he administered chloroform with each pain. No headway was made, but the woman's "tiredness" increased, so low forceps were applied. Suddenly, during delivery of the foetal head, the patient ceased breathing.

Acute Inversion of Uterus.—There were five cases of acute inversion of the uterus. One (*case* 355) occurred after perfectly normal labour in a multipara (one normal labour, one miscarriage previously) who was confined in a public hospital. About 20 minutes after delivery of the child, and before delivery of the placenta, sudden, complete inversion of the organ took place, the placenta being attached to it. The placenta was immediately removed and the uterus replaced and packed, but in spite of treatment for the very profound shock, the patient died seven hours later.

Another case (366) showed unusual features also. The patient, primipara, aged 21, was confined under ideal conditions, having an easy instrumental delivery. Placenta expelled naturally half an hour later. Then the patient began to bleed a little and a notch suddenly appeared at the fundus uteri. This was thought at first to be a fibroid, but was found on palpation to be a partial inversion of the uterus. The woman suffered from shock, but recovered completely with manipulation and treatment. The umbilical cord was very short. Seven hours after delivery the patient suddenly collapsed and died.

One case of inversion followed manual removal of the placenta, and another followed attempted manual removal, while in the third case the placenta was retained as a result of the (partial) inversion.

Deaths under Anaesthesia.—Of the six cases of death under anaesthetic, three occurred under open ether. One was no doubt due to a great amount of manipulation (failed forceps) under chloroform, terminating in craniotomy under ether.

Another patient (*Case* 370) had had ether administered during an unsuccessful attempt at delivery of a frank breech presentation. She had then been admitted to a public hospital, showing signs of acidosis on admission, and when (after treatment) ether anaesthesia had again been commenced for delivery she collapsed and died five minutes later.

Case 375.—Primipara. Small pelvis; large post-mature child. "Failed forceps" at home, under chloroform anaesthesia for *two hours* during attempts. Then sent to public hospital, where she arrived vomiting, with very rapid pulse. Two hours later it was decided to give open ether and deliver by any means. Just as the surgeon was about to crush the foetal head, after twenty minutes' ether, the patient's heart stopped beating—though respiration continued for a time.

Three patients died under chloroform anaesthesia, the histories of two being as follows:—

Case 371.—Primipara, 30. Labour was somewhat slow, so chloroform was administered by an experienced sister in a first-class hospital (training school) while doctor applied forceps. The sister had to leave patient for a moment and handed over anaesthetic to another nurse. During that time the patient's condition went off and she ceased breathing, just as the head was delivered.

Case 372.—Primipara of poor physical type, with mitral regurgitation from rheumatic fever in childhood. Measurements small, so induced medically at term—in own home. The head was on the perineum, so that the doctor administered some chloroform and left the mask on the patient's face while delivering the head (and, presumably, while "scrubbing-up" preparatory to doing so). Breathing ceased as the child was delivered.

It is cases like these which help to establish the reputation of chloroform being a "dangerous anaesthetic" for use in childbirth.

Rupture of Uterus.—The most dramatic series of deaths in Group III were those which followed rupture of the uterus. They were ten in number. Two of them were apparently caused by falls—which in one case had occurred two days previously (the patient, wife of a medical practitioner, not having complained of any pain) and in the other instance as long as six weeks previously.

Case 364.—V para. Patient received a kick during pregnancy, and complained of pain in the side thereafter. Admitted to hospital for confinement. Breech presentation. Dilation was proceeding very slowly, and when the cervix was half-dilated patient suddenly collapsed. Was taken straight to operating theatre but died immediately.

One patient complained of "something giving way" after the first three severe labour pains. She had five children, the youngest 11 years previously. Two years before the fatal labour she had had a large pelvic abscess drained following an early miscarriage. She died before section could be commenced.

Two other cases (360 and 352) also occurred spontaneously in the first stage of labour, both being in public maternity hospitals, having regular pains, when the rupture took place. The former patient had attempted to produce abortion earlier in pregnancy, so there may have been some injury to the uterine musculature. In the latter case, the patient, IV para, gave a history of septicaemia following her first labour, but of no other acute infection. Post mortem examination in this instance showed a very marked and generalised condition of degeneration of the uterine muscle, so distributed that it would appear to have been toxic in origin. There was a large irregular tear from the upper uterine segment to cervix, with the foetus lying wholly free in the abdominal cavity.

In the following two cases it would appear that ill-advised attempts at version after rupture of the membranes led to disaster:—

Case 359.—Seventh labour; last three still-births. Long and difficult labour after early rupture of membranes. Patient under anaesthetic for several hours. Version attempted after cervix had been dilated for some hours. Forceps delivery finally. Manual removal of placenta. Great deal of bleeding. Had not recovered from anaesthetic when doctors (3) left. Died suddenly.

Case 377.—Multipara, post-mature. Transverse presentation. Unsuccessful attempts at version (after rupture of membranes) at home and at another town en route to Sydney—where she was ultimately sent undelivered, the journey necessitating two changes of ambulance. On arrival, the uterus was tense, with two transverse rings across abdomen, a foetal arm had prolapsed at vulva, and a leg was protruding through the uterus at the level of the umbilicus. Immediate Caesarean section and hysterectomy. Patient very shocked afterwards and died same night.

In one case (1033) a woman, who was about four months pregnant, had a fall. She did not call in a medical man until showing signs of sepsis two days later. He attempted induction of abortion but states that he was unsuccessful, so the patient was sent to a public hospital, where she died. Post mortem examination revealed a large tear of the uterus from the internal os, with the foetus lying free in the abdominal cavity.

Rupture of Vagina, Bladder, etc.—Other cases of rupture which occurred during labour were of the vaginal vault, the bladder, fibroids and hydatid cyst. They occurred under the following circumstances :—

Case 340.—X para, 45. Emaciated and under-nourished. Breech presentation. Vaginal vault ruptured during second stage of labour. No haemorrhage afterwards. Death two hours later.

Case 320.—Multipara 32. Myocarditis (fatty degeneration) for some years. Three previous difficult instrumental labours. Fatal confinement was posterior position with delay and extension of head at brim. Catheterization of bladder before application of forceps for rotation of head followed by difficult delivery. Retention of urine afterwards. Transferred to public hospital where abdomen was opened and rupture of bladder found, with extensive extravasation of urine.

Case 312.—Three normal labours. Pessary worn during first four months of pregnancy on account of retroversion. No indication of fibroids. Normal labour. Next day severe pain when nurse attempted to massage fundus of uterus to expel clots, accompanied by profound shock. Laparatomy showed ruptured fibroid in wall of uterus. Death occurred on the twelfth day.

Case 308.—Difficult instrumental labour previously, on account of small pelvis, led to induction of labour at 8 months. High forceps after 18 hours. Five days after delivery patient developed acute abdominal condition. Laparatomy. Found to have ruptured hydatid cyst of broad ligament. Died three days later.

Shock, etc., after Caesarean Operation.—There were 23 deaths from shock or paralytic ileus after Caesarean section, the indications for the operation being contracted pelvis, malpresentation, disproportion, tumour obstructing labour, myocarditis and previous rupture of the uterus. Only 13 of the women had been under ante-natal supervision and in 10 of these cases the operation was one of choice; the remaining 13 operations were emergency ones.

One woman (*Case* 325) did not report at all during pregnancy, and did not summon the doctor until she had been ten hours in labour, in spite of the fact that of her four previous deliveries three had been by craniotomy and the fourth had been induced at seven and a half months. There had been a complete tear of the perineum at the premature labour and faeces were passed per vaginam as well as per rectum.

Another woman (*Case* 324) had undergone two very difficult instrumental deliveries, in spite of which she, too, was not seen until in labour. There was a large foetal head which could not enter the patient's contracted pelvis. Nevertheless forceps delivery was attempted, but without success, and Caesarean section was performed.

Case 327.—A young primipara with a contracted pelvis was not seen until the liquor amnii had been draining twelve hours and a foetal hand had prolapsed. She had a contracted pelvis, with plural pregnancy—both infants lying transversely. Death from internal haemorrhage occurred ten hours after operation.

Nine of the 23 women were primiparae and among the 14 multiparae there were only 3 whose previous labours had been normal.

One woman (*Case* 380) had undergone a previous Caesarean section. On this second occasion resection of one inch of each Fallopian tube was also carried out, but death occurred from paralytic ileus two days later.

Case 322 was that of a VI para of 41 whose last labour had taken place twelve years previously, and on that occasion she had almost died because of myocardial disease. She was under constant treatment throughout the fatal pregnancy, and Caesarean section was decided upon and carried out at the beginning of the eighth month under avertin anaesthesia. The wound burst open on the tenth day, showing no signs of healing, and death from shock and heart failure occurred the same night.

Case 323 was that of a woman aged 35, who had had four previous normal confinements. On this occasion, after a trial of thirty-six hours she was making no headway. Forceps were applied, and very gentle traction made, without success. Vaginal examination then revealed a prominent sacrum obstructing a large foetal head. Caesarean section was performed, but the patient (who was just recovering from severe influenza) died two hours later.

The following cases showed unusual features :—

Case 331.—Multipara. Four normal labours, then Gilliam's operation. At next labour there was spontaneous rupture of the uterus, with severe shock and profuse haemorrhage, but the patient recovered. During the sixth and fatal pregnancy the patient suffered from persistent hyperpiesis and myocarditis, and, since the uterus had been abnormally high up in position following the operation (so that the cervix could only just be reached with the tip of the examining finger) and recurrence of the rupture would be almost certain. Caesarean section was performed before labour commenced. Sudden collapse, probably due to myocarditis, occurred twenty-four hours after delivery.

Case 333.—II para, aged 19. At previous labour delivery had been instrumental with a tear of the cervix and vagina and hernia of the bowel through the tear. The second infant was post-mature, and just after labour began the first child died suddenly of gastro-enteritis. Pains ceased, and the mother insisted upon leaving hospital to attend the funeral, after which she was admitted to the district hospital and underwent Caesarean section. She collapsed and died four days later.

Case 335.—II para, aged 28. Other labour normal. At eight months the patient contracted what was thought to be influenza. Two days later she complained of inability to move her legs, and she collapsed on the floor. On admission to hospital she could not walk, and the knee-jerks were absent, but there were no other abnormal signs. Later she complained of inability to swallow. There was a faint cloud of albumen in the urine on two occasions only. B.P. 120–80. After 11 days, rapid loss of strength, persistently rapid pulse, and failing heart rendered Caesarean section advisable, but the patient took the anaesthetic badly and collapsed, and died eight hours after operation.

In one case (378) a meningocoele, protruding from the anterior fontanelle, and larger than the foetal head itself, prevented delivery per vaginam, so Caesarean section was performed.

Case 379.—Primipara. Contracted pelvis and large child, so after some hours labour, Caesarean section was performed. Condition excellent after operation, until the fourth day, when patient became very restless and vomited. Gastric lavage removed one gallon of brown fluid. Next day a similar amount was removed. The stomach again became dilated, and the patient acutely delirious before death on the fifth day. The woman was an excessive eater, and consumed large quantities of fluid and it was afterwards verified that while awaiting confinement in the hospital (she had come down from the country) she had taken 3 quarts of milk and two siphons of soda water, daily, in addition to her ordinary meals.

Case 334.—Aged 39. Several years since previous labours. Only consulted doctor once during pregnancy, though urged to report regularly. After dilatation to ¾ the cervix was quite rigid, due to obstruction by a large fibroid. Version was performed, but further dilatation being impossible, Caesarean section was performed. Extensive fibroids were found in the uterine wall at operation, and difficulty was encountered in controlling haemorrhage. Death occurred three days later.

Case 383.—Primipara. 27. "Tilted" pelvis due to infantile paralysis, with shortening of one leg. Sent down from the country for Caesarean section. X-ray examination showed tilting, but no narrowing of the pelvis, and no overlapping of the foetal head at the brim. The sacrum was not reached by vaginal examination. As the patient was anxious to avoid operation, trial of labour was allowed. The pains were strong, but no headway was made, so the operation was performed, and a 7½ lb. baby delivered. There was a great deal of bleeding from the wound and, finally, a basal pneumonia developed.

Case 385. IV para. All previous labours had been breech presentations, and first and third babies had died shortly after birth. During pregnancy under review, external version—presentation again being breech—had been performed four times. On patient's admission to hospital presentation was transverse, so Caesarean section was decided upon. A mild degree of bicornuate uterus was found. The patient died of intestinal obstruction after operation.

In considering the thirty-two deaths from shock or collapse after dystocia, one is again struck by the fact that many of these difficulties could have been anticipated and dealt with differently if there had been proper ante-natal supervision and examination. Only fourteen of the thirty-two may be regarded as having had satisfactory supervision. There were fifteen primiparae in the group and eight multiparae whose previous labours had been normal. Four women died undelivered.

Three of the patients were aboriginals. In one instance (313) the medical attendant was not called until labour had lasted two days with no progress being made. Attempts were made, under appalling home conditions, to deliver the very large foetus, but the patient died undelivered.

In another case (316) the woman was brought into hospital and skilled help was obtained, but even after craniotomy and cleidotomy were resorted to she died with the foetus still in utero. She had had two previous still-births. Her external measurements were normal.

The third aboriginal (*Case* 348) was a single girl. She was first seen and examined thoroughly at seven months, but, though urged to do so, did not report again. Before the cervix was fully dilated the mother's condition began to deteriorate, so dilation was completed manually and the child extracted instrumentally without any difficulty. There was a great deal of shock, with a tendency to post-partum haemorrhage, so the placenta, which was retained, was not removed until three hours later. Delivery had taken place in the patient's home, a cold wooden unlined hut, the cold accentuating the condition of shock, and, in spite of every effort to restore circulation, death occurred four and a half hours after delivery.

Difficulties under Adverse Conditions.—As previously remarked, many difficult operations were undertaken under very adverse conditions, which could, in some cases at least, have been carried out in a hospital. One sympathises fully with the conditions under which much of the out-back medical and surgical work has to be carried out and marvels at the excellent results so often attained under the circumstances; at the same time, however, it can be seen from the histories quoted that in some cases unnecessary risks are run and such facilities as are available are very often not made use of—especially in the larger towns.

Case 341.—Multipara. Two previous labours difficult. The patient lived in a large town, and was under ante-natal supervision. Difficult forceps delivery of a still-born child, in the woman's own home, with no other doctor assisting or administering anaesthetic. The condition of shock was so severe that patient was moved to the district hospital, where she died four hours after admission.

Case 319 was a difficult delivery (brow presentation), which took two doctors three hours to accomplish. It took place in the patient's own small, overcrowded home.

Case 350. Primipara. 22. P.O.P. Five attempts at forceps delivery were made by doctor in patient' own home, resulting in much trauma and haemorrhage. Version also attempted. She was then sent in to public hospital, with hand and cord prolapsed, and died there shortly after delivery by combined version.

Heart Disease and Labour.—Several patients died after difficult labours, which proved too great a strain on already damaged hearts. The circumstances were as follows:—

Case 317.—IX para, aged 38. Fatty degeneration of myocardium. Brow presentation. Large child. Attempts at version failed. Forceps delivery. Labour lasted fourteen hours, and death occurred fifteen minutes after delivery of the child. Third stage had not commenced.

Case 349.—Primipara, 38. Pituitary dystrophy. Patient 6 ft. 1 in. high, 19 stone in weight. Acute myocardial failure occurred at thirty-eighth week. Duration of labour (at term), forty-eight hours, pains intermittent. R.O.P. Syncopal attack occurred, so ether was administered and forceps applied. Patient collapsed and died, child (still-born) being extracted post-mortem.

Case 353.—III para. Said to have "heart trouble." Early rupture of membranes, with manual dilation of cervix and instrumental delivery of P.O.P., followed by manual removal of placenta. Puerperium was pyrexial and patient's condition unsatisfactory, so after three weeks the uterus was explored with blunt curette. Patient collapsed after this and died next day.

Case 387.—Primipara, 41. Pneumonia, followed by myocarditis, twelve months before present pregnancy. Induced at term by surgical means—medical induction having failed. Long labour, terminated with forceps. Condition good after delivery until sudden collapse and death on third day.

Impaction of Shoulders.—In two cases the head was delivered without difficulty, but the shoulders became impacted. One of the women was multipara who had given birth to nine children, all of them large (some were stated to have weighed over 13 lb. at birth). The head was born easily with forceps and when the medical attendant failed to deliver the shoulders he called in two colleagues, who, however, even after fracturing both clavicles, failed to deliver the shoulders. It was finally necessary to amputate the head and perform podalic version and embryotomy. The patient collapsed immediately after completion of the manipulations.

Case 315.—VII para, aged 38. Under treatment for six weeks for hydramnios. The head was born at 6 a.m., whereupon labour pains are alleged to have ceased suddenly. The doctor could not deliver the shoulders, so he "made the patient comfortable" until midday, when a colleague arrived from a neighbouring town. The colleague administered ether, but the patient vomited, became distressed and died undelivered.

In the majority of cases of dystocia, interference did not take place until the patient had been in labour for some considerable time—as long as four days, in one instance.

Shock after uncomplicated Labour.—

Case 352.—Patient collapsed after easy spontaneous labour. The placenta was retained and was not removed until four hours later because of the collapsed condition. At her previous labour—two years before—a similar condition of profound shock had occurred and further similar collapse after curettage ten days later.

Case 357.—X para. Had been under treatment irregularly for some years for pernicious anaemia. First of twins born at home, with midwife only, in attendance. The patient appeared to have not strength to expel the second child and was taken to public hospital, where the membrances were ruptured artificially, but no pains developed. She died undelivered of the second child one hour later.

Case 386.—Primipara, 40. Slow dilatation of cervix, followed by easy forceps delivery. Patient seemed excessively "tired" for about an hour, during which time two unsuccessful attempts were made to express placenta. No bleeding. Patient became steadily weaker, in spite of full treatment for shock, and died two hours after birth of child with placenta still in utero.

Pelvic Disproportion and other Factors.—In two instances dystocia was due to hydrocephalus, and in several other cases much manipulation was necessary. The following are instances:—

Case 336.—One previous difficult instrumental labour, but no ante-natal treatment sought during second pregnancy. Strong pains with no advance of head—which was in right posterior position. Pelvis contracted, with a round boss on sacrum. (Measurement of outlet about 3½ inches from symphisis to tip of coccyx.) Forceps delivery of 11½ lb. infant, followed by retention of urine and paralysis of bowels. Death occurred a week later.

Case 374.—Primipara. R.O.P. with some disproportion. Forceps were applied at full dilatation, but as the cord was prolapsed and pulseless and light manipulation with forceps was unsuccessful, a consultant was called in for craniotomy. This, and subsequent repair of perineum, occupied about two hours and the patient gradually weakened. Did not pick up, but died next day.

Case 388.—Primipara. Admitted to public hospital after "failed forceps"—three attempts. The head was fixed and could not be pushed up. After seventy-eight hours' labour, it was decided to perform craniotomy. Even then it was found impossible to deliver head first, and version from R.O.P. to L.S.A. was necessary. The operation lasted two hours and the patient died half an hour after it was completed.

Serious difficulty for Attendant.—

Case 367.—Primipara, 28. Was to have been confined in private hospital and was admitted there when membranes ruptured. Liquor drained for three days, but pains were very slight and patient returned home and arranged to be nursed at home instead. Pains ceased for three days, during which time greenish liquor was draining and the patient was seen frequently by doctor and nurse—and examined P.V. on each occasion. On sixth day she was feeling ill and desired a second opinion, so a

colleague was called in. The os was fully dilated. Forceps were applied unsuccessfully and version attempted, but the obstacle to success "seemed to be a thick band of muscle around the uterus, probably Bandl's ring." The patient lost a lot of blood during the manipulations and was very collapsed. Was given stimulants and taken in ambulance for admission to public hospital, but died en route. (This case would appear to have been one of contraction ring.)

Case 356.—III para. Said to have suffered from myocardial condition since 9 years old and treated for heart during pregnancy. Delivery took place in private hospital and was normal until third stage, when the membranes became "nipped" by cervix as placenta was in the vagina and protruding. The half-expressed placenta was kept covered by sterile towels, and when the condition did not change, the doctor awaited events! Half an hour later the patient became very restless, with rising pulse-rate. The doctor was again summoned and administered strychnine and pituitrin—also oxygen—but the placenta did not leave the vagina and the patient died two hours after the birth of the child.

A study of the cases in Group III of this investigation reminds one that a steady increase in the number of operative deliveries is, perhaps, the most prominent feature of the development of modern obstetrical practice.

According to Plass (*American Journal of Obstetrics and Gynaecology*—August, 1931), the rate in America of operative interference is variously estimated at 10 to 20 per cent., while the optimum is usually regarded in the neighbourhood of 5 per cent.

The figures in Australia may not be quite so high, but the same factors enter into these high figures—the greatly increased use of anaesthesia, the spread of the knowledge of surgical techniques, the pressure of time upon the attendant and the increasing demand on the part of the patient for shorter and less painful parturition.

The Report on Maternal Mortality in New York City (1933) shows the significant rôle played by high operative incidence in the production of a high mortality rate.

The Committee of Investigation associated with that report felt that 76·8 per cent. of all the deaths following abnormal delivery could have been prevented. They express the belief that "if all women who could do so were allowed to deliver themselves spontaneously and the indications for instrumentation were reduced to those having real validity, and, further, if the attendant were fully informed, before the onset of labour, as to each individual's capacity to deliver, there is every reason to believe that there would be a reduction in the deaths from childbearing."

GROUP IV.—ANTE-PARTUM HAEMORRHAGE—91 Deaths.

There were 91 deaths from ante-partum haemorrhage—45 taking place following accidental haemorrhage and 46 following placenta praevia.

Owing to the adverse conditions under which much of the midwifery is carried out in country districts, added to difficulties of transport and long distances, one would expect to find that most of the deaths from haemorrhage were country ones. Such, however, was not the case. The country deaths were only slightly in excess of the metropolitan ones, and this relates not only to the cases investigated, but to all the deaths from haemorrhage which occur in New South Wales annually.

Actually, of the cases investigated, country deaths predominated in the placenta praevia group (M. 17 and C. 29) and metropolitan deaths in the group of accidental haemorrhages (M. 25, C. 20).

TABLE VII.—*Ante-Partum Haemorrhage*—91 Deaths.

	Metropolitan.	Country.	Total.
Placenta praevia	17	29	46
Accidental haemorrhage	25	20	45
	42	49	91

Where Confined (or Treated)—

	Metropolitan.	Country.
1. Placenta praevia—		
At home		1
Private hospital...	1	13
Public hospital throughout	4	3
Transferred to hospital bleeding ...	8	8
Undelivered	4	4
	17	29
2. Accidental haemorrhage—		
At home	5	3
Private hospital...	2	7
Public hospital throughout	4	1
Transferred to hospital bleeding ...	10	2
Undelivered	4	7
	25	20

TABLE VII—*Ante-Partum Haemorrhage*—continued.

Method of Treatment—	Metropolitan.
1. Placenta praevia—	
Version	14
Version and plug	7
Plug	8
Caesarean section	2
Accouchement forcé	4
De Ribes' bag	2
Rupture of membranes	2
No active treatment	5
Unstated...	2
	46
*Saline, etc., given	13
Blood transfusion	2
2. Accidental haemorrhage—	
Version (attempted)	1
Version and plug	4
Plug	7
Caesarean section	6
Accouchement forcé	4
Drugs, saline, etc.	8
Rupture of membranes	6
No active treatment	5
Unstated...	4
	45
*Saline, etc., given	9
Blood transfusion	3
Warning haemorrhages before fatal one—	
Placenta praevia	22
Accidental haemorrhage	7

*Saline transfusions probably administered in many more cases—referred to as "treatment for shock."

A study of the histories of the cases investigated shows that to reduce deaths from haemorrhage there are many directions in which our efforts must be extended. To begin with, women must be educated to realise that bleeding—even slight bleeding—during pregnancy should be regarded seriously, and it must not be overlooked by medical practitioners when mentioned to them during the ante-natal period.

During that period, too, the recognition and thorough treatment of all toxaemias of pregnancy should reduce the incidence of premature separation of the placenta, or should, at least, cause the practitioner to be on the look-out for such an eventuality.

If and when the haemorrhage does occur, careful judgment as to how much interference is called for, and skill in administering such necessary interference to arrest the haemorrhage, while conserving the strength of the patient, are all-important. It would appear in some of the cases that the treatment adopted, while directed towards arresting the haemorrhage, also tended to increase the amount of shock; and that, furthermore, in many cases, the necessity for replacing the lost blood by blood transfusion or even the administration of saline intravenously, subcutaneously or per rectum, was not appreciated.

Blood transfusions are only recorded as having been given in 5 cases and saline administered in only 22 cases. It may be, however, that saline transfusions were given more often, and were included in the term "treatment for shock."

Most of the cases of placenta praevia were dealt with in hospitals. Among the 17 metropolitan cases, 4 died undelivered, and of the remaining 13, 12 were in public hospitals, the majority (8) being removed thence when severe haemorrhage occurred.

Four country cases also died undelivered, and of the remaining 25.1 was delivered at home, 13 in private hospitals, and 11 (8 of them emergencies) in public hospitals. While it is generally realised that all emergencies can best be dealt with in a public hospital or fully-equipped and well-staffed private hospital, it is doubtful in many cases of profound shock or collapse after severe haemorrhage whether treatment on the spot, even under adverse conditions, may not incur less risk to the patient than her transferrence to a distant hospital, often over bad roads and with no ambulance available.

In many cases of ante-partum haemorrhage—both "accidental" and "unavoidable"—the initial complication was dealt with, and the patient's condition was regarded as satisfactory after delivery, but further—post-partum—haemorrhage turned the scales.

Several others appeared to have recovered from shock and died suddenly with symptoms suggestive of embolism rather than of further haemorrhage.

The Table (VII) shows the various methods of treatment adopted in both varieties of ante-partum haemorrhage. Six cases of accidental haemorrhage were delivered by Caesarean section.

External version was performed in 3 cases. In every other instance where version was performed, it was of the combined or of the internal podalic type.

Most of the metropolitan cases of accidental haemorrhage were dealt with in hospitals, 4 being in public hospitals throughout and 10 transferred there bleeding. (This does not include the patients who died undelivered, 3 after removal to public hospitals and one at home.)

Seven of the fatal country cases were undelivered, 3 of them being treated in their own homes, and the other 4 removed to hospitals.

Among the 91 women, 10 were primiparae and 27 had had five or more labours previously. In two placenta praevia cases (430 and 435) there was a history of the same condition with former labours. The latter, and also *Case* 429, were in bed, both in country hospitals, undergoing medical treatment for intercurrent diseases (toxic goitre and myocarditis respectively) when the fatal haemorrhages occurred. Caesarean section had been arranged for in both cases. In the former instance (*Case* 435) placenta praevia had already been diagnosed, but the haemorrhage occurred suddenly and the patient died an hour later undelivered. The history of *Case* 429 was as follows: Multipara, aet. 40. Last child seven years ago. Numerous miscarriages since, due to fibrosis uteri. Myocardial degeneration. Section eight months before death and both diseased ovaries removed (neither medical attendant nor patient being aware of state of pregnancy). On account of myocarditis was kept in bed and digitalised preparatory to Caesarean section at term. After seven days there haemorrhage occurred, so immediate operation was performed under avertin anaesthesia. There was difficulty in separating the placenta from the fibrotic uterus. The patient collapsed three hours after completion of the operation.

In 29 cases there were haemorrhages of varying degree of severity before the fatal one. Sometimes these were ignored by the patient and no medical advice or treatment was sought. In other cases, either the warning was ignored by the medical attendant, or even in the presence of excessive bleeding a policy of "masterly inactivity" was adopted. The following cases may be quoted:—

Case 392. Multipara. Two previous labours normal. Then one ovary and tube removed and, later, part of other ovary. Pregnancy supervened, with bleeding on and off at intervals, but patient sought no advice, and was not seen by doctor until day before death at six and a half to seven months. Uterus did not contract firmly after delivery, some post-partum haemorrhage occurred, and patient did not respond to restorative treatment.

Case 399.—Multipara. Aged 45. No ante-natal treatment. Lived in country. Sudden accidental haemorrhage, and much time was lost because the attendant at the local telephone exchange could not be raised. The patient was practically dying when the doctor finally arrived. Immediate delivery by forceps and saline, haemostatic serum, etc., given without avail.

Case 400.—Multipara. Aged 20. Normal labours. First child born when patient was 14½. Began to bleed at term, but did not inform anyone of her condition for three hours, and was then brought 10 miles over a bad road in an old car, arriving at hospital in collapsed condition. This course was not warranted, as the patient's financial circumstances were satisfactory. There was no recovery from initial shock, in spite of good treatment. The bleeding continued and the uterus was tense, so, as the cervix was two-thirds dilated, she was delivered. Bleeding stopped for a time, but commenced again.

Case 408.—Primipara. Ante-natal treatment from five months. At six months had vague pains, but was told by neighbours not to worry—that such pains were "natural." After six days husband noticed that she was pale. Brought in to doctor (12 miles), by which time she was pulseless and collapsed. The uterus was tender and os not dilated. Usual methods of restoration applied, but died undelivered.

Case 441.—Multipara. No ante-natal treatment. Slight bleeding at seven months, after digging in the garden all day. That night the patient "felt off colour," but thought she was just "bilious." Own medical adviser not available, so another was summoned and he administered morphia. During the night bleeding increased. In morning own doctor summoned. He found the woman practically moribund—blanched and with a tense uterus. He gave her no treatment, but sent her (several miles) to public hospital, where rupture of membranes and packing was performed. She died shortly afterwards undelivered.

Case 458.—Multipara, with history of post-partum haemorrhage at several previous confinements. Was seated in a chair when sudden haemorrhage occurred—at seven months. Doctor was called and eliminated possibility of placenta praevia by examination, and sent patient to hospital. Within three-quarters of an hour of her arrival there she lost between 1 and 2 pints of blood. Six hours after initial haemorrhage accouchement forcé performed. Haemorrhage free throughout. Blood transfusion given, but died three hours later.

Case 440.—Multipara. Ante-natal treatment. Pregnancy normal, with no signs of toxaemia. When eight and a half months pregnant, this woman was sitting on the floor rolling a ball to her older children when she suddenly felt stiff and complained of pain, so went and lay on her bed. This was at 2 p.m. Later she felt worse, so was admitted to hospital at 4.30 p.m. There seems to have been a good deal of delay because, although Caesarean section was decided upon, it was not performed until 9.30 p.m. The uterine cavity contained much blood and the placenta lying quite free. Bleeding continued after delivery, and haemorrhage was found in the muscular coat of the uterus and into the broad ligaments. It also occurred at the stitch holes. Hysterectomy was performed. The patient died on the table.

Case 465 was a woman pregnant for the eighteenth time, having given birth to thirteen children. Profuse haemorrhage occurred at seven months, and she was taken to hospital and admitted. She had slight pains, but as there was no further bleeding after twenty-four hours she was allowed to go

home again, without even being examined per vaginam! Forty-eight hours after the first haemorrhage she had another profuse one, and a doctor who was called in examined P.V. and found a central placenta praevia. She refused to return to the same hospital, so was sent to another one and died there two hours after admission.

In one case (468) bleeding commenced after external version for breech presentation. She bled on several occasions after that, but the diagnosis was obscure and the placenta praevia missed by several experienced practitioners. Finally a very profuse haemorrhage occurred which sent her into a public maternity hospital. Packing of vagina, a second external version and rupture of the membranes was followed by a very difficult delivery owing to the arms becoming extended and the anterior arm impacted above the symphysis pubis. Shock and collapse ensued, with death three hours later.

Three other cases presented unusual features. In one the patient (VIII para.) developed heavy albuminuria after the expected date of confinement, and was given medical induction of labour with m=minum V doses of pitocin. After the second dose the patient began to bleed externally and the pains ceased. The vagina was packed and two more doses of pitocin were given. The uterus was still not contracting, but was not tense, and the patient gradually became paler and more collapsed, with rising pulse-rate. An honorary medical officer seized a foot and delivered the infant with great difficulty, and also delivered the (very broken) placenta, as the patient died. Post-mortem examination revealed a ruptured uterus. It is questionable whether the rupture occurred as a result of the doses of pitocin in a case of accidental haemorrhage or whether it occurred during the difficult delivery.

In the second the patient—who was seven months pregnant—was in a general hospital with an attack of cholecystitis when sudden profuse haemorrhage occurred. The vagina was packed immediately and she was sent to a maternity hospital, where her condition became progressively worse in spite of treatment, and she finally died undelivered.

The third case was that of a patient admitted to hospital at term having a "show" of blood. There was no bleeding and no pains, so Ol. Ricini was administered. The patient was walking about the hospital quite well during the day, but was wakened from sleep at 10 p.m. with a haemorrhage which was so profuse that it soaked through the bedding on to the floor. There was still no dilatation of the cervix, and the placenta could not be felt, so the vagina was packed and morphia given. No pains or contractions occurred, and the patient died four hours later undelivered.

In some cases the patient's general health was such that she succumbed to a haemorrhage which would possibly not have proved fatal in a healthy woman. One such instance was where a half-starved single woman was pregnant to a man who was in gaol, and she was not seen until after a haemorrhage from placenta praevia. Another patient was an unmarried woman with several illegitimate children, and she worked as a charwoman. She, also, was not seen by a medical man until she had bled, and she died two hours later. When seen, the uterus was tonically contracted down on the foetus, which was lying transversely with an elbow presenting.

One patient had given birth to seven children previously, and on each occasion there had been post-partum haemorrhage.

In one case haemorrhage occurred from placenta praevia in a woman who, although she lived in the city, had no light except candles in her home (the family was on the dole), and the doctor who was called in had to pack the vagina by the candle light.

Abnormally short umbilical cords were only noted in two cases. In one of them the cord was only 5 inches in length and had to be divided to allow delivery of the child.

One country practitioner had the unenviable experience of attending two fatal cases of haemorrhage—one ante-partum and one post-partum—in the same night. They were his first fatal cases after some hundreds of deliveries, and while he was 6 miles out of town bringing in the second patient by ambulance, the first patient (whose case, No. 491, will be considered under Group V) died. The patient who died of ante-partum haemorrhage (*Case* 422) was pulseless when she reached hospital, but with packing and the onset of pains, and after blood transfusion, her condition improved. She was easily delivered with low forceps under light anaesthesia, but the placenta was adherent, and there was constant oozing of blood, so that at the end of half an hour it was removed manually, and before a second blood transfusion could be given the patient died. The shock of removal of the placenta and the comparatively small post-partum haemorrhage apparently turned the scale against her.

In only 15 of the 91 fatal cases of ante-partum haemorrhage was there any evidence of a toxaemic origin. One woman (*Case* 475), at III para., gave a history of albuminuria in her second pregnancy and during the third (fatal) one suffered from excessive vomiting. Although ante-natal care was sought early, no treatment was given, and specimens of urine which were brought were not examined. Even when profuse bleeding occurred at term there was much delay and bungling, until the patient reached a public hospital, where she was delivered and a blood transfusion given. The uterus remained atonic, and after manual removal of the placenta death occurred.

An unusual case was that (479) of a primipara who developed albuminuria at seven months and had a haemorrhage two days later. After consultation, medical induction was decided upon, but eclampsia supervened that night, with solid albuminuria.

The patient's condition improved with treatment in a public hospital, and a week later the urine was almost free of albumen and three pints were being passed daily. Bleeding then re-commenced and as it became worse bipolar version and delivery were performed, followed by manual removal of the placenta. Death occurred suddenly with symptoms suggestive of embolism.

Case 395.—A young primipara was well until a cloud of albumen appeared in the urine, followed three days later by a concealed accidental haemorrhage. Caesarean section was performed immediately, and the placenta was found lying free in the cavity of the uterus.

Case 438.—This patient (VII para, aged 30) persistently tried to bring on an abortion early in pregnancy. She was under ante-natal supervision and the urine was clear until two weeks before death, when it boiled half solid. Concealed and revealed hæmorrhage occurred. Caesarean section was performed.

In the case of one multipara, albuminuria had necessitated treatment in hospital on three occasions during pregnancy. There was marked improvement and the urine was clear just prior to the occurrence of a concealed hæmorrhage at term, while she was still in hospital. She died undelivered.

A chronic nephritic had been pregnant thirteen times in fourteen years and had given birth to eight children. In spite of pre-eclamptic symptoms during fatal pregnancy, she did not present herself at the Out-Patient Department of a maternity hospital until the sixth month. Even then she refused to come into hospital for treatment, but returned two weeks later. Three days after admission, concealed hæmorrhage occurred. The vagina was packed but the packing was expelled, and after being re-packed the patient died.

As would be expected, in most cases in this group the infant was still-born. Only three infants survived the accidental variety of hæmorrhage, one in spite of further complications :—

Case 455.—Multipara. Ante-natal supervision, with no evidence whatever of toxæmia during pregnancy. Accidental hæmorrhage occurred at term. The os was two-thirds dilated, so the membranes were ruptured at once. After the birth of the child the placenta was expelled naturally—the third stage lasting about twenty minutes, with continuous, slow bleeding after delivery of placenta in spite of intra-muscular injection of infundin and ernutin, and, finally packing of uterus with gauze. There was no inclination whatever towards clotting; uncontaminated blood in a kidney tray was still perfectly fluid two hours later. About one-eighth of the surface of the placenta was dark in colour from the detachment. The mother died shortly after delivery.

The infant lived—although twenty-four hours after birth it developed a condition analagous to eclampsia, with albuminuria and frequent fits for the next twenty-four hours.

The following case was another to add to the list of those already considered in previous groups where death was due to complications following the operation (not accompanied by sterilisation) of ventro-fixation in a woman of child-bearing age :—

Case 392.—Severe post-partum hæmorrhage after last labour—seven years before—ventro-fixation performed four years ago. There were no abnormal symptoms during the fatal pregnancy until seven months, when liquor amnii began to drain, followed by accidental hæmorrhage. The head was not engaged and there was no dilatation of cervix. On Caesarean section twelve hours later the uterus was found to be distended with blood and the placenta partially separated. The uterus was bound down to the abdominal wall by dense adhesions, preventing its proper expansion.

In summarising Group I of this Investigation (Deaths from Puerperal Sepsis) it was seen that, in addition to the cases we have just been considering, there were nine deaths from sepsis after placenta prævia.

Considering the conditions under which that emergency has frequently to be met and in which packing is performed with very few antiseptic facilities and with no anæsthetist, these figures are surprisingly low.

At the same time, however, it should be realised that some of the ninety-one women who died of hæmorrhage might have developed puerperal sepsis if they had lived long enough to do so.

GROUP V.—POST-PARTUM HÆMORRHAGE—64 Deaths.

The majority of the (64) deaths in this group occurred in the metropolitan area. This fact is difficult to explain; prolonged and difficult labours, with faulty management of the third stage (the chief predisposing causes of this type of hæmorrhage) should not predominate in the city. One would expect them to occur in the country, where medical help is often difficult to obtain, owing to distance.

TABLE VIII.—*Post-partum Hæmorrhage*—64 deaths.

	Metropolitan.	Country.
Following normal I and II stages	20	19
Following abnormal I and II stages	15	10
	35	29
Method of delivery of placenta—		
Manually removed	13	6
Expressed	14	13
Not delivered	3	6
Not stated	5	4
	35	29
Where confined—		
At home	16	15
Private hospital	9	10
Public hospital	10	4
	35	29
Saline administered	13	13
Blood transfusion	2	3

The accompanying table shows that the greatest number of deaths took place in private homes (as one would expect), but one would not expect to find—as was actually the case—that more than three-quarters of the deliveries were conducted by medical practitioners, not by midwives.

A doctor was present at delivery in all but five of the metropolitan and all but ten of the country cases.

Certainly 25 of the deaths followed abnormal first and second stages. It may be that in some cases unnecessary interference and "speeding-up" of delivery through the importunity of the patient's relatives was a predisposing cause of hæmorrhage. If, also, as is frequently stated, the use of anæsthetics in labour tends to induce post-partum hæmorrhage, this may be another explanation of its frequency in private homes as well as in hospitals—as thirty of the sixty-four patients were delivered under anæsthesia.

In one of the metropolitan cases which was not attended by a doctor the woman (multipara in comfortable circumstances) denied pregnancy and was found sitting up in bed, dead, at term, with new-born-twins beside her, whose umbilical cords she had severed herself by tearing. Another patient was confined by a midwife and not seen by a doctor until five hours later. In one case—attended by the "district" (nursing) staff of a metropolitan hospital—the bleeding was venous in character and apparently proceeded from a ruptured varicose vein and followed a precipitate labour.

The circumstances under which the following death occurred are almost incredible :—

Case 522.–Multipara, 40. History of post-partum hæmorrhage after each of seven previous labours. When nurse was summoned to the case, at onset of labour, she found that no doctor had been engaged, although, in view of previous history, she had instructed the patient beforehand that one must be in attendance. There was no other adult in the house at the time, so the nurse remained to conduct the case alone. Five minutes after delivery of the infant the patient began to bleed. One of the children was sent to call a neighbour, who telephoned several doctors' homes before help could be obtained. Meanwhile the nurse pressed down on uterus and attempted to control the hæmorrhage. When a doctor arrived he attempted to express the placenta, but did nothing further beyond administering strychnine and ergot and ringing for an ambulance to remove the patient to a public hospital (several miles distant). He dissuaded the nurse from accompanying the patient as he said the ambulance men were "quite capable of dealing with the case." The patient was moribund on arrival at the hospital. The placenta was removed immediately and saline and all possible treatment given, but the woman died forty minutes after admission.

Three of the country deaths were of aboriginals. One was confined in a shockingly dirty bag-lined "humpy" by a midwife only. The placenta was adherent and the midwife made vigorous attempts to force it out. By the time the doctor arrived the patient was blanched and almost pulseless, with continuous trickling of blood. She was moved immediately to hospital, and no attempt was made to remove the placenta, but—in spite of all treatment—she died of shock. Another aboriginal died quite unattended.

A single girl had a concealed birth and was found by her mother in a shed, bleeding. The placenta was not expelled. A doctor was summoned, but did not arrive until after the patient had succumbed.

One woman (*Case* 502) was 100 miles away from medical help. Instructions were given to the nurse by telephone for the treatment of the hæmorrhage. When the doctor reached the patient's bedside—after four hours' drive—he found an hour-glass contraction of the uterus and a retained placenta which he removed manually. Continuous treatment was given, but the patient died two hours later.

Twenty-five deaths followed abnormal labours, many of which were due to the women not seeking ante-natal treatment. In most of the country cases attended by doctors there was no ante-natal care, the doctor being called in when a complicated first or second stage demanded interference.

It was noted that in several cases the patient had a firm conviction that she was not going to survive her pregnancy—in spite of which no effort was made to ensure safe delivery. One such case was that of an elderly multipara (*Case* 501), who had nearly died from post-partum hæmorrhage at her previous labour, but would not place herself under ante-natal supervision, even after her husband had seen the doctor and made an appointment for her to be examined. She came into labour in a weak and tired condition and the post-partum hæmorrhage which ensued was not excessive and had ceased completely half an hour before she died.

There was a previous history of post-partum hæmorrhage in ten cases and of a tendency to bleed excessively from other causes (after teeth extraction or at menstrual periods) in several others.

In some cases, the presence of fibromyomata or polypi favoured hæmorrhage and prevented uterine contraction and retraction.

One patient—*Case* 516—had a fibrotic uterus which prevented contraction and occlusion of the blood-vessels. Fatal bleeding commenced two hours after very difficult delivery (due to contracted pelvic inlet and breech presentation. She was a III para and had suffered from menorrhagia since her last confinement, four years before.

Another case—514—was complicated further by eclampsia. The woman—primipara—had refused ante-natal care. When eclampsia occurred the doctor was called in and he performed manual dilatation with instrumental delivery. Hæmorrhage followed delivery of the placenta and the uterus would not contract because of fibroids—which could be felt through the abdominal wall.

In some instances the patient's health was poor and the fatal hæmorrhage was not sufficient to have caused death in a normally healthy woman. The following cases illustrate this :—

Case 485.—A diabetic primipara, whose health had always been poor. Labour was very slow and the patient was much distressed. The fatal hæmorrhage did not occur until forty-eight hours after delivery.

The above case (485) was not the only one where the fatal hæmorrhage did not occur until some considerable time after labour.

Case 537.—Patient had chronic myocarditis and collapsed after a small P.P.H. There was a history of similar collapse after each of the three previous confinements, the patient taking about three weeks to convalesce.

Case 534 was a very difficult confinement in a multipara with a history of renal disease since childhood, There was some post-partum hæmorrhage, followed—two hours later—by manual removal of placenta. A fatal, secondary, hæmorrhage occurred a week later.

Case 486.—There was a delayed second stage and the woman—a healthy young primipara—collapsed after delivery. The placenta was rough, but appeared complete. On the sixteenth day, when the patient was sitting up, reading, she had an appalling hæmorrhage and was much shocked and exsanguinated. Curettage was performed, and a firmly adherent, fresh-looking piece of placenta (about the size of a hen's egg) was removed. The lochia had not been offensive and the puerperium had been apyrexial. Blood transfusions were given, but the woman died fourteen days later.

Case 490.—Hæmorrhage was due to uterine polypus and did not occur until the third week of the puerperium, though the placenta had been adherent and had to be removed manually and evidence of the presence of a polypus was found then.

In one instance—*Case* 511—the placenta was retained and was removed manually after delivery of twins. Bleeding began two days afterwards with severe after-pains. The patient was removed to hospital and the uterus was about to be explored when she died suddenly.

In *Case* 542 the patient had a sudden severe hæmorrhage twenty-eight hours after a completely painless labour. She was treated afterwards for extreme anaemia, with liver extract and blood transfusions, but died a month later.

Two women died as long as four months after childbirth, from secondary anaemia resulting from post-partum hæmorrhage. These last three cases would, no doubt, in other countries, have been classified as deaths associated with (not due to) childbirth.

In some instances, manual removal of the placenta was performed in a patient suffering from shock without restorative treatment being applied first. In other cases it was considered unsafe to delay manual removal any longer because the patient was losing continuously.

Altogether, manual removal of the placenta was performed in 19 of the 64 fatal cases.

Many patients did not die immediately from hæmorrhage, but lived sufficiently long to allow for the administration of saline infusions—which, however, are only recorded as having been given in 26 instances. Nor were blood transfusions resorted to as often as might have been expected, but only in 5 cases, and 3 of these were in the country, where facilities are not so readily available.

Some fatal cases occurred after delivery in public maternity hospitals where every facility—such as saline infusions, packing of uterus, etc.—was made full use of, but death occurred, notwithstanding.

One feels that in the two following cases the "primary avoidable factor" is obvious:—

Case 512.—A metropolitan confinement, attended by a midwife. The doctor was not called until three hours after delivery, when he found that the patient had had severe P.P.H. He treated her for shock—hæmorrhage having ceased—and told the nurse to send for him again if required. She did not do so, so he called again and, finding the patient's condition bad, sent her to hospital immediately where, in spite of attempted plugging of the uterus, etc., she died the same night.

Case 519.—After delivery at home the patient was left in the care of her husband. The (visiting) midwife returned four hours later and had difficulty in rousing the husband, who was sleeping, to let her in. She found the patient bleeding and sent for the doctor. He was out, so a colleague came, and on his arrival the nurse departed. The doctor, unassisted, gave an intra-uterine douche, and although the woman had been practically pulseless when he arrived she picked up and he left her—again with only the husband in charge. Bleeding recurred, the husband left the woman to call the doctor again, and by the time they both returned, she was dying.

Other cases, which call for no comment, were:—

Case 497.—A dressmaker, who was very undernourished and whose husband was unemployed, worked hard at her trade until the beginning of the second stage of labour. She had made no arrangements for a doctor, but the midwife summoned one when the woman was exhausted and the head on the perineum. She was delivered with low forceps. P.P.H. occurred, and death followed shortly.

Case 531.—The patient collapsed after labour which was normal except for very slight difficulty in expressing placenta. This was followed by fairly profuse hæmorrhage, the uterus not contracting well. She was in a public hospital, and all necessary treatment was given, including blood transfusion. Some ten hours after delivery, a dimple, about the size of an egg, appeared at the upper pole of the uterus. There was no further bleeding, but the patient died suddenly four hours later. Post-mortem examination revealed a partial inversion of the uterus, as seen ante-mortem.

Case 536.—This case presented unusual features. In the course of a still-birth at six months, a woman began first of all to bleed from her gums, then she vomited one-half a pint of bright blood. There was not much bleeding from the uterus at delivery, but it began an hour later. There was no clotting. Hæmostatic serum, plugging of uterus, saline infusions were all unavailing. There was no family history of hæmophilia and the previous labour had been normal.

Case 491 was referred to in considering deaths from ante-partum hæmorrhage, as it occurred in the same night as *Case* 422, both being in the practice of the one doctor. The patient was a multipara of 41, whose previous labours and present pregnancy had been normal. Delivery occurred ten minutes after her arrival at hospital and was normal, but was followed by hæmorrhage. The patient fainted, but had recovered and the uterus was hard and bleeding had ceased, so the medical attendant felt justified in leaving her to obey the summons to the other woman who lived 6 miles out of town. After his departure hæmorrhage recurred, and other medical assistance was obtained, but the patient succumbed rapidly. In all, 3 c.c. of pituitrin were given without avail.

In some of the cases in this group, ante partum hæmorrhage had already lowered the patient's vitality. In others, as seen, difficult delivery had had a similar effect. In the majority of cases, circumstances had been unfavourable, and one gains the impression from a close study of the histories that not many of the deaths can be regarded as being avoidable.

GROUP VI.—TOXAEMIAS OF PREGNANCY—132 Deaths.

The deaths in this Group, 132 in number, consisted largely of albuminurias and pre-eclamptic toxaemias in whom fits did not occur. Fifty-nine of the 132 were of this type, the remainder being due to hyperemesis gravidarum (22), puerperal mania (14), pyelitis and pyelonephritis (16) and other toxaemias. The majority were country cases—72 as against 60 metropolitan ones.

TABLE IX.—*Toxaemias of Pregnancy*—132* *deaths.*

Classification of toxaemias—	Metropolitan.	Country.
Hyperemesis gravidarum	10	12
*Acute yellow atrophy	2	1
Chorea	2	...
Albuminuria and pre-eclampsia (without fits)	24	36
Mania	8	6
Acute oedema of lungs	...	1
Pyelitis and pyelonephritis	8	8
Delayed chloroform poisoning	1	1
"Toxaemia" unspecified	5	7
	60	72
Where confined—		
Home	9	7
Private hospital	16	25
Public hospital	17	23
Not stated	...	4
Undelivered	18	13
	60	72

*Acute yellow atrophy not classified as puerperal according to International List of Causes of Death. These three cases have been included because of doubt as to the correctness of the certification.

Many of the deaths occurred early in pregnancy, 31 of the women dying undelivered.

Although acute yellow atrophy of the liver is not now classified as a puerperal cause of death, according to the International Classification of Causes of Death, three deaths from this cause have been included because of doubt as to the correctness of the certification.

A study of the histories in this Group impresses one—as did those in Group II (Eclampsia)—with the fact that although in our present state of knowledge deaths from toxaemia cannot be altogether eliminated, they can be reduced considerably with continuous intelligent medical supervision of the expectant mother from early pregnancy. In many of the deaths investigated, the doctor did not see the patient until the condition was already acute.

There can be no question that the proper method of dealing with toxaemia of pregnancy is by early recognition of the symptoms and thorough treatment. Half-hearted treatment (not carried out in an institution or even in bed at home), vague instructions about diet, incomplete elimination—all these reasons for failure bring discredit upon ante-natal work and lay it open to the criticism that the great extension of ante-natal care in recent years has had no appreciable effect on the maternal death-rate.

It will be seen by the accompanying table that only 16 of the pregnancies terminated at home; the majority of patients were transferred to private or public hospitals for treatment, induction of labour or delivery. Most of them did not reach term.

Hyperemesis Gravidarum.—Of the 22 fatal cases of hyperemesis, 13 were country women, of whom 12 were treated in their own districts, whilst one was removed to the city for therapeutic induction of abortion, and is therefore included in Metropolitan deaths. This latter patient had suffered from a similar condition previously, and on that occasion, also, the pregnancy had been terminated. She was the wife of a medical practitioner, and under constant supervision and treatment—to which, however, she made no response. Pregnancy was terminated at four months.

Ten of the total fatal cases received institutional treatment, though in some instances not until after they had been vomiting for some weeks and were in an advanced stage of exhaustion, often with acetone and di-acetic acid in the urine.

Munro Kerr considers that the death-rate from hyperemesis could be reduced to an almost negligible figure if patients were transferred to institutions before the sickness became intractable and that, when necessary, there should be no delay in emptying the uterus.

In five cases there was a history of hyperemesis in previous pregnancies, which in two of the women had caused an abortion.

Albuminuria is recorded as having been present in 12 out of the 22 cases.

One woman (*Case* 668) had given birth to a child 5 years previously, and had not been pregnant since. She was a healthy woman of 28 and was convinced that she was pregnant, though the medical attendant and consultant were not sure of this and she died before the usual signs and symptoms could become evident. Vomiting was occasional at first, but after a week or so became troublesome and, in spite of treatment she was losing weight so rapidly that she was sent to hospital for gastric lavage. She collapsed there, however, and died with symptoms suggestive of cerebral embolism.

Another patient (*Case* 670), who did not respond to treatment after one month in hospital, had her pregnancy successfully terminated at three months. Albumen, acetone and sugar had been present in the urine, and after the uterus was emptied the sugar increased and the patient died in coma six days later. There was no previous history of diabetes.

Case 641 was that of a healthy young woman who had had one previous (normal) labour. She developed hyperemesis early in the fatal pregnancy, but improved for a time with treatment in hospital. After returning home she again became worse, and was sent to a public maternity hospital for induction of abortion. She refused interference and did not improve under treatment there. After three weeks she returned home with her condition worse and having lost 2 stone in weight. At about the fourth month she collapsed suddenly and died.

It is surprising to note for how long some women will suffer from excessive vomiting before seeking relief in medical treatment. This is largely due to the prevalent idea that vomiting in pregnancy is "only to be expected," and also, in some cases, to the unfortunate medical view that it is neurotic in origin and can be exorcised by an unsympathetic attitude.

Abortion was induced in one case (649) as early as six weeks. Normal labour seventeen months previously had been preceded by a miscarriage at four months caused by hyperemesis. In the fatal illness, the patient's condition was accompanied by a profound nephritis; she became more and more toxic and died ten days after the termination of pregnancy. Marked changes in the liver (but not those of acute yellow atrophy) were found post-mortem.

In one instance (*Case* 669) vomiting persisted throughout pregnancy and became worse after delivery of a macerated foetus at term. Two attacks of haematemesis followed, and the patient died ten days later.

One woman (*Case* 672) died when two months pregnant, in spite of induction. She had aborted naturally at three months, during her previous pregnancy, as a result of excessive vomiting. This time vomiting had commenced two days after the last menstrual period and did not respond to treatment—the patient being apathetic and jaundiced, with scanty urine containing albumen and acetone. The systolic blood pressure was only 75 mm., but later in the course of the disease it rose to 110/80 mm. Post-mortem, the liver and kidneys were found to be enlarged and microscopical examination showed an acute nephritis.

Case 560 was that of a multipara living in the bush on a very poor diet—mainly of meat, bread, potatoes and tea. She vomited from the commencement of pregnancy. She did not consult a doctor until about three and a half months' pregnant, when she was anaemic and dropsical. There was no albumen in the urine. In hospital her condition improved at first, but vomiting recurred and her heart became irregular. She died suddenly at four and a half months.

In *Case* 572 the medical attendant ascribes death to the woman's apathy. She was treated in hospital for a time and then left, against advice, somewhat improved. At home her condition became rapidly worse, but she did not inform the doctor (she lived in the town and her financial circumstances were good) and when, a week later, he examined the urine it was found to contain albumen and acetone, and the woman by then was practically blind. She was re-admitted to hospital immediately, and the membranes were ruptured (without an anaesthetic), but she died, undelivered, next day from acidosis.

In some cases hyperemesis was late in developing. *Case* 588 was a healthy multipara, whose health was good until she was almost six months' pregnant, when vomiting commenced. She was admitted to hospital, treated with glucose and insulin and, finally, induced after seventeen days' treatment. Vomiting ceased, but in spite of induction (under ether) the patient went down-hill and died four days later.

In most of the cases where the uterus was evacuated, chloroform or ether was administered, although many authorities deprecate the use of these anaesthetics in the presence of the acidosis which is generally present under such circumstances.

Acute Yellow Atrophy of the Liver.—The histories of the three cases of (?) acute yellow atrophy of the liver are as follows:—

Case 606.—Primipara, 31. Careful ante-natal supervision, health being excellent throughout, except that the urine always contained a faint cloud of albumen. On account of small pelvic measurements, induced by bougies at eight months—chloroform being administered. Had had chloroform for vaginal examination at seven and a half months (because she objected to the examination) and vomited for a day afterwards. Also vomited after anaesthetic for insertion of bougies. Labour—which was a difficult forceps delivery—took place three days later, and chloroform was again administered—for second and third stages. Patient did not pick up afterwards; urine became very scanty, and jaundice developed. She died four days later.

Case 630.—A particularly healthy young primipara. Constant ante-natal supervision. Albumen appeared in urine at seven months—not excessive, one-sixth or less. Patient sent straight into hospital and treated. Seen by consultants. At eight months condition had not improved, so induction was performed by dilatation and insertion of bougies. Ether was the anaesthetic used, and the medical attendant states that he had three or four cases about that time (puerperal and others) where this brand of ether appeared to have caused alarming symptoms. A "few whiffs" of chloroform were given in second stage of labour. Patient much worse after delivery, with suppression of urine, haematemesis, haematuria and decrease of liver dullness. She died three days after labour.

Case 631.—Primipara, 21. Died undelivered after suffering from jaundice, albuminuria, bile in urine, progressive decrease of liver dullness and, finally, coma. Treated with intravenous salines and glucose. By the time she was seen (six days before death) was considered to be too ill for induction of abortion.

Chorea Gravidarum.—The two deaths from chorea gravidarum occurred under the following circumstances:—

Neither gave any history of chorea or rheumatism previously, but one (*Case* 621), a primigravida, eight months pregnant, had been treated for three months for syphilis, developed chorea, and became rapidly worse, and ultimately demented, dying eight days after the onset of symptoms; and the other (*Case* 647) who had had one previous normal pregnancy and labour, also developed sudden choreic symptoms. She was seven months pregnant, and was shopping in town when the symptoms developed. She, too, grew rapidly worse, in spite of treatment. Labour was induced, but she died a few days later. It was learned afterwards by her medical attendant that the patient's mother had become mentally deranged at the time of the patient's birth, and had died some few years later of cerebral syphilis.

Acute Oedema of Lungs.—*Case* 546, where death occurred from acute oedema of the lungs, was that of a multipara, aged 27. Previous pregnancies and labours normal. Health was good until about five months, when she developed asthma (supposedly toxic in origin) at night. Before she consulted a doctor—a few days later—she developed an acute oedema of the lungs. She was admitted to hospital and obtained some relief from adrenalin and atropine, but, two nights later, she had another acute attack and died of asphyxiation.

Puerperal Mental Aberration.—Among the 14 deaths from puerperal insanity, there was a family history of insanity in 5 cases, and a bad (personal) mental history in 3 others.

One of the latter (*Case* 665) gave a history of puerperal mania, necessitating a year's detention in a mental hospital after her only previous labour eleven years before. In the present instance, there was no pyrexia during the puerperium (labour had been normal and had taken place in a public maternity hospital), and no sign of sepsis, except for an erythematous rash on the seventh day. Her behaviour became peculiar the next day, and she gradually became maniacal and died on the eleventh day.

In *Case* 667 the patient had given birth to three children previously, with no doctor in attendance on any occasion, and was said to have been " peculiar " during each puerperium. The fatal pregnancy terminated spontaneously at eight months, and after delivery the patient complained of headache and vomited. A doctor was called and prescribed a sedative. When the nurse (a visiting one) returned later in the day the patient became violent, and was finally sent to the Reception House, where she died. Post-mortem examination revealed a cerebral haemorrhage.

A woman living in a bag hut in the bush (*Case* 557) was mentally dull, as was her husband. There are four children of poor mental development, and at the last labour (six years ago) the patient became very violent. The fifth labour took place at home, and there was some post-partum haemorrhage. This was controlled. After the doctor and nurse had left, the patient became violent, but the husband did not become alarmed and go for help until one and a half hours later. Meanwhile, further haemorrhage had occurred and the woman was exsanguinated, dying soon afterwards.

One patient (*Case* 558) did not die until two years after delivery at term of her tenth child. Mental symptoms had developed at seven months, and she had been treated in a mental hospital before confinement. It is doubtful whether this death should really be ascribed to puerperal causes, being certified as " cerebro-spinal degeneration."

Another woman (*Case* 553) was alleged to have had an attack of " influenza " for a fortnight, but the history was unreliable, as when she was seen by the doctor she was mentally confused. She died undelivered two days later, after becoming maniacal.

In one case (554) there was history of a previous very difficult forceps delivery, and as the woman had mitral regurgitation, albuminuria and extreme " nervousness," Caesarean section was considered imperative. After operation, her urine cleared, and her heart condition improved considerably, but she became mentally confused and died of mania eight days later.

Case 633 was that of a primipara of 22, with no personal history of mental instability, but two uncles have been in mental hospitals. She was confined in a private hospital, and left there quite well two weeks afterwards. A few days after returning home she developed symptoms of restlessness and excitability, rushing into town and shopping lavishly. When seen five days later by a psychiatrist she was found to be typically hypomaniac—restless, talkative, obscene in language, sleepless and difficult to feed. She became worse, with morning temperature, albumen and acetone in the urine, and died eight days afterwards. The psychiatrist states that her early mental excitement, akin to that of alcoholic toxaemia, was strongly suggestive of some metabolic or other toxaemia, followed by exhaustive factors which tended still further to accentuate the chromatolysis of the cerebral neurones. He regards puerperal mental cases, such as the one under consideration, as a manifestation or a variation of the toxaemias of pregnancy.

Some, at least, of these fourteen puerperal confusions would definitely appear to have been toxic in causation, notably cases 665, 667, 553 and 554; also the following cases :—

Case 634.—Primipara. Pregnancy normal. Under ante-natal care throughout. Three days after a long, instrumental labour she began to have rigors and became mentally confused. Temperature rose to 103 degrees. She was removed to a mental hospital, where she gradually wore herself out, being very violent, and died three months later. She had meanwhile developed a definite sub-acute nephritis.

Case 636.—Treated for pyo-nephrosis during pregnancy. There was a family history of insanity. Primipara. Eclamptic fit after delivery at term. Mental condition poor thereafter, though renal condition improved somewhat under treatment. Died on tenth day of puerperium.

Case 666.—Maternal grandmother had been in a mental hospital for two years with puerperal insanity. Patient had given birth to one child ten years previously, and was very stout and dyspnoeic, and said to have a " fatty heart." Difficult instrumental delivery, followed by pain in the thigh (? thrombosis). Then condition of mental excitement developed, with pyrexia. Removed to mental hospital where, after a time, her condition improved, but she died one month after delivery from heart failure.

Delayed Chloroform Poisoning.—The two deaths ascribed to delayed chloroform poisoning were of primiparae. One of them (*Case* 595) occurred on the fifth day after delivery, the second stage of labour having been delayed owing to persistent occipito-posterior position. The doctor who attended did not see the patient until she was in labour. Her urine was clear and contained no bile, and she was not jaundiced. She had a rather prolonged chloroform anaesthesia, and was very drowsy the next day. There was vomiting, but no rise of blood pressure. Temperature 101·6 immediately after delivery and did not fall below that thereafter. Jaundice then developed and coma deepened. Glucose and insulin, also oxygen and soda-bicarbonate intravenously, had not effect on the patient's condition.

The other patient (*Case* 630) was treated throughout pregnancy for a moderate degree of albuminuria. She, too, underwent a difficult delivery—decapitation of the foetus finally proving necessary—under chloroform anaesthesia. This was carried out in a first-class institution. The anaesthetic was administered for one hour. Jaundice and vomiting developed the following day, and she died three days after delivery. There were no signs of sepsis.

Toxaemia Unspecified.—There were twelve deaths in this group, which were certified as being due to "toxaemia," of unspecified nature. In some of them the history throws no light whatever on the condition. Five of them died undelivered, two at full-time labour, and the remaining five at varying periods of gestation between four and eight months.

In one case (561) where the woman died undelivered, there had been an accidental haemorrhage at six months and the patient was admitted to hospital and given treatment to determine the supposed toxaemic condition underlying the haemorrhage. Before this could be properly completely she left the hospital against advice. She was then kept in bed at home under close observation, and no further haemorrhage occurred. When seen two days before death she was displaying no unusual symptoms. Two days later she died with dramatic suddenness. The two doctors who had seen her previously surmised that she was suffering from a toxaemia.

One patient died undelivered at three months in spite of constant supervision and treatment, while two others had not received any ante-natal care at all.

The fifth undelivered case was that of a woman with various symptoms of toxaemia, including albuminuria, who did not call in a doctor until the disease was advanced, and did not follow the treatment advised or encourage regular visits thereafter. She had had a similar train of symptoms during her previous pregnancy.

Case 644 was that of a wealthy educated woman who had borne six children in eleven years, and at her last two labours had suffered severely from post-partum shock. She refused ante-natal supervision—beyond examination of urine. Small ante-partum haemorrhages occurred all through the last three months of pregnancy, and there was albumen in the urine. She had a raised temperature when she came into labour. A secondary anaemia developed, and she died suddenly, after admission to a hospital for blood transfusion, three weeks after delivery.

One woman (*Case* 597) had been treated for hyperemesis in the second and third month of pregnancy, but was in good health after that. There was no albuminuria at any time. Labour was long and barbitone administered on account of sleeplessness. After delivery she became drowsy and could not be roused (chloroform anaesthesia had been employed during second stage). In spite of treatment with glucose and insulin she grew worse, becoming deeply jaundiced. Albumen, acetone and sugar appeared in the urine prior to death.

Case 589 was a multipara with no previous history of toxaemia. Toxic vomiting appeared in the third month. There was no albuminuria. Treatment in hospital was given and the condition improved, so she returned home, to be re-admitted one week later suffering from a "toxic psychosis." Excepting for the clouding of the mental functions and rapid pulse there were no other abnormal physical signs—urine, blood pressure, fundi, etc., normal. Induction of abortion was carried out after consultation, but in spite of very thorough treatment the condition became worse and the patient died about six weeks after the first symptoms manifested themselves.

Pyelitis and Pyelonephritis.—Sixteen deaths in this group occurred from pyelitis or pyelonephritis. Four of them gave a history of renal infection previously—two before marriage (both were primiparae) and one as a child. The last-mentioned only reached the fourth month of pregnancy. One of the two primiparae (*Case* 602) was delivered prematurely of triplets at six and a half months. The other was delivered by Caesarean section because of disproportion. Pyelitis flared up after delivery.

The fourth woman developed uraemic symptoms after difficult delivery and manual removal of the placenta. The blood urea was 128 mg. and Creatinin 15·3 mg. On post mortem examination the right kidney was found to be completely destroyed by abscesses, while the left kidney showed marked perinephritis and contained small calculi. In ten of the cases, attacks of pyelitis occurred during pregnancy, and in the remaining two cases no symptoms developed until a sudden attack of pain and vomiting (in both instances) was experienced in the eighth month. Both of these women had been under ante-natal supervision and had been in good health, with no abnormality of urine. One was a primipara and one pregnant for the eighth time. In the latter case (661) the patient was sent into hospital at eight months as an "acute abdomen." A catheter specimen of urine showed ¼ albumen, pus cells, B.C.C. and granular casts. The blood urea was 162 mg. Induction of labour was followed by no improvement, but the patient became mentally clouded, cyanosed and jaundiced, and died four days later.

The primipara came into labour spontaneously during the attack and appeared much improved, but died suddenly of toxic myocarditis sixteen hours after delivery. Her urine had been quite clear when last seen before the attack (three days before).

Case 602 (referred to above; triplets) was one where the patient was under treatment throughout pregnancy. The same applies to *Case* 654. This woman had been admitted to hospital on two occasions, and on the second one, the condition proved intractable, surgical induction of labour was performed at seven and a half months. Albuminuria continued, but the pyuria improved until a catheter specimen of urine was sterile on culture.

In one primipara (*Case* 629) who died undelivered at six months, there was no previous history of renal disease, yet the blood urea was 210 mg., and at the last she became uraemic.

In one case (573) a sub-acute appendicitis became acute and appendicectomy was performed (at seven months). Pyelitis had been pre-existent and had cleared up, but recurred after the operation.

Pre-eclamptic Condition.—As already stated, almost half the deaths (60) in this group were due to albuminuria and pre-eclampsia. A study of these cases reveals much the same results as a study of the cases in Group II (Eclampsia).

Twenty-two of the patients were primiparae. Ten women gave a history of chronic nephritis (and should therefore, strictly speaking, not be classified as puerperal cases).

Nearly one-half (twenty-seven) of the sixty fatal cases appear to have been receiving adequate ante-natal treatment. Two of these were aboriginals. There were some women who did not seek ante-natal care until alarming symptoms manifested themselves; others developed pre-eclamptic symptoms in spite of close supervision. In most cases thorough eliminative treatment was instituted once the symptoms had appeared, which was often too late for it to be availing. Nine died undelivered. One died when only two months pregnant, one at three months, three at four months, and the others after reaching viability. In the case of one of the women who died at four months, gestation, the medical attendant inclined to the opinion that the case was one of primary nephritis and uraemia of uncertain origin and not of puerperal origin, mainly as it developed so early in pregnancy. She consulted the doctor when only three or four weeks' pregnant and had thorough institutional treatment.

One multipara (*Case* 551) had had two normal pregnancies previously. She was not seen by a doctor until eight months' pregnant, when she exhibited failure of compensation from mitral stenosis and heavy albuminuria, with blood and granular and hyaline casts in the urine. Her cardiac condition became progressively worse and urine boiled solid, so Caesarean section was performed. After five weeks' stay in hospital she left at her own request, her condition showing little improvement. Anasarca gradually supervened and she died four weeks after operation.

Case 564 was that of a woman who gave a history of pyelitis with her one previous pregnancy and another attack about a year later. On this occasion she was induced at eight and a half months on account of solid albuminuria. Post partum haemorrhage occurred and she died next day.

One case was associated with an accidental and a post-partum haemorrhage. Four other cases were associated with ante-partum haemorrhage.

A young woman of 22 (*Case* 569) had had pyuria for two or three years and X-ray examination had revealed a ureteral calculus (R)—which had been removed at subsequent operation. During the present pregnancy she had pyuria and albuminuria at seven months, which cleared up in a week with treatment. When the urine was tested two days before labour at term it contained no albumen. Early on the third morning of the puerperium she came suddenly unconscious and died. Urine examined just before death (the first time since the occasion two days before delivery) showed solid albumen and blood.

In one case (580) a multipara, three days after a normal labour, developed pyrexia and albuminuria. She was confined in a country private hospital and it was afterwards considered that the case was really an acute nephritis due to scarlet fever—of which there was an epidemic in the hospital after her death.

Case 582.—Multipara, 47. Excellent health. Regular ante-natal treatment. Faint cloud of albumen in urine, for first time, day before delivery at term. No pre-eclamptic symptoms. Premature rupture of membranes. Precipitate labour, followed by condition of severe shock. Complete anuria thereafter for twenty-four hours. One ounce obtained by catheterization. Patient gradually became comatose and died on third day.

Case 585.—An aboriginal, admitted to hospital at eight months with solid albuminuria, vomiting and diarrhoea. Urine cleared up sufficiently under treatment to give hopeful prognosis. After delivery she was progressing satisfactorily until she died with dramatic suddenness eight hours later.

A healthy young primipara was seen by her doctor at about six months. The urine was then clear. She lived some distance out of town and was to report to him in another month's time. About that time headaches, dyspnoea, and oedema of the face, feet and hands, with epigastric pain, developed. After three days she came in to see the doctor—by which time she had an acute oedema of the lungs, with blood-stained frothy sputum, B.P. 170/100 mm. and urine solid. During the next twenty-four hours she only passed 2 ounces of urine. Venesection gave temporary relief. She died, undelivered, quite suddenly next day.

One patient gave a bad family history of nephritis, two sisters having been eclamptic. Developed albuminuria at five months, which did not respond in the least to thorough eliminative treatment and rest in bed. Labour induced at seven months. No improvement thereafter and died four days later.

One patient (*Case* 614), a young primipara, enjoyed excellent health. Her labour was very protracted, with weak and intermittent pains. Vomiting and suppression of urine directly after delivery. No symptoms of acidosis. Became uraemic and died on the fourth day.

Case 618 was that of a healthy young primpara. No history of any previous acute infection. Hip injury as a child, so was examined under anaesthetic during pregnancy to ascertain whether there was any pelvic deformity. Albumen appeared in urine at eight months, increasing to ¾, B.P. 160 mm. No other pre-eclamptic signs or symptoms. Forceps delivery at term. Condition excellent afterwards, albuminuria having cleared up. On third day a sudden cerebral haemorrhage occurred, with complete left-sided hemiplegia and coma. Lumbar puncture yielded no fluid. Died four days later. (The patient's father was under treatment at the time for acute nephritis.) Another primipara (*Case* 627) also developed a cerebral haemorrhage.

One patient suffered from attacks of colitis throughout pregnancy. When urine was examined at a Health Department ante-natal clinic at six and seven months it was clear, but patient was referred to her regular medical attendant for treatment of colitis. She was admitted to public hospital by him at eight months in an absolutely oedematous condition. Caesarean section performed, the abdomen being found full of free fluid. She appeared thoroughly "toxic" and died two weeks later.

One primipara with a bad mental family history became unmanageable shortly before term, was certified and sent on to mental hospital. Normal labour occurred a week later followed—for first time—by evidence of cystitis and pyelitis from which she died after one month.

In one case the onset was apparently very sudden. The patient's urine was examined fortnightly and was clear. At term she suddenly complained of feeling ill and of dyspnoea. A medical practitioner was called, he examined urine and finding albumen in it, sent her straight to hospital, where she died immediately on admission. Post-mortem examination revealed acute nephritis and dropsy.

One multipara (*Case* 643) was induced at six and a half months in her fourth pregnancy because of pre-eclamptic symptoms. She had had albuminuria in each pregnancy, but on each occasion failed to seek any medical advice until she could no longer get about. Oedema of the lungs developed just before delivery and she died two days afterwards.

Another multipara was sent from the country to a metropolitan maternity hospital at seven months. She had four children and all labours were normal. On present occasion pre-eclamptic symptoms had appeared at six months, and on admission to hospital urine contained quarter albumen and B.P. was 218/130 mm. Condition did not improve after delivery, which occurred shortly afterwards. Blood urea estimations at intervals of ten days were 338 m.g. and 367 m.g. and blood creatinin 6·6 m.g. and 7·7 m.g. A blood transfusion was given. Patient died of uraemia one month after labour.

The following case has interesting features :—

Case 658.—Multipara, 41. Three previous pregnancies all terminated early on account of severe kidney disease. When about six weeks pregnant, induction was advised and arranged for, but the patient was dissuaded by a Christian Scientist from undergoing termination of her pregnancy. Under strict supervision she carried on until about thirtieth week. Albumen then appeared in the urine. As she was anxious for a living child, she was admitted to hospital and carried on—with increasing toxaemic symptoms—until the thirty-fourth week, when Caesarean section was performed and a living child obtained. The patient appeared to be progressing well until two days after section, when a fatal acute nephritis, with rapid development of generalised oedema, set in.

A multipara of 36 (*Case* 659), with a history of ten previous pregnancies, and post partum haemorrhage after the last four labours, had a cerebral haemorrhage at four months which did not, however, prove fatal. Labour did not take place until three months later. It was followed by a fatal acute oedema of the lungs.

Case 674 was that of a primipara aged 37. Her health was normal until seven and a half months, when a faint cloud of albumen appeared in her urine. She was difficult to diet and treat at home, so was put into hospital. By then her condition was much worse, she was oedematous and B.P. was 190 mm. The lie was transverse and as patient was very anxious for a child, Caesarean section was favoured. A second opinion, however, was sought and consultant advised induction and podalic version. This was performed with great difficulty, the cord prolapsed and difficulty was experienced in delivering the after-coming head, which proved to be a condition of hydrocephalus. Manual removal of placenta. Patient recovered and was well for three days, then developed jaundice, vomiting and decreased liver dullness, followed by air hunger and death.

Observations.—An interesting and important point made evident by a study of these cases and those of eclampsia is the necessity for more institutional treatment of cases of toxaemia. There is a great lack of beds available in public hospitals for the treatment of such conditions and one feels that if necessary it would even be better to reduce the number of beds allotted to normal cases (or cases which it is anticipated will be normal) in these institutions and to increase the ante-natal accommodation. Doubtless many of the above cases could have been saved if early treatment in hospital had been possible. As already stated, most of the patients who were given eliminative treatment for the various toxaemias received it too late.

Increased hospital accommodation and ever-increasing propaganda and education of the general public as to the necessity for early ante-natal treatment—so that such accommodation can be utilised fully—are the lines upon which the campaign for the reductions of deaths from toxaemia (probably the biggest part of the maternal mortality problem in Australia) must be carried out.

GROUP VII.—EMBOLISM AND SUDDEN DEATH—101 Deaths.

This group contains 101 deaths, in many of which the correctness of the certification is open to question, but the indefiniteness of the history supplied does not warrant their inclusion in any other group.

Some sudden deaths were associated with mental or other prodromal symptoms. In other instances (23) they occurred with dramatic suddenness in perfectly healthy women after normal labours. Seven others would appear to be due to cardiac failure, either after normal or difficult labours, and it is possible that in the latter case they would be equally classifiable in Group III.

Seventeen women died following venous thrombosis—femoral or otherwise—one as long as six month after childbirth. Five died undelivered and two during delivery.

There were 26 primiparae and 26 women who had given birth to six or more children.

TABLE X.

Embolism and Sudden Death—101 *deaths*.

	Metropolitan.	Country.
Classification—		
Sudden death from embolism in healthy woman after normal labour	8	15
Undelivered at term	3	...
Undelivered at 8 months	...	1
Undelivered at 18 weeks (cerebral haemorrhage).	...	1
Sudden death after Caesarean section ...	4	1
Sudden death after appendicectomy during puerperium.	1	...
Death during delivery	1	1
Death subsequent to venous thrombosis ...	5	12
Remainder	20	28
	42	59
Where Confined—		
At home	10	22
Private hospital	14	29
Public hospital	14	5
Undelivered	4	3
	42	59
Type of Labour—		
Normal	16	32
Abnormal	22	21
Undelivered	3	2
Died during delivery	1	1
Not known	...	3
	42	59

Eighteen of the 101 women had suffered from toxaemia during the fatal pregnancy.

Among the deaths of healthy women which followed normal labour, there was one (*Case* 765) in which the woman was left alone all day except for the presence of her brother-in-law, and she used to get out of bed and attend to herself. On the seventh day of the puerperium the embolism occurred while she was out of bed.

Case 706 was that of a II para, aged 22. Labour was normal and followed a normal pregnancy Puerperium normal until the ninth day, when the patient exhibited paresis of the whole of her left side, On the eleventh day she became unconscious, with raised temperature and flaccid paralysis of left side and died from cerebral thrombosis a day later. Wassermann reaction was negative.

Another death from cerebral thrombosis (*Case* 710) occurred in the case of a multipara of 43. On the eleventh day of the puerperium she had been sitting up out of bed for two hours, apparantly quite well. About midnight she suddenly became ill, with symptoms of cerebral thrombosis, and died in about eight hours.

Two women died after epileptiform fits. One (*Case* 680) was a primipara, and the fit occurred twelve days after delivery. It was afterwards learned that in childhood she had been subject to "turns" suggestive of petit mal.

The other woman (*Case* 714), a multipara of 31, was seen by her medical attendant as labour was beginning, and was told to send for the nurse. When the doctor returned one hour later he was told that the patient had had an "epileptic fit," heralded by the statement that she could not talk. After this first fit the pulse was feeble. The child was born (still-born) naturally, and then another epileptiform fit occurred, with right-sided twitching and spasticity and turning of the eyes to the right. With each fit the patient became pulseless, and after the second one she gradually sank. The medical attendant certified the cause of death as cerebral embolism and states that the condition did not at any time resemble eclampsia. No record of urinalysis was supplied.

Three women died undelivered at term :—

Case 750.—Multipara, aet. 36. Developed acute thrombophlebitis of right internal saphenous vein, for which she sought medical advice about one week before death at term. Refused to go to hospital, so was put to bed at home. There was only a girl of 16 in charge of the house, and she afterwards confessed that the patient used to get up out of bed every day, in spite of the doctor's strict instructions to the contrary. She was found lying moaning on the kitchen floor by one of her children on the day of her death, and was dead by the time a neighbour had summoned the doctor, who arrived ten minutes later. He performed immediate Caesarean section, but, although the foetal heart was beating slowly, the child failed to live.

Case 775.—Patient suffered from anterior pituitary disorder, being of large, gross type. IV para. Suffered from sudden onset of severe dyspnoea with cough and oedematous sputum in ninth month of pregnancy, apparently due to pulmonary embolism, with acute pulmonary oedema. Death occurred in a few minutes.

Case 747.—Primipara, aet. 31. Health good until about eighth month, then developed irritable cough and slight albuminuria and oedema of feet. Labour pains had begun at term, and patient had received an injection of morphia and scopolamine. She was seen by her doctor at 5.30 p.m., and was then well. At 8.30 p.m. she got out of bed on to a chair while her husband straightened up the bed-clothes (the visiting nurse was not present as the pains had temporarily ceased, though she had been in and out all day), and died suddenly. There had been no signs in the chest when the doctor had seen her earlier in the day.

One woman (*Case* 688), primipara, aged 22, was pregnant eight months. She had not received any ante-natal care. At eight months she suddenly started to foam at the mouth and died in a few moments.

Another woman, multipara, aged 35 (*Case* 720) came under observation when about sixteen weeks pregnant, suffering from intense headache, B.P. 240 mm., and about ¼ albumen. Under treatment in bed the condition abated until, at eighteen weeks, she sat up in bed and suddenly fell back dead.

Case 709 was that of a multipara of 43 who was in the secon[1] stage of labour and apparently making satisfactory progress when she gave a sudden gasp and rapidly went blue and died in the space of a few minutes, the child being still-born meanwhile.

Case 766.—This woman had slight albuminuria during pregnancy. The nurse was called to the house two hours after labour began, and on arrival found the woman standing up holding on to the foot of the bed having an intensely severe pain. She hurriedly helped the patient on to the bed and turned to wash her hands. Receiving no answer to a remark, she rushed to the bedside and found the patient doubled up and looking very blue. At that moment the head was born (the doctor entering just in time to deliver it), and the patient died. It was so sudden that everything was over within a quarter of an hour of the nurse's arrival.

There were four sudden deaths after Caesarean section, and one case (743), signed up as pulmonary embolism, where the history supplied suggests to one that the condition might equally well be ascribed to paralytic ileus. The patient had undergone a very protracted labour fifteen years previously, due to a justo minor pelvis. A trial of labour showed (on this occasion) that the head could not enter the pelvis so Caesarean section was performed. The next day there was tympanites, vomiting and failure to react to enemata, with pain in the chest. The third day there was still no result from enemata, rapid respirations, delirium and death.

One death after Caesarean section (*Case* 684) occurred in a primipara of 24. Section was performed on account of threatened rupture of the uterus, with a contracted pelvis, poorly dilated cervix, occipito-posterior position and very forcible pains. Upon separation of the placenta there was a sharp post partum haemorrhage, which, however, was checked successfully. Some time after return to the ward, the patient collapsed and died immediately.

Of the remaining three patients, one (*Case* 743) was having a meal on the fifth day of the puerperium when the embolism occurred; another (*Case* 742) died on the sixth day, quarter of an hour after feeding her baby (both of these women had extensive fibroids necessitating delivery by Caesarean section), and the third died from pulmonary embolism the day after operation (*Case* 741).

In *Case* 759 the patient, multipara, aet. 28, had a normal labour, except that there was some difficulty in expressing the placenta. Her condition was normal until the third day, when she developed acute appendicitis and was sent in to a public hospital, where she underwent successful operation for the condition. Four weeks later, while still in hospital, and having quite recovered from the operation, she died suddenly with all typical symptoms of a pulmonary embolism.

Seventeen deaths in this Group occurred subsequent to venous thrombosis (generally femoral). In eight of these there was pre-existent varicosity of the veins of the legs; others developed phlegmasia alba dolens during the puerperium. In one case (691) the woman was not seen by the (country) doctor who signed the death certificate, until six months after delivery, when she called him in because of the condition of phlegmasia (which, however, had almost cleared up). She appeared unduly worried about it, and became sleepless and so melancholic that he decided to send her to a mental hospital. A few minutes before the train left she had a sudden cerebral thrombosis and died.

The remaining forty-eight cases in this Group include many difficult deliveries as well as many abnormal pregnancies.

As stated above, in some instances, the meagre details supplied as to the history of the case render it possible that the inclusion in this Group is open to question.

A primipara (*Case* 682), after a somewhat protracted labour with a lacerated perineum, was quite well until the early hours of the third day, when she complained of pains in both breasts. The medical attendant was summoned and found her in extremis, with both breasts black and swollen very hard. The urine contained albumen then, for the first time. Death occurred twelve hours later.

Case 718 was that of an VIII para. She was highly excitable all through pregnancy and became quite insane within forty-eight hours of delivery, but recovered a week later, only to develop signs of pulmonary embolism. Shortly after talking quite rationally to her husband, three days after the embolism occurred, she died suddenly of apparent heart failure. (There was a pre-existing mitral disease).

A multipara of 41 (*Case* 721), about ten minutes before the end of the second stage of labour, under very slight chloroform anaesthesia, suddenly became very quiet. (She had previously been somewhat excited.) The sister, who was administering the anaesthetic under the doctor's supervision, then noticed that the patient's right arm seemed limp. At the completion of the labour the patient would not speak and appeared " vacant "-minded.

Examination revealed unequal pupils, and a complete right-sided hemiplegia. Unconsciousness supervened, the respiratory centre became involved and death took place thirty-six hours after the occurrence of the haemorrhage.

The following case (732) was unusual. The patient was a multipara of 42. She had a large femoral hernia, with a large piece of omentum in the sac, which was irreducible. On the fourth day after normal childbirth, the medical attendant was examining the hernia and had pushed it partly into the canal, causing no pain, when the woman's breathing became rapid and her colour dusky, and she died in a few moments.

In two cases (707 and 748) acute gastric dilatation occurred—one and a half hours and five days after delivery.

GROUP VIII.—EXTRA-UTERINE GESTATION—71 Deaths.

There were 71 deaths from extra-uterine gestation, 43 of them occurring in the metropolitan area and 28 in country districts.

Twenty-three of the women were primigravidae.

In view of the obscure aetiology of this condition, the cases did not call for any particular investigation. It is interesting to note, however, that in our investigation this Group included 6·6 per cent. of the total deaths, while in the British Investigation only 1·5 per cent. of the total deaths were due to ectopic gestation.

TABLE XI.—*Extra-uterine Gestation—71 deaths.*

Metropolitan, 43; country, 28.
(Primigravidae, 23.)

GROUP IX.—UNCLASSIFIED—24 Deaths.

The twenty-four deaths in this Group would almost certainly in other countries have been excluded from the list of puerperal deaths altogether. Such cases were grouped by the British Departmental Committee as " Deaths not primarily due to Childbearing."

They were, however, included among puerperal deaths by the Government Statistician in New South Wales and so—as they are not classifiable in any of the other Groups—have been formed into a Group of their own.

TABLE XII.—*Unclassified—24 deaths.*

	Metropolitan.	Country.
Chronic myocarditis	2	3
Malignant endocarditis	1	...
Pulmonary tuberculosis	1	...
Pneumonia	4	5
Gastro-enteritis	1	2
Pernicious anæmia	1	1
Cerebral hæmorrhage	...	1
Encephalitis after breast abscess	...	1
Indefinite	...	1
	10	14
Where confined—		
At home	...	4
Private hospital	2	3
Public hospital	8	6
Undelivered	...	1
	10	14

In some of the cases it is difficult to decide whether death was actually due to the specific disease—or at least whether the disease would have proved fatal if pregnancy or labour had not supervened. In other cases—such as the death which was caused by encephalitis after breast-abscess, and those due to gastro-enteritis—although the pregnancy cannot be held entirely responsible for the death, it is impossible to say whether the terminal disease would ever have occurred if the woman had not been pregnant or recently delivered.

It will be seen by the Table that the largest number of deaths in this Group was due to respiratory diseases and it is particularly difficult, in these cases, to decide as to what extent the pregnancy or parturient state was a contributory factor in producing the fatal termination.

Cardiac Disease.—Similarly, although only six deaths are classed here as being due to cardiac disease, it has already been seen, in considering other Groups, that many of the women were already suffering from injured hearts and showed evidence of failure of compensation during pregnancy—so that many deaths ascribed to " Shock," " Cardiac Embolism," etc., might equally well be eligible for classification in this Group if more complete and exact histories were available.

One patient (*Case* 848) was a single girl with mitral regurgitation, who died when five months pregnant. She had consulted several doctors, in the hope of having her pregnancy terminated, but such a course had not been considered justifiable. She died suddenly one night while in bed. No post-mortem examination was performed as her regular medical attendant (though he had not seen her for several weeks) certified that her previous cardiac condition was sufficiently serious to account for the sudden death.

Case 861 was that of a multipara (seventh labour), aged 43. She was under treatment for her cardiac condition throughout pregnancy, with no improvement, and died shortly after delivery at seven months.

Another multipara of forty-four (*Case* 869) had undergone nine previous pregnancies and gave a history of "heart trouble" with the last one—two years previously. During fatal pregnancy she had all the symptoms of failure of compensation, but did not seek medical advice until the eighth month. No proper treatment appears to have been given until she was sent into a public hospital a few days before term. Labour was spontaneous, but patient was very exhausted afterwards. She was allowed up out of bed at the usual time and was walking about the ward, but suddenly collapsed and died on the eleventh day.

From the histories obtained it would seem that only two of the five women who died of chronic cardiac disease were properly safeguarded during pregnancy and died in spite of every care. It has been seen that two of those already quoted (*Cases* 848 and 869) were not under competent care, and the third patient (*Case* 868) was possibly doomed in any event. Her history was as follows:—

> Primipara, 39. Two previous miscarriages. Was curetted after the second—three or four years before fatal pregnancy—and her heart was then quite sound. Consulted doctor early in pregnancy and, as she had developed signs of active endocarditis a few months previously (with no history of any acute infection), he sent her straight to a public maternity hospital for therapeutic induction of abortion as he did not consider her fit to go through pregnancy. His suggestion was not agreed to by the hospital authorities and he watched her through a very precarious pregnancy, most of her time being spent in bed until labour commenced spontaneously at 7½ months, when she was admitted to the hospital. By that time she was dyspnœic and had a rapid pulse, œdema of the feet, albuminuria, cough and vomiting. The membranes ruptured prematurely and labour dragged out over four days—resulting in a still-birth. Breech delivery. Her condition did not improve and she died eight days later.

The remaining death from chronic myocarditis was that of a primipara, aged 30, with mitral stenosis of long standing (*Case* 849), who was treated from the fourth month for cardiac insufficiency with albuminuria. Her condition did not improve, even on a strict diet and rest, so at eight months she was admitted to a public hospital, where labour occurred two weeks later. The duration of labour was twenty-four hours, terminated by instrumental delivery under aether anaesthesia. There was increasing dyspnoea afterwards, and she died on the fifth day.

One death occurred from malignant endocarditis (*Case* 867). The patient was a single girl, who gave a history of a "poisoned leg" three years and "growing pains" in legs two years previously. She was first seen by a doctor when in labour, which was somewhat protracted, and he did not examine her heart. Delivery was spontaneous, and no anaesthetic was given. Excepting for a tear of the labia there was no complication. Pyrexia occurred from the third day, but no alarming symptoms until the seventh day, when there were rigors and vomiting, with a pulse-rate of over 140 and loud cardiac murmurs heard all over the chest. Cyanosis developed and death took place the next day.

Pulmonary Tuberculosis.—There was one death from pulmonary tuberculosis (*Case* 862), said to have been contracted after a "cold" in the first month of pregnancy. The patient was a young primipara and her chest condition was not diagnosed until three weeks before term. She was confined in a public hospital, where, owing to maternal distress, instruments were applied (under chloroform) as soon as the os was fully dilated. She died, however, three hours later.

Pneumonia.—Of the nine deaths from pneumonia, four at least might have had a chance of recovery if they had received proper nursing—instead of being in their own (poor) homes with visiting midwives in attendance. The circumstances were as follows:—

> *Case* 853.—Multipara, 40. Some albuminuria present during last two days of pregnancy and first six days of puerperium. Delivery at home, at term, with instruments. P.O.P presentation. Chloroform administered by colleague. Signs of pneumonia day after delivery, becoming marked on fifth day. General condition stated to have been good until the seventh day, when she had slight abdominal distension and suddenly became cold and clammy, with subnormal temperature. Death occurred that night.

> *Case* 854.—Patient in comfortable circumstances. One very difficult labour eleven years previously. Confined at home. Labour again difficult, chloroform being administered by doctor himself, who also attempted replacement of prolapsed cord and performed manual rotation and forceps delivery of P.O.P presentation. Visiting nurse. Patient, who was difficult to manage, probably became exposed during nurse's absence and developed pneumonia in the second week. Removed to public hospital, where she died a fortnight later.

> *Case* 858.—Multipara in very poor circumstances, whose four children all had whooping cough and who herself contracted influenza shortly before parturition. Confined at home—P.O.P. with rotation and extraction by forceps. Chloroform anaesthesia administered by nurse. It was learned subsequently that between the nurse's visits the mother used to get out of bed and attend to the sick children. Pneumonia, followed by empyema, developed, and the woman was admitted to the district hospital, where she died one month after childbirth.

> *Case* 859.—Multipara. Very poor. Contracted pneumonia three days before confinement at term. Precipitate labour at home. Visiting nurse. On third day of puerperium admitted to public hospital moribund. Died next day.

On the other hand, *Case* 851 was that of a healthy young primipara, who was under regular antenatal supervision and confined under ideal conditions in a good private hospital. Delivery was by low forceps at term under chloroform, which was administered by another medical man at first and then by a trained Sister under the doctor's directions. Within two hours of delivery the patient's respiration was noticed

to be rapid (32–38 per minute) and examination of the chest showed the presence of coarse basal râles. By next day these had spread all over the lungs and the patient was cyanosed and breathing rapidly. She died fifty hours from the onset of symptoms, and her death was thought to have probably been due to an aspiration pneumonia due to post-anaesthetic vomiting.

One patient (*Case* 865) was sent down to Sydney from the country for treatment on account of exophthalmic goitre. She was under constant supervision and labour was induced at six months. She developed pneumonia and her thyroid condition became worse after delivery, until death supervened a week later.

Of the remaining three deaths from pneumonia, one occurred in an unhealthy unmarried woman, who had persistently attempted to produce an abortion by taking drugs, one in a woman who contracted a "cold" a week before childbirth and was admitted to hospital for delivery with increased pulse, temperature, and respiration rates. She developed a lobar pneumonia. The third woman also had contracted pneumonia before undergoing a very difficult and protracted labour (of fifty hours' duration). She died on the third day.

Gastro-enteritis.—Three women died from gastro-enteritis or colitis. One, an aboriginal, appears to have had a premature labour as a result of the infection, and to have succumbed to exhaustion; while of the other two women, one was ill before confinement and died the next day, and one developed intractable diarrhoea the day after delivery.

Pernicious Anaemia.—There were two deaths in this Group ascribed to pernicious anaemia. The histories were as follows:—

Case 855.—Aet. 40. Nine previous labours and one miscarriage. At last confinement (three years previously) she developed hoarseness and severe cough with bronchitis at about eight months, and had general oedema. She was admitted to hospital and labour was induced, after which she was treated for severe anaemia (diagnosed as megaloblastic anaemia of pregnancy) for four months. Two months later the blood picture had been normal and gastric contents contained free HCl.

The same train of symptoms recurred during the fatal pregnancy, and at seven months she reported to her medical attendant and was treated unsuccessfully at home, and then admitted to hospital, where she was delivered spontaneously of twins at eight months. A blood examination the day of labour again showed a megaloblastic anaemia, with anisocytosis, poikilocytosis, and polychromasia. She died four days after childbirth.

Case 871.—V para, aged 36. Was ill throughout pregnancy—pale, listless and unable to attend to household duties. She did not, however, consult a doctor. About three weeks before term she was persuaded to go to bed, but still refused to see a doctor. She remained in bed two weeks, during which time she seemed very ill, and on attempting to get up again she collapsed and a doctor was called in. He stated that her heart was affected, and ordered rest in bed, but was not sent for again for a week, by which time, as there was no improvement, he sent the patient to a public hospital.

A blood examination done on admission there established the fact that she was suffering from pernicious anaemia, and the urine contained acetone and diacetic acid.

Labour occurred shortly afterwards and was quick, with only slight haemorrhage. In spite of a blood transfusion, however, the patient died next day.

A young primipara of 21 (*Case* 852) underwent a normal confinement and was going about her normal duties a month later when she suddenly became feverish and strange in manner and died two days later with symptoms suggesting a sudden pontine haemorrhage. She was seen by two medical men who decided that the condition was due to embolism. No post-mortem examination was done, and it was only assumed that the condition was associated with the recent parturition.

Case 860 was somewhat unusual. The patient, aged 24, had given birth to two children previously, and on each occasion there had been trouble with her breasts. On present occasion the right breast became swollen and tender the day after labour, but with fomentation and treatment the condition subsided and the slightly raised temperature fell to normal. She left hospital on the eleventh day apparently perfectly well, both breasts were normal and the baby was sucking well. The morning after her return home the patient felt feverish and unwell and her breast again became swollen and painful. The doctor was called in that afternoon and admitted her straight to hospital with a temperature of 103 deg. Next day he opened the breast under a local anaesthetic. It was brawny and enormously swollen, but very little pus was evacuated. The patient became unconscious and developed convulsive seizures, dying on the thirteenth day.

The remaining death in Group IX occurred after premature labour, and appears to have been due to cardiac failure accompanied by diarrhoea.

GROUP X.—ABORTIONS—201 Deaths.

Deaths which were definitely known to have been due to deliberate interference with pregnancy have not been included in this Group, but are considered separately in this Report under the heading "Illegal Operations."

Nevertheless, there is little doubt that very many of the 201 deaths which do comprise the Group—probably the majority of them—were brought about by the patient herself, particularly the septic cases. (It is generally acknowledged that truly spontaneous abortions are not likely to be followed by sepsis). One has been forced to include these doubtful cases in this Group in the absence of definite proof or sufficiently detailed history to warrant their inclusion among Illegal Operations.

It is probable that deliberate interference with pregnancy is on the increase all the world over. While it may be that with increasing education women are less inclined to put themselves into the hands of professional abortionists, it appears that there are comparatively few who will hesitate to take drugs to "bring on" an overdue menstrual period. Many, of course, will go further and use instrumental means to bring about the desired result.

The average woman, moreover, regards an early miscarriage very lightly and as something which does not call for medical treatment—even when it is spontaneous; in fact, it is usually difficult to obtain a correct history regarding miscarriage because such occurrences are frequently overlooked or conveniently forgotten.

Pearce, in the *Journal of Obstetrics and Gynæcology of the British Empire* (Vol. 37, No. 4, 1930), calculates that abortion is increasing while the birth-rate decreases, and that about 25 per cent. of known pregnancies end in abortion.

In the Interim Report of the British Departmental Committee the statement is made that "the general conclusion of the Committee is that while there can be no doubt that abortion plays a serious and regrettable part in the production of puerperal sepsis, and therefore in the causation of maternal morbidity and death, they are unable to find evidence to support the opinion that an increase in deaths from abortion, of sufficient magnitude materially to affect the maternal death-rate, has taken place in recent years."

In the present investigation over 18 per cent. of the 1,073 deaths investigated (201) were due to abortions.

The term "abortion" refers to the expulsion of a fertilized ovum from the uterus before the twenty-eighth week of pregnancy.

TABLE XIII.—*Abortions*—201 deaths.

	Metropolitan.	Country.
Septic-abortions	112	57
Non-septic	12	20
	124	77
Married		155
Single		30
Widowed, living apart, or divorced		15
Not stated		1
		201

One death in this group (*Case* 1048) followed therapeutic induction at six weeks' gestation on account of hyperemesis. The patient had been subject to attacks of B.C.C. pyelitis since childhood, and her only previous pregnancy had to be induced a week before term on account of pre-eclamptic toxaemia.

Immediately prior to the fatal pregnancy she had been two months in hospital with pyelitis and salpingitis.

The induction of abortion was carried out with every surgical precaution, but an acute pyosalpinx developed a week later, becoming a pelvic abscess. This was drained per vaginam, but death occurred from a secondary haemorrhage.

Altogether four deaths in this group were due to sepsis after therapeutic induction of abortion, the histories of the other three cases being as follows:—

Case 896.—Multipara, 35. Large umbilical hernia, on account of which it was decided to terminate pregnancy. Pelvic peritonitis supervened.

Case 923.—Multipara, 28. Acute hyperemesis, which failed to respond to treatment. After four weeks the patient was so weak that—after consultation—induction of abortion was performed at three months by dilatation and packing. Placental fragments were retained after abortion, so curettage was done. A low-grade and fatal septicaemia supervened, the patient being too weak to fight against the infection.

Case 1049.—Primipara of 46 married to a man of 73. Patient had been advised to undergo hysterectomy, on account of large uterine fibroids. At six months it was found necessary to terminate pregnancy, on account of pre-eclamptic symptoms which did not respond to treatment. Septicaemia supervened.

Several women who died after early abortions had not been aware that they were pregnant.

In some cases abortions were due to falls or other accidents, in other cases to ill-health, and in many cases appeared to have occurred without any cause being ascertained.

Case 874 occurred at four months. Afterwards, jaundice and an intense haemolytic streptococcal infection manifested itself, with blockage of the renal tubules by the haemoglobin destroyed.

Case 877.—Violent pain after spontaneous abortion at four months. Abdomen was opened up and leaking pus tubes found, which were considered to have been the cause of the abortion.

In some cases death was ascribed as being due to embolism after miscarriage.

One case (879) showed interesting features on account of the remarkable rapidity of progress to the fatal termination. The woman, aged 19, with one child, was seen by the doctor at 4 p.m. with her sick child. She herself was quite well except that (as afterwards learned) she had had a slight, blood-stained discharge on and off for some days. She was six weeks pregnant. By 9 a.m. next day she was having some pain and was slightly icteric, and a diagnosis of threatened abortion was made. At 6 p.m. the same day curettage was performed, and by the day after the icterus was marked, the temperature was mounting rapidly, and death took place.

Post-mortem examination disclosed advanced gangrene, with every part of the body filled with gas and *B. aerogenes capsulatus*.

In many of the septic cases medical attention was not sought until the condition was hopeless. Some cases were undoubtedly syphilitic.

One woman (*Case* 916), who had undergone one labour and two miscarriages (the second miscarriage only five months previous to death), was ten weeks pregnant and, in spite of a profuse haemorrhage—soaking four large sheets and eight towels—sought no medical advice until she walked into the doctor's surgery nine days later. By that time she was blanched and thoroughly septic.

A young aboriginal woman (*Case* 907) became mental after abortion. She escaped from the hospital and jumped into the river, and on being rescued was so covered in mud that she was taken on to the lawn and hosed. Death, which supervened, was thought to have probably been due to sunstroke.

THE OPERATION OF CAESAREAN SECTION.

It is generally agreed that the operation of Caesarean Section is performed far too frequently. With increased knowledge and application of asepsis and increased technical skill, many enthusiastic aspirants to surgical fame no doubt rush into the operation when more mature judgment would suggest another (though less spectacular) mode of delivery.

Eardley Holland (*Lancet*, 27th April, 1935), in considering the remarkable widening in the last fifteen or twenty years of the indications for intervention during labour and the great increase in the number of operative deliveries (induction of labour, forceps and Caesarean section), suggests that the following factors have been responsible :—

(*a*) Increasing employment of analgesics and anæsthetics—often leading to increase in forceps rate.

(*b*) Increased opportunity given to local practitioners—who may possess neither the requisite judgment or skill—to perform Caesarean Section and other obstetric operations.

(*c*) Uninstructed ante-natal work, with its mistaken notions about "disproportion," "post-maturity," the "unengaged head," and the resort in consequence to unnecessary interference.

(*d*) Any sort of interference to suit the convenience of the patient, her friends, the doctor or the nurse.

(*e*) An exaggerated idea of the value of the infant's life as compared with the life of the mother—due to the fact that nowadays pregnancies are spaced, regulated, and relatively rare.

He considers that "it must be clearly recognised that practical training in obstetrics must come after graduation . . . Once an 'obstetric conscience' has been acquired a doctor is proof against any amount of temptation to hurry or to interfere unnecessarily, or to offend in any other way against the cardinal principle of normality."

Among the 1,073 deaths investigated in New South Wales, no less than 67 followed Caesarean Section. This would suggest that the operation was performed in an abnormally large number of cases, and an analysis of the histories shows that most of the operations were performed as emergencies—very often late in labour and when the birth canal was probably already infected, as in cases of "failed forceps."

Thirteen of the women died subsequently from sepsis and another 13 from "shock."

TABLE XIV.—*Caesarean Section*—67 deaths.

Indication—	
Ante-partum haemorrhage	8
Myocarditis	3
Disproportion	7
Contracted pelvis	14
Malpresentation	7
Previous ventro-fixation	2
Eclampsia or pre-eclampsia	9
Previous rupture of uterus	1
Ruptured uterus	3
Post-maturity	1
Pelvic tumour obstructing labour	4
Threatened rupture of uterus	1
Indefinite	7
	67
Cause of subsequent death—	
Haemorrhage	6
Shock	13
Haemorrhage and albuminuria	1
Chronic myocarditis	5
Sepsis	13
Pyelitis or nephritis	2
"Toxæmia"	2
Pulmonary embolism	5
Acute dilation of stomach	2
Pneumonia	1
Intestinal obstruction	9
Mania	1
Eclampsia	7
	67

And 2 post-mortem Caesarean sections (1 child lived).

Where the operation is a matter of deliberate selection and preparation, the dangers are not exceptional and the mortality low (from 1–2 per cent. according to Munro Kerr and Eardley Holland).

The 67 deaths have already been considered—many of them in detail—in the respective groups to which they belong according to the ultimate cause of death.

The indications for operation are shown in the accompanying Table. Some of them, on closer study, would appear to be of doubtful validity; others were very indefinite.

It would seem that many of the instances of alleged disproportion, malpresentation and contracted pelvis did not offer sufficient indication for the procedure (especially in the cases of 3 multiparae who had undergone previous normal labours). In some of the 14 cases described as "contracted pelvis" the measurements did not deviate markedly from normal and were apparently not verified by internal (and in at least one case not even by external) examination, and in those of "disproportion" and "malpresentation" (14) the same applies.

In 22 of all the 67 fatal cases a trial of labour was allowed first.

Twenty-seven of the women were primiparae.

Four women had been delivered by Caesarean section previously.

It is debatable whether the operation is the treatment of choice in eclampsia and toxaemia of pregnancy. Nevertheless, it was performed in 9 fatal toxaemic cases.

In some instances the indication for which the operation was undertaken was, in turn, the ultimate cause of death.

Seven of the 9 fatal cases of albuminuria and eclampsia who underwent Caesarean section died of the toxæmia, and to this extent the operation must be considered as having failed in its objective, whilst of the cases operated upon for ante-partum haemorrhage, 6 died from the haemorrhage.

Furthermore, C. J. Miller, in "Surgery, Gynæcology and Obstetrics" (No. 48, June, 1929) believes that the proportion of living mothers and infants obtained by Caesarean operation fails to justify its use, and that the average mortality figures show plainly that Caesarean section is a dangerous measure.

Among the total 67 deaths under review there were 19 still-born infants delivered.

As has been seen all through this Investigation, proper ante-natal examination, with careful judgment as to the prognosis, might have averted the fatal issue—and this applies particularly to the dystocias and toxæmias. In the former class some of the operations, if not avoidable, might have been performed by deliberate choice and at the most opportune time.

The present situation as regards this operation is well summed up in the New York City Report,* as follows:—

> "The indications for the Caesarean operation need re-statement and further limitation to really valid causes, such as severe degrees of contraction of the pelvis. More careful observation during the pre-natal period should provide the opportunity for making a proper prognosis of labour and delivery, and so eliminate the use of the Caesarean section as a last resort. . . . Sharp reduction in the number of Caesarean sections performed is to be strongly recommended. Where the operation is required, only those whose training in abdominal surgery is adequate to ensure proper performance of the operation should be considered suitable operators. Only by this definite narrowing of its use to the legitimate occasion demanding it, as well as the provision of capable operators, can a decrease in these deaths be achieved."

Munro Kerr sums up by stating, "It will be a sad day for obstetrics and for the community if Caesarean section is freely and light-heartedly employed in complications which can be successfully overcome by manipulations and devices long associated with the art of obstetrics."

TABLE XV.—*Deaths among Primiparae (or Primigravidae).*

Cause—	
Ante-partum haemorrhage	10
Post-partum haemorrhage	19
Sepsis	64
Toxæmias of pregnancy	47
Eclampsia	71
Operative shock, etc.	31
Embolism	26
Ectopic gestation	23
Unclassified	12
Abortion	37
	340

* "Maternal Mortality in New York City"—New York Commonwealth Fund. 1933.

Deaths among Multiparæ (Sixth Labour or More).

Cause—	
Ante-partum hæmorrhage	27
Post-partum hæmorrhage	11
Sepsis	21
Toxæmias of pregnancy	15
Eclampsia	16
Operative shock, etc.	15
Embolism	26
Unclassified	4
Ectopic gestation	...
	135

Deaths among Aborigines and Half-castes.

Cause—	
Sepsis	5
Post-partum hæmorrhage	3
Toxæmias	2
Eclampsia	2
Difficult labour, etc.	4
Embolism	2
Unclassified	1
Abortion	1
	20

WHERE PATIENTS WERE CONFINED.

In Table XVI the deaths have been summarised according to where the woman was delivered and in Table XVII certain of those deaths which occurred in the metropolitan district have been utilised to obtain comparative death-rates for births at home, in private hospitals, and in public hospitals.

TABLE XVI.—*Summary—Where confined*—801 *deaths* (*excluding abortions and ectopic gestations*).

	Home.		Private Hospitals.		Public Hospital throughout.		Public Hospital after onset of complications.		Undelivered.		Not Stated.	
	M.*	C.†	M.	C.	M.	C.	M.	C.	M.	C.	M.	C.
Sepsis	33	29	28	26	27	8	11	4	...	...	...	1
Eclampsia	4	10	14	27	11	6	11	17	18	17	...	1
Operative shock	8	9	13	22	9	7	5	5	4	4	...	...
Ante-partum haemorrhage	5	4	3	20	8	4	18	10	8	11	...	...
Post-partum haemorrhage	16	15	9	10	10	4	...	...	...	...	...	...
Toxaemia	9	7	16	25	17	23	...	...	18	13	...	4
Embolism	10	22	14	29	14	5	...	...	4	3	...	...
Unclassified	...	4	2	3	8	6	...	...	...	1	...	...
	85	100	99	162	104	63	45	36	52	49	...	6
Total 801	185		261		167		81		101		6	

*M.—Metropolitan deaths. †C.—Country deaths.

TABLE XVII.—*Death Rates in metropolitan district** (excluding abortions, ectopic gestations and women who die undelivered).

Year.	Total Metropolitan Births.	Births (Metropolitan District) in			
		Private Dwellings.	Private Hospitals.	†Public Hospitals.	Other Institutions.
1929	22,347	8,835	7,603	5,906	3
1930	21,927	7,914	7,500	6,512	1
1931	19,080	6,405	6,303	6,370	2
1932	17,583	5,506	5,723	6,348	6
1933	17,083	4,558	6,098	6,425	2
	98,020	33,218	33,227	31,561	14
Deaths	.....	85	99	104 (a) 145 (b)	.....
Maternal Mortality Rate per 1,000 births	.....	2·55	2·98	3·29 (c) 4·72 (d)	.....

* Data relating to distribution of births not available for country districts.
† Includes public maternity hospitals and subsidised hospitals to which a maternity ward is attached.
(a) Deaths of women who were in public maternity hospitals throughout labour.
(b) Deaths of women who were in public maternity hospitals throughout labour and including patients admitted after onset of complications.
(c) Death-rate where women were in public hospitals throughout labour.
(d) Death-rate including those admitted after onset of complications.

From Table XVII it will be seen that the births in the metropolitan district are fairly equally distributed between the ordinary home, the private hospital and the public hospital.

The public hospital compares unfavourably in its death-rate, but it must be remembered that such hospitals receive patients in whom difficulties are anticipated or inevitable. The death-rate is greatly increased where the woman is admitted to hospital after the onset of complications.

CONCLUSIONS.

1. It will be seen from this investigation that in the majority of deaths there is more than one influencing factor, and no attempt has been made to apportion responsibility in regard thereto.

2. While it does not seem possible at present, for reasons which have been discussed, to control about 40 per cent. of maternal mortality, the remaining 60 per cent., *i.e.*, the greater part, is capable of control.

3. Formerly puerperal sepsis accounted for about one-third of the total mortality. Now, under more accurate classification, and due possibly also, to an increase in the use of asepsis and antisepsis, the deaths from this cause comprise about 15 per cent. of the total maternal deaths.

It is extremely difficult to explain why sepsis follows normal labour, and still more difficult to find the reason for its incidence in public hospitals where adequate skill and facilities are available. Errors of judgment, manipulative interference and Caesarean section are several factors related to this problem which demand the serious consideration of the medical profession.

4. The outstanding problem of New South Wales, and probably of Australia, generally, would appear to be reduction of the deaths from toxaemias. The indifference and apathy of the mother regarding her own welfare is a potent factor which calls for intensive educational effort.

Table II shows that 25 per cent. of the deaths investigated can be attributed to these conditions, but actually the numbers are much higher, for many of the cases of puerperal sepsis, ante-partum haemorrhage and embolism were complicated by toxaemia—305 cases in all.

5. Adequate ante-natal care and treatment, highly important though it is, has many limitations in the prevention of eclampsia and toxaemia.

6. Fulminating eclampsia is an extremely fatal condition which, in the present state of our knowledge is not, apparently, susceptible to very satisfactory control. The necessity for research into this problem is obvious and urgent.

7. Increased hospitalisation of toxaemic patients appears to be necessary. The treatment given to the fatal cases under review, though suitable, was administered too late in most instances.

8. Adequate ante-natal supervision and attention would probably have prevented many deaths from various forms of dystocia which necessitated serious interference, as a matter of urgency, to deal with problems which might have been more appropriately controlled at an earlier stage.

9. The operation of Caesarean section appears to be employed with increasing frequency but with doubtful efficacy or justification in dealing with obstetric complications.

10. It would also appear that in Australia the problem is not primarily one of social status. Among the 167 deaths from sepsis, for instance, only 38 occurred among women in poor or destitute circumstances. In the remaining 129 deaths, the circumstances were fairly good and the homes good or at least not devoid of ordinary necessities.

In this Investigation, inquiries were only made into actual deaths which occurred. No estimates of the amount of morbidity which follows childbirth was made. It may not be easy to lower a death-rate of 0·4 to 0·5 per cent., but it is certainly possible to lower the morbidity rate and although this latter rate can only be guessed at, it is an undoubted fact that most of our gynæcological work can be attributed to the after-effects of child-bearing.

It is hoped that this Investigation, carried out as the pressure of official duties permitted, will be useful, in some small measure, in indicating the actual circumstances associated with a large number of puerperal deaths.

It is an attempt to present, for the first time, a survey of the actual details of the problem of maternal mortality in this State, so that it may be possible to discern the lines along which the campaign for the reduction of our maternal mortality rate should be directed.

XI.—ILLEGAL OPERATIONS—Addendum—198 Deaths.

During the course of this investigation, histories were obtained of 198 deaths from illegal operations and as these deaths are frequently—though incorrectly—included in the maternal mortality rate by those who want to paint the picture as black as possible, a summary of them has been made.

The question of deliberate interference with pregnancy was touched upon when the cases in Group IX (abortions) were under consideration, and it is very probable that many of the deaths in that Group should have been ascribed to illegal operations if more detailed histories had been available.

Deaths from this cause would appear to be undoubtedly on the increase, and in Australia are particularly high. This increase is well shown by the records of the Prince Henry Hospital, Sydney, the institution in the metropolis where most of the cases of abortion are treated. Whereas in the year 1919, out of a total of 3,210 female patients treated, 54 were cases of abortion (1·7 per cent.), by 1934 the total number of females treated (5,304) had not doubled and yet the number of abortions treated increased seventeen-fold—being 946 for the year.

As is generally the case elsewhere, the number of deaths from illegal operations is greatest in large centres of population, and Sydney is no exception—although the population of New South Wales is fairly evenly divided between the city and the rest of the State, and the maternal deaths are about even in number in the Metropolitan and Country districts respectively.

Table XVIII.—*Illegal Operations*—198 deaths (Metropolitan, 147; Country, 51).

Social Status.	Metropolitan.	Country.	Means adopted.	
Married*	83	33	Mechanical	119
Single	42	9	Drugs	25
Widow or living apart	22	8	Drugs and mechanical	16
Not known	...	1	Not known	38
	147	51		198

*Youngest married woman 17 years—married 3 years, 2 children.

Most of the deaths, as may be seen by the foregoing Table, occurred in the City of Sydney, and of the country cases many were in the City of Newcastle. This is, no doubt, mainly due to the fact that the means of procuring the desired termination of pregnancy is more readily obtainable in large cities. Many of the women who died in the cities were country women who had come to the city for the special purpose of procuring termination of pregnancy.

The most disquieting fact about these deaths is that the majority of them do not occur among single women driven to desperation, but among married women already the mothers of families. As will be seen in the Table, 116 of the 198 women whose cases were investigated were married women, as against 51 single and 30 widowed or living apart from their husbands.

The ages of the women ranged from 16 to 44—the youngest married woman being only 17 years old and already having two children. Half of the total group were between 25 and 35 years old.

From the histories obtained it would appear that most women who died from illegal operations—and therefore most women in whom interference takes place—do not visit professional abortionists, but procure the abortions themselves, by mechanical means. It is interesting to find that out of the 160 cases in which the method adopted is known, 119 were procured by mechanical means, 16 by drugs and mechanical means combined, and 25 by drugs only.

Knitting needles, crochet hooks, catheters, sea-tangle tents and other foreign bodies were inserted—all, apparently, without any attempt at sterilization of the instrument. In many cases douching with strong antiseptics was resorted to, resulting in 9 cases in air emboli from separation of the placenta by air in the syringe, and in 6 cases by perforation by the nozzle itself.

in some instances the woman was not pregnant at all, but only supposed herself to be so.

One woman syringed with a pint of water and carbolic soap. No fluid was returned. She was seen by a doctor next day, who found evidence of fluid in the peritoneal cavity and opened the abdomen. No perforation of uterus or bladder was found at post mortem examination but a piece of placenta was in the abdominal cavity.

In 2 cases death occurred from tetanus—one following the introduction of a sea-tangle tent.

SECTION I.—B.

DIVISION OF MATERNAL AND BABY WELFARE.

SECTION II.—ANNUAL REPORT FOR THE YEAR ENDED 31ST DECEMBER, 1934.

Director: Dr. Elma Sandford Morgan.

PART I.—MATERNAL WELFARE.

Though the maternal death-rate fluctuates from year to year, on the whole there appears to be a slight downward tendency. This is shown in Table I.

It is necessary to bear in mind, however, that allowance must be made for the fact that the more exact certification of deaths in recent years prevents accurate comparison between the present maternal mortality rate and that of former years.

In the table it will be seen that the birth-rate in New South Wales continued to fall in 1934, as it has done consistently since 1928, that the maternal death-rate for the year (4·9) was practically the same as for 1933, and that the illegal operation rate is the highest yet recorded.

Doubtless, many factors which are not obvious at first influence these figures—including the later incidence of marriage and smaller families and the greater number, proportionately, of first labours.

For some years now, owing to an investigation into every maternal death in New South Wales which has been carried out by this Division (p. 35), more accurate information than that obtained by the Government Statistician from the death certificates has been made available, and this has, no doubt, resulted in some deaths being included among puerperal deaths which would formerly not have been classed as such.

Furthermore, as has frequently been pointed out, in the Commonwealth of Australia strict adherence is made to the International Classification of Causes of Death, and all deaths which are associated in any way with pregnancy or the puerperal state are included in the maternal mortality rate, while, in many other countries (England and Wales, for instance), a special section is allotted to "Diseases not due to childbirth but associated therewith."

These facts are some of those which prevent Australian figures from being strictly comparable with those of other countries, and place us at a statistical disadvantage.

TABLE I.

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.*
1910	45,533	261	8	3·0	5·5	
1911	47,677	279	12	4·3	5·6	
1912	51,993	305	16	5·2	5·5	100
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	
1916	52,575	297	16	5·3	5·3	
1917	52,467	327	22	6·7	5·8	92
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	
1921	54,634	281	33	11·7	4·5	
1922	55,214	279	32	11·4	4·4	85
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	
1926	53,126	276	40	14·5	4·4	
1927	53,858	352	46	13·0	5·6	90
1928	54,800	327	32	9·7	5·4	
1929	52,676	278	33	11·8	4·6	
1930	52,136	304	44	14·4	4·9	
1931	47,724	288	45	15·6	5·1	
1932	44,905	276	50	18·1	5·02	88
1933	44,195	246	34	13·8	4·8	
1934	43,335	263	49	18·63	4·9	

* Per cent. ratio of quinquennial averages to average of 1910-14 which is taken as 100.

In Table II these deaths from the various causes incidental to childbirth are shown as follows :—

NEW SOUTH WALES.—Deaths Incidental to Childbirth, 1929–1934.

Causes.	1929.		1930.		1931.		1932.		1933.		1934.	
	No.	Rate per 1,000 Births.	No.	Rate per 1,000 Births.	No.	Rate per 1,000 Births.	No.	Rate per 1,000 Births.	No.	Rate per 1,000 Births.	No.	Rate per 1,000 Births.
Accidents of Pregnancy	29	·55	33	·63	24	·53	24	·53	26	·59	20	·46
Puerperal Haemorrhage	34	·65	36	·69	33	·69	39	·87	31	·70	30	·69
Puerperal Septicaemia	49	·93	42	·81	41	·85	26	·58	34	·77	39	·90
,, ,, following Abortion ...												
Miscarriage..	30	·57	38	·73	41	·85	33	·73	32	·73	24	·55
Albuminuria and Eclampsia	48	·91	41	·79	53	1·11	61	1·36	51	1·15	64	1·48
Phlegmasia Alba Dolens, Puerperal Embolism, Sudden Death	26	·49	24	·46	23	·48	16	·35	16	·36	11	·26
Other Casualties of Childbirth.....	29	·55	46	·88	28	·58	27	·60	22	·50	26	·60
Total	245	4·65	260	4·99	243	5·09	226	5·02	212	4·80	214	4·94
Illegal Operations	33	·63	44	·84	45	·94	50	1·12	34	·77	49	1·13
Grand Total	278	5·28	304	5·83	288	6·03	276	6·14	246	5·57	263	6·07

Table II shows the various causes to which the deaths are ascribed.

From this table it will be seen that in 1934 there was an increase in the deaths from septicaemia after labour, and from albuminuria and eclampsia.

The reduction of the deaths in these two classes appears to be the chief problem of maternal welfare here in New South Wales, as elsewhere.

Toxaemias of pregnancy are now included among deaths from albuminuria and eclampsia. Previous to 1929 they were classed with Accidents of Pregnancy.

As already stated, an investigation into every maternal death which occurred in this State in the years 1929–1933 was carried out by this Division, as it was realised that no such inquiry yet had been instituted in Australia and that until some effort was made to assess the causes which underlie our undoubtedly much too high maternal death-rate we cannot formulate any satisfactory solution to the problem.

The summary of the findings is published separately in this Report.

During 1934 the work of the Division of Maternal and Baby Welfare was carried out upon the same lines as in previous years since the reorganisation and augmentation of the medical and nursing staffs in 1929.

The work of private hospitals and practising midwives is supervised throughout New South Wales by six of the Supervisory Nurses—two working in the metropolis, one in the Newcastle district, and the remaining three in the country parts of the State. The seventh nurse is occupied entirely with conducting pre-natal clinics in metropolitan Baby Health Centres under my personal supervision.

There are ten of these departmental pre-natal clinics, and, during the year 1934, the total number of attendances at them was 2,254.

At Newtown, the first established and most important clinic (conducted one night weekly), attendances reached over 1,000. The average number of subsequent attendances of each individual expectant mother is rising each year, and more women are reporting for post-natal examination. This is especially important, as the majority of patients who attend these sessions are confined in their own homes, very often without any doctor in attendance, and it is gratifying to find that every year the practising midwives in the neighbourhood of these Clinics are being brought to realise the advantage and advisability of persuading their patients to attend for ante-natal care.

The Baby Health Centre nurses have unique opportunities for getting into close touch with pregnant women, especially with mothers who have had children already and attended the Centres, and the departmental Supervisory Nurses lose no opportunity of impressing upon the midwives they visit the advantage to themselves, as well as to their patients, of co-operation in this direction.

During 1934 the Supervisory Nurses inspected 718 private hospitals and visited 1,605 midwifery nurses in the city and country. They also inspected 166 training schools and public maternity hospitals. The visits are paid twice yearly as a routine measure and at any time when circumstances require it.

(Visits of investigation were also paid by these nurses to 74 cases of infantile paralysis during the year.)

The Supervisory Nurses report a considerable improvement in the methods of practice of the midwives and of the conduct of private hospitals since their regular inspections were instituted. There should be still greater improvement in the future, as the period of training in midwifery for general-trained nurses has now been increased from six to nine months, and for untrained women from twelve to eighteen months.

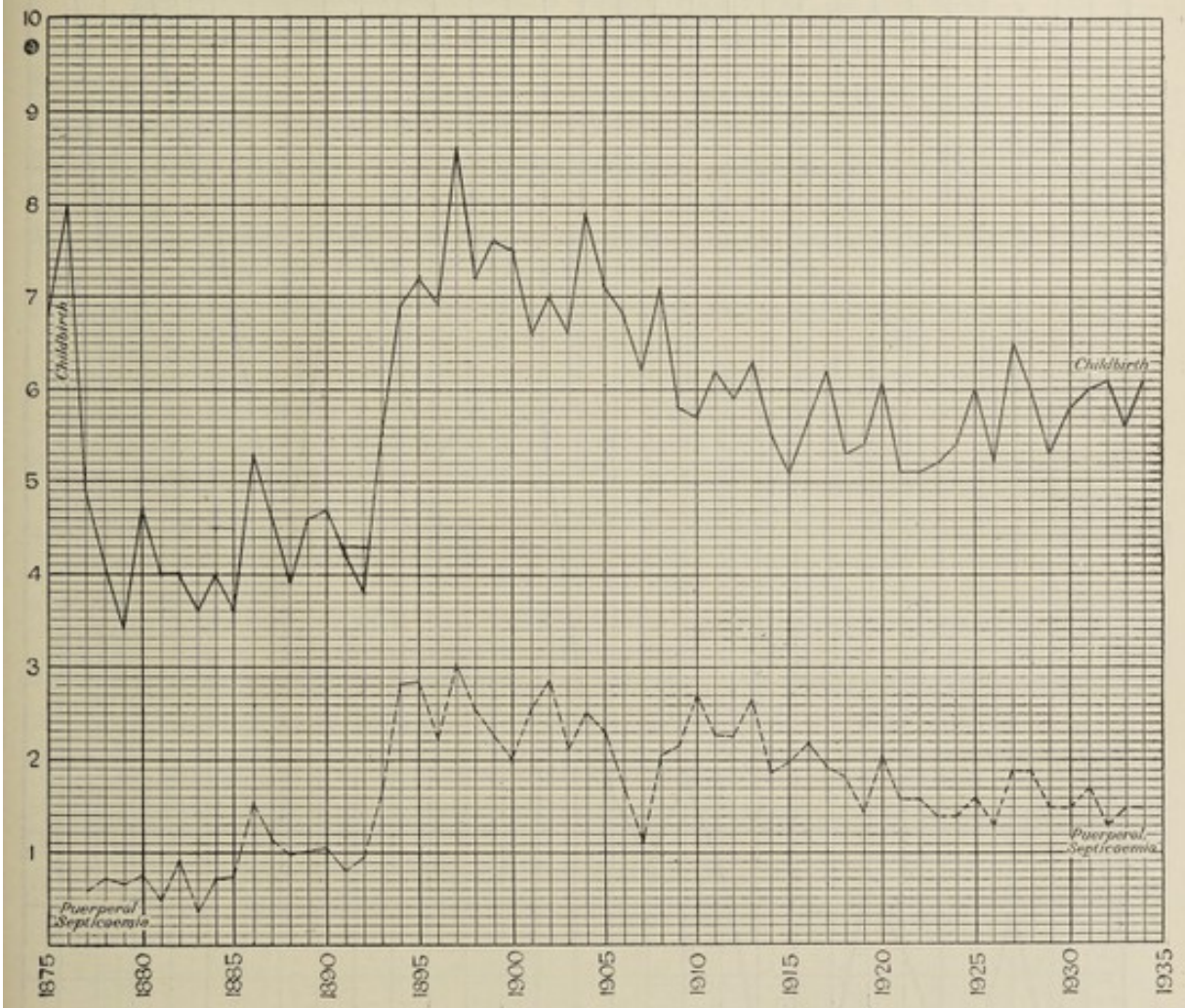
A moving picture illustrating the work of the Baby Health Centres and stressing the need for ante-natal care was produced by the Division during the year, and has been screened in all the Centres throughout the metropolis and country.

Lectures and addresses to various organisations, such as the Girl Guides, Salvation Army, and branches of the Country Women's Association, were delivered by myself during the year. Much propaganda was also carried out through the Press.

GRAPH No. 1.

CHILDBIRTH AND PUERPERAL SEPTICÆMIA.

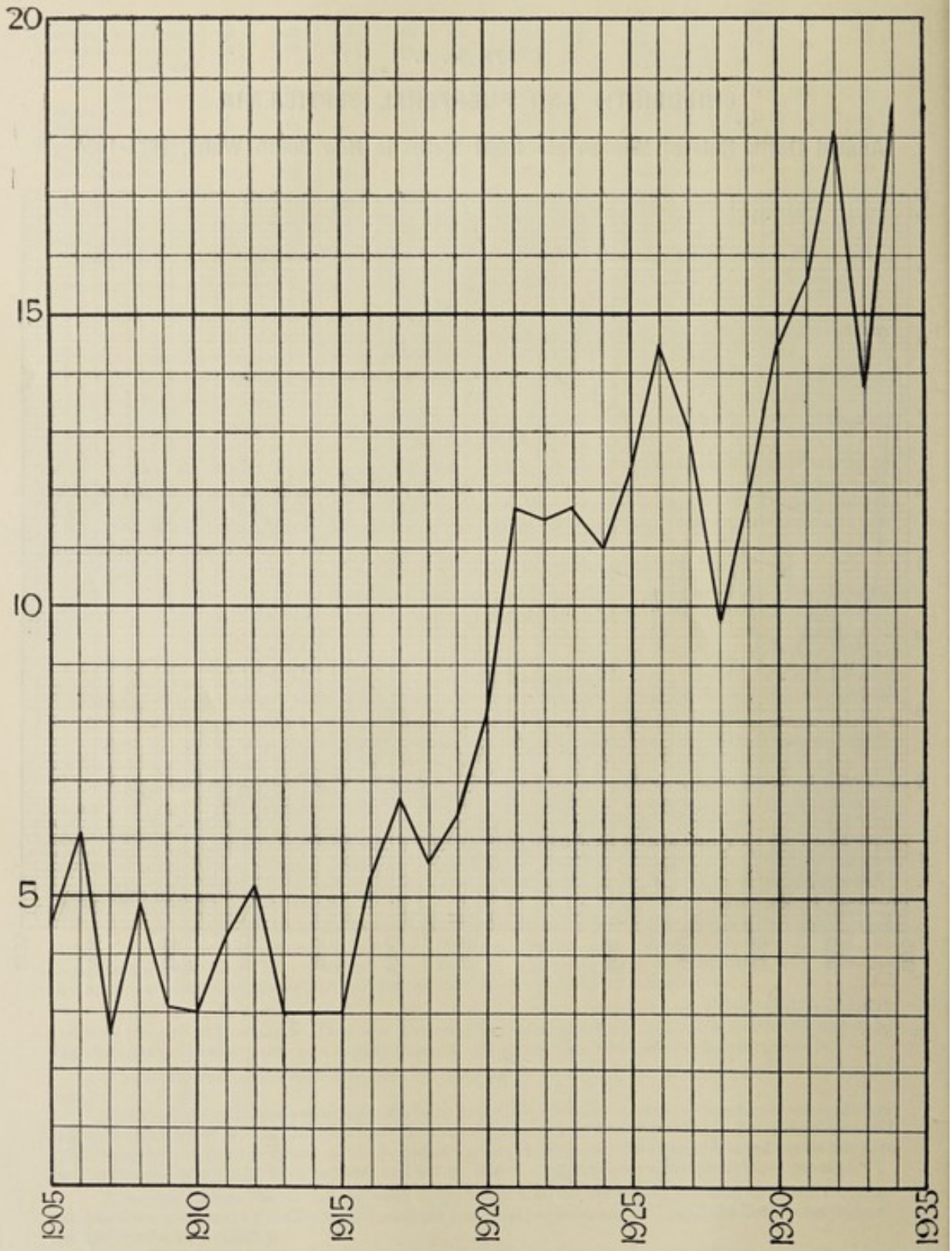
Annual Death Rate of Women per 1,000 Births in New South Wales, 1875-1934.



GRAPH No. 2.

ILLEGAL OPERATIONS.

Percentage of Total Maternal Deaths in New South Wales, 1905-1934.



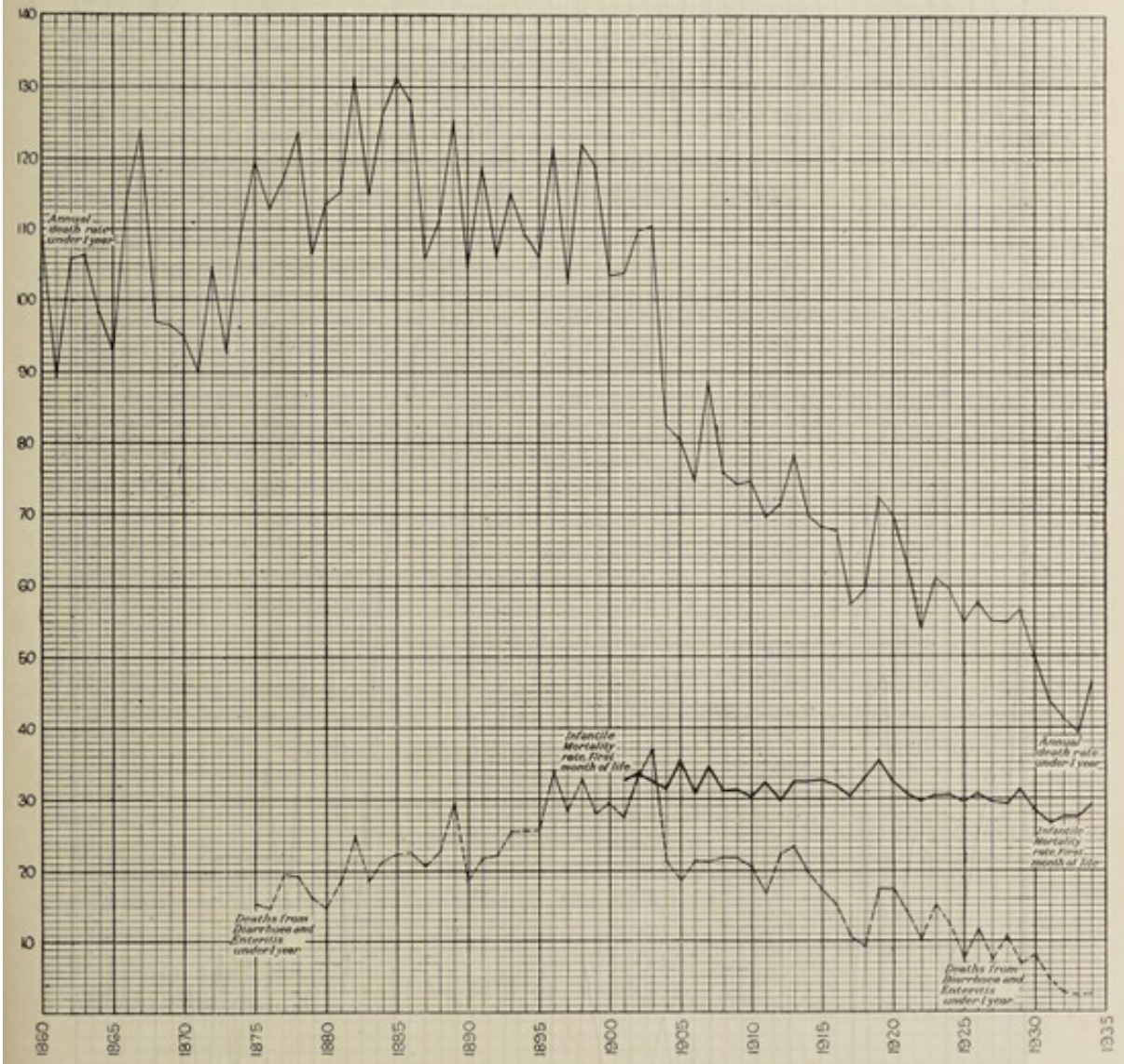
GRAPH No. 3.

INFANTILE MORTALITY IN NEW SOUTH WALES, 1875-1934.

Annual Death Rate of Children under 1 Year, per 1,000 Births———————

Deaths from Diarrhœa and Enteritis of Children under 1 Year, per 1,000 Births·····

Infantile Mortality in the 1st Month of Life, 1900 to 1934, per 1,000 Births———————

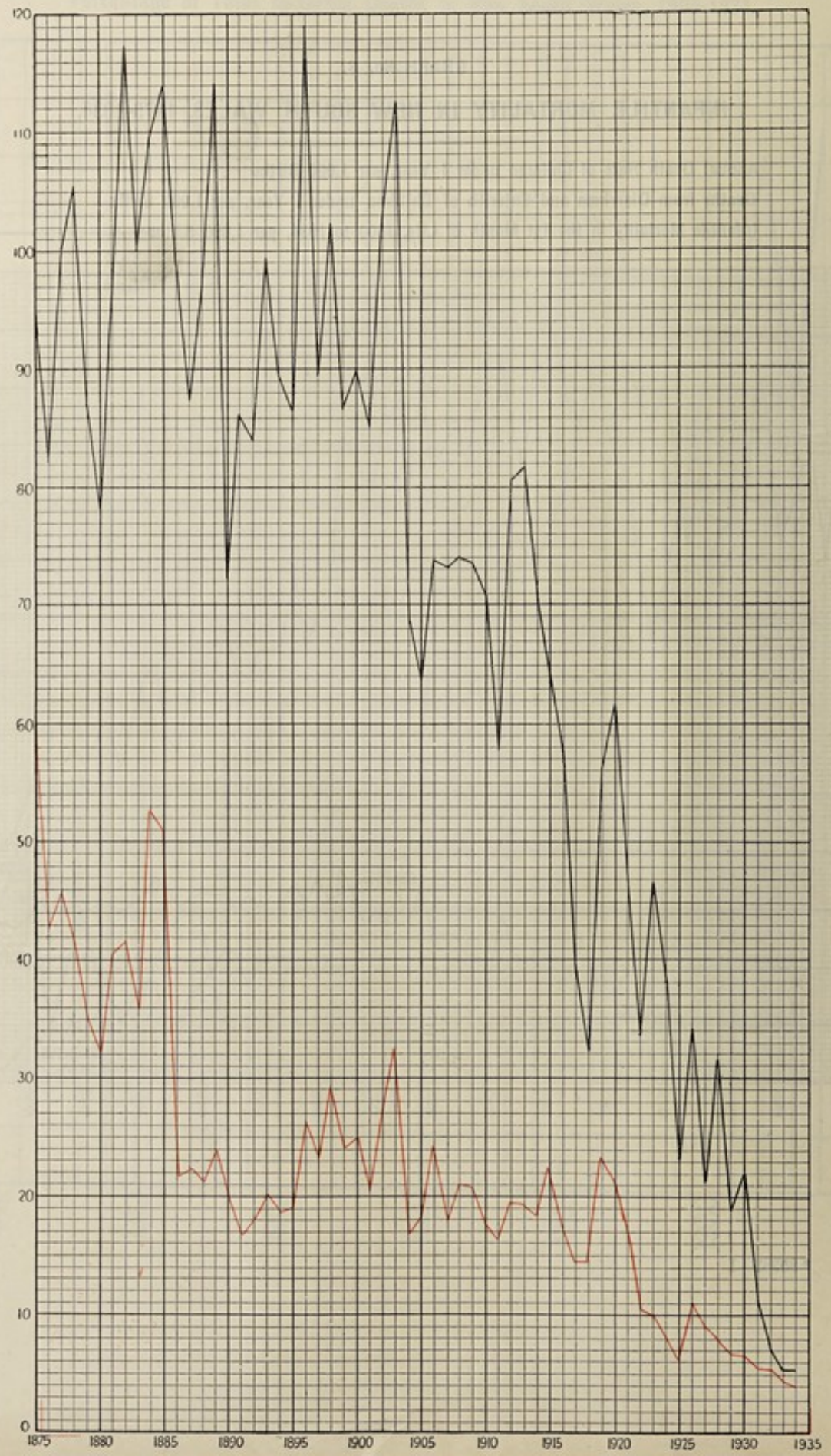


GRAPH No. 4.

DIARRHŒA and ENTERITIS.

Under 2 years—BLACK Line. Over 2 years—RED Line.

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1934.



Part II.—Infant Welfare.

In 1934 a very severe epidemic of whooping cough took toll of the infants and children of New South Wales. As a result, the infant death-rate, which had been falling steadily for some years, and in 1933 had reached the low record of 39·35 per 1,000 births, rose to 46·36 per 1,000 births in 1934. The total number of deaths in the first year of life, from all causes, was 2,009, as against 1,739 in 1933, and whooping cough was largely responsible for this increase, as 171 infants under 1 year of age died of the disease in 1934.

Considerable extension of Infant Welfare work in New South Wales was made possible in 1934, largely due to an increase in the nursing staff (which now totals 141 Baby Health Centre Nurses and 2 Nurse Inspectors, in addition to the Supervisory Nurses already referred to).

Twenty-five New Centres were opened—3 in the metropolitan area and 22 in the country. This brought the total number of Baby Health Centres in the State at 31st December, 1934, to 130—46 metropolitan and 84 country.

This is the largest number of new Centres opened in any one year, and, as before, the extension of the work in country districts has been largely due to the co-operation of the Country Women's Association. The various branches of the Association supply the premises and equip the Centres, this Department controlling them and providing the nursing staff.

The nurses employed are all general-trained and have, in addition, obtained their infant welfare ("Tresillian") certificates. Most of them are midwifery-trained as well.

The new metropolitan Centres were opened at Homebush, Sutherland, and Liverpool, the first named being provided entirely by the Municipal Council (the first metropolitan Centre to be inaugurated by a local council).

The 22 new country Centres were opened at Armidale, Uralla, Boggabri, Bungendore, Cooma, Griffith, Barellan, Gundagai, Leeton, Narrandera, Michelago, Millthorpe, Narrabri, Nowra, Port Kembla, Richmond, Riverstone, Windsor, Trangie, Narromine, Corowa, and Bundanoon.

Every opportunity was taken to extend the work of education in regard to mothercraft. Classes were delivered at twenty-seven Domestic Science Schools (and attended by 2,300 girls) in the city, and at twenty-one Domestic Science and State Schools in the country.

Sick children are not treated at Baby Health Centres, or allowed to attend there when suffering from infectious diseases, so that the epidemic of whooping cough resulted in a lowered attendance at most of the metropolitan Baby Health Centres.

The total attendances throughout the State, however, show an increase of 21,203 over those of the preceding year, being 535,373 for 1934. There was also an increase in the number of individual babies attending—47,236 in 1934, against 44,728 in 1933. There were 23,863 new cases enrolled; 6,661 expectant mothers received advice, and 31,516 test meals were given.

In concluding, I wish to express my sincere appreciation of the whole-hearted co-operation of the Country Women's Association in opening up new Country Baby Health Centres, and my thanks to the the honorary medical officers of the Centres for their great assistance.

ELMA SANDFORD MORGAN,
Director of Maternal and Baby Welfare.

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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.	
	1933.	1934.	1933.	1934.	1933.	1934.	1933.	1934.
Alexandria	218	247	1,342	1,546	10,836	9,370	819	766
Annandale	203	207	666	598	4,902	4,206	400	285
Ashfield	254	292	846	815	11,752	10,772	995	895
Auburn	460	311	891	506	10,310	7,480	786	541
Lidcombe		142		259		3,693		286
Balmain	259	335	728	1,416	9,511	8,818	943	600
Bankstown	305	224	449	370	6,935	5,304	726	428
Punchbowl		...		...		1,785		172
Burwood	531	464	982	1,197	13,482	11,527	1,302	1,078
Campsie	545	515	534	888	14,706	14,468	1,360	1,431
Chatswood	235	201	732	955	11,475	11,957	926	956
Chippendale	345	291	722	1,062	7,405	7,270	325	276
Daceyville	230	253	1,036	1,063	10,006	9,562	835	825
Five Dock	12	240	12	579	301	6,025	94	280
Glebe	168	171	1,170	1,273	6,445	5,950	511	451
Granville	323	291	403	388	6,623	6,396	721	329
Homebush	...	83	...	288	...	3,233	...	220
Hornsby	193	175	599	625	4,272	4,127	354	345
Hurstville	491	459	501	599	13,448	10,427	1,244	975
Mortdale		...		...		2,096		206
Kogarah	207	250	394	480	7,598	7,187	598	580
Sutherland	...	71	...	143	...	1,411	...	60
Lane Cove	184	160	879	1,604	6,705	7,524	466	518
Leichhardt	488	521	622	967	10,973	8,682	837	792
Liverpool	...	9	...	...	...	527	...	144
Manly	157	205	994	1,505	11,634	12,351	1,315	1,322
Marrickville	317	322	503	397	5,569	4,926	396	421
Earlwood	125	146	226	...	3,924	5,474	249	316
Mascot	263	303	816	1,391	7,283	7,792	641	684
Miller's Point	30	35	300	286	1,347	1,336	70	75
Mosman	177	201	867	1,127	11,964	10,736	641	746
Newtown	469	460	979	1,090	12,940	12,991	1,229	1,278
North Sydney	465	502	600	1,350	11,031	11,085	992	1,052
Paddington	332	271	822	884	11,787	11,220	828	831
Parramatta	255	201	888	874	9,913	10,448	1,060	1,000
Petersham	100	116	733	576	7,629	8,329	668	877
Pyrmont	75	67	623	596	2,667	2,663	160	172
Randwick	250	237	1,110	1,124	10,177	12,355	726	1,047
Rockdale	325	331	377	695	11,449	11,207	950	955
Rose Bay	374	398	781	1,118	11,924	12,573	1,063	1,172
Ryde	196	207	410	384	11,596	7,670	1,029	669
Gladesville		...		...		3,635		312
St. Peters	156	148	745	777	2,675	2,397	171	221
Surry Hills	220	201	1,278	1,418	8,390	7,702	683	612
Waverley	498	382	853	1,216	14,301	15,449	1,109	1,260
Woolloomooloo	181	170	925	853	9,624	9,773	646	684
Albury	110	93	475	616	5,885	6,426	470	646
The Weir		...		...		...		...
Corowa		20		260		743		90
Armidale	...	148	...	331	...	932	...	167
Bathurst	170	106	490	270	5,075	4,739	260	438
Bowral	176	50	768	480	2,358	1,104	314	133
Berrima		5		44		155		21
Bundanoon		9		37		118		24
Mittagong		28		224		644		90
Moss Vale		32		253		640		55
Boggabri	...	42	...	50	...	652	...	68
Bungendore	...	5	...	8	...	68	...	17
Broken Hill—Central	185	144	510	662	6,312	6,405	320	386
,, ,, North	71	74	241	207	3,719	3,696	181	214
,, ,, Railway Town	42	26	220	364	3,074	4,215	184	194
,, ,, South	47	36	424	303	1,907	2,164	127	137
Casino	113	112	877	661	1,807	2,569	269	335
Cessnock	251	225	322	465	6,479	5,253	665	479
Abermain		26		62		955		73
Cooma	...	74	...	209	...	1,177	...	191
Cootamundra	128	74	1,027	820	3,327	2,344	325	220
Cowra	107	91	363	282	2,472	2,042	230	205
Woodstock		10		30		170		18
Dubbo	318	159	951	503	5,330	3,109	631	353
Wellington		85		218		1,739		178
Gilgandra		53		130		632		101
Narromine		19		52		713		78
Trangie		...		...		21		14
Forbes	110	96	684	526	2,520	2,522	263	281
Glen Innes	89	71	296	231	1,935	2,171	179	195
Gosford	50	42	118	66	2,392	1,162	297	109
Wyong		...		...		897		83
Woy Woy		...		...		469		49
Goulburn	240	228	1,240	1,317	6,415	5,664	677	567
Crookwell		35		115		363		58
Grafton	141	118	378	322	4,020	4,392	427	492
Griffith	...	96	...	102	...	552	...	91
Barellan	...	13	...	11	...	46	...	13
Gundagai	...	51	...	172	...	633	...	53
Gunnedah	6	80	28	399	58	1,445	56	110

TABLE III—Showing work of Baby Health Centres—*continued.*

Baby Health Centres.	Visits to Individual New-born Babies.		Subsequent Visits to Homes of Babies.		Total Attendances, including Expectant Mothers.		Individual Babies Attending Centres.	
	1933.	1934.	1933.	1934.	1933.	1934.	1933.	1934.
Hamilton	317	203	756	655	14,994	11,841	1,401	1,200
Adamstown		122		330		3,176		243
Inverell	167	122	386	418	2,397	3,097	273	275
Kurri	129	107	813	705	6,256	4,621	449	446
Weston		49		274		1,722		141
Leeton	...	20	...	39	...	570	...	85
Narrandera	...	24	...	98	...	470	...	80
Lismore	271	368	375	373	4,219	758	385	521
Lithgow	280	259	1,234	1,278	5,090	4,737	481	486
Mayfield	216	164	730	881	13,217	9,122	1,172	820
West Wallsend		...		...		1,853		146
Waratah		52		279		1,917		129
Michelago	...	...	...	...	...	107	...	26
Millthorpe	...	...	...	...	...	63	...	23
Moree	76	75	885	679	2,746	2,522	306	284
Muswellbrook	70	69	234	267	1,566	1,630	145	138
Narrabri	...	86	...	83	...	915	...	78
Newcastle	350	360	1,128	955	9,730	7,944	1,125	439
Carrington		...		...		1,532		121
Stockton		...		...		1,826		135
New Lambton	237	141	299	280	3,864	1,662	395	190
Wallsend		109		205		2,214		238
Nowra	...	48	...	266	...	1,003	...	150
Orange	206	211	792	926	4,223	4,360	344	444
Port Kembla	...	...	...	...	...	190	...	27
Queanbeyan	93	76	726	671	2,131	1,932	195	195
Richmond	...	17	...	33	...	581	...	48
Riverstone	...	8	...	16	...	186	...	38
Singleton	83	67	343	333	1,893	1,368	185	120
South Singleton		...				857		63
Tamworth	...	169	713	659	9,732	7,714	1,053	962
Werris Creek		40		112		1,250		133
Temora	...	45	...	250	...	1,205	...	134
Uralla	...	44	...	69	...	244	...	45
Walcha	...	49	...	85	...	686	...	83
Wagga	457	214	645	286	7,391	5,610	634	511
Culcairn		16		66		392		48
Henty		19		83		351		60
Junee		108		230		1,730		136
West Maitland	214	164	737	678	6,110	5,693	627	654
East Maitland		61		119		1,294		116
Wollongong	146	155	577	516	4,080	4,216	...	359
Windsor	...	48	...	77	...	646	338	97
Yass	51	58	1,235	1,228	2,128	2,263	225	222
Young	53	64	237	241	1,759	1,654	232	194
Total	17,502	17,403	50,605	61,212	514,170	535,373	44,728	47,236

1934: Test Meals, 31,516. Expectant Mothers advised, 6,661. New Cases enrolled, 23,863.

SECTION I—C.

COMMUNICABLE DISEASES.

1.—NOTIFIABLE INFECTIOUS DISEASES RECORDED IN NEW SOUTH WALES DURING THE YEARS ENDED 31ST DECEMBER, 1934.

(F. S. Wearne.)

Public Health Acts, 1902–1932.

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. No alteration to the existing list was made in 1934.

	Notifiable from—	Cases and Deaths Notified.					
		1932.		1933.		1934.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever and paratyphoid	1st January, 1898	233	31	188	28	141	19
Scarlet fever	,,	4,905	57	4,259	55	2,166	19
Diphtheria or membranous croup	,,	4,310	160	3,912	169	6,167	193
Bubonic plague	23rd January, 1900	...	...	...	...	...	...
Infantile paralysis (including any form of acute anterior poliomyelitis, polioencephalitis or polio-myeloencephalitis)	1st February, 1912. Definition Re-proclaimed 14th August, 1931	384	44	13	4	94	13
Epidemic cerebro-spinal fever (meningococcal meningitis)	11th October, 1915	51	7	24	5	29	7
Encephalitis lethargica	1st April, 1926	12	18	11	15	6	15
Cholera	12th August, 1927	...	...	...	...	...	...
Typhus fever	,,	2	1	3	1	7	...
Yellow fever	,,	...	...	...	...	...	...
Puerperal infection	16th August, 1929	292	59	222	100	238	63
	Total	10,187	376	8,632	377	8,748	329
	Population at 31st Dec.	2,542,034		2,613,776		2,623,817	

The number of cases of the above diseases notified in each district in 1934 and deaths therefrom are shown in Tables I–IV, pp. 39–50. For reasons of economy tables showing age and sex incidence and seasonal prevalence have been omitted. Pulmonary tuberculosis is notifiable under the Public Health (Amendment) Act, 1915, and venereal diseases under the Venereal Diseases Act, 1918 (see below).

In 1934 there were 8,748 notified cases of infections disease, compared with 8,632 cases in 1933. The year was marked by a severe epidemic of diphtheria, there being 6,167 cases, compared with 3,912 cases in 1933 and 4,310 in 1932. Cases of scarlet fever decreased from 4,259 cases in 1933 to 2,166 cases in 1934.

Typhoid fever again showed a gratifying decline, there being only 141 cases in 1934, compared with 188 in 1933.

Infantile paralysis appeared in epidemic form towards the end of 1934; 66 of the 94 notified cases were reported in November and December. The outbreak continued during the early months of 1935.

Puerperal infection.—238 cases and 63 deaths were recorded. During the last five years the Department has made an investigation into every maternal death, and a report on the 1,073 deaths which occurred during the years 1929–1933 will be found on p. 35.

Cerebro-spinal meningitis.—29 cases and 7 deaths were notified.

Encephalitis Lethargica.—6 cases were notified. The Statistician's return shows 15 deaths. On investigation it is found that some of these deaths are due to non-notifiable forms of encephalitis, such as cerebral abscess, brain tumours, etc.

Bubonic Plague.—No case of plague has been recorded in New South Wales since 1923. Systematic trapping of rats along the foreshores used by overseas shipping is continuous; no infection was found among the 3,758 rats examined in the Microbiological Laboratory during the year.

Smallpox.—No case of smallpox was reported during 1934.

Leprosy.—One case of leprosy was admitted to the Lazaret in 1934; 2 patients died; and 1 case was discharged; 17 persons (15 males and 2 females) remained under detention on 31st December, 1934. A summarised report will be found on p. 149.

Endemic typhus fever.—Of seven cases notified in 1934, two were from the metropolitan district, and five from the North Coast.

Pulmonary Tuberculosis—Notifiable under the Public Health (Amendment) Act, 1915.

For report on the Tuberculosis Division, see p. 108. 1,509 cases of pulmonary tuberculosis were notified in 1934, an increase of 68 cases compared with 1933. There were 955 deaths from tuberculosis of the respiratory system. The Waterfall Sanatorium report will be found on p. 155.

Venereal Diseases Act, 1918.

For the report of the Commissioner, see p. 101. There were 4,721 notifications of venereal disease in 1934, a decrease of 88 compared with 1933.

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), Scarlet Fever, Typhoid Fever (including Paratyphoid), Pulmonary Tuberculosis, and Puerperal Infection in the METROPOLITAN COMBINED DISTRICTS for the year ended 31st December, 1934.

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 ...	88,420	1	...	63	...	162	5	2	...	...	...	...	...	168	77	25	1
Alexandria	9,020	...	...	8	...	44	1	3	...	...	...	...	...	14	1	5	...
Annandale	12,230	...	...	15	...	34	2	...	...	...	...	...	...	11	9	2	...
Ashfield	39,530	2	...	31	...	53	1	2	...	...	...	...	1	29	15	1	1
Auburn	20,180	5	...	43	1	45	...	2	...	...	...	...	...	11	8	3	...
Balmain	28,310	1	...	47	...	82	8	3	...	...	...	1	1	34	8	5	...
Bankstown	25,690	...	...	28	...	53	1	2	...	1	...	1	...	22	7	5	1
Bexley	20,650	...	...	24	...	39	1	1	...	...	...	...	...	10	7	2	...
Botany	8,400	1	...	10	...	20	...	2	...	...	...	...	...	6	1	4	...
Burwood	19,490	...	...	24	...	28	...	...	...	2	...	...	...	6	7	1	...
Canterbury	79,580	4	...	127	...	198	7	3	1	...	...	1	1	57	35	18	5
Concord	23,300	...	...	25	...	47	4	2	...	...	...	...	...	19	6	...	...
Darlington	3,060	...	...	...	...	10	...	...	...	...	...	...	...	5	2	1	...
Drummoyne	29,410	2	1	17	1	16	...	2	...	...	...	...	...	21	8	5	...
Dundas	6,070	...	...	3	...	3	...	1	...	...	...	...	...	6	1	...	...
Eastwood	3,090	...	...	1	...	3	1	...	...	...	...	...	...	9	1	1	...
Enfield	14,810	1	...	27	...	53	3	2	...	...	...	...	...	15	4	2	...
Ermington and Rydalmere.	2,370	...	...	4	...	6	...	...	...	...	...	...	...	6	1	...	...
Erskineville.....	6,650	...	...	8	...	21	1	1	...	...	...	...	...	7	3	4	1
Glebe	19,890	1	...	27	...	56	3	...	...	...	...	...	1	23	14	4	...
Granville	19,790	1	...	48	1	21	1	3	1	...	...	...	...	15	8	3	1
Holroyd (Pitt and Merrylands wards).	8,590	...	...	11	...	19	...	...	...	...	...	...	1	...	3	...	...
Homebush	3,190	2	...	...	...	1	...	...	...	...	...	...	...	2	1	...	...
Hunter's Hill	9,050	3	...	9	...	8	1	1	...	...	...	...	...	5	4	...	...
Hurstville	22,840	...	...	19	...	43	2	4	...	1	...	...	...	20	11	3	1
Kogarah	30,930	...	...	24	...	92	2	1	...	...	...	...	...	18	10	5	...
Kuring-gai	28,760	1	...	15	...	17	...	3	...	1	...	...	...	20	12	1	1
Lane Cove	15,310	2	...	17	...	58	2	1	...	...	...	...	...	12	4	1	1
Leichhardt	30,240	...	...	23	1	55	1	2	1	...	...	...	...	31	16	3	...
Lidcombe	17,400	1	...	29	...	27	3	1	...	...	...	...	1	26	19	2	...
Manly	21,660	1	...	10	...	50	2	2	2	...	...	...	...	14	9	1	1
Marrickville	45,470	1	1	63	...	87	3	4	...	1	...	1	...	47	21	5	...
Mascot	14,570	...	...	28	...	32	...	3	...	2	...	...	...	14	6	1	...
Mosman	23,920	...	...	22	...	10	...	...	...	...	...	...	...	6	5	...	...
Newtown	25,300	...	...	17	...	105	2	2	...	1	...	...	...	38	15	9	4
North Sydney.....	49,970	1	...	32	...	131	5	...	...	1	...	...	...	33	17	1	1
Paddington	21,710	...	...	13	...	44	4	1	...	...	...	...	...	29	22	10	1
Parramatta	18,160	...	...	21	...	16	2	...	...	1	...	...	1	22	6	3	...
Petersham	27,060	3	...	35	1	38	1	1	...	...	1	...	...	23	10	4	1
Randwick	79,480	4	...	68	1	188	4	5	1	...	...	...	...	62	41	6	1
Redfern	18,840	1	...	13	...	76	1	1	...	1	1	...	1	39	16	7	1
Rockdale	39,430	...	...	52	...	67	...	3	...	...	...	...	1	18	8	4	2
Ryde	28,160	1	...	45	...	116	6	1	...	...	...	...	...	13	18	2	1
St. Peters	12,570	...	...	14	...	51	3	1	...	...	...	...	...	13	2	1	...
Strathfield	12,280	...	...	10	...	8	1	...	...	...	...	...	...	8	4	1	...
Vaucluse	7,330	1	...	3	...	3	...	1	...	...	...	...	...	3	2	...	...
Waterloo	11,680	...	...	7	...	42	1	4	...	...	...	...	...	5	4	3	...
Waverley.....	56,580	2	...	25	...	59	...	...	...	1	...	...	...	40	21	4	...
Willoughby	42,870	2	1	27	1	121	6	1	...	1	1	...	...	29	14	5	1
Woollahra	35,220	...	...	23	...	55	...	2	...	...	...	...	...	42	7	6	...
EXTRA METROPOLITAN MUNICIPALITIES.																	
Cabramatta and Canley Vale.	6,290	1	...	4	...	23	1	...	...	...	...	...	...	2	1	...	...
Fairfield	8,840	1	...	13	...	28	...	1	...	...	...	...	...	6	5	1	...
Holroyd (Guildford and Wentworth wards.)	7,590	...	...	11	...	19	...	...	...	...	...	...	...	13	2	...	...
Ingleburn	1,910	...	...	4	...	5	...	...	...	...	...	...	...	...	...	...	...
Liverpool.....	6,420	1	...	...	...	22	...	...	...	...	...	...	...	19	5	1	...
SHIRES.																	
Hornsby	22,880	...	...	13	...	19	...	...	...	...	...	...	...	9	20	3	...
Warringah	16,250	1	...	25	...	36	1	...	...	...	...	...	...	7	7	...	1
Harbour of Port Jackson.	.....	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...
Totals	1,313,600	49	3	1,314	7	2,746	93	77	6	14	3	4	9	1,191	591	187	28

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, 1934.

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	4,930	...	...	10	...	13	...	...	...	...	...	...	...	1	1	1	...
Carrington	3,240	...	...	...	...	4	...	...	...	...	...	...	...	2	...	...	...
Cessnock	14,510	1	...	9	...	37	2	...	...	1	...	...	...	3	3	...	...
Hamilton	19,180	1	1	41	...	39	3	1	...	...	...	...	...	5	4	2	1
Lambton	4,430	...	...	4	...	11	...	...	...	2	...	...	...	4	3	...	...
Maitland, East	4,180	...	...	1	...	8	...	...	...	...	...	...	...	...	...	...	...
,, West	8,210	1	...	3	...	5	1	...	...	...	...	...	...	2	2	1	...
Merewether	8,160	1	...	11	...	35	...	...	...	...	...	...	1	5	3	...	...
Morpeth	1,040	11	1	1	...	6	...	...	...	...	...	...	...	...	...	...	...
Newcastle	13,750	...	...	5	...	26	...	...	...	...	...	...	...	9	3	1	...
New Lambton	6,380	...	...	10	...	6	...	...	...	...	...	...	...	1	...	...	...
Raymond Terrace	930	...	...	...	...	2	...	...	...	...	...	...	...	...	1	1	...
Singleton	3,690	...	...	1	...	12	2	...	...	...	...	...	...	1	2	...	...
Stockton	5,710	...	...	10	...	8	1	...	...	...	...	...	...	3	...	...	1
Wallsend	7,000	1	1	13	1	40	3	...	...	...	...	...	...	3	1	1	...
Waratah	20,480	...	...	29	1	66	...	...	...	...	...	...	...	10	8	2	...
Wickham	12,010	1	1	13	1	43	1	...	...	...	...	...	...	2	5	1	2
SHIRES.																	
Bolwarra	3,620	...	...	4	...	4	...	...	...	...	...	...	...	...	...	...	...
Kearsley	27,300	...	...	8	...	77	3	...	...	1	...	...	...	7	14	...	...
Lake Macquarie	30,000	...	...	35	1	81	2	...	...	...	...	1	2	11	16	2	2
Port Stephens	4,230	1	...	...	...	5	...	...	...	...	...	...	...	1	1	...	...
Tarro	9,610	...	...	1	...	19	...	...	...	1	1	...	...	1	1	1	1
Harbour of Port Hunter.	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	212,590	18	4	209	4	547	18	1	...	5	1	1	3	71	68	13	7

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, 1934.

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	980	...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...
Albury	10,730	2	...	3	...	55	2	1	...	1	...	...	1	...	5	...	...
Armidale	6,860	...	...	2	...	24	...	...	...	...	...	...	...	...	...	...	...
Ballina	3,060	...	...	1	...	3	1	...	...	...	...	...	...	...	1	...	...
Balranald	1,290	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Barraba	1,470	3	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...
Bathurst	10,500	...	...	5	...	5	3	...	...	...	...	...	...	2	8	3	...
Bega	2,320	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
Berry	2,690	...	...	4	...	1	...	...	...	...	...	...	...	...	1	...	...
Bingara	1,480	1	...	1	...	43	1	...	...	...	...	...	...	...	...	3	1
Blackheath	1,460	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...
Blayney	1,660	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Bombala	950	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Bourke	1,810	...	...	...	...	1	...	...	...	...	...	...	...	2	2	...	...
Bowral	3,090	...	...	4	...	...	...	...	...	...	...	...	...	1	2	...	...
Braidwood	1,090	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
Brewarrina	830	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Broken Hill	26,850	10	...	36	...	42	...	...	1	...	...	...	...	13	22	...	...
Broughton Vale	330	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burrowa	1,540	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Camden	2,420	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...
Campbelltown	2,860	...	...	3	...	2	...	...	...	...	...	...	...	...	...	...	...
Carcoar	470	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...
Casino	5,580	...	...	...	...	7	...	1	...	...	...	...	...	...	...	...	...
Castlereagh	1,140	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Cobar	1,160	...	...	...	...	14	...	...	...	...	...	...	...	...	2	1	...
Condobolin	2,650	2	1	2	...	31	1	...	...	...	...	...	...	1	3	...	...
Cooma	1,990	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Coonamble	2,750	...	...	...	...	2	1	...	...	...	...	...	...	2	4	...	...
Cootamundra	4,730	...	...	28	...	50	...	...	...	...	...	...	...	2	2	...	...
Corowa	2,800	...	...	1	...	18	...	2	...	...	...	...	...	...	2	...	...
Cowra	5,140	1	...	...	...	22	...	...	...	...	...	...	...	1	1	...	...

REMAINDER OF STATE.—Return showing the number of Cases, etc., 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	3,240	2	1	4	...	30	...	...	...	...	...	...	...	1	1	...	...
Dubbo	8,380	...	...	23	...	47	...	...	...	...	...	...	...	1	3	...	...
Dungog	2,180	...	...	...	...	9	...	...	...	...	...	...	...	2	...	...	...
Forbes	5,420	...	...	3	...	7	2	...	...	...	...	...	...	4	2	...	...
Gerringong	900	...	...	4	...	1	...	...	...	...	...	...	...	...	...	...	...
Glen Innes	5,400	1	...	1	...	38	1	...	...	...	...	...	...	1	...	...	...
Goulburn	14,950	1	...	7	...	72	3	...	...	...	...	...	...	5	1	...	...
Grafton	6,600	2	1	2	...	5	...	...	...	...	...	...	...	...	...	...	...
Grafton South	2,200	3	...	...	...	2	1	...	...	...	...	...	...	1	1	1	...
Grenfell	2,490	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	1
Gulgong	1,730	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...
Gunnedah	3,690	1	1	...	...	31	...	...	...	...	...	...	...	6	2	1	...
Hay	3,200	5	...	3	...	20	2	...	...	...	...	...	...	2	2	...	...
Hillston	1,160	...	...	2	...	...	...	...	...	...	...	...	...	1	1	1	...
Illawarra North	7,850	...	...	3	...	26	...	...	...	...	...	...	...	3	4	...	...
Inverell	5,390	...	...	...	...	9	1	...	...	...	...	...	...	...	1		...
Jamberoo	1,110	...	...	...	...	...	...	...	...	...	...	...	...	1	3	...	...
Junee	4,230	...	...	5	...	22	...	...	...	...	...	...	...	...	...	...	...
Katoomba	6,540	...	...	4	...	3	...	...	...	...	...	1	1	24	9	...	1
Kempsey	4,970	...	...	2	...	5	1	1	...	...	...	...	...	...	1	...	...
Kiama	2,470	...	...	1	...	7	...	...	...	...	...	...	...	...	...	...	...
Lismore	12,110	1	...	1	...	25	1	...	...	...	...	...	...	7	1	1	2
Lithgow	13,470	1	...	4	...	16	...	...	...	...	...	...	...	3	3	...	...
Maclean	1,610	...	...	...	...	3	...	1	1	...	...	...	...	...	...	...	...
Manilla	1,810	...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...
Mittagong	1,790	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
Moama	780	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Molong	1,550	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Moree	4,460	...	...	2	...	51	...	...	...	...	...	...	...	5	3	...	...
Mudgee	4,030	...	...	2	...	5	...	...	...	...	...	...	...	7	2	...	...
Mullumbimby	1,370	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Murrumburrah	2,870	1	...	...	...	3	...	...	...	...	...	...	...	...	1	...	...
Murrurundi	1,250	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
Murwillumbah	4,010	...	...	...	...	14	...	...	...	...	...	...	...	1	...	...	...
Muswellbrook	3,310	...	...	...	...	42	...	...	...	...	...	...	...	2	...	...	...
Narrabri	2,990	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Narrabri West	1,040	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Narrandera	4,180	1	1	2	...	34	2	...	...	...	...	...	...	1	4	2	...
Narromine	1,670	...	...	32	1	2	...	...	...	...	...	...	...	...	...	...	...
Nowra	3,020	1	1	...	...	1	...	...	...	...	...	...	...	3	2	...	...
Nyngan	1,590	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
Orange	9,710	...	...	19	1	14	3	...	...	...	...	...	...	5	2	...	...
Parkes	5,910	3	...	7	...	4	1	...	...	...	...	...	...	1	...	1	...
Peak Hill	1,240	1	...	24	1	...	...	...	...	...	...	...	...	2	1	...	2
Penrith	3,960	...	...	1	...	2	...	...	...	...	...	...	...	2	3	1	...
Picton	1,050	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...
Port Macquarie	1,810	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Queanbeyan	4,070	...	...	...	...	173	3	...	...	...	...	...	...	2	...	...	...
Quirindi	2,630	...	...	2	...	...	...	...	...	...	...	...	...	1	2	1	...
Richmond	2,390	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Scone	2,230	...	...	5	...	20	1	...	...	...	...	...	...	2	...	...	1
Shellharbour	1,920	...	...	...	...	2	...	...	...	1	...	...	...	1	1	...	...
Shoalhaven South	820	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
St. Marys	2,930	...	...	1	...	11	...	...	...	...	...	...	...	...	1	...	2
Tamworth	10,090	...	...	6	...	189	4	...	1	...	...	...	...	3	2	...	...
Taree	4,670	...	...	2	...	13	...	...	...	...	...	...	...	1	...	...	...
Temora	3,900	...	...	1	...	14	1	...	...	...	...	...	...	2	1	...	...
Tenterfield	2,640	...	...	...	...	2	1	...	...	...	...	...	...	1	...	...	1
Ulladulla	1,460	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Ulmarra	1,990	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
Uralla	1,070	1	...	...	...	3	...	...	...	...	...	...	...	...	1	...	...
Wagga Wagga	11,790	...	...	9	...	16	...	...	...	...	...	...	...	11	7	...	...
Walcha	1,530	...	...	1	...	3	...	...	...	...	...	...	...	...	1	...	...
Wallendbeen	650	...	...	1	...	3	1	...	...	...	...	...	...	...	...	...	...
Warren	1,600	...	...	1	...	3	...	...	...	...	...	...	...	...	...	...	...
Wellington	4,360	...	...	17	...	26	...	...	...	...	...	...	...	...	...	...	...
Wentworth	840	2	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...
Wilcannia	630	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Windsor	3,260	...	...	...	...	2	...	...	...	...	...	...	...	2	3	...	...
Wingham	1,660	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Wollongong	11,730	...	...	1	...	30	...	...	...	...	...	...	...	5	3	...	
Wyalong	970	...	...	...	...	...	...	...	...	...	...	...	...	3	1	...	
Yass	2,900	...	...	4	...	7	...	1	1	...	...	...	...	1	1	...	...
Young	4,060	4	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...
Total, Municipalities	390,190	50	6	308	3	1,423	38	8	3	2	...	1	2	157	117	21	14

Excludes Broken Hill deaths, but includes Broken Hill population.

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

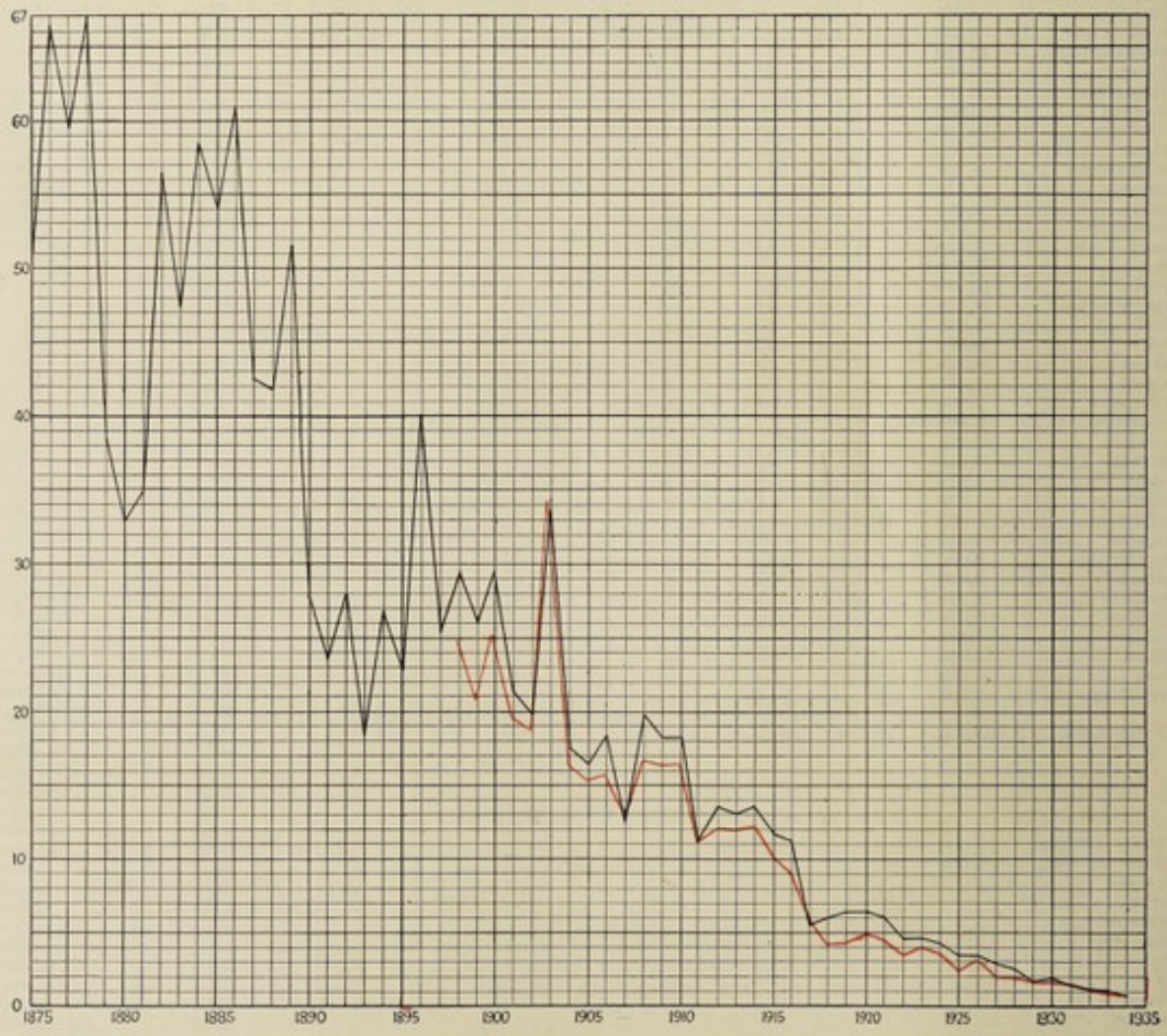
Shire.	Estimated Mean Population.	Typhoid and Paratyphoid.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
		C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.
SHIRES.																	
Abercrombie	4,320	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Amaroo	2,900	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...
Ansley	2,950	...	...	1	...	3	1	...	...	...	...	...	...	...	1	...	...
Ashford	3,830	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bannockburn	3,400	1	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...
Barraba	2,150	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...
Baulkham Hills	8,180	...	...	2	...	10	...	2	...	...	...	...	...	...	4	...	...
Bellingen	6,210	...	...	...	...	4	...	...	...	...	...	...	...	...	4	1	...
Berrigan	4,560	...	...	2	...	6	...	...	...	1	...	...	...	...	1	...	...
Bibbenluke	2,960	...	...	3	...	11	1	...	...	...	...	...	...	...	...	...	...
Blacktown	13,880	...	...	7	...	24	...	1	...	...	...	...	...	6	11	...	...
Bland	11,320	3	1	18	1	5	3	...	...	...	...	...	...	...	...	...	...
Blaxland	8,650	...	...	17	...	9	...	...	...	...	...	...	...	2	2	...	...
Blue Mountains	6,920	...	...	2	...	2	...	...	...	...	...	...	...	16	13	...	...
Bogan	1,950	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Booloorco	3,490	...	...	1	...	11	1	...	...	...	...	...	...	...	...	...	...
Boorni	3,170	...	...	1	...	14	...	...	...	...	...	...	1	...	1	...	...
Boree	6,870	...	...	5	...	98	3	...	...	2	...	...	...	...	2	...	...
Bulli	15,070	...	...	7	...	48	...	1	...	...	1	...	...	8	9	...	...
Burrangong	5,920	1	1	1	...	2	...	1	1	...	...	...	...	...	2	...	...
Byron	7,960	...	...	1	...	6	...	...	...	...	...	...	...	...	2	...	...
Cambewarra	1,180	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Canobolas	8,960	...	...	8	2	9	...	...	...	...	...	...	...	...	3	...	...
Carrathool	5,760	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clyde	1,910	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...
Cobborah	5,340	...	...	3	...	5	...	...	...	...	...	...	...	1	1	...	...
Cockburn	5,000	...	...	1	...	56	1	...	...	...	...	...	...	...	...	...	...
Colo	5,310	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Conargo	1,180	...	...	3	...	...	...	...	...	...	...	...	...	...	1	...	...
Coolah	2,150	1	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...
Coolamon	7,140	...	...	12	...	11	...	...	...	...	...	...	...	1	...	...	1
Coonabarabran	6,840	...	...	...	...	10	...	...	...	...	...	...	...	2	2	...	...
Copmanhurst	3,440	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Coreen	3,340	...	...	6	...	24	...	1	...	1	...	...	...	...	1	...	...
Crookwell	6,440	...	...	1	...	26	...	...	...	...	...	...	...	...	3	2	...
Cudgegong	5,840	...	...	4	...	1	...	...	...	...	...	...	...	...	2	...	
Culcairn	5,450	1	...	1	...	6	...	...	...	...	...	...	...	...	...	...	...
Dalgety	3,590	...	...	2	...	...	...	...	...	...	...	...	...	2	...	1	...
Demondrille	3,300	...	...	...	...	5	...	...	...	...	...	...	...	...	1	...	...
Dorrigo	10,780	...	...	...	...	8	...	...	...	...	...	...	...	1	...	1	2
Dumaresq	4,390	...	...	3	...	15	2	...	...	...	...	...	...	...	...	...	...
Erina	17,390	...	...	13	...	18	2	...	...	...	...	...	...	6	3	2	...
Eurobodalla	5,270	...	...	1	...	6	...	...	...	...	...	...	...	4	2	...	...
Gilgandra	5,490	...	...	5	...	42	1	...	...	...	...	...	...	...	2	...	...
Gloucester	4,500	...	...	1	...	13	...	...	...	...	...	...	...	1	2	...	...
Goobang	6,800	1	...	2	...	3	...	...	...	...	...	...	...	1	2	1	...
Goodradigbee	3,590	...	...	1	...	4	...	...	...	...	...	...	...	...	1	1	1
Gostwyck	4,270	...	...	2	...	9	1	...	...	...	...	...	...	...	...	...	...
Gundagai	5,340	...	...	3	...	96	5	...	...	...	...	...	...	1	3	...	...
Gundarimba	4,630	...	...	...	...	3	...	...	...	...	...	...	...	...	2	...	...
Gunning	3,190	...	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...
Guyra	6,630	...	...	...	...	10	...	...	...	1	...	...	...	...	1	2	1
Gwydir	1,810	...	...	2	...	16	...	...	...	...	...	...	...	...	...	...	...
Harwood	4,640	...	...	1	...	5	1	...	...	...	...	...	...	...	1	...	...
Hastings	9,390	...	...	...	...	6	1	...	...	...	...	...	...	1	1	...	...
Holbrook	2,680	1	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...
Hume	5,360	3	2	1	...	29	...	...	...	...	...	...	...	1	1	...	...
Illabo	2,900	...	...	1	...	2	1	...	...	...	1	...	...	...	...	...	...
Illawarra Central	8,860	...	...	...	...	27	1	...	...	...	...	...	...	4	2	...	...
Imlay	4,830	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Jemalong	4,390	...	...	3	...	...	...	...	...	...	...	...	...	...	1	...	...
Jerilderie	1,780	...	...	1	...	5	...	...	...	...	...	...	...	2	1	...	...
Jindalee	1,940	...	...	3	...	27	1	...	...	...	...	...	...	...	...	...	...
Kyeamba	4,590	...	...	...	...	8	1	...	...	...	...	...	...	...	1	...	...
Kyogle	11,680	...	...	6	...	11	...	...	...	...	...	...	...	...	2	...	...
Lachlan	8,200	1	1	3	...	7	...	...	...	...	...	...	...	...	...	...	...
Liverpool Plains	5,310	...	...	3	...	18	...	...	...	...	...	...	...	...	2	...	1
Lockhart	5,550	...	...	14	...	6	...	...	...	...	...	...	...	1	1	...	...
Lyndhurst	5,340	...	...	2	...	14	1	...	...	...	...	...	...	...	3	...	...
Mcintyre	1,620	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Macleay	8,720	...	...	...	...	1	...	...	...	...	...	...	...	...	5	...	1
Macquarie	4,560	...	...	5	...	9	...	...	...	...	...	...	...	...	3	...	...
Mandowa	1,940	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Manning	14,190	2	1	...	...	31	...	...	...	...	...	...	...	1	2	2	1
Marthaguy	2,210	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Merriwa	3,110	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...
Mitchell	4,160	...	...	5	...	...	...	...	...	...	...	...	...	...	1	...	...
Monaro	2,630	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	1
Mulwaree	7,290	...	...	2	...	6	...	...	...	...	...	...	...	...	1	...	...
Mumbulla	4,640	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	1
Murray	3,190	...	...	2	...	2	...	...	...	...	...	...	...	...	...	...	...
Murrumbidgee	830	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
Murrungal	2,640	...	...	1	...	3	...	...	...	...	...	...	...	...	...	...	...

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 ...	4,040	...	...	2	...	4	...	...	...	...	...	...	...	1	...	1	1
Nambucca	7,660	...	...	...	...	2	...	...	...	...	...	...	...	2	1	...	...
Namoi	8,100	...	...	1	...	42	1	...	...	...	...	...	...	...	...	1	...
Narrabarra	4,330	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...
Nattai	3,770	...	...	3	...	3	...	...	...	...	...	...	...	...	2	...	...
Nepean	3,440	...	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...
Nundle.....	1,800	...	...	1	...	17	1	...	...	...	...	...	...	...	...	...	...
Nymboida	2,820	...	...	...	...	2	...	1	...	1	...	...	...	...	...	...	...
Oberon.....	2,920	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Orara	2,130	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Patrick's Plains ...	6,690	...	...	1	...	5	...	...	...	1	1	...	...	...	...	...	...
Peel	6,500		...	4	...	33	1	...	...	...	...	...	...	...	2	...	...
Rylstone	5,650	...1	...	4	...	1	...	...	...	...	...	...	...	...	...	...	...
Severn	6,300	...	...	...	...	65	1	...	...	...	...	...	...	...	1	1	...
Stroud	6,470	1	...	...	...	83	2	...	...	...	...	...	...	1	1	...	...
Sutherland	13,830	...	...	16	...	43	...	...	...	...	...	...	...	6	4	...	...
Talbragar	3,980	...	...	4	...	7	1	...	...	...	...	...	...	...	...	...	...
Tallaganda	2,490	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Tamarang	3,050	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Tenterfield	5,380	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...
Terania	7,650	1	...	...	...	10	2	...	...	...	...	...	...	...	...	...	...
Timbrebongie ...	4,390	1	...	16	...	9	...	...	...	1	...	...	...	1	...	...	...
Tintenbar	5,310	...	...	1	...	5	...	...	...	...	...	...	...	...	1	...	...
Tomki	4,000	...	...	...	...	3	1	...	1	...	...	...	...	...	...	...	...
Tumbarumba	2,960	...	...	...	...	36	...	...	...	...	...	...	...	...	...	...	...
Tumut	7,890	...	...	5	...	39	1	...	...	...	...	...	...	2	3	...	...
Turon	4,370	...	...	...	...	1	...	...	1	...	...	...	...	1	3	...	...
Tweed	13,380	...	...	2	...	20	...	...	...	...	...	...	...	2	1	...	...
Upper Hunter ...	4,850	...	...	5	...	22	...	...	...	...	...	...	...	...	1	...	...
Urana	3,220	...	...	5	...	3	...	...	...	...	...	...	...	...	...	1	...
Wade	8,580	...	...	5	...	10	...	...	...	...	...	...	...	2	2	...	...
Wakool	4,220	...	...	...	...	48	...	...	...	...	...	...	...	...	...	...	...
Walgett	3,680	...	...	...	...	3	...	...	...	...	...	...	...	1	1	...	...
Wallarobba	5,330	...	...	1	...	11	...	...	...	...	...	...	...	...	...	...	...
Waradgery	1,090	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Warrah	2,220	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Waugoola	6,340	...	...	5	...	20	1	...	...	...	...	...	...	...	...	...	1
Weddin	4,020	1	...	...	...	2	...	...	...	...	...	...	...	...	1	...	...
Willimbong	7,870	2	...	7	...	9	...	...	...	...	...	...	...	2	...	...	1
Windouran	800	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wingadee	3,510	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Wingecarribee ...	6,620	...	...	24	2	15	...	...	...	...	...	...	...	2	4	...	...
Wollondilly	6,460	...	...	7	...	2	...	...	...	...	...	...	...	1	3	...	...
Woodburn	4,510	...	...	...	...	3	...	...	...	...	...	...	...	1	2	...	...
Woy Woy	2,570	...	...	2	...	...	...	...	...	...	...	...	...	...	2	...	...
Wyaldra	2,430	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Yallaroi	4,330	...	...	2	...	36	...	...	...	...	...	...	...	...	1	...	1
Yanco	5,180	...	...	1	...	8	...	...	...	...	...	...	...	...	1	...	...
Yarrowlumla	2,190	...	...	...	...	11	...	...	...	...	...	...	...	...	1	...	...
Total Shires ...	683,370	22	6	332	5	1,438	44	8	3	8	3	...	1	90	154	17	14
COUNTRY POLICE DISTRICTS.																	
Western Division (Unincorporated)..	18,850	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...
Balranald	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bourke.....	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Brewarrina	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Broken Hill.....	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cobar	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hay	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hillston	.....	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
Menindie	.....	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mitchell	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Nyngan	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Walgett	.....	...	...	1	...	13	...	...	...	...	...	...	...	...	...	...	...
Wentworth	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wilcannia	.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	18,850	2	...	3	...	13	...	...	...	...	...	...	...	...	3	...	...
Migratory	5,057	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lord Howe Island	160	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Outside the State—																	
Fed. Cap. Ter.	.....	...	...	...	...	27	...	...	...	...	...	...	...	...	...	...	...
Queensland ...	.....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Victoria	.....	1	...	2	...	108	...	...	...	...	...	...	...	...	...	...	...
South Australia	.....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	2,623,817	2	...	2	...	136	...	...	...	...	...	...	...	...	...	...	...

TYPHOID FEVER.

Annual Death Rate, New South Wales per 100,000 of the Population, 1875-1934.
" Case " " " " " 10,000 " " 1898-1934.
Death Rate—BLACK Line. Case Rate—RED Line.

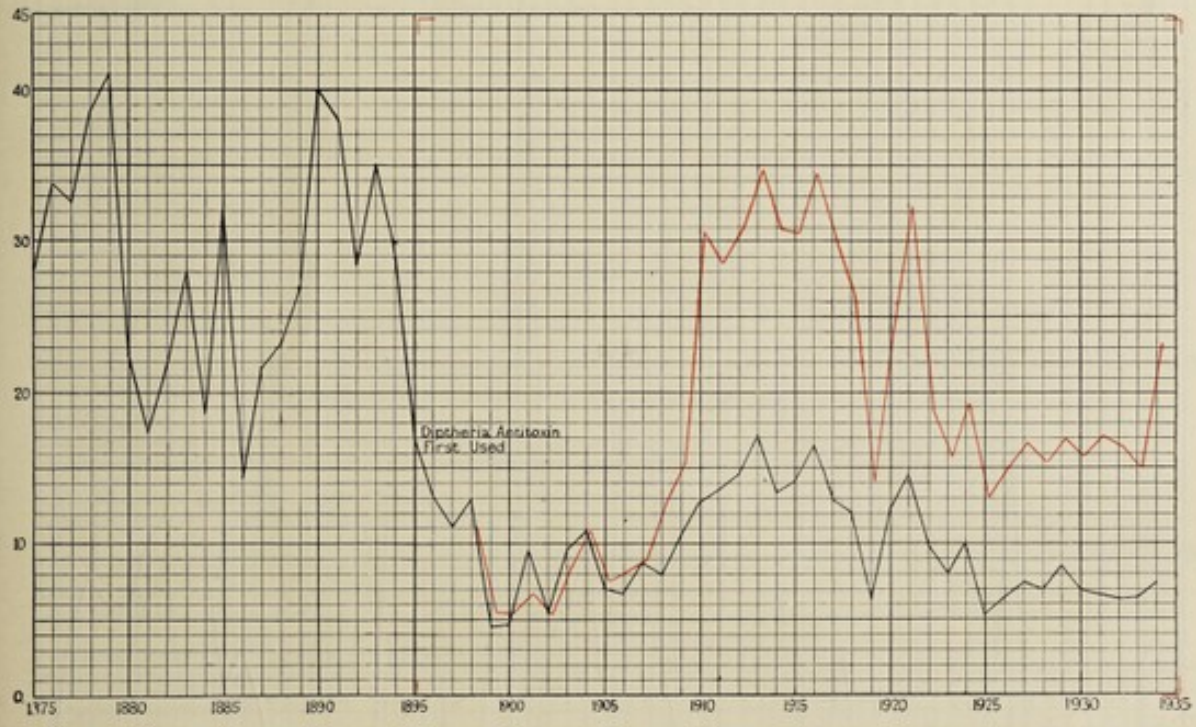


DIPHTHERIA.

Annual Death Rate, New South Wales, per 100,000 of the Population, 1875-1934.

„ Case „ „ „ „ „ 10,000 „ „ 1898-1934.

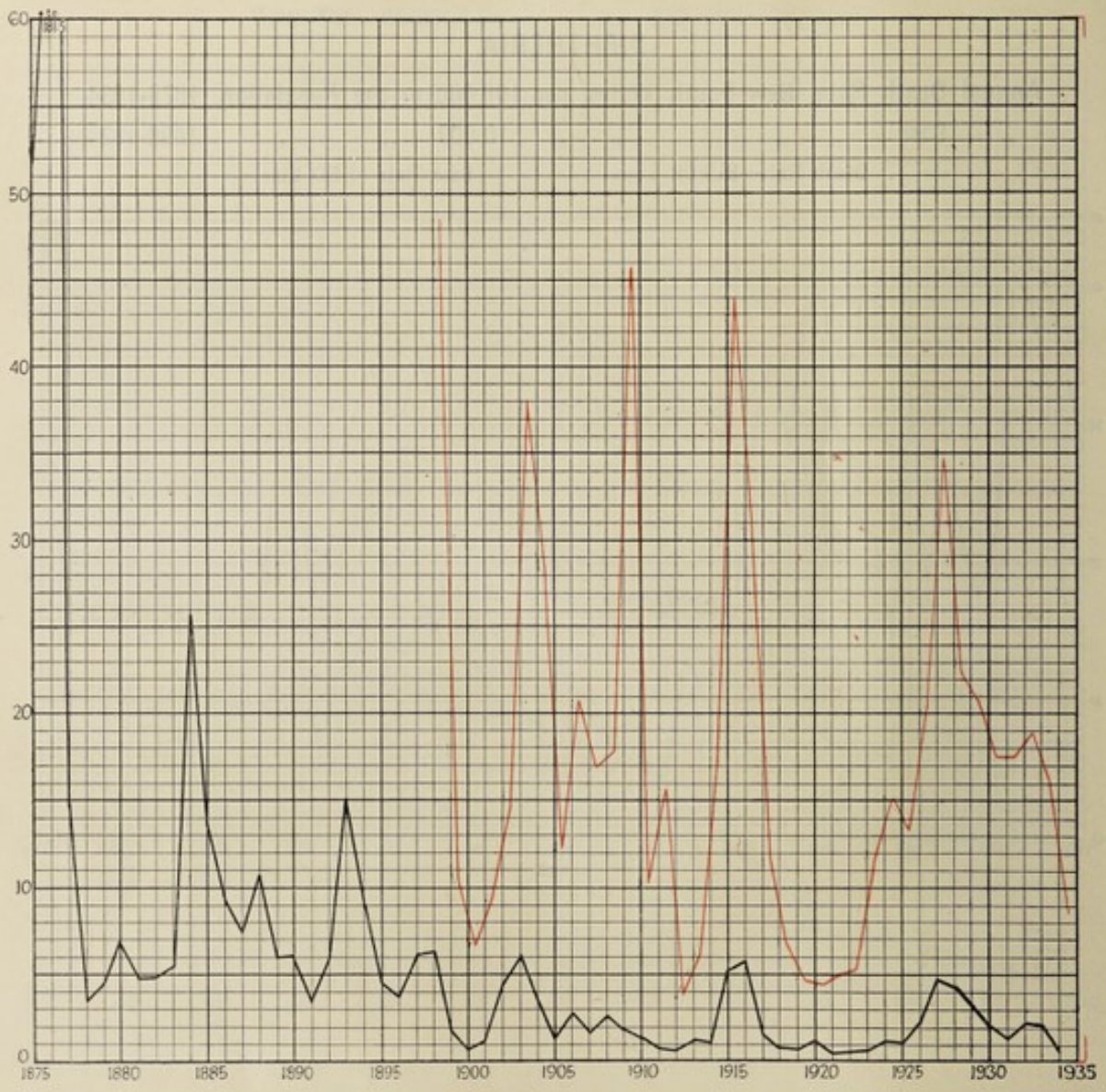
Death Rate—BLACK Line. Case Rate—RED Line.



SCARLET FEVER.

Annual Death Rate, New South Wales, per 100,000 of the Population, 1875-1934.
" Case " " " " " 10,000 " " 1898-1934.

Death Rate—BLACK Line. Case Rate—RED Line.



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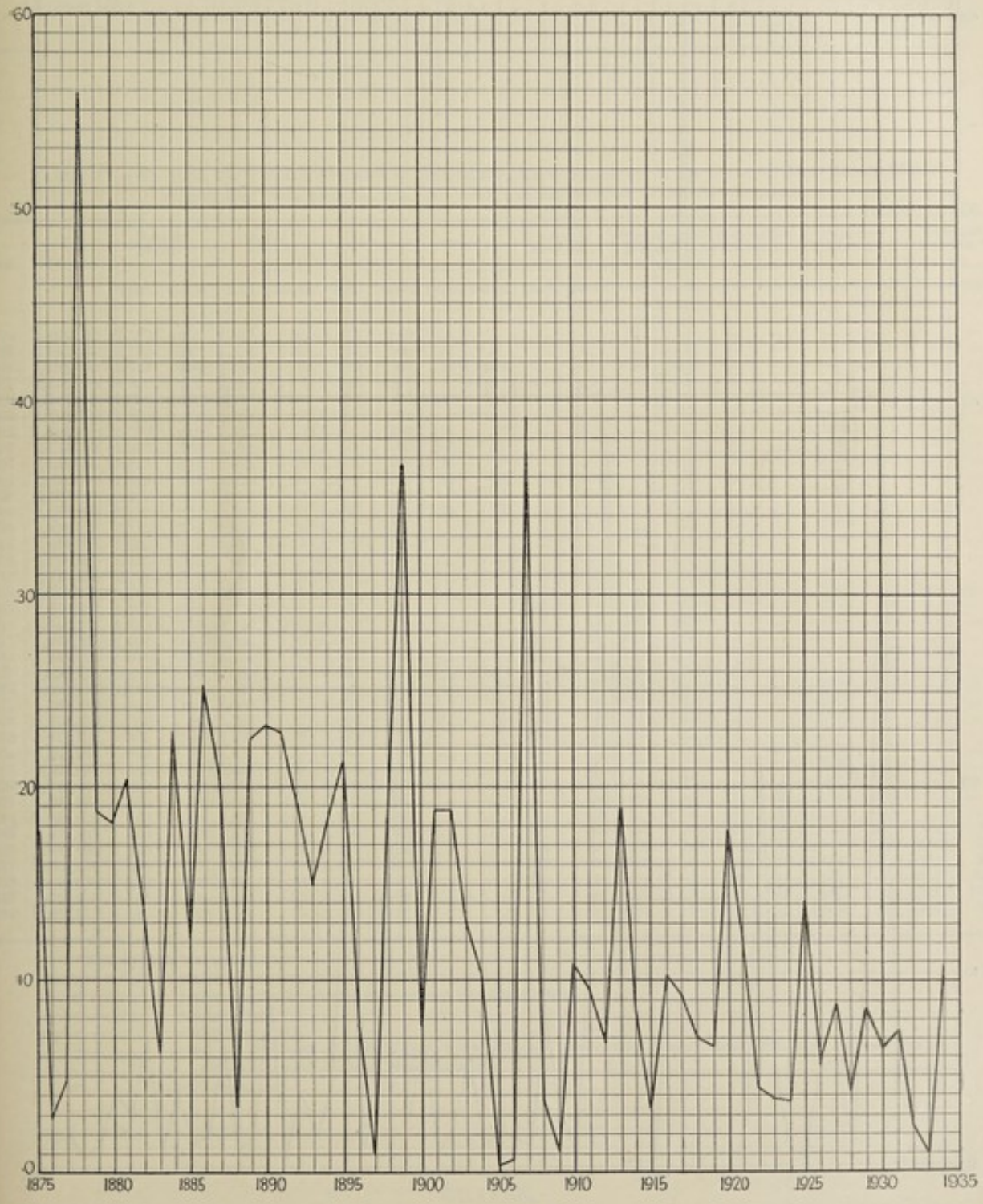
WHOOPING COUGH.

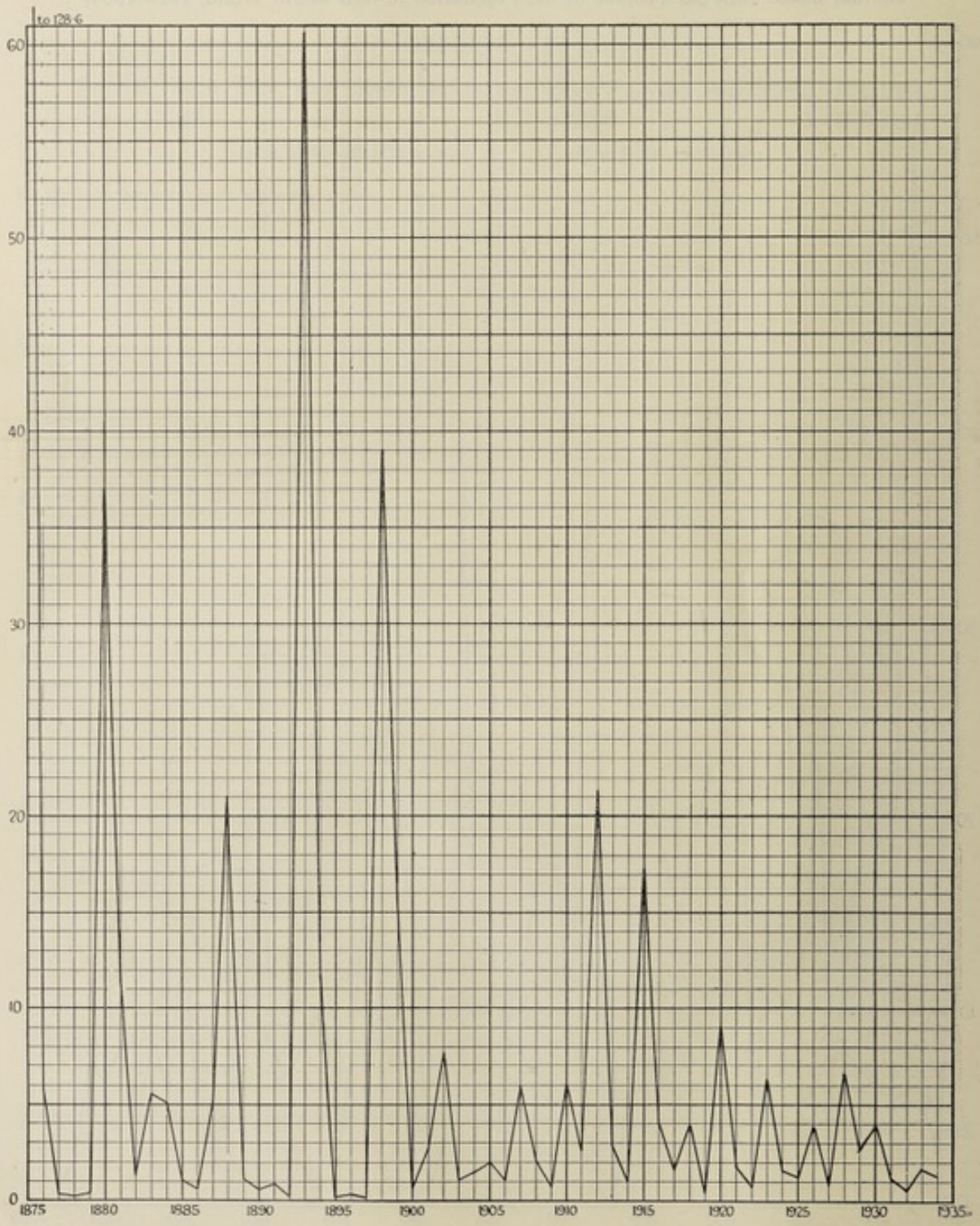
Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1934.



*85383—M

MEASLES.

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1934.



SUMMARY, 1934.

District.	Typhoid Fever.		Scarlet Fever.		Diphtheria.		Infantile Paralysis.		Cerebro-spinal Meningitis.		Encephalitis Lethargica.		Pulmonary Tuberculosis.		Puerperal Infection.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Metropolitan Combined Sanitary District	49	3	1,314	7	2,746	93	77	6	14	3	4	9	1,191	591	187	28
Hunter River Combined District	18	4	209	4	547	18	1	...	5	1	1	3	71	68	13	7
Broken Hill District	10	...	36	...	42	...	...	1	...	...	...	...	13	22	...	...
Remainder of State—																
Municipalities	40	6	272	3	1,381	38	8	3	2	...	1	2	234	117	21	14
Shires	22	6	332	5	1,438	44	8	3	8	3	...	1		154	17	14
Police Districts	2	...	3	...	13	...	...	...	...	...	...	...		3	...	...
Lord Howe Island	...	...	...	...	...	...	...	...	...	...	...	...		...	...	...
Total	141	19	2,166	19	6,167	193	94	13	29	7	6	15*	1,509	955	238	63

* Includes deaths from non-notifiable forms of Encephalitis.

TABLE IV.—Showing the number of Cases of Infectious Diseases notified in the State of New South Wales during the years 1898 to 1934, inclusive, and the number of deaths therefrom.

Year.	Population.	Typhoid Fever.*		Scarlet Fever.*		Diphtheria.*		Plague.†		Infantile Paralysis.‡		Cerebro-spinal Meningitis.§		Encephalitis Lethargica.		Pulmonary Tuberculosis.¶		Puerperal Infection.**	
		Cases.	Deaths.	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	...	...	...	...	...	...	...	...	...	...	...	...
1899	1,344,080	2,783	347	1,389	25	741	60	...	...	...	...	...	...	...	...	...	...	...	...
1900	1,364,590	3,442	398	895	9	726	63	303	103	...	...	...	...	...	...	...	...	...	...
1901	1,376,199	2,702	291	1,288	16	922	131	...	...	...	...	...	...	...	...	...	...	...	...
1902	1,397,858	2,624	276	2,010	61	757	74	140	41	...	...	...	...	...	...	...	...	...	...
1903	1,416,879	4,855	475	5,358	87	1,214	134	2	...	...	...	...	...	...	...	...	...	...	...
1904	1,440,919	2,370	249	4,056	50	1,584	156	12	6	...	...	...	...	...	...	146	...	...	...
1905	1,469,153	2,226	239	1,773	21	1,118	102	56	21	...	...	...	...	...	...	128	...	...	...
1906	1,498,609	2,373	271	3,085	42	1,219	100	20	8	...	...	...	...	...	...	118	...	...	...
1907	1,531,980	1,972	189	2,570	26	1,376	133	51	20	...	...	...	...	...	...	161	...	...	...
1908	1,560,026	2,607	307	2,755	40	2,001	123	6	3	...	...	...	...	...	...	112	...	...	...
1909	1,596,685	2,615	287	7,178	30	2,419	166	24	7	...	...	...	...	...	...	196	...	...	...
1910	1,638,220	2,714	294	1,642	23	4,989	207	...	...	...	...	...	...	...	...	184	...	...	...
1911	1,698,735	1,864	184	2,618	11	4,784	226	...	...	...	...	...	...	...	...	222	...	...	...
1912	1,778,962	2,126	236	662	11	5,440	253	...	...	...	...	...	...	...	...	265	...	...	...
1913	1,832,546	2,187	236	1,120	23	6,380	310	...	...	47	10	...	...	...	...	228	...	...	...
1914	1,862,028	2,284	250	3,207	21	5,831	247	...	...	79	14	...	...	...	...	293	...	...	...
1915	1,868,644	1,941	219	8,335	97	5,838	264	...	...	63	11	50	33	...	...	361	86	...	...
1916	1,846,736	1,742	209	5,759	107	6,588	309	...	...	311	21	309	145	...	...	1,499	666	...	...
1917	1,886,701	1,091	103	2,255	27	5,805	247	...	...	16	12	197	98	...	...	1,319	584	...	...
1918	1,928,174	810	112	1,308	15	5,151	221	...	...	50	12	120	80	...	...	1,308	586	...	...
1919	2,000,173	857	106	959	10	2,826	114	...	...	8	3	28	23	...	...	1,102	678	...	...
1920	2,099,763	1,016	132	937	24	5,043	263	...	...	45	10	34	27	...	...	1,509	674	...	...
1921	2,128,786	949	129	1,060	8	6,854	306	2	1	184	22	30	28	...	...	1,240	791	...	...
1922	2,174,688	706	99	1,153	11	4,094	207	33	9	33	5	21	22	...	...	1,045	517	...	...
1923	2,211,106	873	104	2,623	13	3,480	176	1	1	104	8	27	22	...	...	1,218	657	...	...
1924	2,256,649	768	97	3,421	29	4,364	222	...	...	108	6	29	38	...	...	1,096	730	...	...
1925	2,300,081	533	80	3,043	27	3,004	118	...	...	57	14	37	27	...	...	1,195	617	...	...
1926	2,349,401	698	80	4,755	53	3,579	147	...	...	81	21	32	23	...	...	1,265	705	...	...
1927	2,401,884	460	68	8,369	113	4,059	179	...	...	25	4	25	10	3	27	1,158	632	...	...
1928	2,446,874	453	60	5,531	105	3,835	168	...	...	30	2	31	8	18	23	1,212	815	...	...
1929	2,479,147	438	45	5,219	78	4,274	215	...	...	241	29	28	10	26	30	1,215	1,152	44	79
1930	2,502,039	380	48	4,400	54	4,051	176	...	...	30	6	43	12	14	20	1,917	1,022	269	82
1931	2,519,300	340	35	4,477	36	4,432	168	...	...	103	10	30	9	20	16	1,588	1,014	319	83
1932	2,542,034	233	31	4,905	57	4,310	160	...	...	384	44	43	7	12	18	1,485	969	292	59
1933	2,613,776	188	28	4,259	55	3,912	169	...	...	13	4	24	5	11	15	1,441	951	222	100
1934	2,623,817	141	19	2,166	19	6,167	193	...	...	94	13	29	7	6	15	1,509	955	238	63

* Notifiable from 1st January, 1898.
† " 23rd January, 1900.
‡ " 1st February, 1912. Proclamation re-issued 14th August, 1931.
§ " 1st April, 1926.
‖ " 11th October, 1915.
¶ " 1904, city of Sydney only; from 1915, Metropolitan and Hunter River Districts; from 1916, Blue Mountain Districts. Notification extended to whole State, March, 1929.
** " 16th August, 1929.

GRAPHS.

Typhoid Fever, Scarlet Fever, Diphtheria ... } Annual Death-rate per 100,000 (1875–1934) and case rate per 10,000 of population (1898–1934).

Whooping Cough, Measles ... } Annual Death-rate per 100,000 of population in New South Wales, 1875-1934.

DIVISION OF VENEREAL DISEASES.

REPORT of the Director, Division of Venereal Diseases (J. COOPER BOOTH, M.B., Ch.B.) to the Commissioner under the Venereal Diseases Act, 1918 (E. SYDNEY MORRIS, M.D., Ch.M., D.P.H., Director-General of Public Health) for the year ending 31st December, 1934.

STAFF.

Medical Officers: J. H. ABBOTT, M.B., Ch.M.; H. V. HANSON, M.B., Ch.M. *Clerical*: L. Maher and two assistants, one clinic assistant and four attendants.

The total number of cases of infection (4,721) notified during the year 1934 is small, and cannot be regarded as a true indication of the incidence of venereal disease. It is regrettable that there are apparently still some medical practitioners who do not comply with the requirements of the Venereal Diseases Act. Unless the medical profession will co-operate more in the attempt to control venereal disease, it will be impossible to make the desired progress, and these diseases, the spread of which is definitely preventable, will continue to flourish as in the past.

To blame a Government because ideal action has not been taken is foolish, for these diseases are part of the most intimate life of society, and are such that the preliminary move for really effective control must come from those most intimately concerned. Much can be done once public opinion is strongly aroused, but to attempt to introduce and enforce effective measures before the public have been adequately prepared is to court failure.

It seems extraordinary that nations are content to permit a group of devastating infections to continue to take toll in ruined lives and in social misery, generation after generation, and yet not demand that world-wide active measures shall be taken to prevent them.

The majority of infections do not come from professional prostitutes. By professional prostitute we mean the woman who sells her services for cash. A larger group of women occasionally prostitute themselves in exchange for luxuries, and though this is really professional prostitution by barter, we have not classified these women as professionals, but as amateurs. In the majority of cases the amateur is infected, and spreads infection because she is amiably inclined towards the male sex and permits familiarity in return for amusement, etc., provided.

If parents would realise that the problem of venereal disease was one that concerned them intimately, and that it was their duty to be fully informed regarding these complaints, we would begin to progress. Moral education lies with the Church, and much can be done by the various religious bodies.

From a public health point of view, the problem is one of prevention and control of infection. We may begin to attempt to do this by :—

1. Educational propaganda.
2. Requiring a certificate of health from both parties before marriage (a blood test for syphilis being part of the medical examination).
3. The routine blood examination of every pregnant woman for syphilis.
4. Obtaining the name and address of the person accused of having conveyed infection, and having him or her examined and brought under treatment if found infective.
5. The establishment of adequate facilities for prophylaxis and treatment.

Such activities would require to be Commonwealth wide.

The enforcement of severe penalties will seldom do any good, but will usually tend to make people hide their infection or drive them to an unqualified person for treatment. There are occasions, however, when drastic action, even to the extent of imprisonment, may be necessary, and, under such circumstances, it is desirable that the power to enforce severe penalties should be available.

One fact is clear amid all the erratic and unconcerted efforts of the past and present, and that is that if nations would combine and agree upon an efficient basic scheme for the world-wide control of venereal disease, with minor modifications to adapt the scheme to the national characteristics of the various nations concerned, venereal disease could be satisfactorily controlled, and within three generations at most would become a rare condition.

These diseases exist to-day not because we are unable to control them on account of lack of knowledge, but because we have not dared to attempt to control them in a business-like manner.

A Board, consisting of one member from each State and from the Commonwealth Health Department, should meet at least twice in each year in a capital city in rotation, and confer on methods of administration and treatment. This would contribute towards united and uniform action within the Commonwealth of Australia, and should certainly have a decided influence on the control of venereal disease.

VENEREAL DISEASES ACT, 1918.

REPORT ON NOTIFICATIONS RECEIVED FOR THE YEAR ENDED 31ST DECEMBER, 1934.

Four thousand seven hundred and twenty-one notifications of venereal disease were received during 1934, a decrease of 88 compared with 1933. Of these notifications, 41·07 per centum came from private medical practitioners as compared with 30·19 per centum in 1933, and 40·92 per centum in 1932.

Syphilis.—Of the 4,721 total notifications received during 1934, 1,120 were for cases of syphilis (males 729 and females 391), a figure 179 below that for 1933. The sex ratio of notified cases of syphilis for 1934 was 1·84 males to one female. Of the cases of syphilis notified in 1934, 14·55 per centum were being treated privately as compared with 15·6 per centum in 1933 and 15·9 per centum in 1932. Of the total notifications of venereal disease in 1934, syphilis contributed 23·72 per centum as compared with 27·01 per centum in 1933 and 29·16 per centum in 1932. The notifications of syphilis gave a rate of 42·69 per 100,000 of population for 1934 compared with 49·9 per 100,000 in 1933 and 55·66 per 100,000 in 1932.

Gonorrhoea.—Of the 4,721 total notifications received during the year 1934, 3,149 were cases of gonorrhoea (males 2,539 and females 610), a figure 48 less than that for 1933. The sex ratio of notified cases of gonorrhoea was 4·16 males to one female. Of the cases of gonorrhoea notified in 1934, 43·25 per centum were being treated privately as compared with 30·28 per centum in 1933 and 47·66 per centum in 1932. The percentage of cases of gonorrhoea notified in the total notifications of venereal disease was 66·70 per centum for 1934 compared with 66·48 per centum in 1933 and 65·34 per centum in 1932. The notifications of gonorrhoea gave a rate of 120·02 per 100,000 of population for 1934 compared with 122·9 per 100,000 of population in 1933 and 124·99 per 100,000 for 1932.

Other Forms of Venereal Disease.

Soft Chancre (*Chancroid*).—Notifications were ·15 per centum of the total notifications for 1934 compared with ·08 per centum for 1933 and ·10 per centum for 1932.

Gonococcal Ophthalmia decreased to ·02 per centum of the total notifications for 1934 as compared with ·21 per centum in 1933 and ·12 per centum in 1932.

Venereal Warts reported were ·19 per centum of the total notifications for 1934 as compared with ·17 per centum for 1933 and ·25 per centum in 1932.

Gleet.—Notifications of this condition accounted for 9·17 per centum of the total notifications of venereal disease for 1934, compared with 6·05 per centum in 1933 and 4·98 per centum in 1932.

The term Gleet is an unsatisfactory one. A person either has or has not a gonococcal infection, and a careful examination will generally disclose the true facts. Strictly speaking, gleet is an episode in the process of resolution of gonococcal urethritis, and is a part of the experience of such infection. We have a suspicion that the term is frequently loosely used to describe a condition which, in the majority of cases, may be not only non-infective, but possibly not of gonococcal origin at all. We do not use the term for notification purposes at the Health Department Clinic.

VENEREAL DISEASE NOTIFICATIONS, 1929 TO 1934, INCLUSIVE.

Year.	Total Notifications.	Percentage Grouping in Notifications for Year.			Mean Population.	Rate per 10,000 of Mean Population.		
		Syphilis.	Gonorrhoea.	Other V.D.		Syphilis.	Gonorrhoea.	Other V.D.
1929	5,226	19·04	76·14	4·82	2,464,510	4·04	16·14	1·02
1930	5,225	27·02	68·08	4·90	2,489,657	5·67	14·29	1·03
1931	4,617	24·26	68·96	6·78	2,510,083	4·46	12·68	1·25
1932	4,842	29·16	65·34	5·50	2,531,330	5·57	12·5	1·06
1933	4,809	27·01	66·48	6 51	2,602,037	4·99	12·29	1·20
1934	4,721	23·72	66·70	9·58	2,623,817	4·27	12·00	1·72

Sex Ratio in Venereal Disease Notifications.—The sex ratio for the total notifications of venereal disease for 1934 is 3·68 males to one female. This is the lowest ratio recorded since the Venereal Diseases Act, 1918, came into force in December, 1920. The figures for the past fourteen years are as follows :—

1921	...	...	6·44	males to 1 female.		1928	...	...	5·00	males to 1 female.
1922	...	...	7·69	„	„	1929	...	...	5·28	„	„	„
1923	...	...	8·72	„	„	1930	...	...	4·40	„	„	„
1924	...	...	7·83	„	„	1931	...	...	3·94	„	„	„
1925	...	...	7·75	„	„	1932	...	...	4·27	„	„	„
1926	...	...	6·73	„	„	1933	...	...	4·21	„	„	„
1927	...	...	6·31	„	„	1934	...	...	3·68	„	„	„

In 1934 more women came under treatment (and were notified), than in any year back to 1921. 1921 was a loaded year, as the initial notifications due to the enforcement of the Venereal Diseases Act were recorded in that year.

Failure to continue Treatment.—The Act provides that the name and address of a patient, who discontinues treatment before being discharged as free from infection, shall be forwarded by his medical adviser to the Commissioner in order that steps may be taken to ensure resumption of treatment.

Any patient who fails to continue under treatment until cured is liable, on conviction, to a penalty not exceeding twenty pounds. During 1934 the names and addresses of 1,472 defaulters (1,181 males and 291 females) were notified—a figure 759 in excess of that for 1933.

Owing to wrong information having been given or patients having omitted to notify change of address, 665 letters were returned unclaimed, giving 45·17 per centum undelivered letters for 1934 compared with 20·62 per centum in 1933 and 40·03 per centum in 1932.

During 1934 it has been possible to " follow up " defaulters more satisfactorily, and at the end of the year there were only 40 cases unfinalised, and the percentage of defaulters remaining in default was 47·89 per centum, which figure is the lowest yet recorded.

The following table shows the percentage of notified defaulters in the last five years who remained apparent permanent defaulters :—

Year.	Total Defaulters Notified.	Resumed Treatment, Dead, or left State.	Remained in Default.	Percentage Remaining in Default.
1930	774	400	374	48·32
1931	709	325	384	54·16
1932	572	268	304	53·15
1933	713	191	522	73·21
1934	1,472	767	705	47·89

CLINICS.

Attendances at clinics for males numbered 138,567 for 1934 as compared with 110,533 for 1933 and 69,542 for 1932. This shows an increase of 99·26 per cent. in two years.

At the clinics for females the attendances were 30,167 for 1934 as compared with 27,315 for 1933, and 26,431 in 1932. This shows an increase of 14·13 per cent. in two years.

The sex ratio of attendances was 4·59 males to one female in 1934 compared with 4·05 males to one female in 1933, and 2·6 males to one female in 1932.

Metropolitan District.—No new clinics were opened in 1934. Ten clinics are in operation. One clinic for males is continuous (at the Health Department) and one clinic for females has six sessions a week (at the Rachel Forster Hospital for Women).

Newcastle District.—The Clinic at Newcastle was opened at the new Out-patients' Department, Newcastle Hospital, in June. Its establishment was long overdue. The section for venereal diseases is well equipped, and results will now largely depend on its reputation to attract and its ability to hold patients. The growth of this Clinic will be watched with particular interest.

District General Public Hospitals.—At 45 District Hospitals treatment has been made available to persons suffering from venereal disease. This is a decided advance in the provision of facilities for treatment in various parts of the State.

According to the provisions of the Venereal Diseases Regulations, 1919, all general public hospitals subsidised by the Government are prescribed places for attendance and treatment under the provisions of Section 4 of the Venereal Diseases Act, 1918.

Bed Accommodation.—Beds are available for 51 males and 59 females.

Health Department Clinic, (93 *Macquarie-street, City*).—The clinic attached to the Division of Venereal Diseases continued to expand, and the following figures give a record of the registrations and discharges for 1934 :—

Patients carried forward from 1933		1,155
New patients registered in 1934—		
Gonorrhoea	977	
Syphilis	316	
Venereal Warts	4	
	1,297	
Non-Venereal...	1,106	
		2,403
Former registered patients who have re-attended with fresh infections, etc.		372
Total		3,930

Attendances for 1934		...	87,119
Cases finalised during 1934		...	2,556 as follows :—
Discharged (cured)—			
Syphilis	7		
Gonorrhoea	708		
Non V.D.	939		
		———	1,654
Transfers—			
Syphilis	54		
Gonorrhoea	116		
Non V.D.	58		
		———	228
Left State—			
Syphilis	34		
Gonorrhoea	44		
Non V.D.	45		
		———	123
Defaulters—			
Undiagnosed	39		
Syphilis	91		
Gonorrhoea	275		
Non V.D.	146		
		———	551
Total		...	2,556
Patients remaining on Clinic and carried forward to 1935... ...		...	1,374

Of the 3,930 cases under treatment, 14·02 per centum became permanent defaulters (of which figure, 26·5 per centum were non-venereal, 49·9 per centum were suffering from gonorrhoea, 16·5 per centum were syphilitic and 7·1 per centum were undiagnosed).

INVESTIGATIONAL WORK ON GONORRHOEA.

The Tables in Appendix I (p. 105) deal with 539 cases of gonorrhoea, compiled by Dr. J. H. Abbott, of the Division of Venereal Diseases, give a survey of gonococcal infection in males treated at the Divisional Clinic.

It will be noticed that patients were kept under surveillance for several weeks after treatment had ceased, and this period loads the total period of attendance for each patient. We, however, consider it necessary, as we desire to make as certain as is possible that each patient is free from infection before being discharged. We have noticed, as others have also, that where treatment is free and the patient is not restrained, there is a tendency for him to take less heed of his actions than would be the case were he paying fees. We would have liked to have had more complement fixation tests performed, but the laboratory was overtaxed during the year and was unable to carry out all the tests we desired.

Pathological Examinations.—Table 3 shows the use made of laboratory tests for diagnostic purposes and progress reports. In 1934, 35,410 serological tests were made on 16,020 specimens; in 1933 the tests were 34,330 on 14,732 specimens; and in 1932, 30,041 on 13,219 specimens. In 1934, 12,785 smears were examined for detection of gonococci, as compared with 8,617 smears in 1933 and 6,505 in 1932. Examinations for spirochaetes numbered 85 in 1934, compared with 136 in 1933, and 130 in 1932.

Prosecutions.—There were three prosecutions under the Venereal Diseases Act, 1918, namely :—

1. Action taken for breach of Section 25.—Fine of £5 inflicted, plus 8s. costs.
2. Action taken for breach of Section 25.—Fine of £5 inflicted, plus 8s. costs.
3. Action taken for breach of Section 25.—Fine of £20 inflicted, plus 8s. costs.

The year 1934 closes showing a definite advance in the provision of facilities for treatment. More country hospitals are co-operating, and we are slowly raising the standard of treatment available.

We are trying to educate patients to realise that the care of these infections is the duty of the legally qualified medical practitioner, and that the unqualified person is one to be avoided, not only because attention by such person is illegal, but also because much harm may result therefrom.

It is obvious, especially to those who specialise in venereal diesases, that the public are still amazingly gullable and are too easily attracted by the " sales talk " of the charlatan who seeks clients among those suffering from sexual disorders. Not infrequently people who have nothing really wrong are gulled into believing that a disease is present, and, conversely, many a patient is treated for gonorrhoea and a syphilitic infection is overlooked.

An amendment of the Medical Practitioners' Act to effectively suppress the activities of unqualified persons is long overdue.

The following tables are appended :—

Table 1.—Notifications received during the year 1934, arranged in order of district from which the notifications are received.

Table 2.—Return of cases of Venereal Disease notified during 1934, showing forms of disease and age and sex of patients.

Table 3.—Diagnostic examinations for Venereal Disease made in the Microbiological Laboratory during the years 1932–34 inclusive.

Table 4.—Summary of annual attendances at public clinics, 1932–34.

TABLE 1.—Notifications received during 1932–1934 arranged in order of districts.

	Metropolitan Area.			Newcastle District.			Remainder of State.		
	1932.	1933.	1934.	1932.	1933.	1934.	1932.	1933.	1934.
Gonorrhoea	2,884	3,019	2,868	126	49	128	154	129	153
Syphilis	1,346	1,186	1,006	31	82	83	33	31	31
Soft Chancre	5	4	7	...	...	...	...	...	...
Gleet	239	288	433	...	3	...	2	...	...
Venereal warts	12	8	9	...	...	...	...	...	...
Gonorrhoeal ophthalmia	6	8	1	...	...	...	...	2	...
Venereal granuloma	3	...	2	...	...	...	1	...	...
	4,495	4,513	4,326	157	134	211	190	162	184

It will be noticed in the above table that the notifications from Newcastle District have increased. This is not due to increase of venereal disease in the district, but is accounted for by the opening of a specially constructed and well-equipped clinic at the Newcastle Hospital about the middle of 1934. It is expected that the notifications from Newcastle District will be further increased in 1935, when the existence of the clinic becomes better known.

TABLE II.—Return of cases of Venereal Diseases notified during 1934, showing forms of disease, and age and sex of patients.

Disease.	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.	
Gonorrhœa	1	29	...	24	6	15	304	106	672	176	613	116	381	56	254	45	131	19	108	10	63	10	6	4	2,539	610	3,149
Syphilis	3	9	8	15	10	20	22	32	70	49	77	45	76	53	101	50	87	33	85	35	184	45	6	5	729	391	1,120
Soft chancre	...	...	...	...	...	...	...	...	2	...	1	...	3	...	...	1	...	...	...	...	...	...	...	...	6	1	7
Gleet	...	...	...	...	...	...	7	...	61	...	103	...	103	2	57	1	43	2	31	...	15	...	8	...	428	5	433
Venereal warts	...	...	...	...	...	...	1	...	3	...	4	1	...	...	...	...	...	...	...	...	...	...	...	...	8	1	9
Gonorrhoeal ophthalmia	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Venereal granuloma	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...	2
	5	38	8	39	16	35	334	138	808	225	798	162	563	111	413	97	262	54	224	45	262	55	20	9	3,713	1,008	4,721

TABLE III.—Diagnostic examinations for Venereal Diseases made in the Microbiological Laboratory during the years 1932–1934, inclusive.

Year.	Gonorrhœa. (Smears and Urine.)	Gonorrhœa. (Complement Deviation Test.)	Syphilis. (Wassermann Reaction.)	Syphilis. (Kahn's Test.)	Syphilis. (Smears for Spirochætes.)
1932	6,505	4,433	13,219	12,389	130
1933	8,617	5,464	14,732	14,134	136
1934	12,785	5,294	16,020	14,096	85

TABLE 4.—Showing Annual Attendance Returns at Public Clinics for treatment of Venereal Diseases, 1932—1934, inclusive.

Year.	Attendances.			New Cases.					
				Gonorrhœa.			Syphilis.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Royal Prince Alfred Hospital.									
1932	29,187	6,547	35,734	323	122	445	77	56	133
1933	31,356	6,580	37,936	359	78	437	84	44	128
1934	28,465	6,315	34,780	306	71	377	29	21	50
Sydney Hospital.									
1932	13,258	4,889	18,147	125	36	161	157	53	215
1933	13,218	5,046	18,264	204	30	234	139	56	195
1934	13,631	5,879	19,510	252	24	276	95	46	141
Royal Alexandra Hospital for Children.									
1932	917	2,595	3,512	...	17	17	11	25	36
1933	612	2,560	3,172	...	25	25	7	13	20
1934	589	1,600	2,189	...	27	27	7	8	15
Royal South Sydney Hospital.									
1932	3,262	993	4,255	139	14	153	15	14	29
1933	2,880	1,145	4,025	79	3	82	18	11	29
1934	3,089	1,281	4,270	61	5	66	11	7	18
Royal North Shore Hospital.									
1932	5,441	1,819	7,260	128	38	166	14	9	23
1933	5,451	1,845	7,296	109	9	118	28	29	57
1934	4,299	1,702	6,001	47	17	64	11	19	30
Rachel Forster Hospital for Women.									
1932	...	8,395	8,395	...	169	169	...	126	126
1933	...	8,458	8,458	...	152	152	...	149	149
1934	...	12,057	12,057	...	132	132	...	112	112

Year.	Attendances.			New Cases.					
				Gonorrhœa.			Syphilis.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Balmain District Hospital.									
1932	844	1,151	1,995	...	...	...	15	13	28
1933	863	1,034	1,897	...	...	...	4	10	14
1934	629	963	1,592	...	...	...	5	9	14
Parramatta District Hospital.									
1932	711	187	898	...	...	...	...	...	...
1933	661	195	856	35	10	45	9	2	11
1934	669	314	983	7	5	12	2	3	5
St. George District Hospital, Kogarah.									
1932	60	42	102	12	4	16	4	1	5
1933	820	452	1,272	15	5	20	25	15	40
1934	77	56	133	2	...	2	2	2	4

Appendix I.

Analysis of 539 Cases of Gonorrhœa in the Male.

(J. H. Abbott, M.B., Ch.M.)

The Departmental Clinic was opened on 12th June, 1933. On 30th April, 1934, the total number of registrations had reached 2,759; 956 represented patients suffering from gonorrhœa. On 15th December, 1934, these cases were analysed, giving a period of 7½ months for the patient last registered on the 30th April, 1934, to complete his treatment.

To the figure 956 may be added 24 (the number of "return" cases which, in almost every case, gave a history strongly suggestive of a fresh infection), or 2·6 per cent. of the total gonorrhœa cases.

These 980 cases are divisible into three groups:—

I. Patients who received regular treatment. (This group represents the average "good" clinic patient who adheres to directions fairly rigidly, and who attends fairly regularly. In no way was this a specially-selected group of completely co-operating patients.)

II. Defaulters, early or late. Transfers to other States or doctors. Cases which were very irregular in their attendances. Some of these were eventually discharged as cured.

III. Cases still being treated on 15th December, 1934.

In I were 539 cases (55 per cent.); of these 18 were "return" cases (3·3 per cent. of group).

In II were 423 cases (43 per cent. approx.); of these 6 were "return" cases (1·4 per cent. of group).

In III were 18 cases (1·8 per cent. of total cases). These patients, although regular in attendance, indulged in excesses of various kinds.

An analysis was made to determine the average time of treatment, the average time of investigation, and also the amount of active treatment required in relation to the day of the disease (or appearance of first symptom) on which treatment was sought. Treatment consisted of anterior and (or) posterior irrigations, instillations, prostatic massages, straight and curved sounds, urethroscopic cauterization, vaccines, contramine, serum (in some arthritis cases, all in hospital), and various mixtures, etc.

Investigation (Tests of Cure).—Patients clinically free of disease; blood C.F.T. negative; three successive negative smears of the expression from the prostate and seminal vesicles; no urethral discharge, and a clear urine for a period of at least six weeks.

The 539 regularly-treated cases were all that were considered. These fell into two groups:—

(*a*) 386 cases. Patients who had received no previous local treatment before attending Clinic.

(*b*) 153 cases. Patients who received some treatment before attending Clinic. (The treatment varied considerably. Many had had from the onset a routine treatment of posterior irrigations three times daily. Others were treated by unqualified men, other practitioners, or had treated themselves.)

The findings of the analysis will be seen in the following tables.

A.—Cases Untreated before Attending Clinic.

Case Groups (Day of Disease).	No. of Complications. *	Total No. of Cases. (Progressive Totals.)	Average Time of Treatment. (Weeks.)	Average Time of Investigation. (Weeks.)	Total Time. (Weeks.)	No. of Cases in Individual Groups.	Second Infection (Return Cases). †	Average Time of Treatment. (Weeks.)	Average Time of Investigation. (Weeks.)	Total Time. (Weeks.)
Up to 1 day ...	12	101	13·2	8·8	22·0	101	3	13·2	8·8	22·0
,, 2 days ...	13	171	13·7	8·0	21·7	70	7	14·4	6·7	21·1
,, 3 ,, ...	8	223	13·8	7·9	21·7	52	4	14·1	7·1	21·2
,, 4 ,, ...	6	257	14·0	7·8	21·8	34	...	15·4	7·8	23·1
,, 5 ,, ...	...	281	14·2	7·5	21·7	24	1	15·7	5·5	21·2
,, 8 ,, ...	8	322	13·9	7·7	21·6	41	...	12·3	8·4	20·7
,, 11 ,, ...	3	336	14·1	7·7	21·8	14	...	17·2	7·1	24·2
,, 16 ,, ...	2	355	14·0	7·6	21·6	19	1	12·8	6·7	19·5
,, 23 ,, ...	1	363	14·0	7·6	21·6	8	...	10·8	6·6	17·3
,, 35 ,, ...	3	371	14·0	7·6	21·5	8	1	15·6	5·1	20·9
,, 49 ,, ...	1	376	13·9	7·6	21·6	5	...	7·3	11·5	18·9
,, 72 ,, ...	1	378	14·0	7·6	21·6	2	...	27·4	6·4	33·9
,, 101 ,, ...	...	380	14·0	7·6	21·6	2	...	14·4	6·6	21·0
,, 200 ,, ...	...	382	14·0	7·6	21·6	2	...	30·3	6·3	30·6
,, 365 ,, ...	...	382	14·0	7·6	21·6	...	...	...	...	...
Over 365 ,, ...	1	386	14·2	7·6	21·8	4	...	27·3	10·1	37·5
Totals	59	...	...	...	...	386	17	14·2	7·6	21·7

*Complications.—There were practically no severe complications; only Epididymitis, Arthritis, Fibrositis and Myositic conditions were considered here.

†Second infection refers to second attack occurring during period under review.

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B.—Cases Treated before Attending Clinic.

Case Groups (Day of Disease).	No. of Complications. *	Total No. of Cases. (Progressive Totals.)	Average Time of Treatment. (Weeks.)	Average Time of Investigation. (Weeks.)	Total Time. (Weeks.)	No. of Cases in Individual Groups.	Second Infection (Return Cases). †	Average Time of Treatment. (Weeks.)	Average Time of Investigation. (Weeks.)	Total Time. (Weeks.)
Up to 5 days ...	...	1	9·1	8·1	17·2	1	...	9·1	8·1	17·1
,, 8 ,, ...	1	5	18·9	9·1	28·0	4	...	21·3	9·4	30·7
,, 11 ,, ...	1	7	18·9	8·8	27·7	2	...	18·9	8·1	27·1
,, 16 ,, ...	2	13	18·6	7·6	26·2	6	...	18·3	6·2	24·5
,, 23 ,, ...	1	23	17·4	6·8	24·2	10	...	15·9	5·8	21·7
,, 35 ,, ...	5	39	15·6	6·4	22·0	16	...	13·9	5·8	19·7
,, 49 ,, ...	3	54	14·7	7·0	21·7	15	...	11·6	8·6	20·4
,, 72 ,, ...	5	65	14·2	6·9	21·1	11	...	11·0	6·5	17·5
,, 101 ,, ...	4	82	14·4	7·0	21·4	17	...	15·4	7·8	23·1
,, 200 ,, ...	9	114	15·4	6·9	22·3	32	1	18·1	6·6	24·7
,, 365 ,, ...	2	131	16·1	7·1	23·2	17	...	20·1	7·7	27·8
Over 365 ,, ...	3	153	16·3	7·2	23·5	22	...	17·4	7·7	25·0
Totals—B ...	36	...	...	...	...	153	1	16·3	7·2	23·5
A ...	59	...	...	...	...	386	17	14·2	7·6	21·7
Grand Total	95	...	...	...	...	539	18	14·8	7·4	22·2

*Complications.—There were practically no severe complications; only Epididymitis, Arthritis, Fibrositic and Myositic conditions were considered here.

†Second infection refers to second attack occurring during period under review.

Epididymitis.

In Section A. 386 patients (cases not previously treated). There were 44 cases of epididymitis :—

(*a*) 38 (9·8 per cent.) occurred during treatment. (There were 3 cases with both sides affected.)

(*b*) 6 (1·6 per cent.) occurred before any local treatment.

The average times for treatment, investigation, etc., were :—

(*a*) 19·0; 6·7. Total, 25·7 weeks.

(*b*) 18·8; 7·1. Total, 25·9 weeks respectively.

In Section B. 153 patients (previously treated cases). There were 28 cases of epididymitis :—

(*a*) 9 (5·9 per cent.) occurred while under treatment at the Clinic.

(*b*) 2 (1·3 per cent.) occurred before any treatment.

(*c*) 17 (11·1 per cent.) occurred during previous treatment, and was still present on attending Clinic.

The average times for treatment and investigation were :—

(*a*) 26·8; 8·2. Total, 35·0 weeks.

(*b*) 8·8; 4·1. Total, 12·9 weeks.

(*c*) 13·6; 8·3. Total, 21·9 weeks.

The total number of epididymitis cases occurring while under treatment here in the group of 539 patients was 47 (8·7 per cent.).

Average times for treatment and investigation were : 20·4; 7·0. Total, 27·4 weeks.

Effect of Contramine Injections.—Forty consecutive cases were examined :—

I. 11 received injections of contramine when epididymitis arose.

II. 29 had usual treatment of rest.

The average times of treatment of the cases were :—

I. 20·1; 6·3. Total, 26·4 weeks.

II. 18·6; 7·9. Total, 26·5 weeks.

Gonococcal "Rheumatism."

There were no cases of severe arthritis. Under the above heading I have included mild and moderate arthritis cases and the more severe fibrositic and myositic conditions.

In Section A. 386 patients. Cases not previously treated. There were 10 cases (2·6 per cent.) which occurred while under treatment. The average times of treatment and investigation were : 22·2; 5·4. Total, 27·6 weeks.

There was one case which developed prior to any treatment being initiated (·26 per cent.).

Average time of treatment and investigation was : 10·6; 9·0. Total, 19·6 weeks.

In Section B. 153 patients (who had received previous treatment). Seven patients (4·6 per cent.) developed "rheumatism" prior to attending the clinic, and while under "outside" treatment, the complication still being present on attending.

The average times of treatment, etc., were : 9·5; 7·2. Total, 16·7 weeks.

No patients of this group developed "rheumatism" while under treatment here.

The Amount of Active Treatment.—The amount of active treatment necessary to effect a cure on the 539 cases under review will be seen from the accompanying table.

Amount of Active Treatment Performed.

	C.F.T.	Urethral Smears.	Sounds.	Urethroscopics.	Prostatic Smears.	Prostatic Massages.
Section A—						
386 patients	614	648	447	63	1,418	1,046
Average	1·59	1·68	1·16	·16	3·69	2·71
Section B—						
153 patients	265	292	242	35	498	671
Average	1·73	1·91	1·58	·23	3·25	4·39
Totals—						
539 patients	879	941	689	98	1,916	1,717
Average	1·62	1·74	1·28	0·18	3·56	3·19

In the early days of the Clinic, neither an urethroscope nor straight sounds were available, this in part being responsible for the low figures in these columns.

Treatment and Investigation Periods.

	Treatment.	Investigation.	Total Attendance.
Uncomplicated cases (451)	13·9 weeks	7·5 weeks	21·4 weeks
*Complicated cases (88)	18·8 weeks	7·1 weeks	25·9 weeks
All cases (539)	14·8 weeks	7·4 weeks	22·2 weeks

*Means Epididymitis, Arthritis and severe types of Myositis and Fibrositis.

SECTION I.—D.

TUBERCULOSIS DIVISION.

ANNUAL REPORT OF THE DIRECTOR FOR THE YEAR ENDED DECEMBER 31ST, 1934.

Staff.

Director—Dr. H. K. Denham, B.A., L.L.B., M.B., Ch.M., D.S.O., V.D.

do Dr. H. G. Wallace, M.B., B.S., D.P.H., vice Dr. Denham, from October 16th, 1934.

Medical Officer—Dr. J. Hughes, M.B., Ch.M.

1 Clerk, 4 nurses.

Throughout the year the familiar aspect of tuberculosis has been stressed, particular attention having been directed to the descendants of tuberculous patients who came within the age group of 15 to 25 years. This has been emphasised during interviews at the Tuberculosis Division, by the nurses whilst visiting homes, by pamphlets, lectures and broadcasts.

A system has been instituted whereby a family record in the form of a genealogical tree is kept of all patients interviewed, including details of tuberculosis or other chest diseases, extending wherever possible, back to grandparents.

The four clinics, Royal Prince Alfred Hospital, Royal North Shore Hospital, Anti-Tuberculosis Association of New South Wales, and Newcastle Hospital, together with the sanatoria at Waterfall, Wentworth Falls (Bodingtom, Red Cross, and Kings Tableland, Queen Victoria Homes), the R. T. Hall Sanatorium, Hazelbrook, the Queen Victoria Home, Thirlmere, the Picton Lakes Village Settlement, the Red Cross Hospital "Malahide," at Pennant Hills, the Red Cross Farm at Exeter, and also the Prince Henry Hospital Auxiliary at Randwick have all been visited during the year. The medical officer during the year visited the homes of 138 tuberculous patients.

An investigation into the occurrence of tuberculosis amongst nurses and trainees engaged in hospital work was commenced and the following information obtained :—

There were 23 cases reported over the 10-year period, 1923–1932, among 40 institutions, comprising—

27 General Hospitals in the Metropolitan Area.

6 Mental Hospitals in the Metropolitan Area.

2 Military Hospitals.

5 Government Institutions controlled by the Department of Public Health.

The following is an analysis of the source (*i.e.*, type of hospital) from which cases have been reported : Metropolitan Mental Hospitals; Prince Henry Hospital; Waterfall Sanatorium; Military Hospital; Liddcombe State Hospital; General Hospitals in Metropolitan Area.

Sex of reported cases—Males, 7; females, 16.

Age when infection was discovered.—Trained nurses—56, 44, 39 (2), 37, 35, 32 (2), 29, 27 (2), 26. Total, 13.

Trainees.—30, 28, 27, 25, 23, 21 (4), 20. Total, 10.

Part of body affected.—Lung, 22; Hip, 1. Total, 23.

Notification.—The total number of notifications for the whole State during 1934 was 1,509, an increase of 68 cases compared with the previous year. In the Metropolitan District there was an increase of 91 cases, and in the Broken Hill District a decrease of 11 cases, whilst in the Hunter River District there was an increase of 3 cases, and for the remainder of the State a decrease of 16 cases.

Details of the distribution, and age and sex incidence of the notified cases are given in Table 1; and Table 2 shows the monthly incidence of notified cases, and also the number of cases "to be visited" and "not to be visited."

TABLE 1.—Showing the age and sex incidence of the cases of Pulmonary Tuberculosis notified during the year 1934.

Age Period.	Metropolitan Combined Sanitary District. Mean Population 1,313,090.			Hunter River Combined Sanitary District. Mean Population, 212,590.			Broken Hill Combined Sanitary District. Mean Population, 26,850.			Remainder of State. Population, 1,070,777.			Whole State. Population, 2,623,817.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Under 1 year	...	...	...	...	...	...	...	...	...	1	...	1	1	...	1
1– 4	...	2	2	...	...	...	...	...	...	...	...	...	...	2	2
5–14	8	5	13	...	...	...	...	...	...	1	1	2	9	6	15
15–24	83	112	195	1	7	8	1	1	2	15	30	45	100	150	250
25–34	166	157	323	4	19	23	2	...	2	29	28	57	201	204	405
35–44	173	78	251	8	3	11	2	1	3	30	25	55	213	107	320
45–54	188	45	233	13	6	19	4	1	5	31	6	37	236	58	294
55–64	109	19	128	7	1	8	1	...	1	18	7	25	135	27	162
65 and over	31	15	46	1	1	2	...	...	...	8	4	12	40	20	60
All ages	758	433	1,191	34	37	71	10	3	13	133	101	234	935	574	1,509

TABLE 2.—Showing monthly incidence of notified cases of Pulmonary Tuberculosis and also incidence of cases "To be Visited" and cases "Not to be Visited," year 1934.

Month.	Metropolitan Combined Sanitary District.		Hunter River Combined Sanitary District.		Broken Hill Combined Sanitary District.		Remainder of State.		Whole State.	
	To be Visited.	Not to be Visited.	To be Visited.	Not to be Visited.	To be Visited.	Not to be Visited.	To be Visited.	Not to be Visited.	To be Visited.	Not to be Visited.
January ...	65	19	2	...	3	...	20	9	90	28
February...	85	26	6	2	5	...	13	7	109	35
March ...	92	28	5	2	2	...	8	12	107	42
April	79	16	7	3	...	...	9	2	95	21
May	88	6	...	3	...	...	12	10	100	19
June	77	24	3	2	...	...	19	7	99	33
July	69	32	5	...	...	...	11	8	85	40
August ...	70	8	2	2	1	...	8	4	81	14
September	89	26	5	2	1	...	9	14	104	42
October ...	73	10	3	2	...	...	6	10	82	22
November	107	18	7	4	...	...	12	6	126	28
December	69	15	4	...	1	...	11	7	85	22
Totals	963	228	49	22	13	...	138	96	1,163	346

TABLE 3.—Showing the number of deaths from all forms of Tuberculosis in (*a*) Metropolitan, (*b*) whole State, during the year ended 31st December, 1934.

	Metropolis.			Whole State.		
	Males.	Females.	Total.	Males.	Females.	Total.
Respiratory system	344	207	551	567	388	955
Meninges and nervous system	14	12	26	23	17	40
Other	13	14	27	24	26	50
Total	371	233	604	614	431	1,045

TABLE 4.—Showing the age and sex of the persons whose deaths from Pulmonary Tuberculosis were notified during the year ended 31st December, 1934.

Age Period.	Metropolitan Combined Sanitary District. Mean Population: 1,313,600			Hunter River Combined Sanitary District. Mean Population: 212,590			Broken Hill Combined Sanitary District. Mean Population: 26,850			Remainder of State. Mean Population: 1,070,777			Whole State. Mean Population. 2,623,817		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Under 1 year	...	...	...	...	...	...	...	...	...	1	1	2	1	1	2
1– 4 "	...	...	...	...	...	...	...	...	...	1	...	1	1	...	1
5–14 "	3	1	4	...	...	...	...	...	...	1	1	2	4	2	6
15–24 "	26	50	76	1	4	5	1	...	1	10	26	36	38	80	118
25–34 "	62	59	121	4	9	13	...	3	3	21	32	53	87	103	190
35–44 "	69	44	113	9	3	12	3	1	4	30	25	55	111	73	184
45–54 "	107	38	145	13	4	17	5	1	6	31	18	49	156	61	217
55–64 "	60	16	76	8	5	13	3	1	4	29	18	47	100	40	140
65 and over.....	42	14	56	5	3	8	3	1	4	19	10	29	69	28	97
All ages	369	222	691	40	28	68	15	7	22	143	131	274	567	388	955

TABLE 5.—Showing Institutional Accommodation available for patients suffering from Pulmonary Tuberculosis.

Sanatoria and Hospitals.	Type of Cases Received.	Number of Beds.		
		Male.	Female.	Total.
1. Waterfall Sanatorium (under Government control)	Intermediate	292	136	428
2. Randwick Auxiliary Hospital (under Government control)	Late	90	30	120
3. Queen Victoria Homes (subsidised)—				
Thirlmere	Early female	...	54	54
Wentworth Falls	Early male	54	...	54
4. Red Cross Society (subsidised)—				
"Bodington" at Wentworth Falls	Early male and female	89	9	98
"Malahide" at Pennant Hills	Late male and female...	15	6	21
"Southern" at Exeter	Male quiescent	20	...	20
(The above institutions work in full co-operation with the Tuberculosis Division.)				
R. T. Hall Sanatorium	.....	4	4	8
Private Hospitals (approximately)	.....	...	...	40
Repatriation Department—				
Prince of Wales Hospital	.....	65	...	65
Lady Davidson Home	.....	77	...	77
				985

TABLE 6.—Showing number of patients receiving Institutional treatment during 1934.

	Queen Victoria Sanatorium, Wentworth Falls.	Queen Victoria Sanatorium, Thirlmere.	Red Cross Sanatorium, Wentworth Falls.	Waterfall Sanatorium.	Red Cross Hospital, Pennant Hills.	Red Cross Convalescent Home, Exeter.
1. Number of patients in Institution on 1st Jan., 1934	49	51	67	352	22	16
2. Number of patients admitted during 1934	74	85	87	555	34	18
3. Number of patients discharged (including deaths) during 1934	75	85	71	572	35	25
4. Number of patients remaining in Institution on 31st December, 1934	48	51	83	335	21	9
5. Average daily number of beds occupied	48·2	50·5	65	360·2	20·5	13·9

TABLE 7.—Showing the average residence in days and condition on discharge from Sanatoria and Hospitals of patients under treatment during 1934.

Condition on Discharge.	Queen Victoria Sanatorium, Wentworth Falls.		Queen Victoria Sanatorium, Thirlmere.		Red Cross Sanatorium, Wentworth Falls.		Waterfall Sanatorium.		Red Cross Hospital, Pennant Hills.		Red Cross Convalescent Home, Exeter.	
	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.	No. of Patients.	Average Residence in Days.
1. Arrested (A.)	...	...	...	...	...	...	5	3,439	...	...	...	...
2. Quiescent (Q.)	32	205	46	260	18	305	45	403	...	...	...	...
3. Much Improved (M.I.)	21	305	20	235	27	238	150	217	3	204	20	190·7
4. Improved (I.)	8	110	8	140	14	139	177	124	3	67	15	93·06
5. Stationary (S.)	2	149	8	86	10	88	83	280	7	73½	...	...
6. Worse (W.)	12	163	3	207	9	203	41	342	5	157	...	...
7. Dead (D.)	...	...	...	...	5	223	68	309	17	97½	...	...
Total	75	215	85	213	83	156	569	243	35	108	35	149

TABLE 8.—Showing condition of patients on admission to, and discharge from, Institutions for the treatment of Pulmonary Tuberculosis during 1934.

Condition on Admission.	Queen Victoria Sanatorium, Wentworth Falls.								Queen Victoria Sanatorium, Thirlmere.								Red Cross Sanatorium, Wentworth Falls.								Waterfall Sanatorium.								Red Cross Hospital, Pennant Hills.							
	Condition on Discharge.								Condition on Discharge.								Condition on Discharge.								Condition on Discharge.								Condition on Discharge.							
	A.	Q.	M.I.	I.	S.	W.	D.	Total	A.	Q.	M.I.	I.	S.	W.	D.	Total	A.	Q.	M.I.	I.	S.	W.	D.	Total	A	Q.	M.I.	I.	S.	W.	D.	Total	A.	Q.	M.I.	I.	S.	W.	D.	Total
L1T1	...	3	1	...	...	...	...	4	...	32	8	3	4	1	...	48	...	11	8	3	4	1	1	28	...	5	8	1	2	...	...	16	...	...	...	...	...	...	...	...
L2T1	...	20	12	5	1	3	...	41	...	6	8	2	2	1	...	19	...	1	...	...	...	...	...	1	1	14	37	32	13	3	3	103	...	...	...	...	...	...	...	...
L1T2	...	...	...	...	...	...	...	...	...	4	...	2	...	1	...	7	...	4	12	4	...	2	2	24	...	1	3	2	1	...	...	7	...	...	...	...	...	...	...	...
L2T2	...	9	7	3	...	7	...	26	...	4	2	1	1	...	...	8	...	1	2	2	1	...	...	6	1	4	12	21	6	1	8	48	...	...	1	1	1	...	...	3
L3T1	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	2	...	1	5	4	...	...	...	10	...	12	45	52	27	9	10	155	...	...	...	...	...	...	...	...
L3T2	...	...	1	...	1	2	...	4	...	...	1	...	...	...	...	1	...	...	...	1	5	6	2	14	...	9	38	51	29	19	35	181	...	...	1	1	2	3	2	9
L1T3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
L2T3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
L3T3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	7	18	5	9	17	59	...	...	1	1	4	2	15	23
	...	32	21	8	2	12	...	75	...	46	20	8	8	3	...	85	...	18	27	14	10	9	5	83	5	45	150	177	83	41	68	569	...	...	3	3	7	5	17	35

TABLE 9.—Comparative Statement of work carried out at the various Anti-Tuberculosis Clinics during a period of 12 months in 1934.

	Royal Prince Alfred Hospital.	Royal North Shore Hospital.	Anti-Tuberculosis Association of N.S.W.	Newcastle Hospital.
1. Total number of persons who attended for examination	2,740	645	1,729	284
(a) First attendance during year	1,182	338	1,111	310
(b) Attended in previous years and re-attended during year	1,558	307	618	126
2. Total number of attendances	9,103	1,844	10,025	1,878
3. Number of persons found tuberculous	304	70	150	26
4. Number of persons found not tuberculous	772	267	961	165
5. Number of persons where diagnosis is not yet completed	106	30	45	...
6. Number of contacts examined	789	174	538	50
7. Number of contacts found to be infected	213	4	59	...
8. Number of sputum examinations	585	134	1,302	100
9. Number of X-ray examinations	2,074	280	500	148
10. Number of nurses' visits	2,370	3,495	2,054	176
11. Number of homes visited	1,826	704	699	89
12. Sent to Sanatoria	163	33	42	5
13. Sent to hospital	107	47	108	20
14. Sent to country	81	35	23	3
15. Number of deaths recorded	115	24	57	19

TUBERCULOSIS.

Annual Death Rate per 100,000 of the Population in New South Wales, 1875-1934.

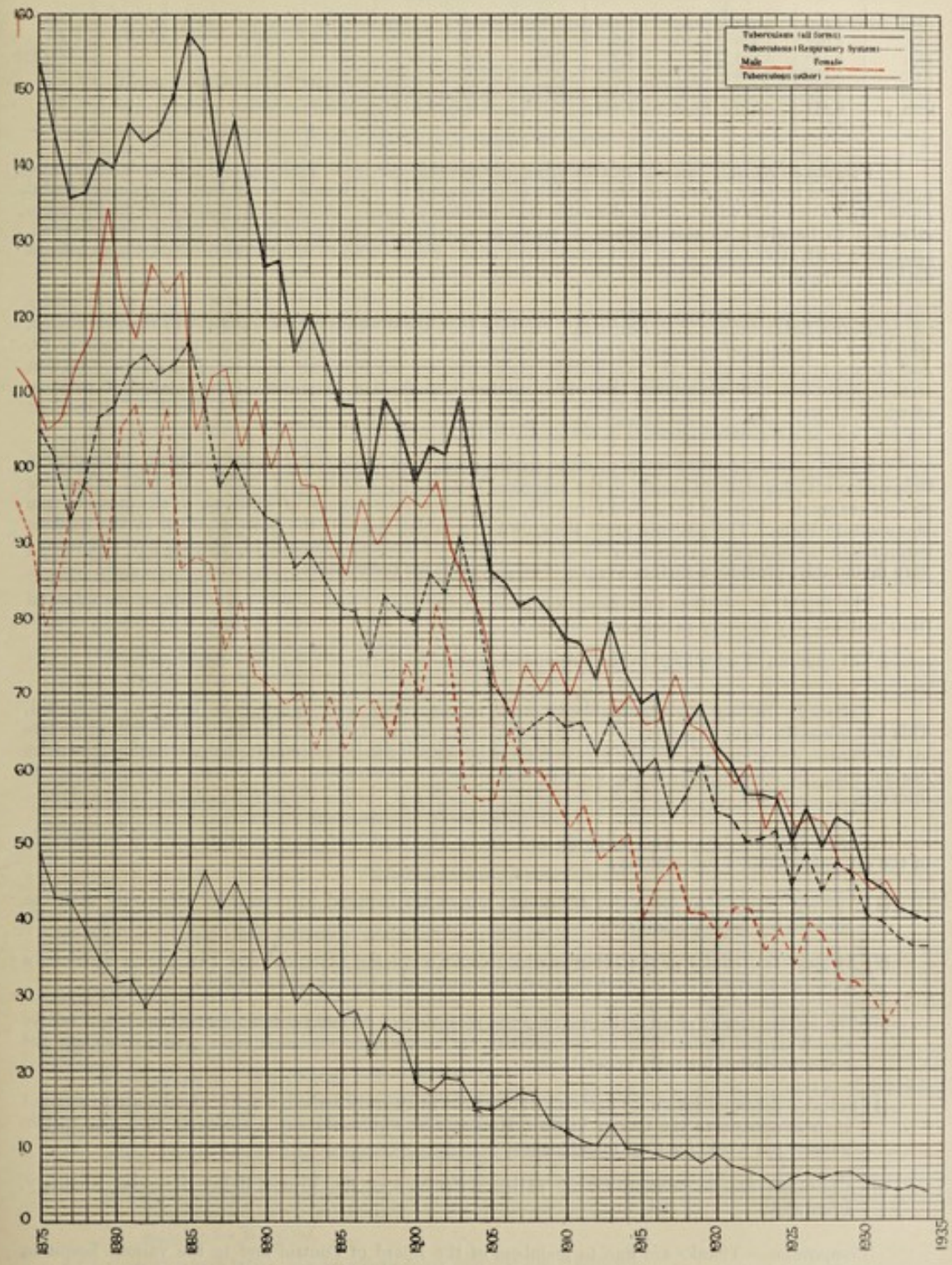

TABLE 10.—Comparative Statement of work performed by visiting nurses in the metropolitan area for the years 1930-1934, inclusive.

Year.	Total Visits by Nurses.			Total Visits by Departmental Nurses.		No. of Homes visited by all Nurses.		No. of Visits paid by all Nurses.		Average Number of Visits per Patient per Year.		
	Departmental Nurses.	Non-Departmental Nurses.	Total.	Dispensary Cases.	Non-Dispensary Cases.	Dispensary Cases.	Non-Dispensary Cases.	Dispensary Cases.	Non-Dispensary Cases.	Dispensary Cases.	Non-Dispensary Cases.	All Cases.
1929 ...	4,023	5,610	9,633	2,455	1,568	1,729	533	7,872	1,761	4·5	3·3	4·2
1930 ...	7,052	4,826	11,878	3,618	3,434	1,780	1,080	8,444	3,434	4·7	3·1	4·1
1931 ...	8,170	5,205	13,375	4,305	3,865	2,046	1,022	9,510	3,865	4·6	3·7	4·4
1932 ...	5,178	5,596	10,774	2,990	2,188	2,497	835	8,647	2,127	3·5	2·4	3·2
1933 ...	7,125	5,212	12,337	4,185	3,519	3,155	1,248	8,818	3,519	2·7	2·8	2·8
1934 ...	6,411	6,070	12,481	3,463	3,163	3,445	1,443	9,789	2,092	2·8	1·8	2·6

Visiting by Nurses.—In the metropolitan district this service is undertaken by four departmental nurses assisted by four nurses provided by the dispensaries; in the Hunter River District a departmental nurse carries out this work. It is desirable that additional nurses should be appointed to enable more attention to be given to this important work, as domiciliary treatment under constant supervision, associated with attendance at an anti-tuberculosis clinic, would tend to relieve the demand for accommodation in Sanatoria.

Picton Lakes Village T.B. Settlement.—During 1934 there were no new additions to the Settlement, which has 32 buildings for patients and their dependents. The cottages for married patients number 19, and for single patients there are two hostels, the balance of the buildings comprising the administration section, recreation hall, workshops, etc. The population at the 31st December, 1934, totalled 56 persons, of which 21 were arrested cases of tuberculosis, the balance being members of their families. A resident matron, who is a registered nurse, is in charge of the Settlement.

Every patient is called upon to do a certain amount of work for as many hours of the day as is compatible with his state of health, in the industrial section of the Settlement. The main products of this section are small articles of household furniture, any profits from the sale of which go to the patients who manufacture them. The patients grow their own vegetables and sell the flowers grown in the gardens surrounding the cottages. The establishment of a citrus and passion-fruit orchard, which is now progressing very favourably, provides a further avenue of employment for the inmates.

The Board, in addition to housing the patients and their families rent free, supplies one quart of fresh milk per day to every patient without charge.

The children of school age in the Settlement attend the public school in the neighbourhood.

Publicity.—During the year publicity work in connection with tuberculosis has been continued. This has taken the form of display of models and posters during Health Week; the distribution of leaflets on the disease, its treatment, and the precautions to be taken to avoid infection; the publication of articles dealing with the disease, etc., in the country and suburban newspapers; and lectures and broadcasts at intervals.

Urgent Requirements.—The following are among the more important requirements in furtherance of the campaign against tuberculosis :—

(1) Visiting nurses. At least two additional nurses are required to cope more effectively with the work in the metropolitan area.

(2) At least two clinics in the suburbs which could serve the Liverpool and Parramatta districts, a clinic at Hornsby for outlying northern districts, and a clinic at Broken Hill.

(3) The establishment of an institution for the reception of 50 male chronic cases, in order to relieve the Waterfall Sanatorium of the necessity of accommodating such cases, and so increase the accommodation for early hopeful cases.

(4) Suitable accommodation for patients who are not in an early enough stage of the disease to warrant their admission to the Queen Victoria Homes, and who could pay a moderate sum (one to two guineas per week) for their maintenance.

(5) Additional accommodation for 30 patients (female) at the Prince Henry Hospital Auxiliary, Randwick.

Co-operation.—Thanks are due to members of the Board of Control and to the various hospitals, associations, and other agencies for active co-operation throughout the year in the work of the Division.

H. K. DENHAM,
(Director to 15-10-1934).

H. G. WALLACE,
(Director from 15-10-1934).

APPENDIX "A."

Scheme for the Classification of Tuberculous Patients.

(Formulated by Board of Control of the Campaign against Tuberculosis.)

On First Examination.

The extent of the lung lesion as determined by clinical findings to be denoted by the symbols L1, L2 and L3.

The Toxicity or degree of systemic effect to be denoted by the symbols T1, T2 and T3.

The extent of the lesion as determined radiographically to be denoted by the symbols R1, R2 and R3.

Definitions.—L1—Lesion of slight severity affecting at most the apices of both lungs not lower than the spine of the scapula and the clavicle on each side or the apex of one lung not lower than the second rib in the front and the spine of the scapula behind, or an equivalent area in any one lobe.

L2.—Lesion of slight severity more extensive than L1, but affecting at most the volume of one lobe, or severe disease extending at most to the volume of one half lobe.

L3.—Lesion of slight severity more extensive than the volume of one lobe; severe lesion more extensive than the volume of one half lobe.

Note.—By lesion of slight severity is to be understood disseminated foci of infiltration or slight fibrosis; by severe lesion, consolidation, excavation or dense fibrosis—in each case as indicated by the obvious physical signs. A small area of dry pleurisy should not exclude a case from L1.

For the purpose of classification, the right upper and middle lobes are to rank as one lobe.

T1.—Constitutional disturbance absent or slight, as judged mainly by the temperature, pulse-rate and effect on nutrition and strength.

For example, temperature after an hour's rest should rarely exceed 99 degrees in the mouth at maximum or, if higher, should be reducible to the lower figure by a week's rest in bed. Pulse rate after an hour's rest should rarely exceed 90.

T3.—Severe constitutional disturbance or deterioration; one or more symptoms present in severe degree. For example, temperature during rest at the maximum persistently over 100·8 in the mouth, or 101·3 in the rectum; pulse-rate during rest persistently over 96. All cases with severe complications, whether tuberculous or not, fall in this grade.

T2.—All cases intermediate between T1 and T3.

Note.—Rectal temperatures are preferable; when mouth temperatures are used, the thermometer should be kept in the closed mouth for at least 5 minutes. In the case of women, add to the temperature limits given 0·6 degrees for the premenstrual rise which may normally occur.

R1, R2 and R3 to be expressed on the basis of the same definitions as for the clinical findings, i.e., L1, L2 and L3.

The presence of tubercle bacilli in the sputum at any time to be denoted by the symbol B+. If tubercle bacilli have never been demonstrated in the sputum at any time the symbol B— to be used.

On Subsequent Observation.

A. Arrested.—A case should not be classed as arrested until it has been quiescent two years. Sputum to be free on at least three consecutive occasions at intervals of one week prior to discharge.

Q. Quiescent.—I.e., no symptoms of tuberculosis and no signs of tuberculosis except such as are compatible with a completely healed lesion and in which the sputum, if present, is free from tubercle bacilli.

M.I. Much Improved.—I.e., the condition is not quiescent but (i) the general health is good, (ii) the signs and symptoms of tuberculosis are materially diminished, (iii) working capacity is more or less restored.

S.—Stationary. W.—Worse. D.—Dead.

Sebsequently the Board decided on the following standards to be adopted by the Examining Medical Officers for the various institutions with regard to the suitability of applicants for admission :—

L1T1, L2T1.—Early case, suitable for Queen Victoria Homes or Bodington.

L1T2.—To be kept under observation in bed for 14 days—if marked improvement, suitable Queen Victoria Homes or Bodington; if no improvement, suitable for Waterfall; if retrogression, suitable for Hospital.

L2T2, L3T1, L3T2.—Intermediate case, suitable for Waterfall.

L1T3, L2T3, L3T3.—Advanced case, suitable for Hospital.

Graphs.

1. Annual death-rate from Tuberculosis per 100,000 of population in New South Wales, 1875–1934.

Section I.—E.

DIVISION OF INDUSTRIAL HYGIENE.

REPORT OF THE MEDICAL OFFICER OF INDUSTRIAL HYGIENE FOR THE YEAR ENDED 31st DECEMBER, 1934.

Staff.—Medical Officer of Industrial Hygiene, Charles Badham, B.Sc.,M.B.,Ch.M., D.P.H.; Physicist Assistant, H. E. G. Rayner, B.Sc.; Second Assistant, A. M. Willison, B.Sc.

This Division undertakes the investigation of hazards to health in factories, mines and industry generally; the ventilation of theatres, cinemas and other places, the examination of factory children; and diagnosis of cases of occupational disease.

Dust Diseases of the Lungs.

Investigational work on the lungs of miners dead of dust diseases has proceeded, and a monograph dealing with the pathology, chemical analysis and petrology of pneumonoconiosis is nearing completion. A number of coal-miners, claiming to be affected by fibrosis, due to dust, have been seen by me as a member of the Special Pneumonoconiosis Board of the New South Wales Workers' Compensation Commission.

Experimental Dusting Chambers.

Sydney Sandstone.—Of 101 guinea-pigs dusted by Sydney sandstone alone, no less than 68, exposed from 146 to 693 days, showed macroscopic fibrosis, and this was gross in those that had been longest exposed or had lived longest after dusting. The range of dusting time and developing time of these animals is large. For instance, one guinea-pig, exposed for 166 days, died from lung fibrosis 544 days after dusting ceased, while another pig, dusted for 693 days, died 282 days later. This development of "naked-eye" fibrosis, seen in this group, and even more markedly in the quartz group, has not been described by other workers. Deaths from pneumonia, except as a terminal disease, and other conditions, were very small in this series. The type of fibrosis was the generalised, diffuse fibrosis of the pulmonary framework, and particularly in the alveolar walls.

Gardner considers this fibrosis as secondary to nodules developed in the lymph-nodes, but, in my series, the development of such nodules is not seen in the early stages, while the development of diffuse fibrosis appears as the chief reaction. In the later stages this becomes so marked to the naked eye that the term "massive" might be applied.

The full pathological investigation of this series of lungs is to be proceeded with. Meanwhile, I might stress the fact that this simple silicosis in the guinea-pigs is not the result of co-incident infection.

The dusting chamber employed was of the type originally used by Gardner. The average concentration of the dust of Sydney sandstone, measured by the Greenburg-Smith Impinger Apparatus, and estimated as shown in our Studies in Industrial Hygiene, No. 12, 1927*, was 510 mg. per cubic metre, which is equivalent to 51,000 particles per cc. of size-frequency 3—*i.e.*, 1,440 million particles per cubic foot.

Quartz Free from Sericite.

Of 53 guinea-pigs dusted only by quartz free from sericite, no less than 40, exposed from 136 days to 244 days, showed macroscopic fibrosis, and this was gross in those that had been longest exposed.

In this group of animals none was removed from dusting, as it was not expected to get such a degree of fibrosis so early.

As to whether the massive fibrosis, which was so marked to the naked eye in most of these lungs, was due to a much greater concentration of the dust employed than in the case of those dusted by sandstone (it was of a different grinding and was more easily put into suspension), or was due to the nature of the dust, a quartz free from sericite, I am not at present prepared to offer an opinion. The fibrosis seen in sections is of the diffuse type, chiefly occurring in the alveolar walls, at times so well developed that the alevolar spaces are abolished. Here, again, it appears that a nodular fibrosis is not an early development.

The average concentration of the quartz dust measured by the Greenburg-Smith Impinger Apparatus was 1,350 mg. per cubic metre, which is equivalent to 135,000 particles per cc. of size-frequency 3—*i.e.*, 3,820 million particles per cubic foot. This is nearly three times the concentration of the Sydney Sandstone dust used.

It is expected that these guinea-pigs' lungs, showing all stages of fibrosis due to sandstone and quartz, will enable those interested to appreciate the reaction of lungs to various dusts.

Lead Poisoning.

Eighty-three examinations of individuals for lead-poisoning were made, and twenty-eight of these were diagnosed as lead-poisoning with disability, the remaining fifty-five had no disability or were not lead-poisoned. As in previous years, the greatest number of lead-poisoning cases came from accumulator factories; of a total of sixteen, eleven were from one factory employing about thirty workers in lead processes, and three from a small factory with about twelve employees. As a result of improved working conditions and medical supervision no cases of lead poisoning were seen in the larger factories.

The examination of blood smears submitted by the Medical Officer in charge of five factories has been continued and 1,425 slides were reported on.

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*Badham, C., Rayner, H. E. G., Broose, H. D., "Dust Sampling in Sydney Sandstone Industries," *Studies in Indust. Hyg.* No. 12, Report of Dir. Gen. of Pub. Health, New South Wales, 1927.

Small factories engaged in the manufacture of lead oxides and battery plates are still a source of concern to me. The attention of the Chief Inspector of Factories was drawn to the pernicious habit of working overtime in lead processes with a request that permission to work overtime in lead processes be withheld until the incidence of lead poisoning is considerably reduced.

From trades other than the manufacture of accumulators, twelve cases of lead-poisoning were seen as follows:—painting (6), lead-burning (water-pipes) (3), printing (1), smelting (1), manufacture of litharge (1).

Three men employed in a trench with an oxy-acetylene flame burning out the lead joints of water pipes, were severely poisoned, one being in hospital for six weeks. Since the introduction of canister and hose masks, no further cases have been reported.

A painter with a history of scraping down old paint with a wire brush, had a paresis of the right and left extensors of the fingers and wrists (most marked on the right side) and of the right deltoid and extensors of the right foot.

A lead smelter with double wrist-drop, referred to in the 1933 report, (*) was seen three times during 1934 and was able to return to work nine months after being affected. He then, against advice, returned to the same works, mixing lead and antimony and sorting metals, etc. After ten months (February, 1935) he was compelled to leave work, suffering from lead-poisoning with a recurrence of the wrist-drop.

At the request of the Australian Railways Union, an investigation was made of the working conditions at the Enfield Running Sheds where men were employed painting the inside of tenders with a preparation of red and white lead. Masks were supplied and compressed air fed into the confined spaces. The work was uncomfortable but an examination of the blood of three employees failed to show any evidence of lead-poisoning.

Table I, showing the occupations of 83 individuals examined for lead poisoning during 1934 and the diagnosis:—

Industry.	Occupation.	Number examined.	Lead-poisoning with disability.	Not lead-poisoning or lead-poisoning without disability.
Printing	Lithographing	1	1	...
	Linotyping	1	...	1
	Hand composing	2	...	2
	Linoleum printing	1	...	1
Manufacture of electric accumulat'rs	Pasting	4	2	2
	Mixing	4	4	...
	Assembling	5	2	3
	Burning	1	...	1
	Moulding	4	2	2
	Formation	2	1	1
	Handling dry plates	5	3	2
	Repair work	1	...	1
	Lead oxide and reclaim	4	2	2
	Cleaning	1	...	1
Plumbing Soldering	.....	5	...	5
Smelting of metals	.....	2	1	1
Painting	Coach tram, train, etc.	5	2	3
	House	7	1	6
	Spray	5	...	5
	Ship	1	1	...
	Commercial	3	...	3
	Paint factory	2	1	1
	Lead corroding	2	1	1
Brass foundry	Furnace	1	...	1
	Moulding	1	...	1
Pipe laying	Lead caulking	1	...	1
	Lead burning	3	3	...
Tinning	.....	3	...	3
Manufacture of litharge	.....	2	1	1
Miscellaneous	.....	4	...	4
		83	28	55

Occurrence of Punctate Basophilia (Stippled Red Cells) in Normal Individuals.—Over the course of years, working with the one stain and fixative (Giemsa's Stain and Methyl alcohol-Ether), we had formed the opinion that stippled red cells were rarely found in normal individuals. Working under somewhat more favourable conditions: binocular microscope, artificial light and darkened room; we now find that it is possible, by intensive search, to demonstrate a few stippled cells in the blood of normal individuals, generally from 50 to 100 per million red cells. These cells are nearly always of the very fine type; rarely does one find an individual in whom a greater number of stippled cells can be found without a history of exposure to lead. This fact, in no way, impugns our conviction in regard to the practical specificity of stippled cells in diagnosing lead-poisoning—for these few finely stippled cells, discovered in intensive search, are of no practical importance when compared with the easily demonstrated, more numerous, generally coarser, stippled cells of lead-poisoning. Moreover, before relating the punctate basophilia of our cases to lead-poisoning, definite evidence of a lead intake is required.

* Report of Director General of Public Health, N.S.W., 1933, page 63.

Tetraethyl Lead.—At each medical inspection by Dr. Fairley of the Sydney men engaged in mixing tetraethyl lead petrol, we have examined the blood slides taken for stippled cells. The average number of stippled cells was 60 per million red cells. The urines of three workers were analysed and one showed an excretion of 0·06 mg. of lead per litre. This worker showed 400 stippled cells per million red cells.

Arsenic Poisoning.

An inspection was made of the Mole River Arsenic Mine and Refinery in May. A previous inspection was made in 1931. There were forty employees, including fifteen miners, truckers, crackers and wood-cutters, some of whom were occasionally employed in the refinery. The number of men exposed to the dangers of arsenic poisoning or dermatitis is approximately thirty. Many of them work seven days a week, with a break at the third week-end.

The methods of treating the ore have not altered since my last inspection,(*), but at present arsenic trioxide is not prepared for sale; this has fortunately removed one of the most obnoxious processes of the work.

Briefly, the treatment of the ore after it has been mined is as follows. The graded ore is burnt in one of two furnaces, the arsenious oxide sublimes and deposits in the flues, from which it is "pulled" into a small truck. It is tipped into chutes about two feet in diameter and twelve feet high, and is shovelled from these chutes into earthenware stills to be mixed with nitric acid to form arsenic pentoxide. This gravitates into storage tanks from which it is run to evaporating basins, and finally to the packing bench.

Of five of the six men employed on the furnace, three were unaffected, one had a rash on the calves, and another had an ulcer on the right leg with a number of scars of healed ulcers.

The men engaged on one of the most dangerous processes, "pulling" the arsenic from the flues, work according to a roster, being placed on less hazardous work after a few weeks' exposure.

The men on the stills are not greatly exposed to arsenic dust and, apart from acid burns, nothing abnormal was noted.

Of the five men employed on the pentoxide plant, where there is little danger from dust in the air two employees had one or more decaying finger-nails due to contact with the pentoxide.

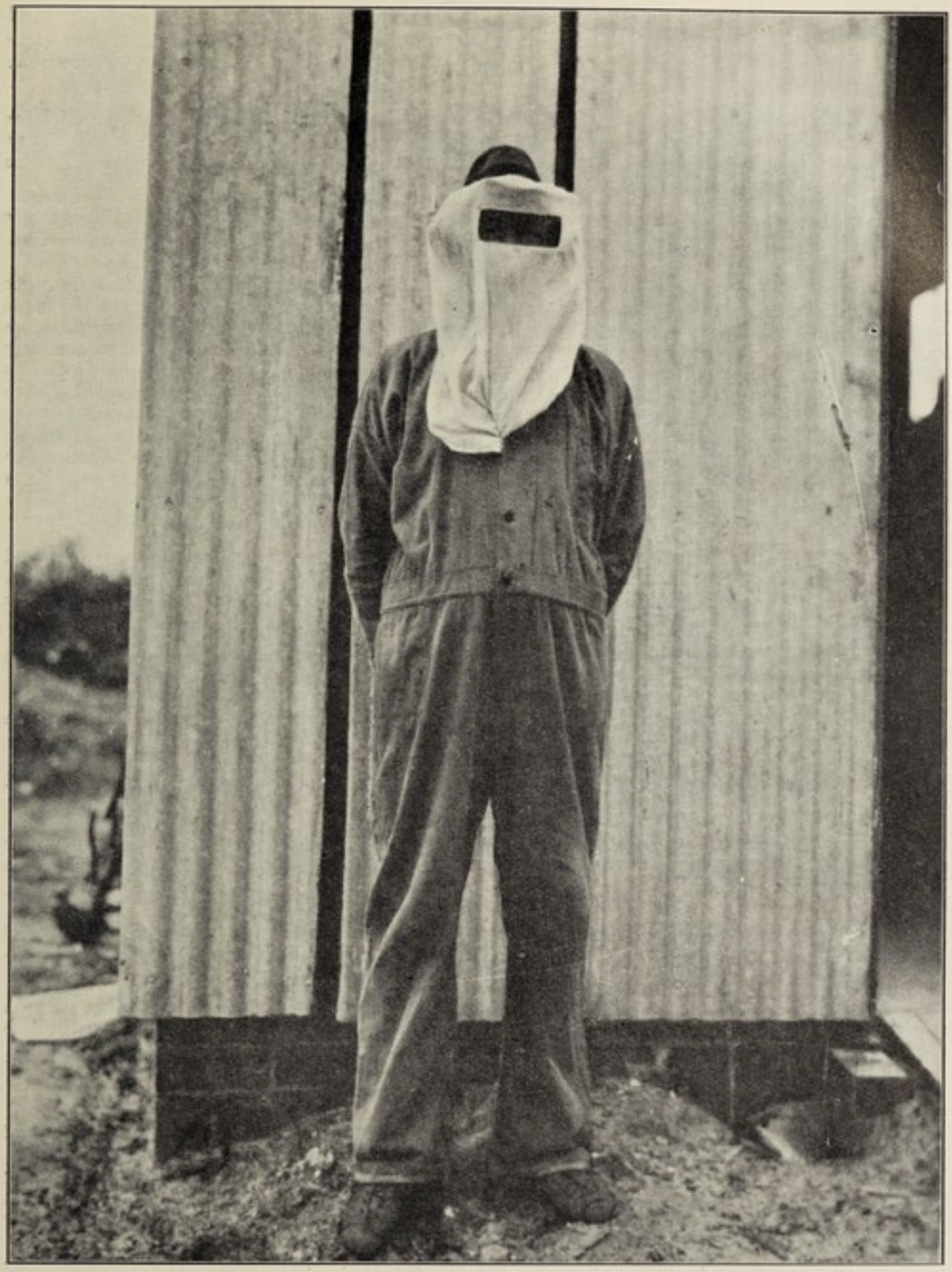
An examination of the hair of a number of the employees shows large amounts of arsenic, but it is doubtful what diagnostic value may be attached to arsenic in the hair of individuals exposed to large amounts of arsenic dust, even when the hair is washed before analysis.

Table II showing the amount of arsenic found in the hair of ten employees of the Mole River Arsenic, Refinery and of two children living near the Refinery .—

No.	Work.	Arsenic mg. per 100g. of hair.	Remarks.
1	Mining, 3 months; pentoxide, 1 month ...	91·5	Decaying nails, third, fourth, and fifth fingers left hand and fourth finger right hand.
2	Pentoxide, 2 months; stills, 1 week; furnace, 1 month.	27·5	No complaints. Burnt face due to accident with nitric acid.
3	Pentoxide, 1 month; pulling and cracking ore, 1 month.	35·0	Last time when pulling had rash over eyes. Complains of sore eyes.
4	Pentoxide, 11 months; furnace 7 months	59·5	No complaints.
5	Furnace, 2 months; pentoxide, 3 weeks...	89·5	Rash on calves both legs when working on furnace.
6	Stills, 4 years	25·0	No complaints.
7	Furnace, 3½ years	75·5	Ulcers on right leg. History of varicose veins and injection treatment. No ulcers before coming to arsenic works.
8	Furnace, 5 years	5·0	No complaints.
9	Pulling pentoxide and cracking ore, 5 months; stills, 3 months.	60·5	Nitric acid stains only.
10	Stills, 5 years	44·2	Nitric acid stains only.
11	Daughter of No. 8 (age 4 years)	2·9	.....
12	Son of No. 8	3·0	.....

The management appears to have taken precautions to minimise the dangers of the work, and have adopted my recommendations to change the employees from the more to the less hazardous work after a limited exposure. Considering the dangers associated with this work, the incidence of sickness is small.

* Report of the Director General of Public Health, 1931-32, page 62.



An approved mask for workers exposed to arsenic dust. Since its use by the employees of a Sydney factory engaged in sieving arsenic no cases of dermatitis have occurred. It has a large air intake and does not come in contact with the face.

In company with an Inspector from the Department of Labour and Industry, an inspection was made of a factory engaged in the manufacture of an arsenical sheep dip where several cases of dermatitis had occurred, presumably from sieving the arsenic. With the adoption of the following precautionary measures, there have been no further cases.

The sieving operations were isolated from other processes, the machinery ventilated with a cowl ventilator and an improved mask supplied for the operator. This mask, which is made of fine muslin, has a celluloid window and fits over the hat, the ends being tucked in under the overalls. It has a large air intake and does not come into contact with the face, a precaution essential to prevent dermatitis when working with arsenic, especially in hot weather.

The amount of air exhausted by the cowl was about 120 cubic feet per minute, giving an average air velocity of 30 feet per minute across the face of the feeding chamber.

* 85383—P

It was found that the amount of arsenic in the air of the room during the sieving of 3 cwt. of arsenic was equivalent to 0·04 mg. in 34 cubic feet of air.

A man engaged spraying and dipping cattle with an arsenic solution was poisoned. Eleven weeks after leaving work, his hair contained 2·7 mg. of arsenic per 100 g. of hair, and his urine 0·05 mg. of arsenic per litre.

A slaughterman who was partly employed spraying skins and hides with a solution containing arsenious oxide, apparently had an acute attack of arsenic poisoning. His symptoms were vomiting at work, followed by diarrhoea. Seven weeks later he complained of general weakness, numbness and "pins and needles." At this time his hair contained 0·12 mg. per 100 g. of hair.

At the request of a Government department whose employees were frequently exposed to the dangers of arsenic poisoning, the following instructions were issued for use in the treatment of arsenic poisoning.

The Dangers of Handling Arsenic.—Owing to the increasing use of arsenic in agricultural work such as the spraying of prickly-pear, killing grasshoppers, dipping sheep, etc., the Division of Industrial Hygiene, Department of Public Health, thinks it is opportune to point out the grave danger that exists to individuals engaged in handling the very concentrated solutions of arsenic which are now commonly marketed. These solutions often contain thirty or more per cent. of arsenic, and a few drops are sufficient to cause death. It is quite easy for careless workers to contaminate their food by fingers which have become wetted with these solutions. Moreover, these solutions are strongly caustic, and will produce skin rashes, diseased nails, and even poisoning itself by contact with the skin. The inhalation of arsenic sprays, when treating prickly-pear and fruit trees is, of course, very dangerous, and more so because there is no efficient antidote available for arsenic which is breathed into the lungs. The following antidote is very efficient where arsenic has been swallowed. It is cheap to make up and keeps well, and it is strongly urged that this antidote should be kept wherever men are engaged working with arsenic.

The symptoms of arsenic poisoning are intense pain in the stomach, vomiting, with diarrhoea and collapse, in the acute form; and in the chronic form, nausea, colic, vomiting, diarrhoea, various skin eruptions and pigmentations, weakness of the muscles of the hands, sore calves, and sensations of numbness and tingling of the hands and feet.

In the case of arsenic being swallowed, the following antidote is very effective, but, where arsenic has been inhaled and passes into the blood through the lungs, it will be of no value.

Arsenic Antidote.—The following two mixtures should be made up ready for immediate use in case of poisoning by arsenic.

Mixture A.—Dissolve ½ lb. of ferric chloride crystals in 2 pints of water and add ½ oz. of concentrated hydrochloric acid. Keep in a rubber-stoppered bottle.

Mixture B.—Mix 4 oz. of finely-powdered magnesium oxide into a smooth paste with a little water and make up slowly, with stirring to prevent it becoming lumpy, to 2 pints by adding further water. Keep in a cork-stoppered bottle.

Do not mix A and B until required for use—Attach the following directions to both bottles.—When arsenic has been swallowed, place ½ pint of mixture B (shake well before pouring out of bottle) into a pint mug, and slowly add to it ½ pint of mixture A. Stir well while adding mixture A.

Give the patient this prepared pint, and 5 minutes afterwards give him a tablespoonful of common salt in a tumbler of water to make him vomit. When vomiting has ceased, give the patient a further dose of ¼ pint of mixture B and ¼ pint of mixture A mixed as before.

Zinc Poisoning.

Following a complaint of bad ventilation in a brass-foundry, an examination was made of several men employed there and inspections made of the foundry under varying outside conditions of wind, temperature, etc. Ventilation by cowls had failed to remove efficiently the fumes formed during pouring operations and a large fan had been installed, also a monitor roof to remove the fumes escaping beyond the hoods. From my inspections, I formed the opinion that the ventilation of the foundry was satisfactory but that some of the employees would be exposed to zinc fumes.

The employees examined complained of symptoms of zinc poisoning. The blood-count was normal and the amounts of arsenic found in the hair and urine and the amount of lead in urine were also normal. The urine of one man showed 1.0mg. of zinc per litre.

Complaints of Ill-effects from Using Solder.

A small number of complaints that the use of certain solders produced sore throats and sore eyes, was investigated. It appears that many of the solders at present in use in various industries contain a small percentage of antimony, but chemical tests failed to show that antimony compounds were volatilized in the process of soldering. An opinion was formed that the complaints arose from the volatilization of zinc chloride used as a flux or of free hydrochloric acid while soldering in confined spaces.

Poisoning by Lacquer Thinners.

Blood examinations were made of five spray-painters; only one showed changes that might be attributed to poisoning by thinners. His leucocyte count was 3,800 per cubic millimetre, with 45 per cent. of small lymphocytes. Except for occasional stippled cells, the red cells showed no changes.

Ventilation.

The examination of cinema theatres has been carried out when required by the Chief Secretary's Department.

The present regulations were drafted at a time when air-conditioning was not practiced in theatres in New South Wales and, in their present out-of-date form, are quite unsatisfactory. For some years, I have recommended that new regulations be gazetted. During the past few years, theatre ventilation in Sydney has developed rapidly and the present time seems opportune to re-cast the regulations. The engineers installing plants have from time to time sought the advice of this Division regarding factors such as air movement and recirculation of air, and I have recommended that a conference be called between the Architect of the Chief Secretary's Department and the representatives of the Ventilation Engineering firms and this Division, to frame regulations. Much valuable data, regarding the ventilation requirements of New South Wales' theatres has been collected by this Division and could be used as the basis for these regulations.

The standard of ventilation has improved with the installation of ventilating and air-conditioning plants in those basement shops investigated by this Division at the request of the City Health Officer.

An investigation of the ventilation of a ground-floor store was made at the request of a suburban council. It was found that the discomfort was due to lack of air movement, and a recommendation was made to instal wall-fans. It was also pointed out that if it was desired to ventilate for comfort when a packed crowd was present, nothing short of a refrigerating plenum ventilation plant was worth consideration.

Instruction in the methods and instruments used for investigating ventilation problems in buildings, mines, etc., has been given on a number of occasions by the Staff of this Division.

The Textile Industry.

Following a complaint of poor ventilation in a cotton mill, an inspection was made, and it was decided to co-operate with the Department of Labour and Industry in an investigation of the conditions found in Sydney Cotton Mills.

From the inspection made, it was found that processes such as bale-breaking, rag-tearing, waste-breaking, waste-shaking, carding and stripping of the carding cylinders were responsible for filling the air with cotton fibre and dust, both of which were irritating to the respiratory tract.

There was no mechanical ventilation in the factory and natural ventilation was negligible. During the " stripping " of the cylinders by means of a fast revolving brush, a heavy cloud of dust is created, and as each cylinder is " stripped " at least twice a day, the conditions are far from satisfactory. A vacuum brush, similar to that used to that in English mills and at least one Sydney mill, was used until two years ago but, has since been discontinued. A microscopic examination of a sample of the dust collected from one of the carding machines showed numerous small cotton fibres and dust.

The conditions of the carding room could be made satisfactory by installing a mechanical plant, together with the use of a vacuum system for stripping as recommended by the Departmental Committee on Dust in Card Rooms in the Cotton Industry (1932). Improvements are also required in other departments and an investigation is proceeding to determine the best means of reducing the dust hazard.

The Incidence of Tetanus in Sorting Dead-wool.

Dead-wool is wool garnered from the rotting carcases of sheep. As received by the wool-sorter from the country, it consists of the fleece of sheep mixed with skin, bones, dried entrails, dung, dust, burrs and thorns. It is not therefore surprising that a special incidence of tetanus has arisen among the employees of one establishment where only dead-wool is dealt with.

This special incidence of tetanus, however, is more clearly revealed when the cause of death given on the death-certificates of two men as encephalitis and meningitis respectively is queried.

In June, 1928, Dr. Millard, of the Coast Hospital, drew my attention to the case of a boy (R.G., age 17) who was suffering from tetanus. I inspected his place of work and found that two weeks previously another boy (F.Q., age 16) had died in a district hospital, and that his death had been certified as due to encephalitis. A perusal of the clinical notes showed that the chief signs and symptoms were muscular spasms of the abdomen and legs, and leaves little doubt that his death was due to tetanus.

The next case that came under my notice from the same works occurred four years later, this man was treated for tetanus and recovered.

In 1934, a man (L.R.C., age 38) employed in the same place, died at a district hospital, and his death, was certified as due to purulent meningitis. Study of the clinical notes shows that he had stiffness of the jaw muscles, spasms and cramps of the abdominal and leg muscles. Post-mortem, a small amount of frank, fluid pus was apparent in each lateral ventricle. No growth was obtained from this pus on culture. Smears from the meninges, made from a substance which was queried as pus, showing occasional Gram negative bacilli and Gram positive cocci. Cultures showed very few colonies of several organisms; Staph. albus, Staph. aureus, and Gram negative coliform bacillus definitely not M. influenzae. Such post-mortem pathological and bacteriological findings are apparently not uncommon in cases of tetanus, treated or untreated by intrathecal injections of serum.

In 1934, another man (R.L., age 21) who worked in the same place, died in St. Vincent's Hospital. His symptoms, signs and pathology presented features similar to the previous cases. A full report on this case will be found in the Reports of the Workers' Compensation Commission. An attempt was made to ascribe his death to influenzal meningitis, but the Commission held that he died of tetanus.

In 1935, a man (W.P.M., age 47) who had been employed in the same place for four days, nine days before he developed signs of tetanus, died of tetanus. The pathology and bacteriology of this case presented features closely akin to the two previous cases.

During an inspection of this establishment, made in April, 1934, seventeen individuals, aged from 14 to 20, were employed sorting dead-wool. This process caused clouds of dust. The place generally was in a dirty condition, worse than any similar store I could find in Sydney. Three of the employees had abrasions; one burr cuts on either hand, which were bound up; another a cut on the arm, and a third, a burr cut on the finger. The last two boys had no covering of the abrasions. There were no bandages available and no iodine. The floors of the dressing-room were very dirty, the washing-basin and parts around filthy, and a cold shower was in a dark, rough place.

Acting under instructions from the Minister of Health, the Director-General of Public Health desired me to draw up recommendations to prevent tetanus. I did this after visiting eight places engaged sorting dead-wool. It is hoped by the use of protective clothing, gloves and gowns, and the sorting of dead-wool on a wire-screen with exhaust ventilation, together with special routine inspection and the advocacy of cleanliness and first-aid practices to prevent tetanus in this industry.

Sandblasting.

The examination of a number of men exposed to dust from sandblasting has shown that generally the conditions of this work are unsatisfactory owing to negligence in keeping the positive-pressure helmets in good repair or to failure to supply helmets to the employees. A recommendation has been made to the Department of Labour and Industry to have sandblasting replaced by shotblasting. For special work, sandblasting could be permitted under strict supervision. The position regarding this process is serious and my recommendation should be adopted without delay.

Bronzing.

I examined the working conditions in the embossing department of a large printing establishment. A claim had been made by one of the employees that dusting with bronze powder had caused or aggravated pulmonary tuberculosis. I have previously investigated cases of ill-health among bronzers, but have been unable to associate them with this work. In the above case only a small percentage of the time was spent on bronzing, and from a chemical and microscopic examination of the powder, I expressed the opinion that, although there appears to be a definite hazard of pulmonary tuberculosis in the printing industry, I am unable to associate it with bronzing.

Dermatitis.

Bakers' Dermatitis.—Between June and October, 1933, seven doughmakers and a pastrycook suffering from dermatitis, were examined. In most cases the flour contained ammonium persulphate in the proportion of one part in 2,000 to one part in 5,000. The flour-millers were asked to discontinue the use of ammonium persulphate and the outbreak of dermatitis subsided.

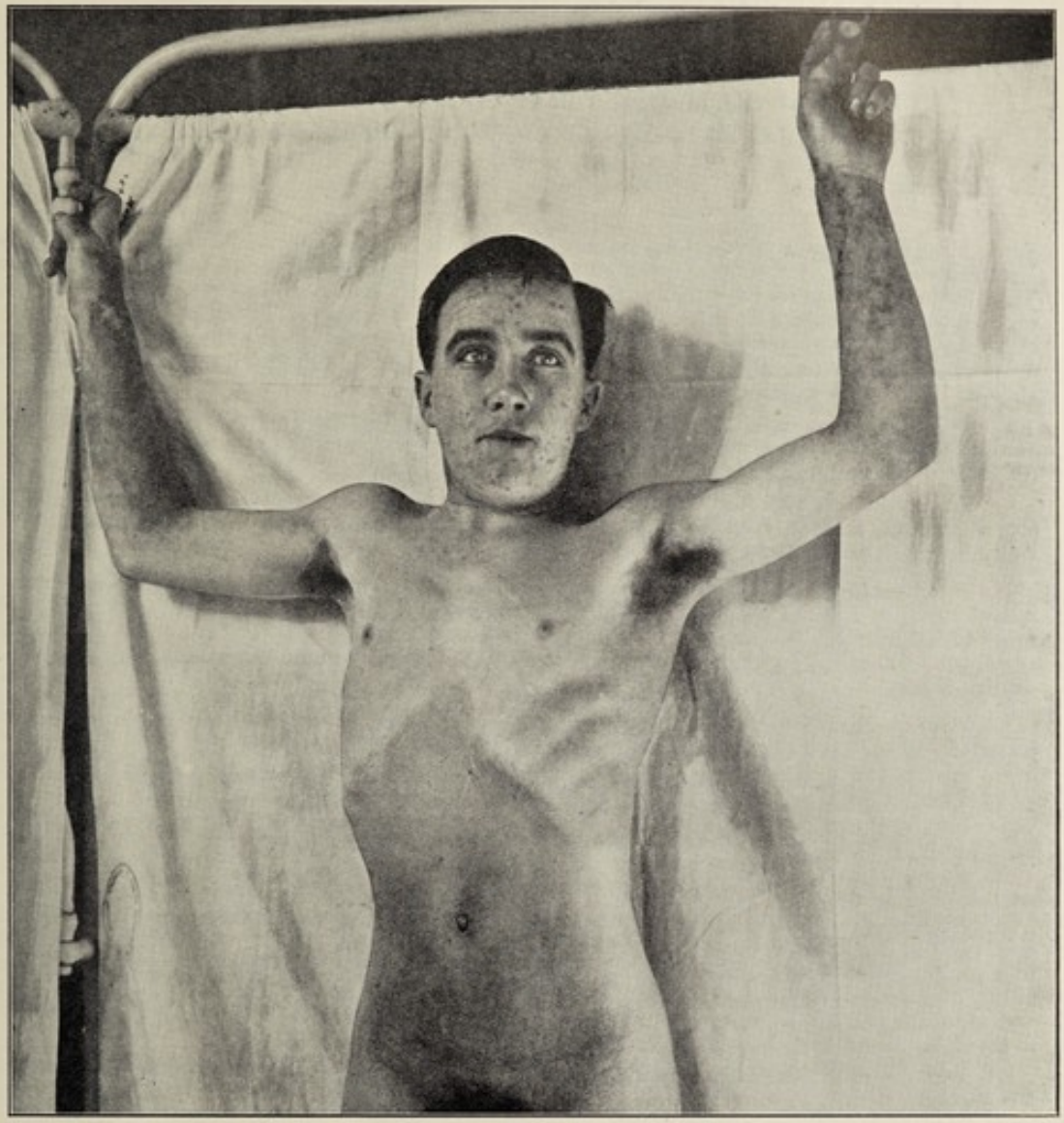
One case, however, occurred in January of this year, and the flour used by the individual affected contained ammonium persulphate.

Rubber Dermatitis.—In company with Dr. Paul, an examination was made of the employees of a rubber factory, who were suffering from skin rashes. Some of these men were not affected by their work, but it was considered that in nine cases, the dermatitis could reasonably be classified as industrial in origin.

In another rubber factory only one case was observed. This employee had worked for two weeks as a mill-hand and had a papulo-follicular rash of the wrists, forearms and arms, with a few patches on the thighs.

Dermatitis due to various substances.—A man employed braiding wire suffered from a miliary papular dermatitis of the forearm and elbow flexures. Six months previously he had had a similar rash which cleared up with a change of employment, only to recur three days after going back to wire-braiding. The dermatitis was probably due to oil.

A boy employed making wireless parts and using a synthetic bakelite resin, had a marked dermatitis of both arms, face, neck, abdomen, groin and thighs, which cleared up within a few weeks of leaving work, but reappeared after resuming work for one day.



Photograph of a boy employed making wireless parts and using a synthetic bakelite resin. He was affected with a dermatitis of the arms, face, neck, abdomen, groin, and thighs.

Three employees in a gas-works showed a scaly resolving dermatitis of both forearms and wrists and one of them had a chronic condition of folliculitis of the thighs, which extended to the buttocks. From their industrial history, coal-tar was indicated as the causative agent.

To prevent the feet of relief workers being affected by the caustic action of cement, a recommendation by this Division to supply gum-boots was adopted with satisfactory results. To avoid the spread of fungus infections of the feet, the boots were hosed out with water and disinfected each day with a 1 per cent. aqueous solution of chloride of lime.

SECTION II.

I.—Metropolitan Combined Sanitary Districts of Sydney.

Report of the Medical Officer of Health for the Year 1934.

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

To the Director-General of Public Health.

Sir,

I have the honour to report on the health conditions of the Combined Sanitary Districts of the Metropolitan Area of Sydney for the year 1934. The Infantile mortality rate was 43·93 per 1,000 births. The Combined Districts for the purposes of health administration consist of the metropolis, together with seven outside metropolitan districts. The metropolis of Sydney proper and suburbs, includes the City of Sydney, forty-eight municipalities and two wards of Holroyd Municipality. The outside metropolitan districts, which are separately dealt with statistically, include four municipalities, the other two wards of Holroyd Municipality together with Warringah and Hornsby shires.

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.

At the Census of 30th June, 1933, the population of the Metropolitan Combined District was 1,304,515 and of the City of Sydney 88,312. The Government Statistician's estimate of the population at 31st December, 1934, was 1,319,850, and the mean population 1,313,600.

Births.—17,709 births were registered in the Metropolitan Combined Area in 1934, equivalent to a rate of 13·48 per 1,000 of population. Male births numbered 9,079; females 8,630, being a ratio of 105 males to 100 females. There were 901 ex-nuptial births, equivalent to 5·09 per cent. of the total births, or ·69 per 1,000 of the population. The birth rate was the lowest hitherto recorded in the Metropolitan district.

Deaths.—There were 12,480 deaths registered in the Metropolitan Combined Area in 1934, giving a rate of 9·50 per 1,000 of the population. (See Table 1 on page 89.)

Detroit, U.S.A., with a death-rate of 8·4 for 1933 has forged ahead of Sydney in establishing a record for the lowest death-rate of any city with a population of over half a million.

There were 778 deaths of children under one year of age, equivalent to a rate of 43·93 per 1,000 births.

Causes of Deaths in the Metropolis.

Diseases of the Heart.—The group, Diseases of the Heart, again occupies the premier position as the chief cause of death, accounting for 2,997, or a rate of 241 per 100,000 in 1934. There were 1,315 deaths from heart diseases among females to 1,682 among males; 28 males and 20 females were under 25 years of age, 34 males and 45 females from 25 to 40 years; and 787 males and 504 females from 40 to 70 years; and 833 males and 746 females over 70 years. Occupation is probably 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, acute and chronic rheumatism, chronic arthritis, etc., accounted for 68 deaths in 1934. Fourteen of the 68 deaths were of persons under 20 years; 11 were 21–40 years; 19 41–70 years, and 24 over 70 years of age.

Two hundred and forty-two males and 100 females died from diseases of the coronary arteries; 11 males and 3 females died of angina pectoris, with record of coronary artery disease, and 52 males and 22 females of angina pectoris, which again illustrates the greater frequency in later life of degenerative changes in the arteries of the male.

In 1934, 37 males and 7 females were reported as having died from syphilis, of whom 2 males and 1 female were under one year of age.

Four men and 6 women died from alcoholism (acute and chronic), the ages of the women were 35–64.

Cancer—with its heavy toll of 1,434 deaths (676 males and 758 females), still baffles intensive and extensive research, and was again second on the list of killing diseases. The continued increase in the number of deaths from cancer emphasises the importance to the public of the often repeated warning that there should be no delay in seeking skilled advice on appearance of any suspicious symptoms.

Bright's Disease (Acute and Chronic), is third on the list of "Causes of Death," and claimed 828 victims, 429 males and 399 females.

Pneumonia holds fourth place, with 691 deaths (males, 364; females, 327); 284 deaths were due to broncho-pneumonia, 281 to lobar pneumonia, 124 to pneumonia (unspecified), and 2 to capillary bronchitis.

Tuberculosis.—The number of deaths from all forms of tuberculosis in the metropolis proper was 604, of which 551 were due to tuberculosis of the lungs; 26 to tubercular meningitis; and 27 to other tubercular diseases. These figures include deaths of former metropolitan residents which occurred at sanatoria and other institutions. During the past forty years there has been a reduction of the death rate of pulmonary tuberculosis by more than half. A 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 modern conditions of living that the next most common cause of death (after Cerebral hæmorrhage) is that due to accidents. In 1934, 432 persons (318 males and 114 females) were fatally injured, a reduction of 16 on the figures for 1933.

Accidents from railways and tramways caused 39 deaths, of which 2 were women; other land transport accidents 12 (9 males and 3 females); motor vehicles, 183 (146 males and 37 females); or 17 more than in 1932.

Table I.

Showing Population, Density of Population, and Deaths from certain Diseases in the Municipalities of the Metropolitan Combined Sanitary Districts for the year 1934. Deaths occurring in hospitals and institutions have been distributed to their proper districts.

Municipality.	Estimated Mean Population 1934.	Mean Density of Population to the acre.	All Causes.	Diarrhœal Diseases, including Enteritis.	Epidemic Diseases.	Tuberculosis of Respiratory System.	All Tubercular Diseases.
			1934.	1934.	1934.	1934	1934.
City of Sydney	88,420	27·26	1,158	4	24	77	81
Alexandria	9,020	8·58	78	2	4	1	1
Annandale	12,230	35·35	108	...	5	9	9
Ashfield	39,530	19·36	395	3	9	15	16
Auburn	20,180	7·79	165	6	6	8	8
Balmain	28,310	28·98	325	4	12	8	9
Bankstown	25,690	1·34	183	4	12	7	7
Bexley	20,650	10·81	163	1	7	7	8
Botany	8,400	3·87	56	1	3	1	1
Burwood	19,490	17·62	182	1	1	7	9
Canterbury	79,580	9·64	562	1	21	35	37
Concord	23,300	8·57	140	1	6	6	6
Darlington	3,060	56·67	36	1	2	2	2
Drummoyne	29,410	15·04	231	2	6	8	10
Dundas	6,070	2·23	32	...	.....	1	1
Eastwood	3,090	1·05	28	...	1	1	1
Enfield	14,810	8·83	143	2	5	4	4
Ermington and Rydalmere	2,370	1·16	29	...	3	1	2
Erskineville	6,650	35·75	74	1	4	3	4
Glebe	19,890	38·40	235	1	11	14	15
Granville	19,790	4·90	176	3	7	8	11
Holroyd(Pitt and Merrylands Wards)	8,500	3·86	64	...	1	3	3
Homebush	3,190	5·36	45	...	...	1	1
Hunter's Hill	9,050	6·39	48	...	2	4	5
Hurstville	22,840	3·73	215	2	8	11	11
Kogarah	30,930	6·43	209	2	7	10	10
Ku-ring-gai	28,760	1·42	265	1	3	12	12
Lane Cove	15,310	5·96	114	1	3	4	4
Leichhardt	30,240	26·18	282	5	8	16	19
Lidcombe	17,400	3·33	454	1	10	19	21
Manly	23,660	7·63	269	2	7	9	9
Marrickville	45,470	24·07	433	...	16	21	22
Mascot	14,570	6·55	111	2	1	6	6
Mosman	23,920	11·18	234	...	7	5	5
Newtown	25,300	52·71	300	1	8	15	15
North Sydney	49,970	19·77	518	1	10	17	18
Paddington	24,710	58·69	301	4	7	22	24
Parramatta	18,160	8·14	264	2	9	6	7
Petersham	27,060	31·84	257	3	5	10	10
Randwick	79,480	9·32	647	1	13	41	48
Redfern	18,840	46·63	226	1	8	16	18
Rockdale	39,430	7·73	286	3	4	8	10
Ryde	28,160	4·04	234	3	11	18	22
St. Peters	12,570	13·94	130	2	11	2	2
Strathfield	12,280	6·69	105	3	3	4	4
Vaucluse	7,330	9·21	62	1	...	2	2
Waterloo	11,680	14·12	95	1	5	4	4
Waverley	56,580	25·89	485	3	12	21	24
Willoughby	42,870	7·84	378	2	15	14	16
Woollahra	35,220	18·68	317	3	5	7	10
Total Metropolis	1,243,420	7·93	11,847	88	348	551	604
Cabramatta and Canley Vale	6,290	·80	61	1	2	1	1
Fairfield	8,840	·55	61	...	...	5	5
Holroyd (Guildford and Wentworth Wards)	7,590	1·02	43	...	...	2	2
Hornsby Shire	22,880	·18	326	...	3	20	22
Ingleburn	1,910	·15	15	...	...	.....	.....
Liverpool	6,420	·25	94	1	2	5	5
Warringah Shire...	16,250	·25	133	...	3	7	7
Total	70,180	.....	633	2	10	40	42
Total Combined Metropolitan Sanitary Districts	1,313,600	.....	12,480	90	358	591	646

In some of the municipalities, the population is confined to small areas, with large unpopulated spaces surrounding, consequently the density per acre is small in such instances.

Deaths from Epidemic Diseases.

Typhoid fever caused 3 deaths in 1934.

Measles showed a decrease from 27 in 1933 to 9 in 1934.

Whooping Cough caused 138 deaths in 1934, or 130 more than in 1933. All the deaths except 5 were of children under five years, and 89 were under one year.

Scarlet Fever deaths numbered 7, a decrease of 30 on the previous year. The rate was 0·56 per 100,000 of the population. Four of the deaths were of children under five years of age.

Diphtheria.—There were 91 deaths from diphtheria, 19 more than in 1933; 44 deaths were of children under five years of age.

Other epidemic diseases—*Influenza*—There were 64 deaths from Influenza. *Infantile Paralysis* caused 6 deaths. *Epidemic Cerebro-Spinal Meningitis* accounted for 3 deaths. *Encephalitis Lethargica* accounted for 9 deaths.

The infectious diseases to show decreases in 1934 were typhoid fever, measles, scarlet fever, influenza and epidemic cerebro-spinal meningitis, whilst whooping cough, diphtheria and infantile paralysis showed increases.

Diabetes accounted for 209 deaths, a decrease of 14 on the number (223) in 1933. The death rate for 1934 was 16·81 per 100,000, contrasted with a rate of 9·9 per 100,000 in 1911. This increase corresponds to that observed in almost all other civilised countries. In New York City the figures for 1931 were 50 per cent. higher than in 1911. The increased per capita consumption of sugar is suggested as a factor in the increased incidence. In 1934 there were 140 deaths of females to 69 in males. The notable increase of deaths in females is most marked in the later age periods.

Diabetes is a disease of adult life, and occurs at that period when people are most productive in an economic sense. It is unfortunate that it is not more frequently discovered in its incipiency; routine examinations of urine for sugar are advisable in overweight individuals of forty years or over. The introduction of insulin treatment with scientific control of the diet and intelligent co-operation of the patient, should considerably prolong the lives of those affected.

Diarrhœa and *Enteritis* caused the deaths of 45 children under 2 years of age; and 43 of persons 2 years and over.

Maternal Mortality.—In the metropolis there were 27 deaths from puerperal septicaemia (including 11 abortions with septic conditions), and 89 deaths from other puerperal diseases. The Government Statistician estimates the maternal mortality rate at 5·02 per 1,000 births, excluding illegal operations.

Infantile Mortality.—There were 731 deaths of infants under 1 year of age in the metropolis during 1934, whilst the births numbered 16,530, giving an infantile mortality rate of 44·20 per 1,000 births.

Of the deaths in the first year of life, no less than 379 occurred in the first week of life, and 458 (or 52 and 63 per cent.) in the first month.

Looking at the rates of infantile mortality in Sydney for the past fifty years we see a reduction from 192 per 1,000 in 1880 to 50 in 1930, 44·34 in 1931, 39·01 in 1932, 36·82 in 1933, and 44·20 in 1934.

The fall in the infantile mortality in Sydney for the past five years below 50 per 1,000 is encouraging following the intensive campaign for its reduction by the Baby Health Centres and the Royal Society for the Welfare of Mothers and Babies.

Table 2 (*a*) Showing deaths of children under 1 year per 1,000 births from 1880 to 1934, and

(*b*) Deaths of infants in the metropolis from various causes, 1920–1934.

(*a*) *Infantile Mortality per* 1,000 *Births,* 1880–1934, *at* 10-*year intervals.*

1880	192	Dairies Supervision Act, passed 1886.
1890	135	
1900	109	Public Health Act, passed 1896.
1910	82	Visiting nurses first appointed 1904.
1920	74	
1930	50	Maternal and Infant Welfare Division, established 1923.
1931	44	
1932	39	
1933	37	
1934	44	

(b) *Deaths of Infants in the Metropolis from various causes*, 1920–1934.

(The accompanying graph shows the infantile mortality rate during the period 1909–1934.)

Cause of Death.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.
Measles	20	3	1	6	2	1	8	1	23	12	15	2	1	1	1
Scarlet Fever	1	...	...	...	...	2	2	5	5	3	2	2	1	2	...
Whooping cough	121	27	24	24	16	74	38	70	16	79	34	70	11	5	89
Diphtheria	11	11	10	12	5	12	11	8	8	14	7	10	7	4	...
Influenza	6	7	1	9	4	8	5	5	3	3	2	4	4	3	1
Cerebro-spinal meningitis	2	1	3	2	3	2	6	3	2	...	2	1	1	1	2
Tuberculosis-meningitis	1	9	8	2	6	3	5	4	2	10	5	3	...	2	1
Other tuberculous diseases	3	5	2	2	1	5	5	3	5	4	4	1	2	2	...
Meningitis	7	14	10	19	20	15	18	17	12	14	11	4	8	5	13
Convulsions	22	18	15	11	13	12	25	19	5	4	4	7	1	...	...
Other nervous diseases	8	4	1	2	2	2	9	4	2	5	...	2	4	6	...
Bronchitis	26	20	21	29	16	18	10	13	13	19	14	11	5	5	5
Pneumonia	126	101	132	129	139	141	105	146	108	164	82	92	54	75	71
Other respiratory diseases	12	6	2	2	4	3	1	5	7	3	1	2	3	1	5
Diseases of the stomach	11	12	6	6	5	5	6	8	3	1	2	1	1	3	...
Diarrhœa and enteritis	443	385	257	407	224	211	281	163	181	144	219	105	59	36	36
Intestinal obstruction and hernia	10	17	7	8	9	9	17	5	6	12	5	6	6	7	8
Bright's Disease	...	2	2	...	1	...	1	1	...	2	1	2	1	1	...
Prematurity	440	379	362	379	382	355	388	313	320	379	353	244	234	221	222
Congenital Malformations	102	91	114	99	100	93	95	100	76	101	73	64	76	79	89
Congenital Debility	121	130	118	104	125	87	90	91	84	93	64	38	28	28	23
Injury at Birth	39	44	49	44	50	47	58	49	60	58	64	73	65	49	64
Other developmental diseases	57	67	70	52	62	71	58	48	48	61	58	44	68	45	58
Accident	12	9	7	10	13	11	7	13	8	20	13	10	10	17	9
All other causes	57	52	57	47	60	68	66	67	45	58	60	48	36	31	34
Total	1,658	1,414	1,279	1,405	1,262	1,255	1,315	1,161	1,042	1,263	1,095	846	686	619	731

Sanitary Survey.

During 1934, much work has been carried out under Unemployment Relief in constructing storm-water drains, more especially on the boundaries of municipalities. Thus the Wangee street drain at Bankstown, Enfield and Canterbury, has been made of brick and concrete. Similarly under the Public Works Department a drainage channel has been constructed on the boundaries of Granville, Guildford and Holroyd, Ramsay-street, Ashfield, to the Harbour, and a drain between Drummoyne and Ashfield. A drain from Kogarah Sanitary Depot and portions of Hurstville, Bexley and Kogarah to Penshurst has also been constructed.

Considerable improvement has been made in reclaiming areas for parks and playgrounds. In Marrickville, Steele Park has been formed by the residue from the incinerator. Reclamation is still being continued in Concord, where forty acres have now been converted from a mangrove swamp into a recreation area.

The Metropolitan Water, Sewerage and Drainage Board has also accelerated the extension of sewerage. Especially in Canterbury and Concord has the boon of sewerage been appreciated.

Incineration of Garbage.

Owing to persistent agitation against the use of the incinerator at Woollahra an inquiry was held by Mr. Gallop at the Woollahra Town Hall, at which thirty-three witnesses were examined. The Woollahra Council had introduced gas boosters and installed three preheating chambers to prevent the issue of smoke, and in addition a smoke arrestor. The Commissioner recorded his opinion that there was no nuisance from the incinerator. At the inquiry, I represented the Department of Public Health. It was demonstrated that the incinerator is a public utility, the erection and operation of which replaced a serious nuisance from the burning of refuse on the tip. Since the decision of the Commissioner, one has not heard a murmur against the incinerator. It is evidently realised that the alleged depreciation of the value of property from proximity thereto was due to the publicity given to the agitation. As a matter of fact further buildings have been erected on land in the vicinity.

A site not having been found in Mosman for the erection of an incinerator, the Mosman Council combined with that of Warringah shire, and selected a site in the latter area on the boundary of Manly. Although the site is well isolated and the ideal advocated by town planners to get local authorities to combine in the erection of such utilities, has been partially solved, yet there is a local agitation against its erection.

The new incinerator at Pyrmont for the city is nearing completion.

The Willoughby incinerator was opened during the year. So far the forebodings of those opposed to its erection have not eventuated.

Housing.—During the years of depression there has been an increase in the number of families occupying one dwelling, and it has been difficult to prevent overcrowding. Whilst in the city proper the Council has cleared away the main formerly congested areas and shown a lead to other authorities in erecting workmen's dwellings in Dowling-street and Way's-terrace; also in the city and suburbs immediately contiguous thereto, a considerable amount of old dilapidated insanitary property has been demolished and replaced either with industrial establishments or more up-to-date dwellings; still there are areas where the housing conditions and the standard of life are below what should obtain in a country so rich in natural resources as Australia.

In Redfern, Paddington, Waterloo, Alexandria and Erskineville, there are congested areas which call for a scheme for replanning and rehousing.

Whole blocks of dwellings with small yards abut on other yards, each surrounded by a dilapidated rence like a boarded well. There are still a few lanes as narrow as 9 to 12 feet; whilst a few backyards are only 6 ft. x 12 ft.

Some demolition of houses unfit for habitation, especially in Redfern, has been carried out under the Public Health Act, whilst others unoccupied have in part been removed especially as to woodwork and internal fittings without authority.

Especially in Redfern is there an area which suggests a scheme for rehousing and replanning, in the interests of the rising generation.

Flats and Tenements.—A feature of all large cities is that the well-to-do leave the houses towards the centre of the city and occupy more recently built houses in the suburbs. The houses vacated become residentials or are divided and again subdivided into tenements or flats accommodating two or more families.

There is insufficient air and yard space, whilst the absence of playgrounds make then unsuitable for rearing children, as they are deprived of nature's gifts, fresh air, sunlight, breathing room and playing area.

Where there are large open spaces, huge blocks of flats, overlooking the parks or water frontages are, when suitably designed so as to secure direct light and air to every room, one solution of the housing problem.

The flat mode of living appears to suit the altered conditions of society.

It is difficult, however, to secure wholesome conditions where there are enclosed areas or courtyards from which the inner rooms derive all light and air. It is a trite saying that some of the flats of to-day will be the slums of to-morrow. In the interests of the coming generation there certainly should be more provision for play areas to at least compensate for the loss of the area available, however little, in the former residences.

INSPECTION OF RESTAURANTS, TEA ROOMS, BUTCHERS' SHOPS, COMMON LODGING HOUSES, BARBERS' SHOPS, ETC., IN CONNECTION WITH THE GENERAL ADMINISTRATION OF THE CITY HEALTH OFFICER'S DEPARTMENT—

Number of premises, city of Sydney, 22,741; restaurants, 324; tea rooms, 203; grill rooms, 66; fruit shops, 192; street fruit stands, 93; fish shops, 81; butchers' shops, 97; barbers' shops, 520.

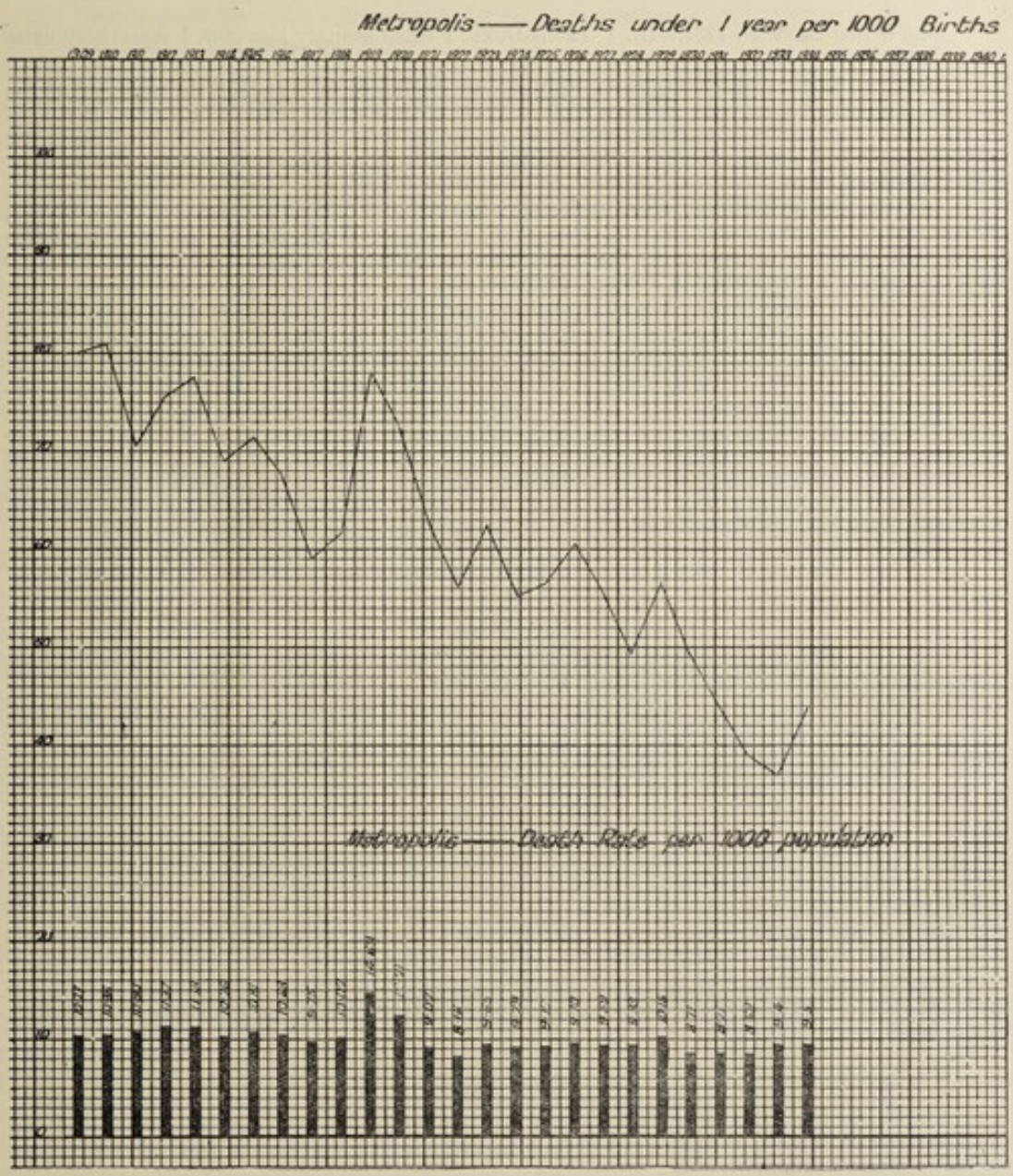
Summary of Routine Work during 1934.

	1934.
Complaints received and dealt with, inspections, etc.	575
Inspections, house to house, reinspections, restaurants, streets, lanes, etc. ...	39,238
Inspections of butcheries, meat depots, poulterers, etc.	11,011
Inspections under Pure Food Act Regulations	23,318
Inspections of common lodging houses	245
Investigations of smoke nuisance	226
Investigations of infectious diseases	187
Notices served	2,124
Number of premises referred to the City Building Surveyor	431
Plans reported on	695
Number of premises visited by ratcatching staff	6,662
Number of complaints investigated by ratcatchers...	476
Number of traps set and poison baits laid	50,468
Number of rats caught...	4,349
Number of milk samples taken for analysis	1,000
Disinfection of premises	186
Prosecutions against offenders (Health Department only)...	38
Total amount of fines inflicted	£78 11s.

Legal Proceedings Undertaken.—In 1934 were respectively, Sydney Corporation Act and By-laws 5; Pure Food Act, 35; total, 36.

Milk Samples.—Of 1,000 samples of milk taken in the city in 1934, 5 were found not in conformity with the standard. There one (1) warning, and four (4) convictions for selling milk deficient in milk fat.

Septic Tank Installation.—Number of septic tanks inspected in 1934 and approved by the Board of Health, 191; sites inspected as to suitability for installing septic tanks, 536 in 1934.


Metropolis —— Deaths under 1 year per 1000 Births
Metropolis —— Death Rate per 1000 population

2.—Hunter River Combined Sanitary District.

REPORT OF THE MEDICAL OFFICER OF HEALTH FOR THE YEAR ENDED 31ST DECEMBER, 1934.

Administration.

Staff at 31st December, 1934.—Dr. T. Lewis-Dunn, 1 senior sanitary inspector, 1 supervisory nurse and 1 clerk.

Dr. H. G. Wallace, Medical Officer of Health, was transferred to Sydney in the early part of the year, his place being taken by the Assistant Medical Officer of Health from Head Office, Sydney (Dr. T. L. Dunn). On the retirement of the Director-General (Dr. Robert Dick) in October, 1934, Dr. Wallace was promoted to the post of Senior Medical Officer of Health, and Dr. Dunn's appointment to the Hunter River District was confirmed.

In June, Miss N. B. McKay, Nurse Inspector, was transferred to the Tuberculosis Division, Sydney, and was replaced by the appointment to the District of a Supervisory Nurse, Miss T. Bain, who, in addition to the work previously undertaken by the Nurse Inspector, carries out inspections of Private Hospitals and supervision of nurses under the Nurses Registration Act.

The Hunter River Combined Sanitary District, with a population of some 210,000, includes 17 municipalities and 5 shires, together with the Harbour of Port Hunter. Each Municipal and Shire Council is a local authority under the Public Health Act, and the Medical Officer of Health and staff exercise a general supervision over the health of the district and act in an advisory capacity to the local authorities.

Of these 22 local authorities, 12 employ qualified health inspectors, and the remainder unqualified men. The majority of these inspectors have other duties to attend to, such as those of Town Clerk, Shire Engineer, Working Foreman, Collector of Electric Light Accounts, etc., with the result that only the more obvious health matters are likely to receive attention. Moreover, many of the unqualified inspectors are not conversant with the Acts they are supposed to administer. This tends to greatly increase the work of the staff of the Medical Officer of Health.

Infectious Diseases.—Details of cases of notifiable infectious diseases are given below and on p. 90.

Diphtheria.

Five hundred and forty-seven cases of diphtheria were notified in 1934, compared with 397 in 1933, and 443, the annual average for the preceding five years.

These figures show an increase of nearly 40 per cent. over the previous year's figures, due to a mild epidemic throughout the district during the autumn of 1934. This epidemic again showed the inadequacy of the accommodation for infectious diseases at Newcastle, Wallsend and Cessnock Hospitals. A number of cases from outlying areas which would ordinarily have been admitted to Newcastle Hospital Isolation Block had to be referred to the Maitland Hospital. At the height of the epidemic it was not uncommon for two or more patients to be obliged to undergo treatment in the same cot. This condition of overcrowding and close contact may have been the cause of the persistent positive swabs given by convalescents, and which was a feature of the epidemic. During the time this disease was prevalent, prominence was given to the question of prophylactic immunization.

In February and March the Medical Officer of Health was asked to assist in combating an epidemic in Stroud Shire, which is beyond the boundaries of the Hunter River District.

This epidemic occurred among small isolated communities at Stroud, Stroud Road, Weismantels and Ward's River. Areas which the disease had not visited for some years and the percentage of susceptibles was, in consequence, very high.

Scarlet Fever.

Two hundred and nine cases of scarlet fever were notified in 1934, compared with 604 in 1933, and an annual average of 354 in the previous five years, and representing a decrease of nearly 80 per cent. on the previous year's figures.

Typhoid Fever.

Eighteen (18) cases were notified during the year, representing a record low figure, the lowest figure previously being 22 in 1932.

Of the 18 cases reported, 11 were from a locality where there was a general lack of attention to sanitation. In this area the incidence rate was 11·45 per thousand of population, compared with 0·03 per thousand for the remainder of the district.

An investigation was carried out in the endemic area, in an endeavour to trace "carriers," a number of whom are thought to exist. Beyond persons with a previous history of typhoid fever, no suspects were located, and, without the services of a bacteriologist, little could be done in the way of bacteriological examinations.

A house-to-house inspection revealed that the sanitation of the area was most primitive, and steps were taken to have this matter attended to forthwith by the Council concerned.

Pulmonary Tuberculosis.

Sixty-eight cases occurred, as against 62 for 1933.

During the year the Anti-tuberculosis Dispensary, taken over by the Newcastle Public Hospital during 1933, was transferred to the new Out-patients' Department at the Hospital.

Puerperal Infection.

There were 13 cases reported. In no case could the source of infection be traced.

Other Notifiable Diseases.

Cerebro-spinal Meningitis.—Five cases and 2 deaths were reported.

Encephalitis Lethargica.—One case.

Infantile Paralysis.—One isolated case in April, whilst 4 cases developed during the latter end of December, but the notifications were not received until January, 1935.

Venereal Diseases.

An up-to-date Clinic was established at the new Out-patients' Department of the Newcastle Hospital during the year. Female V.D. defaulters are now interviewed by the Supervisory Nurse attached to this office.

Infantile Mortality.

Births in 1934 numbered 3,635, and deaths under 1 year of age 209, giving an infantile mortality rate of 57·50 per 1,000 births for the combined districts, compared with 44·30 in 1933.

The chief causes of deaths under 1 year of age were: Congenital malformation, 27; congenital debility, 6; prematurity, 70; injury at birth, 24; other diseases of infancy, 11; whooping cough, 6; diphtheria, 6; bronchitis, 6; pneumonia, 25; diarrhoea and enteritis, 13.

Maternal Mortality.

During 1934 there were 18 deaths from causes connected with childbirth, including 7 from puerperal septicaemia and 7 from toxaemia of pregnancy.

During the twelve months ended 30th June, 1934, 412 cases out of a total of 2,726 female admissions to the Newcastle Hospital were for treatment of abortion, which represents more than one in every seven, or 15 per cent. of all females of all ages admitted.

Private Hospitals Act.

At the end of 1934 there were 57 licensed Private Hospitals, containing 295 beds.

Since the appointment of the Supervisory Nurse to the District, these hospitals have been visited regularly, and a closer supervision has, therefore, been maintained than was the case when these premises were entirely under Head Office control and officers from Sydney periodically visited the district.

The Supervisory Nurse, as well as making regular inspections of the Private Hospitals, visits registered midwifery nurses in the district, in accordance with the provisions of the Nurses Registration Act.

Pure Food Act.

At intervals throughout the year a Pure Food Inspector from Head Office Staff has visited the district. It is customary for his reports on food premises to be forwarded to the local authority concerned for necessary action. It has been ascertained that, with few exceptions, further action was not pursued by the local authority, consequently the time of the Pure Food Inspector from headquarters has been more or less wasted. During 1934 an effort was made by this office to follow up all reports made by this officer and ascertain that the local authority took the necessary action. To carry this out entailed additional work on the Sanitary Inspector and the necessity locally for a full-time Pure Food Officer, as mentioned in previous annual reports, still remains if supervision of premises dealing with foodstuffs is to be strictly maintained.

Some 4,000 packages and articles of foodstuffs were voluntarily surrendered and destroyed at Waratah Municipal Council's incinerator in the presence of the Sanitary Inspector.

Dentists Act.

The Sanitary Inspector was recently gazetted an Inspector under the Dentists Act, and investigations totalling 27 were carried out regarding illegal practices by dental mechanics, unregistered dentists, and advertising.

Cattle Slaughtering and Diseased Animals and Meat Act.

Two shires within the district have taken advantage of the powers conferred by the Cattle Slaughtering and Diseased Animals and Meat Act to impose fees for the regular inspection of cattle slaughtered for human consumption.

As far as possible, a check has been kept on the activities of these Councils, and to determine that all slaughtering fees collected were spent on supervision.

A general investigation of the working of the system was also made.

In 1934 there were 37 slaughtering premises licensed in the district, and a total of 71 inspections were made.

One licensee was prosecuted and fined for dirty premises.

Noxious Trades Act.

Ninety-seven premises were licensed and a total of 208 inspections made during the year. Three premises were delicensed owing to traders not complying with the requirements of the Noxious Trade Regulations. One trader was prosecuted and fined for feeding uncooked offal to pigs.

Miscellaneous.

Sanitary Depots.—Thirty-three are in use within the area, 81 inspections being made. Three local authorities, at the request of this office, replaced existing boilers which had become inadequate.

Septic Tanks.—Plans for the construction of 19 septic tanks were approved by the Board of Health, and advice given as to structural alterations and repairs in thirty instances.

Insanitary Buildings.—In areas where qualified Health Inspectors are not employed, many requests were made by the Local Authority for the Departmental Inspector to visit premises with the view to having them closed under section 58 of the Public Health Act. Seventeen buildings were certified as unfit for human habitation and subsequently closed.

Low-lying Areas.—During the year a commencement was made to notify under the Public Health Act, section 55, low-lying land along the populated shores of Lake Macquarie.

In this portion of the district, large areas are inundated after rain, and much work remains to be done. Owing to the cheapness of this swampy land, numbers of unemployed persons have bought blocks and erected " batches " or " shacks." In wet weather the plight of these people is pitiable.

Examinations of Milk for the Milk Board.—The services of a bacteriologist were made available during the year to investigate the bacterial content of the Newcastle Milk Supply, and to determine the presence of *Brucella abortus*. Sixty-nine samples were examined during the year.

Pathological Examinations.—It is still the practice in parts of the Hunter River District to discharge patients from hospital following their recovery from infectious diseases without first ascertaining whether these persons still harbour the causative organism.

This is against modern medical principles, but it is pointed out that, owing to the distance from the Microbiological Laboratory in Sydney, the time taken by the specimens in transit vitiates the result. The new pathological laboratory at Newcastle Hospital is used primarily for investigation of the hospital inmates, and does not serve the district.

A laboratory under the control of the Health Department is, therefore, still very necessary, and could include among its duties that of examination of milk for the Milk Board.

Medical Examinations of pilots stationed at Newcastle; entrants to the Public Service; applicants for Widows' Pensions, or admission to State Hospitals; workers claiming compensation under the Workers' Compensation Act; applicants for travelling concessions to returned soldiers and others, totalled some 200 examinations during the year.

Examination of Rats for Plague Infection.—The two wharfingers from the Navigation Department continue to trap rats and submit the carcases for examination. A total of 200 rats and mice were examined during the year, none showed any sign of plague infection.

3.—Broken Hill and District.

REPORT OF THE MEDICAL OFFICER OF HEALTH, W. E. GEORGE, M.B., Ch.M., FOR THE YEAR ENDED 31st DECEMBER, 1934.

The population of Broken Hill Municipal District at 30th June, 1934, was 26,484. There were 540 births for the twelve months, comprising 267 males and 273 females. The deaths numbered 307 (males, 178; females, 129).

Infectious Diseases.—The monthly incidence of notifiable infectious diseases was as follows :—

	Typhoid and Paratyphoid.	Scarlet Fever.	Diphtheria.	Puerperal Infection.
January	1	1	3	...
February	3	...	1	...
March	1	...	7	...
April	2	...	9	...
May	1	1	2	...
June	...	4	5	...
July	...	8	9	...
August	...	5	3	...
September	...	7	1	...
October	...	9	...	...
November	1	1	2	...
December	1	...	...	...
Totals	10	36	42	...

Notifications of other notifiable infectious diseases were nil.

The incidence of notifiable infectious diseases at Broken Hill during the past five years is shown in the following table :—

	1930.	1931.	1932.	1933.	1934.
Typhoid and Paratyphoid Fever	95	109	20	8	10
Scarlet Fever	19	38	16	31	36
Diphtheria	37	52	32	27	42
Infantile Paralysis	4	4	6	...	...

Attention is again directed to the low number of cases of notifiable infectious diseases, especially the diminution in the number of cases of typhoid and paratyphoid fever during the past three years.

The unsatisfactory privy accommodation at the various local State schools has received attention. The improvements in this accommodation at the North Broken Hill school have been inspected, and it is now satisfactory.

During the year the municipal swimming baths have been enlarged and modernized, being now supplied with filtered and chlorinated water. Since their opening very large attendances have been the rule.

The State Laboratory has carried out very useful service. The total number of examinations at the Laboratory for the year was 2,804, comprising 268 biochemical tests, 1,895 bacteriological, 315 hæmatological and 192 pathological (tissue) investigations. In addition, 134 serological specimens were sent to Sydney for examination. All necessary culture media, swabs, etc., were prepared at the laboratory.

Wm. E. GEORGE,
Medical Officer of Health.

SECTION III.

Report upon the State Hospitals under the Control of the Director-General of Public Health.

1.—THE PRINCE HENRY HOSPITAL, SYDNEY: REPORT FOR THE YEAR 1934.

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 Prince Henry Hospital during the year 1934.

The Staff during the year has been as follows:—

HONORARY MEDICAL STAFF.

Consulting Physicians.

Charles George Lambie, M.C., M.D., F.R.C.P. (Edin.), F.R.S.E.

Reginald Jeffrey Millard, C.M.G., C.B.E., M.B., Ch.M. (Syd.); D.P.H. (Camb.).

Consulting Surgeon.

Harold Robert Dew, M.B., B.S. (Melb.); F.R.C.S. (Eng.); F.R.A.C.S., F.A.C.S.

Physicians.

Charles Bickerton Blackburn, O.B.E., B.A., M.D., Ch.M.
Edward W. Fairfax, M.B., Ch.M. (Syd.); M.R.C.S. (Eng.); L.R.C.P. (Eng.).
Richard Jeremy, M.B., Ch.M (Syd.); M.R.C.P. (Lond.).
Sidney Rosebery, M.D., M.R.C.P. (Edin.).
Harold Wilson, M.B., Ch.M (Syd.); M.R.C.P. (Lond).

Honorary Surgeons, Etc.

Reginald Henshall Bettington, M.B., M.R.C.S., L.R.C.P., Assistant Honorary Surgeon, Ear, Nose and Throat.

Frank Eric Raymond Biggs, M.B., Ch.M., (Syd.); Honorary Radiologist.

Howard Bullock, B.Sc. (Oxon.), M.B., Ch.M. (Syd.); L.R.C.P. (Lond.); F.R.C.S. (Eng.).

Harry C. Rutherford Darling, M.D., M.S. (Lond.); F.R.C.S. (Eng.); F.P.S. (Glasg.).

Reginald Laidlaw Davies, O.B.E. (M), M.B., Ch.M. (Syd.); F.R.C.S. (Edin.); F.R.A.C.S., Honorary Gynaecological Surgeon.

Thomas Maynard Furber, M.B., Ch.M., F.R.A.C.S.

John Charles White Halliday, M.B., Ch.M. (Syd.); D.P.H. (Camb.); F.R.C.S. (Edin.); F.R.A.C.S., Honorary Ophthalmic Surgeon.

Clarence Henry Hughes, B.D.S., D.D.S., Honorary Dentist.

Herbert Huff Johnston, M.B., Ch.M. (Syd.), Honorary Ear, Nose and Throat Surgeon.

Frederick Arthur Maguire, M.D., Ch.M. (Syd); F.R.C.S. (Eng.); Honorary Consultant Surgeon to the Radium Clinic.

Edmund Harold Molesworth, M.D., Ch.M. (Syd.), Honorary Dermatologist.

Herbert Michael Moran, M.B., Ch.M. (Syd.); F.R.C.S. (Edin.); F.R.A.C.S., Honorary Radium Therapeutist.

Robert Joseph Silverton, M.B., Ch.M. (Syd.); F.R.C.S. (Edin.); F.R.A.C.S., Honorary Urologist.

John Colvin Storey, O.B.E., M.B., Ch.M. (Syd.); F.R.C.S. (Eng.); F.R.A.C.S.

Paul Tillett, M.B., Ch.M. (Syd.), Honorary Radiologist.

Wilfred Vickers, D.S.O., V.D., M.B., Ch.M. (Syd.); F.R.A.C.S., Honorary Orthopoedic Surgeon.

Robert Blakeway Wade, M.D., Ch.M., F.R.A.C.S.

Angus Buchanan Walker-Smith, M.B., Ch.M., F.R.C.S., Honorary Assistant Urologist.

Ernest Stanley Wallace, B.D., Sc. (Syd.); D.D. Sc. (Melb.); Honorary Consulting Dental Surgeon.

Honorary Anaesthetist.

Philip Sydney Jones, M.S., M.B.

Resident Medical Staff.

Medical Superintendent.—Henri V. D. Baret, B.A., M.B.

Deputy Medical Superintendent.—Cecil J. M. Walters, M.B., Ch.M. (Syd.), F.R.A.C.S.

Senior Medical Officers.—Francis H. Hales Wilson, B.Sc., M.B. (Syd.); Norman J. Symington, M.B., Ch.M (Syd.); Ralph C. Huntley, M.B., B.S. (Syd.).

Junior Medical Officers—7.
Manager.—William M. Megarvey, J.P.
Matron, Miss C. M. Burne.
Sub-Matron, Miss C. M. Dickson, R.R.C.
Asst. Sub-Matron, Miss M. A. R. Hall.
First Clerk, William J. Gordon, M.C., J.P.
Dispenser, Miss K. M. Legge.
Sisters, 16; Nurses, 250; other Female Staff, 102.
Attendants (Ward), 21; other Male Staff, 59.

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 1934 and the previous year :—

	1933.	1934.
Remaining in Hospital on 31st December	629	609
Admitted during the year	9,632	9,204
Total cases under treatment during the year	10,412	9,833
Discharges, including deaths	9,783	9,224
Deaths	686	630
Death-rate per cent. of total discharges	7·01	6·8
Average daily number of occupied beds	745	684
Average stay of patients (in days)	26	25·4

For the year the number of admissions was 428 less than in 1933, and the average daily number of occupied beds was 684, as against 745 in 1933. The average stay of patients was 25·4 days.

II. *Infectious Diseases.*—The following table summarises the work of the year in regard to these, and affords a comparison with 1933. 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, 1934, are not included in these figures for the year :—

	1933.			1934.		
	Cases.	Deaths.	Fatality.	Cases.	Deaths.	Fatality.
Typhoid Fever	12	2	16·6	10	...	...
Measles	264	14	5·3	89	7	7·7
Scarlet Fever	1,491	27	1·8	732	3	0·4
Whooping-cough	1	Nil.	Nil.	148	32	21·6
Diphtheria	1,182	28	2·3	1,538	37	2·4
Influenza	99	6	6·06	92	2	2·1
Erysipelas	91	3	17·6	75	2	2·6
Other Epidemic Diseases	24	Nil.	Nil.	22	...	...

Typhoid Fever.—The number of cases under treatment was less than in 1933; the fatality was nil.

Scarlet Fever.—Was less prevalent than in 1933—1,314 cases being notified in the whole metroplitan area during 1934, as against 3,032 during 1933, and the cases treated at the Prince Henry Hospital showed a corresponding decrease. There were 3 deaths.

Diphtheria.—In the Metropolis the cases notified amounted to 2,746 in 1934, as against 2,067 in 1933; and the cases treated at the Prince Henry Hospital were 1,621, as against 1,182 in 1933. The percentage of notified cases which came to this hospital for treatment was—in 1933, 77·1 per cent.; and in 1934, 59·04 per cent. Of the 37 fatal cases, 21 died within seven days of admission. No intubations were performed but there were 4 cases of tracheotomy.

Antitoxin was administered in the hospital to 2,189 cases in the doses shown in the following table :—

Antitoxin.	Cases.	Percentage of Total Cases.	Antitoxin.	Cases.	Percentage of Total Cases.
2,000 units	80	3·6	42,000 units	...	...
4,000 ,,	50	2·2	44,000 ,,	...	...
6,000 ,,	144	6·5	46,000 ,,	1	·04
8,000 ,,	483	22	48,000 ,,	...	...
10,000 ,,	454	20·7	50,000 ,,	15	·66
12,000 ,,	189	8·6	52,000 ,,	...	...
14,000 ,,	29	1·3	54,000 ,,	...	...
16,000 ,,	211	9·6	56,000 ,,	...	...
18,000 ,,	8	·36	58,000 ,,	...	...
20,000 ,,	295	13·4	60,000 ,,	5	·22
22,000 ,,	...	...	62,000 ,,	...	...
24,000 ,,	13	·59	70,000 ,,	...	...
26,000 ,,	5	·22	80,000 ,,	3	·13
28,000 ,,	...	...	90,000 ,,	1	·04
30,000 ,,	184	8·4	100,000 ,,	...	...
32,000 ,,	...	...	110,000 ,,	...	...
34,000 ,,	...	...	140,000 ,,	...	...
36,000 ,,	...	...			
38,000 ,,	...	...	Total	2,189	...
40,000 ,,	19	·86			

Altogether 2,612 cases of typhoid fever, measles, scarlet fever, diphtheria, influenza, meningitis, 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 Prince Henry Hospital in each of the years 1920–1934, 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 1934.

Table VII.—Classification of diseases treated during 1934.

Table VIII.—Operations performed during 1934.

Table XI.—Summary table showing the work of the Prince Henry Hospital and its cost each year from 1890 to 1934.

Summary of Abortion Cases treated at the Prince Henry Hospital, 1921–1934.

Abortion.—During the year 946 patients were treated for abortion. The admissions for this ondition have increased of late years at a startling rate, as indicated by the following figures, which how the ratio of abortion cases to all female cases treated in successive years 1921–1934, inclusive :—

Year.	Total Females Discharged or Died.	Number of abortion cases Discharged or Died.	Percentage of abortion cases to total Females.	How Discharged.				Fatality per cent. of cases of abortion Discharged or Died.	No. of cases of abortion remaining at Hospital end of year.	Total cases treated including those in Hospital at end of year.
				Cured.	Relieved.	Unrelieved.	Died.			
1921	3,267	230	7·04	217	5	1	7	3·04	7	237
1922	3,387	345	10·18	329	11	1	4	1·16	9	354
1923	4,247	373	8·78	346	5	2	20	5·36	8	381
1924	4,343	436	10·03	420	9	3	4	·91	12	448
1925	4,556	470	10·31	455	8	...	7	1·49	27	497
1926	5,586	620	11·09	590	24	2	4	·64	10	630
1927	5,770	581	10·07	554	12	2	13	2·24	15	596
1928	5,267	572	10·86	543	15	4	10	1·75	...	572
1929	5,575	755	13·54	717	24	4	10	1·32	9	764
1930	6,090	887	14·56	824	43	4	16	1·8	18	905
1931	6,176	883	14·29	854	21	...	8	·91	21	904
1932	6,081	799	13·1	760	18	3	18	2·3	24	823
1933	5,540	699	12·6	658	15	2	14	2·0	15	714
1934	5,304	927	17·04	883	14	4	26	2·8	19	946

3. *Expenditure.*—Table IX gives a detailed statement of the working expenses for 1933 and 1934, from which it will be seen that the total expenditure decreased from £106,842 14s. 4d., in 1933 to £98,291 11s. 6d., in 1934, and the average cost per occupied bed decreased from £138 4s. 5d., to £130 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	...	...	...	...	...	...	...	...	52
Second-year	„	...	...	...	...	...	...	...	42
Third year	„	...	...	...	...	...	...	...	52
Fourth-year	„	...	...	...	...	...	...	...	48

During the year 44 certificated nurses left the hospital to take up private nursing, or to take positions in other hospitals, whilst 44 nurses passed the Nurses Registration Board Examination in General Nursing.

Sick leave was granted to 135 nurses, amounting in the aggregate to 3819 days. Of these nurses some were ill on more than one occasion, there being 180 cases of illness altogether. Of the sick nurses, 12 had diphtheria, 295 days; 11 had scarlet fever, 508 days. All recovered satisfactorily.

5. *Laboratory.*—The following Table summarises the work done in the hospital laboratory month by month. In all, 13,413 cultures were examined for diphtheria. The practice was continued of accepting no diphtheria culture as negative unless found so after forty-eight hours' incubation.

1934.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
Cultures examined for diphtheria—													
1. After 12–24 hours' incubation	1,134	760	1,510	242	30	6	21	17	5	73	56	34	3,888
2. After 48 hours' incubation	941	776	1,052	1,169	1,443	1,506	1,499	1,444	978	918	819	868	13,413
Blood Counts—Full	40	41	39	35	60	38	31	32	33	34	38	34	455
Red cells and hb.	...	6	24	27	9	33	46	39	24	33	31	38	310
Leucocytes	54	59	40	36	31	31	53	45	61	44	42	55	551
Parasites, etc.	3	2	...	...	1	3	...	3	2	4	2	...	20
Bleeding and coagulation time	...	4	3	...	3	6	1	2	1	5	6	5	36
Blood Cultures	4	11	7	15	5	5	8	7	11	10	7	2	92
Widals	7	3	4	4	2	1	3	1	3	5	3	7	43
Sugar	165	174	146	198	180	118	168	148	181	186	107	131	1,902
Typing and matching	3	2	16	13	25	8	10	10	60	30	37	14	228
Fluids—Cerebro-spinal	4	12	14	7	7	8	23	9	5	5	8	2	104
Body and joint	5	5	5	2	5	4	11	3	5	8	3	1	57
Faeces	...	4	14	2	3	14	20	8	9	24	29	9	136
Pus—For organisms, etc.	10	7	12	20	10	25	11	17	12	18	10	13	165
Smears–Gonococci	23	26	35	16	25	27	21	34	22	43	29	27	328
Leprosy	...	...	...	15	18	6	21	1	1	10	12	19	103
Vincent's Angina, etc.	8	12	5	5	4	10	6	8	10	10	7	6	91
Dark field examination for Tr. Pallidum	1	1	5	...	...	...	...	2	3	1	3	2	18
Hairs and Scales for fungi	9	3	4	3	2	6	3	4	...	1	1	5	41
Sputum for T.B.	205	120	185	122	218	127	125	266	146	244	117	110	1,985
Urine—Organisms, pus, etc.	30	20	5	19	35	24	16	28	41	54	30	28	330
Deposits only	70	84	87	109	107	140	127	131	105	147	116	133	1,356
Chemical	...	...	62	56	25	64	14	65	64	87	103	94	634
Vaccines prepared	31	12	14	15	15	12	5	14	18	6	14	13	169
Swabbings for Haemolytic Streptococci	392	252	295	355	128	10	18	29	24	42	16	36	1,597
B.M.R. tests	...	...	...	...	...	...	...	5	8	10	8	4	35
Test meals	...	4	22	20	23	20	18	19	20	22	18	16	202
	3,139	2,400	3,620	2,509	2,419	2,252	2,257	2,399	1,836	2,091	1,674	1,693	28,289

Building Developments.

In accordance with the policy of the Minister, the development of the hospital is proceeding on a plan whose salient features are :—

1. Provisions of adequate accommodation for the nursing staff.

2. The remodelling of the infectious diseases section, involving a scheme of rebuilding.

3. The provision of adequate out-patient and dispensary facilities.

4. The extension of the capacity of the hospital to over a thousand beds.

5. The provision of greater facilities in general, especially on the scientific side.

6. Concurrently with the above, in order to meet the convenience of patients and their friends, the hospital is to be more concentrated. Hence any new buildings, instead of being dispersed over the area, will be built on the ridge close to the front entrance.

1. Our nurses are at present housed in 14 different quarters, causing a maximum of inconvenience and a minimum of comfort, some being nearly half a mile away at the old "Coast" quarters, others 1½ miles away at La Perouse.

   New nurses' quarters are at present being built which will house about 225 nurses in the one building. As the matter of the extension of the hospital to accommodate 1,000 beds did not come into prominence until after the contract for the home was let, it is intended in the near future to provide still more accommodation for the nursing staff that will be employed.

   The provision of a nurses' home will set free a ward that has had to be used for a good many years as nurses' quarters. This ward will accommodate fifty patients. It is expected that a wing of the new home will be available early in January.

2. Patients with infectious diseases have hitherto been housed in wards that were merely transformed dwellings, dating back to the earliest years of the Coast Hospital. As wards they were and are deplorable, but an immense amount of excellent work has been done in them.

   Four wards will be built of a total capacity of 300 beds.

   The first building is practically completed. It is a two-storey building with a capacity of about 52 beds.

   When this building is opened it will permit of evacuation of the present diphtheria wards and rebuilding on the site.

   Altogether there will be three blocks built on the old infectious hospital site. Each block will be of three stories, each storey holding about 28 patients.

   Each block then contains 28 x 3—84 beds.

   The three blocks will contain 84 x 3—252 beds.

   These together with the ward mentioned above will give a total capacity of about 300 beds.

   In order to reduce cross-infection which is an ever present danger where children are concerned, much use has been made of the cubicle system.. Each cubicle will hold a single patient. Other sections of the wards are for patients past the danger of cross-infection.

   The remodelling of the infectious site involves the removal of the female lazaret, the workshops, the stables and the workers' dormitories.

   The dormitories have already been removed.

3. The old quarters of the dispensary and out-patients had become totally inadequate, leading to hopeless congestion and relative inefficiency. It is intended to rebuild this section close to the entrance gate, together with sufficient accommodation for administrative purposes.

   This section has already been demolished and the dispensary and the out-patients' departments have a temporary home in two of the old "Coast" wards. which were refitted for the purpose. The inconvenience is obvious, but it was the best possible means of meeting the difficulty.

4. Three new medical blocks are to be built on the southern side of the institution. Each block will consist of three stories, each storey having two wards of 30 beds in two of the blocks. The top storey of the 3 blocks will have only 34 beds. Two of these blocks are in an advanced stage already. The upper eastern ward of one of these blocks is to be a sick room for nurses, with convalescent and sick accommodation for twelve (12). The upper and most western section of the third block is to be an open air ward for orthopaedic cases. Beneath this section is to be the dietetic kitchen.

Exclusive of the nurses' section, the total amount of accommodation available in the three blocks will be 484 beds.

The hospital will then be divided into three sections, each section being grouped—

The infectious section in 4 blocks.

The surgical section in 6 wards.

The medical section in 3 blocks.

The total number of beds available will be—

Infectious	... ...	300
Surgical	... ...	300
Medical	... ...	484
		1,084

The present " Coast " wards will be evacuated with the exception of the Venereal Division.

5. A new laboratory is at present being built to serve the needs of the hospital.

A new operating theatre is well towards completion.

A deep therapy section has been built.

New equipment—in particular an electrocardiograph and urological instruments have been ordered.

New X-ray equipment has also been installed.

Medical Staff.

Prior to 1933 the hospital was conducted as a closed hospital with a few consultant honorary medical officers only, but in September, 1933, a change was made to the honorary system. Twenty honorary Medical Officers were appointed, and during 1934 this number has been increased to 27.

The principal works carried out at the hospital during 1934 were as follows :—

Work performed by the Public Works Department.

Erection of Deep X-ray Therapy block.

Erection of two additional theatre operation blocks.

Erection of Scarlet Fever block, with accommodation for 52 patients.

Erection of two new Medical blocks, each to provide accommodation for 180 patients.

Erection of Pathological block.

Erection of Nurses' Quarters, with accommodation for 225 nurses, and with kitchen, dining rooms, etc.

Erection of residence for Medical Officer.

Erection of residence for Matron.

Demolition of old buildings.

Extension of water tower to provide water supply to upper stories of new buildings.

Construction of storm water drains, and repair and renovation of roads and footpaths.

Alteration and improvement of electrical services.

A detailed description of the building programme is given elsewhere in this report.

Work performed by Hospital Staff.

Repair and maintenance of laundry machinery, etc.

General maintenance and repair of steam and hot water services throughout the wards, quarters, and at the Coast Hospital Auxiliary, Randwick.

Improvement of steam service at the Prince Henry Hospital Auxiliary.

Repair and maintenance of sterilisers and other hospital equipment, including surgical instruments and appliances.

Maintenance, repair and renewal of electric light and power service, appliances, motor, etc.

Repair and renovation of hospital bedsteads, lockers, and other metal furniture.

Minor alterations and additions to buildings; demolition of old buildings; making and repairing splints and surgical appliances; repair and renovation of buildings and furniture, etc.; glazing, repair of brickwork, galvanised iron roofing.

Painting of wards, staff quarters, etc., and duco spraying wood and metal furniture.

Vegetable Garden.—75,280 lb. of vegetables, valued at £474 13s. 4d., were produced in the vegetable garden attached to the hospital.

H. V. D. BARET,
Medical Superintendent.

W. MEGARVEY,
Manager.

TABLE I.—General Statement of the working of the Hospital from 1st January to 31st December, 1934.

	No. of Beds, 1933.
Number of beds available in the General Division on 31st December, 1934	456
Number of beds available in the Infectious Division	273
„ „ Nurses' Sick Room	4
Prince Henry Hospital Auxiliary, Randwick	120
Total accommodation	853

	Males.	Females.	Total.
Number of inmates remaining in hospital on 31st December, 1933	388	241	629
„ admitted during the year 1934	3,911	5,293	9,204
Total treated	4,299	5,534	9,833
Discharged—Cured	2,426	3,956	6,382
„ Relieved	958	902	1,860
„ Unrelieved	150	168	318
„ No Disease	12	22	34
Died	374	256	630
Total number discharged, or who died	3,920	5,304	9,224
Remaining in hospital on 31st December, 1934	379	230	609

Average daily number resident	684
Average residence of discharged patients in days	25·4
Rate of mortality on total number who where discharged or who died	6·8
Total cost of maintenance and treatment of indoor patients	£109,682 11s. 11d.
Average cost of patients per annum	£160 7s. 1d.

	Males.	Females.	Total.	Total Visits.
Out-patients— Total number of individuals who received treatment	8,746	9,518	——	18,264

Hospital Staff on 31st December, 1934.

Medical and Administrative.	Number.	Nursing.	Number.	General.	Number.
Medical Superintendent	1	Sub-Matron	1	Gardeners	3
Deputy Medical Superintendent	1	Asst. Sub-Matron	1	Ambulance Driver	1
Assistant Medical Officers	10	Sisters—		Overseer	1
Manager	1	Senior	9	Artisans	12
Matron	1	Junior	7	Attendants, Outdoor	23
Dispensers	3	Nurses—		Telephone Attendants	4
Clerks	10	Staff	25	Male Cooks	4
Laboratory Assistants	2	Pupil	225	Female Cooks	8
Storekeeper	1	Ward Attendants	21	,, Servants	80
Total	30	Housekeeper	1	Laundresses	13
		Masseuse	2	Needlewomen	3
			292		154
				Total Staff	476

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 Prince Henry Hospital for the year 1934.

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 and 2	77,788	88	855	17	16,915	30	564
5 and gallery	31,368	25	1,254	18 and verandah	53,062	50	1,263
6	10,800	8	1,350	19 and verandah	53,062	50	1,263
7	10,800	8	1,350	20 and verandah	53,062	50	1,263
8 and gallery	32,268	24	1,344	21 and verandah	53,062	50	1,263
9	12,000	8	1,500	23 and verandah	53,062	50	1,263
10 and N Sick Room	16,356	19	1,168	24	19,023	25	761
11	22,320	26	858	25	19,023	25	761
12	23,880	28	853	26	19,023	25	761
13	28,236	41	688	27	19,023	25	761
14	43,520	27	1,012				
15	28,296	30	943	Total	729,996	733	
16	11,520	21	886				

The Prince Henry 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 III.—Discharges and Deaths during 1934, distributed under sex and age.

	Age.	0–5		6–10		11–15		16–20		21–30		31–40		41–50		51–60		61–70		71–80		81–90		Total sexes.		Total cases treated.	Total deaths.	Mortality per cent.
	Sex.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Male.	Female.			
1.	*Infectious Diseases*—																											
	Typhoid Fever—																											
	Discharges	...	1	1	...	...	...	2	2	...	1	...	1	2	...	...	...	...	...	...	...	...	...	5	5	10	Nil.	Nil.
	Deaths	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
	Measles—																											
	Discharges	26	22	7	8	4	1	2	3	1	7	1	...	...	...	...	...	...	...	...	...	...	...	41	41	89	7	7·7
	Deaths	6	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	1			
	Scarlet Fever—																											
	Discharges	134	149	86	121	13	34	11	25	19	75	17	33	3	8	...	...	...	...	1	...	...	...	284	445	732	3	·4
	Deaths	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1			
	Whooping Cough—																											
	Discharges	50	46	4	14	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	54	62	148	32	21·6
	Deaths	15	17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	17			
	Diphtheria—																											
	Discharges	295	322	219	267	58	100	13	46	22	90	14	35	5	9	3	1	...	2	...	...	...	...	629	872	1,538	37	2·4
	Deaths	13	11	4	7	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	18	19			
	Influenza—																											
	Discharges	...	...	1	1	4	1	5	1	8	49	3	10	3	4	...	...	...	...	...	...	...	...	24	66	92	2	2·1
	Deaths	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	2			
	Plague—																											
	Discharges	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
	Deaths	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
	Cerebro-spinal Meningitis—																											
	Discharges	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3	100
	Deaths	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	2	1			
2.	*Other Diseases*—																											
	Discharges	108	167	102	45	315	140	225	346	470	1,203	373	728	420	474	285	288	152	128	52	30	7	8	2,509	3,557	6,612	546	...
	Deaths	4	2	2	...	4	1	6	12	32	52	46	39	77	44	78	31	54	27	24	5	4	2	331	215			
	Totals	652	739	426	463	399	278	265	435	552	1,479	455	847	510	539	367	322	206	157	77	35	11	10	3,920	5,304	9,224	630	6·8

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 Prince Henry Hospital, in each of the years 1920-1934 inclusive. (These figures include cases outstanding at end of year.)

	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.
Diphtheria.															
Cases notified in Metropolis	1,825	2,916	1,807	1,722	2,115	1,626	2,048	2,112	2,028	2,124	1,938	1,873	2,049	2,067	
Cases treated at Prince Henry Hospital	834	1,360	905	854	1,115	787	1,018	997	1,123	1,111	1,180	1,033	1,231	1,273	1,621
Percentage	45·6	46·6	50	49·5	52·7	48·4	49·7	47·2	53·8	52·3	60·8	55·1	60·07	62·07	
Scarlet Fever.															
Cases notified in Metropolis	468	511	653	1,541	2,241	1,916	3,424	5,840	3,729	3,418	2,980	3,180	3,032	2,690	
Cases treated at Prince Henry Hospital	167	174	229	622	1,045	842	1,668	2,183	1,723	1,572	1,516	1,526	1,740	1,607	790
Percentage	35·6	34	35	40·4	46·6	43·9	48·7	37·4	46·2	46·0	52·5	51·1	57.38	59·7	
Typhoid Fever.															
Cases notified in Metropolis	366	342	246	265	242	230	245	184	133	185	118	88	104	...	
Cases treated at Prince Henry Hospital	56	49	33	51	8	50	60	33	22	53	27	27	26	16	11
Percentage	15·3	14·3	13·4	19·2	23·9	21·7	24·4	18	16·6	28·6	22·9	22·9	25	35·2	

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	2	...	2	11	7	18	13	2	15	8	5	13	20	21	41
1— 2 weeks..	...	...	...	42	...	42	6	...	6	12	7	19	55	11	66
2— 3 „ ...	...	...	...	17	...	17	14	...	14	21	7	28	752	2	754
3— 4 „ ...	1	...	1	3	...	3	143	1	143	14	5	19	375	1	376
4— 5 „ ...	2	...	2	2	...	2	290	...	291	26	6	32	114	1	115
5— 6 „ ...	1	...	1	2	...	2	132	...	132	9	1	10	84	1	85
6— 7 „ ...	1	...	1	...	...	...	42	...	42	6	1	7	41	...	41
7— 8 „ ...	2	...	2	...	...	...	28	...	28	6	...	6	17	...	17
8— 9 „ ...	1	...	1	3	...	3	12	...	12	2	...	2	21	...	21
9—10 „ ...	...	...	...	...	...	...	12	...	12	2	...	2	4	...	4
10—11 „ ...	...	...	...	...	...	...	10	...	10	2	...	2	3	...	3
11—12 „ ...	...	...	...	...	...	...	3	...	3	2	...	2	2	...	2
12—13 „ ...	...	...	...	...	...	...	4	...	4	2	...	2	4	...	4
13—14 „ ...	...	...	...	...	...	...	3	...	3	...	...	...	4	...	4
14—15 „ ...	...	...	...	2	...	2	3	...	3	1	...	1	...	...	...
15—16 „ ...	...	...	...	...	...	...	3	...	3	...	...	...	...	...	...
16—17 „ ...	...	...	...	...	...	...	1	...	1	2	...	2	2	...	2
17—18 „ ...	...	...	...	...	...	...	1	...	1	1	...	1	...	...	...
18—19 „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19—20 „ ...	...	...	...	...	...	...	3	...	3	...	...	...	...	...	...
20—21 „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21—22 „ ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
22—23 „ ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
23—24 „ ...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
24—25 „ ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
25—26 „ ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
Over 26 „ ...	...	...	...	...	...	...	3	...	3	...	...	...	2	...	2
Total ...	10	...	10	82	7	89	729	3	732	116	32	148	1,501	37	1,538

Fortnightly Admission cases during 1934.

	Fortnight ending—																										Total.
	Jan.		Feb.		Mar.		Apr.		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	...	1	2	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	8
Measles ...	14	9	1	1	2	1	1	1	1	2	3	2	1	1	3	1	1	...	5	6	4	7	6	4	5	3	85
Scarlet Fever.	30	34	41	31	28	35	27	26	18	22	23	20	22	27	30	29	27	29	27	33	32	14	18	14	19	18	674
Whooping Cough.	1	3	2	4	3	5	4	7	3	2	4	4	4	7	8	8	14	20	13	7	7	8	3	2	3	2	148
Diphtheria	54	68	54	63	75	70	71	66	66	73	64	57	57	57	49	52	59	41	45	42	54	56	57	58	60	62	1,530
Influenza ...	1	...	...	1	...	3	1	1	...	...	...	2	4	10	6	12	19	9	5	2	3	2	2	4	2	4	93
Other Diseases.	277	268	254	285	290	245	197	236	264	244	285	292	252	299	268	251	216	270	232	271	268	238	254	226	233	251	6,666
Total ..	377	383	353	385	399	361	301	337	352	344	379	378	340	401	364	353	336	369	327	361	368	325	340	308	322	341	9,204

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 1934. (Includes cases remaining in Hospital on 31st December, 1933.

1931.	Discharged during the year.				Remaining in on 31st December, 1934.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un-relieved.	Died.			
CLASS 1.—GENERAL DISEASES.							
Typhoid Fever	10	...	...	...	1	11	34·6
Malaria	...	...	...	...	...	...	...
Measles	79	3	...	7	9	98	14·3
Scarlet Fever	725	4	...	3	58	790	37·9
Whooping-cough	108	8	...	32	1	149	29·5
Diphtheria	1,497	3	1	37	83	1,621	23·5
Influenza	89	1	...	2	1	93	10·1
Mumps	21	...	...	...	...	21	12·6
Dysentery	...	...	...	...	...	...	...
Erysipelas	68	6	...	1	2	77	13·2
Other Epidemic Diseases	22	...	...	...	3	25	13·0
Purulent Infection and Septicæmia	1	...	...	...	...	1	4·0
Anthrax	1	...	...	...	...	1	8·0
Tetanus	1	...	...	2	...	3	12·0
Mycoses	...	...	...	...	...	...	...
Lethargica	...	1	...	...	...	1	115·0
Tuberculosis of the Lungs	1	100	35	183	119	438	95·5
,, Acute Miliary	...	...	...	1	...	1	1·0
,, Meningitis	...	...	...	1	...	1	8·0
,, Pott's Disease	...	3	1	1	5	10	140·0
,, Hips	1	...	1	...	3	5	102·0
,, Other	3	2	1	...	1	7	48·0
Poliomyelitis	...	2	1	...	3	6	14·0
Syphilis	2	49	5	4	12	72	52·4
Soft Chancre	...	...	...	...	...	...	...
Gonorrhœal Disease	15	145	...	1	23	184	37·1
Cancer, &c., of the Mouth	6	12	8	4	5	35	30·4
,, of the Stomach and Liver	...	12	15	9	3	39	29·6
,, of the Peritonæum, Intestines, and Rectum	2	14	3	8	3	30	47·0
,, of the Female Genital Organs	1	23	5	9	5	43	30·4
,, of the Breast	3	8	5	1	...	17	39·8
,, of the Skin	12	17	3	3	2	37	24·0
,, of other Organs	2	9	7	7	3	28	43·4
Tumours	2	5	...	1	...	8	42·0
Acute Rheumatism	18	13	1	...	5	37	38·9
Chronic Rheumatism and Gout	20	51	3	...	13	87	55·0
Diabetes	10	154	1	20	13	198	31·9
Exophthalmic Goitre	6	24	4	3	2	39	44·1
Hodgkin's Disease	...	1	...	3	...	4	82·2
Anæmia, Chlorosis	6	26	1	3	4	40	33·1
Leprosy	...	...	...	...	...	...	...
Alcoholism, Acute and Chronic	2	1	...	...	1	4	5·0
Other Chronic Poisoning and Lead	...	1	1	...	...	2	12·6
Other General Diseases	...	4	...	...	1	5	50·2
Diseases of Spleen	...	...	...	...	...	...	...
Addison's Disease	...	...	...	...	...	...	...
Diseases of Pituitary Glands	...	...	...	...	...	...	...
Total, Class 1	2,734	762	102	346	384	4,268	...
CLASS 2.—DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.							
Meningitis	...	...	...	...	...	...	...
Cerebro-spinal Meningitis	...	...	...	3	...	3	13·3
Other Diseases of the Spinal Cord	...	...	...	2	...	2	7·5
Cerebral Hæmorrhage	4	3	...	11	2	20	24·0
General Paralysis of Insane	...	1	...	...	...	1	135·0
Other forms of Mental Alienation	...	2	2	...	...	4	19·5
Epilepsy	...	9	3	...	...	12	21·6
Chorea	1	5	...	...	3	9	26·5
Locomotor Ataxia	...	3	...	...	2	5	67·3
Neuralgia and Neuritis	10	12	...	...	1	23	22·0
Other Diseases of the Nervous System	11	54	29	1	5	100	25·0
Diseases of the Eye and Adnexa	13	3	4	...	...	20	26·0
Diseases of the Ear	54	25	2	2	8	91	32·6
Encephalitis	...	...	...	2	...	2	3·5
Cerebral Embolism and Thrombosis	1	7	...	5	1	14	27·8
Infantile Convulsions under 5	3	...	...	...	...	3	5·3
Total, Class 2	97	124	40	26	22	309	...
CLASS 3.—DISEASES OF THE CIRCULATORY SYSTEM.							
Angina Pectoris	...	4	...	...	..	4	47·0
Acute Endocarditis	...	4	...	12	1	17	31·6
Organic Diseases of the Heart	4	56	1	25	13	99	36·1
Diseases of the Arteries, Atheroma, &c.	2	8	1	3	...	14	42·0
Embolism and Thrombosis	1	6	...	1	...	8	48·1
Diseases of the Veins (Varices, Ulcer, and Hæmorrhoids)	19	10	1	...	2	32	17·9
Diseases of the Lymphatic System	1	2	...	...	...	3	27·6
Hæmorrhage	...	1	...	3	...	4	10·7
Pericarditis	1	...	...	...	...	1	30·0
Aneurism	...	2	...	2	...	4	32·7
Arteriosclerosis	4	29	7	17	3	60	31·4
Other Diseases—Circulatory System	1	5	...	...	...	6	69·0
Total, Class 3	33	127	10	63	19	252	...

TABLE VII.—Return of the Number of Persons under Treatment, &c.—*continued.*

	Discharged during the year.				Remaining in on 31st December, 1934.	Total.	Average number of days in Hospital.
	Cured.	Relieved.	Un-relieved.	Died.			
CLASS 4.—DISEASES OF THE RESPIRATORY SYSTEM.							
Diseases of the Nasal Fossæ	123	39	12	...	...	174	9·9
Diseases of the Larynx	3	2	...	1	...	6	13
Capillary Bronchitis	1	...	...	...	...	1	19
Acute Bronchitis	23	7	...	1	...	31	15·6
Chronic Bronchitis	3	14	1	...	1	19	28
Broncho-Pneumonia	49	7	...	14	1	71	17·8
Pneumonia	84	8	...	31	5	128	21·3
Pleurisy	33	7	1	...	1	42	26·3
Asthma	7	27	2	1	3	40	16
Other Diseases of the Respiratory System	6	16	3	7	1	33	46·9
Congestion and Gangrene of Lung	1	...	...	...	...	1	35
Bronchitis, Unspecified	2	2	...	...	...	4	15
Total, Class 4	335	129	19	55	12	550	...
CLASS 5.—DISEASES OF THE DIGESTIVE SYSTEM.							
Gastritis	9	8	...	...	...	17	15·1
Diseases of the Teeth and Gums	...	...	...	...	...	...	...
Diseases of the Mouth and its Associated Organs	17	3	4	...	1	25	12·1
Diseases of the Pharynx	628	11	6	1	1	647	7
Ulcer of the Stomach	16	16	...	2	5	39	36·4
Other Diseases of the Stomach (Cancer excluded)	2	24	...	1	...	27	23·6
Diarrhœa and Enteritis (children under two years only)	1	...	...	1	...	2	13·4
Diarrhœa and Enteritis (children over two years and adults)	9	5	1	2	...	17	18·2
Appendicitis	493	23	10	7	18	551	16·6
Hernia, Intestinal Obstruction	92	5	7	3	4	111	24·2
Other Diseases of the Intestines	6	8	...	4	2	20	11·4
Diseases of the Anus and Fæcal Fistulæ	27	28	4	2	...	61	33·1
Cirrhosis of the Liver	...	3	1	5	...	9	28·4
Biliary Calculi	46	16	4	4	1	71	27
Other Diseases of the Liver	38	25	5	3	11	82	24
Simple Peritonitis (non-puerperal)	7	15	7	4	1	34	29·3
Hydatid undefined	3	4	...	3	1	11	63·6
Other Diseases of Digestive System	10	9	...	1	3	23	24·4
Œsophagus, Stricture of	...	...	...	...	1	1	...
Ulcer of Duodenum	16	41	1	3	5	66	33·9
Total, Class 5	1,420	244	50	46	54	1,814	...
CLASS 6.—DISEASES OF THE GENITO-URINARY SYSTEM AND ADNEXA (NON-VENEREAL).							
Acute Nephritis	4	4	...	4	...	12	32·2
Chronic Nephritis	2	15	2	42	2	63	25·8
Uterine Hæmorrhage	21	7	3	...	1	32	22·3
Other Diseases of the Kidneys and their Adnexa	54	38	8	1	4	105	26
Calculi of the Urinary Passages	23	16	8	...	3	50	21·1
Diseases of the Bladder	13	18	1	2	2	36	19·9
Other Diseases of the Urethra, Urinary Abscess, &c.	13	21	1	...	5	40	19·5
Diseases of the Prostate	18	18	4	1	4	45	31·9
Non-venereal Diseases of the Male Genital Organs	33	8	3	...	...	44	21·6
Salpingitis and Pelvic Abscess	63	56	5	1	6	131	23·2
Uterine Tumour (non-Cancerous)	24	7	4	2	...	37	27·4
Other Diseases of the Uterus	...	...	...	...	...	...	...
Cysts and other Ovarian Tumours	27	...	2	...	3	32	28·7
Other Diseases of the Female Genital Organs	89	34	15	1	8	147	27·2
Non-puerperal Diseases of the Breast (cancer excepted)	6	1	...	...	...	7	17·8
Total, Class 6	390	243	56	54	38	781	...
CLASS 7.—PUERPERAL CONDITIONS.							
Abortion	881	14	4	10	19	928	9·8
Ectopic Gestation	16	1	...	2	4	23	22·8
Hyperemesis	9	...	...	...	...		8·6
Pyelitis	...	...	...	...	...	...	...
Hæmorrhage	6	...	...	...	...	6	8·3
Retroversion	...	...	...	...	...	...	...
Albuminuria	...	...	...	...	...	...	...
Pregnancy	2	1	...	...	...	3	6
Other Accidents of Labour	4	2	...	...	...	6	35·3
Puerperal Diseases of the Breast	2	1	...	...	1	4	25
Puerperal Septicæmia	2	...	...	16	...	18	10·8
Total, Class 7	922	19	4	28	24	997	...
CLASS 8.—DISEASES OF THE SKIN AND OF THE CELLULAR TISSUE.							
Gangrene	...	...	...	...	...	...	...
Phlegmon, Acute Abscess	86	15	...	2	8	111	17·3
Other Diseases of the Skin and Adnexa	88	50	2	2	5	147	20·4
Scabies	...	...	...	...	...	...	...
Furuncle	16	6	...	...	1	23	17·6
Elephantiasis	...	...	...	...	...	...	...
Total, Class 8	190	71	2	4	14	281	...

TABLE VII.—Return of the Number of Persons under Treatment, &c.—*continued.*

1931.	Discharged during the year.				Remaining in on 31st December, 1933.	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	24	42	8	1	11	86	62·7
Arthritis and other Diseases of the Joints (Tuberculosis and Rheumatism excepted)	10	18	3	...	6	37	45·5
Other Diseases of the Organs of Locomotion	17	10	2	...	...	29	34·3
Total, Class 9	51	70	13	1	17	152	...
CLASS 10.—MALFORMATIONS.							
Congenital Malformations	7	4	1	...	...	12	15·4
Total, Class 10	7	4	1	...	...	12	...
CLASS 11.—DISEASES OF EARLY INFANCY.							
Total, Class 11	...	...	...	...	...	...	Nil.
CLASS 12.—OLD AGE.							
Senility	...	...	...	1	...	1	3
Total, Class 12	...	...	...	1	...	1	...
CLASS 13.—VIOLENCE.							
Lysol Poisoning	...	...	...	1	...	1	3
Scalds and Burns (other than fire)	13	2	...	1	3	19	17·3
Poisoning by Food (not ptomaine)	...	2	...	...	...	2	4·5
Bite of Snake or Insect	3	1	...	...	...	4	3·2
Firearms Accidents	1	1	...	...	...	2	39·5
Cutting Instruments	17	2	1	...	...	20	14·4
Burning by Fire	...	...	...	...	...	...	...
Falls	49	20	5	1	8	83	16
Crushings	8	6	...	1	...	15	12·8
Railways and Tramways and Motor	15	12	...	1	9	37	32·4
Injuries by Vehicles and Horses	5	4	...	...	...	9	44·6
Shock	...	...	...	...	...	...	...
Other Injuries	...	...	...	...	1	1	...
Assault	1	...	...	...	...	1	6
Fractures (cause not obtainable)	15	8	1	...	...	24	28·4
Other Acute Poisonings (except gas)	5	2	...	1	...	8	10·2
Total, Class 13	132	60	7	6	21	226	...
CLASS 14.—ILL DEFINED DISEASES.							
Malnutrition	1	...	...	...	...	1	17
Debility	2	3	...	...	...	5	32
Marasmus	...	...	...	...	...	...	...
Observation	68	64	14	...	3	149	13·3
No disease	...	...	...	...	...	12	6
Nurslings with mothers, no disease	...	...	...	...	1	23	17
Mothers with nurslings, no disease	...	...	...	...	...	...	...
Total, Class 14	71	67	14	...	4	190	...
SUMMARY.							
Total, Class 1.—General Diseases	2,734	702	102	346	384	4,268	...
" 2.—Diseases of the Nervous System and of the Organs of Special Sense	97	124	49	26	22	309	...
" 3.—Diseases of the Circulatory System	33	127	10	63	19	252	...
" 4.—Diseases of the Respiratory System	335	129	19	55	12	550	...
" 5.—Diseases of the Digestive Organs	1,420	244	50	46	54	1 814	...
" 6.—Diseases of the Genito-Urinary System and Adnexa	390	243	56	54	38	781	...
" 7.—Diseases of the Puerperal Condition	922	19	4	28	24	997	...
" 8.—Diseases of the Skin and of the Cellular Tissue	190	71	2	4	14	281	...
" 9.—Diseases of the Organs of Locomotion	51	70	13	1	17	152	...
" 10.—Malformation	7	4	1	...	...	12	...
" 11.—Infancy	...	...	...	...	...	...	...
" 12.—Old Age	...	...	...	1	...	1	...
" 13.—Violence	132	60	7	6	21	226	...
" 14.—Ill-defined Diseases*	71	67	14	...	4	190	...
Grand Total	6,382	1,860	318	630	609	9,833	...

* Includes 34 cases "no disease".

Table VIII.—Operations performed during 1934.

"Recovered" means lived at least ten days after operation.

Operations.	Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.	
Alimentary System.					
Appendicectomy	210	247	2	1	460
Caecopexy	...	1	...	...	1
Caecostomy	1	2	1	...	4
,, closure	2	2	...	...	4
Cholecystectomy	14	57	2	...	73
Other operations on gall bladder	3	10	...	...	13
Colostomy	8	3	...	...	11
Entero-enterostomy	...	1	...	...	1
Freeing adhesions	...	5	1	1	7
Gastro enterostomy	15	3	...	...	18
Laparotomy	10	13	2	...	25
Fistula in ano	11	6	...	...	17
Hernia—					
Femoral	2	3	...	1	6
Incisional	4	10	...	...	14
Inguinal	71	5	11	...	87
Umbilical	1	1	...	...	2
Hydatid cyst—					
Liver	2	2	...	...	4
Peritoneal	1	...	...	...	1
Retro peritoneal	...	1	...	...	1
Intussusception	...	1	...	...	1
Ischio rectal abscess	5	3	...	...	8
Meckal's diverticulum	1	...	...	...	1
Resection of bowel	...	3	...	...	3
Ruptured peptic ulcer	4	...	...	...	4
Oesophadoscopy	2	1	...	...	3
Proctoscopic examinations	1	...	...	...	1
Signoidoscopy	1	4	...	...	5
Unspecified operations	2	...	...	...	2
	371	384	19	3	777
Genito-urinary System.					
Circumcision	50	...	...	...	50
Cauterisation prostate	1	...	...	...	1
Cure of hydrocale	5	...	...	...	5
,, varicocoele	3	...	...	...	3
Cystoscopy	66	48	...	...	114
Cystotomy	3	...	...	...	3
Nephrectomy	4	4	...	1	9
Nephro-lithotomy	4	1	...	...	5
Nephropexy	...	4	...	...	4
Nephrotomy	1	...	...	...	1
Nephrostomy	1	...	...	...	1
Operation for hypospadias	1	...	...	...	1
Orchidectomy	6	...	...	...	6
Perinepleric abscess	...	4	...	...	4
Prostatectomy	12	...	...	...	12
Vesical calculus	3	...	...	...	3
Unspecified	1	...	...	...	1
	161	61	...	1	223
Female Genital Organs.					
Bartholin cyst operation	...	5	...	...	5
Colpotomy	...	22	...	...	22
Cureltage of uterus	...	870	...	1	871
Excision of ovarian cyst	...	9	...	...	9
Hysterectomy	...	62	...	1	63
Internal shortening	...	30	...	...	30
Oophorectomy	...	4	...	...	4
Operation for ectopic gestation	...	17	...	...	17
Operations, miscellaneous	...	14	...	...	14
Perinaeorrhaphy	...	38	...	...	38
Removal of placenta	...	8	...	...	8
Salpingectomy	...	15	...	...	15
Salpingo-oophorectomy	...	28	...	...	28
Trachelorrhophy	...	6	...	...	6
Ventro-suspension	...	5	...	...	5
	...	1133	...	2	1135

Operations.	Recovered.		Died.		Total.
	Male.	Female.	Male.	Female.	
Cellular and Cutaneous System.					
Avulsion of finger nail	3	8	...	...	11
Curreltage of wound	5	...	...	...	5
Excision of corns	1	...	...	...	1
,, scar	2	1	...	...	3
Incision of abscess	69	52	...	1	122
	80	61	...	1	142
Osseous of Arthritic Systems.					
Amputation—					
Finger	6	6	...	...	12
Leg	4	5	...	2	11
Toe	2	2	...	...	4
Application of plaster	8	11	...	...	19
,, extension	1	...	...	...	1
Arthrodesis	5	2	...	...	7
Arthrotomy	5	...	...	...	5
Craniotomy	1	...	...	...	1
Curreltage of sinus	8	11	...	...	19
Astragalectomy	1	...	...	...	1
Extraction of teeth	11	5	...	...	16
Fracture—					
Setting	24	14	...	...	38
Plating	1	1	...	...	2
Unplating	...	1	...	...	1
Osteomyelitis operation	1	2	1	...	4
Osteotomy	4	2	...	...	6
Operation on tendons	2	1	...	...	3
Manipulation of joint	2	...	...	...	2
Operation for periostitis	...	1	...	...	1
Sequestrectomy	11	4	...	...	15
Thoracoplasty	1	...	...	...	1
	98	68	1	2	169
Respiratory System.					
Antrostomy	54	33	...	...	87
Bronchoscopy	1	...	...	...	1
Cauterisation	6	2	...	...	8
Curetlage of adenoids	...	1	...	...	1
Laryngectomy	1	...	...	...	1
Paracentesis thoracis	3	...	...	...	3
Removal of nasal polypi	8	6	...	...	14
S.M.R. of nasal septum	44	13	...	...	57
Thoracotomy	10	4	...	...	14
Tracheotomy	4	...	...	...	4
Turbinectomy	6	...	...	...	6
	137	59	...	...	196
Circulatory System.					
Haemorrhoidectomy	11	6	...	...	17
Excision of varices	3	1	...	...	4
Arrest of haemorrhage	3	1	...	...	4
	17	8	...	...	25
Lymphatic and Glandular System.					
Adenoidectomy	7	4	...	...	11
Excision of lymphatic glands	7	1	...	...	8
Thyroidectomy (partial)	1	10	...	...	11
Tonsillectomy and adinoidectomy	303	305	...	1	609
	318	320	...	1	639

TABLE VIII.—Operations performed during 1934—*continued.*

"Recovered" means lived at least ten days after operation.

Operations.	Recovered.		Died.		Total.
	Males.	Females.	Males.	Females.	
Cancer and other Tumours.					
Diathermy to bladder	2	4	...	...	6
Laparotomy	2	3	1	1	7
Operation for—					
Breast tumour	1	15	...	...	16
Bowel cancer	1	3	1	...	5
Cervical polyp	...	2	...	...	2
Carcinoma, unspecified	...	1	...	...	1
Epethelioma	6	4	...	...	10
Fibroids of uterus	...	2	...	1	3
Fibroma	1	...	...	...	1
Lipoma	2	1	...	...	3
Osteoma	1	1	...	...	2
Ovarian cancer	...	...	...	1	1
Penile cancer	2	...	...	...	2
Sarcoma	1	1	...	...	2
Stomach cancer	1	...	1	...	2
Various tumours, unspecified	8	9	...	...	17
Orchidectomy	1	...	...	...	1
Radium, Application to—					
Breast	...	2	...	...	2
Ceroix uteri	...	20	...	1	21
Lip	11	...	...	...	11
Prostate	1	...	...	...	1
Skin	15	3	...	...	18
Tongue	2	...	1	...	3
Tonsil	1	...	...	...	1
Urethra	...	1	...	...	1
Uterus	...	3	...	...	3
	59	75	4	4	142
Nervous System.					
Ovulsion or crushing of phoenic nerve	2	...	...	...	2
Cisterna puncture	2	...	...	...	2
Periarterial sympathectomy	1	...	...	...	1
	5	...	...	...	5

Operations.	Recovered.		Died.		Total.
	Males.	Females.	Males.	Females.	
Miscellaneous.					
Operations—					
Ear—					
Paracentesis	43	50	...	...	93
Mastoidectomy	20	16	...	...	36
Mastoid dressing	1	...	...	...	1
Eye—					
Cataract operation	2	1	...	...	3
Cure of pterygium	3	2	...	...	5
Dacryocystectomy	...	1	...	...	1
Tridectomy	...	2	...	...	2
Biopsy—					
Uterus	...	1	...	...	1
Ceroix uteri	...	1	...	...	1
Toe	1	...	...	...	1
Unspecified	1	1	...	...	2
Removal of foreign body	7	6	...	...	13
Examination under anaesthetic	4	55	...	2	61
Suture of wound	11	5	...	...	16
,, tendon	1	...	...	...	1
Cure of microstoma	1	...	...	...	1
Removal of stitches	1	...	...	...	1
Operation of cleft palate	3	...	...	...	3
	99	141	...	2	242
Summary of Operations.					
Alimentary system	371	384	19	3	777
Genito-urinary system	161	61	...	1	223
Female genital organs	...	1,133	...	2	1,135
Cellular and cutaneous system	80	61	...	1	142
Osseous and arthritic system	98	68	1	2	169
Respiratory system	137	59	...	...	196
Circulatory system	17	8	...	...	25
Lymphatic and glandular system	318	320	...	1	639
Cancer and other tumours	59	75	4	4	142
Nervous system	5	...	...	...	5
Miscellaneous	99	141	...	2	242
	1,345	2,310	24	16	3,695

Anaesthetics.

Kelene, 88; kelene and open ether, 2,475; kelene I.P. and open ether, 431; local kelene, 12; local novocain, 144; ether, open, 109; ether, intra-trachial, 145; spinal, 18; evipan, 94; chloroform, 4.

STATEMENT OF WORKING EXPENSES OF THE PRINCE HENRY HOSPITAL FOR THE YEAR 1933-34.

TABLE IX.—Maintenance and Treatment of Patients and Staff.

	1933.	Average.	1934.	Average
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
A. Salaries and Wages—				
1. Administrative	2,038 7 9		1,784 18 9	
2. Medical	3,362 3 8		3,241 19 8	
3. Clerical	2,108 15 11		2,202 2 10	
4. Dispensary	1,013 0 8		1,046 13 7	
5. Nursing	22,492 12 7		22,508 13 5	
9. Laundry	2,834 4 10		2,889 10 7	
10. Tradesmen and Mechanics	3,180 9 1		3,297 18 5	
11. Cleaning and General	10,185 12 0		16,327 8 1	
12. Farm and Garden	452 0 4		355 15 2	
13. X ray	312 11 2		341 7 4	
	47,979 18 0	64 8 1	53,996 7 10	78 18 10
B. Provisions—				
1. Meat	2,435 7 3		2,772 1 5	
2. Milk	1,778 6 3		3,351 4 1	
3. Butter	1,611 3 2		1,540 3 9	
4. Bread and Flour	1,242 2 4		1,178 14 1	
5. Eggs	1,360 18 2		1,349 8 2	
6. Fish, fresh	380 11 5		366 11 1	
7. Poultry	1,247 19 4		1,104 14 8	
8. Groceries	3,560 3 10		3,795 7 4	
9. Vegetables and Fruit	1,355 0 7		1,216 16 2	
10. Malt Liquors	8 3 6		10 4 0	
11. Ice	101 8 9		101 17 9	
12. Cream	242 8 4		296 5 5	
	15,323 12 11	20 11 5	17,083 7 11	24 19 6
C. Drugs and Surgical Appliances—				
1. Drugs, &c.	8,889 13 10		10,770 3 5	
2. Dressings and Bandages	136 11 11		243 8 3	
3. Surgical Appliances, Renewals	516 7 4		301 9 5	
4. Surgical Instruments, Renewals	136 7 10		1,051 4 3	
5. Stimulants	461 3 2		189 15 3	
	10,140 4 1	13 12 3	12,556 0 9	18 7 2
D. Fuel, Light, and Power—				
1. Coal, Coke, and Fuel Oil	3,309 18 6		3,422 18 3	
2. Electricity	1,503 7 0		1,053 15 1	
3. Electrical Fittings, Renewals	553 4 8		15 1 10	
	5,366 10 2	7 5 2	4,491 15 2	6 11 4
E. Domestic—				
1. Bedding and Bed Linen	1,940 4 11		2,692 1 1	
2. Clothing	681 11 2		756 12 11	
3. Drapery	911 10 1		351 17 0	
4. Uniforms	85 4 1		208 1 4	
5. Renewals of Furniture	458 9 7		674 15 3	
6. Ironmongery and Cutlery, &c.	339 15 4		164 15 5	
7. Brushware, Earthenware, &c.	477 14 6		382 5 3	
8. Laundry Materials	165 10 5		161 15 0	
	5,060 0 1	6 16 1	5,392 3 3	7 17 8
F. Printing and Stationery—				
1. Printing and Stationery	363 1 0		472 7 6	
2. Postage	172 0 0		159 0 0	
	535 1 0	0 14 4	631 7 6	0 18 5
G. Maintenance of Buildings and Grounds—				
1. Ordinary Repairs and Alterations	1,069 7 5		1,322 17 0	
2. Roadways and Grounds	17 8 4		167 0 10	
	1,086 15 9	1 9 2	1,489 17 10	2 3 6
J. Miscellaneous—				
1. Rates and Taxes	283 6 0		397 0 5	
2. Insurance	.....		.....	
3. Burials and Coffins	164 10 6		190 9 1	
4. Telephones	683 5 6		749 16 6	
5. Petty Expenses	408 14 10		608 19 11	
6. Unclassified	533 14 1		1,514 3 6	
	2,073 10 11	2 15 8	3,460 9 5	5 1 2
K. Extraordinary Expenditure—				
1. Surgical Instruments	10 12 0		272 16 2	
2. Appliances	3,500 0 0		1,103 6 7	
3. Machinery	.....		433 1 9	
4. New Furniture	.....		2,602 4 5	
5. New Buildings and Additions	.....		.....	
6. Miscellaneous	.....		.....	
7. Drapery	.....		.....	
8. Ironmongery	.....		.....	
9. Brushware	.....		.....	
10. Bedding and Bed Linen	.....		.....	
11. Special Repairs	.....		.....	
	3,510 12 0	4 14	4,411 8 11	6 9 0

TABLE IX.—Maintenance and Treatment of Patients and Staff.—*continued.*

	1933.	Average.		1934.	Average.
	£ s. d	£ s. d.		£ s. d.	£ s. d.
L. Special Department—					
1. X-Ray	932 11 2			1,088 2 3	
	932 11 2	1 5 0		1,088 2 3	1 10 10
M. Farm and Garden, Live Stock, etc.—					
1. Purchase of Horses and Cows	.....			.....	
2. Purchase of Fodder	1,015 16 10			260 14 6	
3. Miscellaneous	72 9 4			34 0 2	
	1,088 6 2	1 9 3		294 14 8	0 8 7
N. Auxiliary Hospital—					
1. Salaries and Wages	4,068 18 9			4,125 11 0	
2. Maintenance	5,394 7 0			5,635 1 2	
3. Stores	921 10 11			977 13 2	
	10,384 16 8	13 18 9		10,738 5 4	15 14 0
Total Expenditure	103,482 8 11	138 18 1		115,634 0 10	169 1 1
Add value of goods received from other Institutions	6 11 2			.....	
	103,489 0 1			115,634 0 10	
Deduct value of goods supplied to other Institutions	40 3 5			.....	
	103,448 16 8			115,634 0 10	
Add value of Stock on hand, 31st Dec., 1933	3,646 6 6			4,567 19 8	
	107,095 3 2			120,202 0 6	
Deduct value of Stock on hand, 31st Dec., 1934	4,567 19 8			6,107 19 8	
	102,527 3 6			114,094 0 10	
Deduct Extraordinary Expenditure	4,235 12 0			4,411 8 11	
	98,291 11 6			109,682 11 11	
Average cost per occupied bed, General and Infectious Division, based on upkeep Expenditure	.....	130 11 10		.....	160 7 1
Deduct Collections paid to Revenue	14,031 18 6			18,307 0 0	
	84,259 13 0			91,375 11 11	
Net cost per occupied bed, General and Infectious Division	.....	113 2 0		.....	133 10 10

TABLE X.—Amount expended from the Vote of the Public Works Department not included in the foregoing statistics.

	1933.		1934.	
	£ s. d	£ s. d.	£ s. d.	£ s. d.
Steam and Hot Water Services—				
Repairs—Steam and Hot Water Services	171 15 3	.....	248 5 5	.....
Repairs and Renewals of Boilers	238 19 8	.....	.....	.....
Hot Water Services	15 19 7	.....	29 11 0	.....
Total	426 14 6	426 14 6	277 16 5	.....
Mechanical and Electrical Maintenance	565 14 8	.....	1,258 16 0	.....
Total	565 14 8	565 14 8	1,258 16 0	1,285 16 0
General—				
Repairs and Renovations of Buildings	2,876 15 7	.....	2,091 10 5	.....
Drainage	16 9 0	.....	6,932 4 1	.....
Repairs and Extensions Water Service	236 5 1	.....	311 11 7	.....
New Buildings and Additions	8,417 8 2	.....	107,483 17 10	.....
Renovations, Randwick Auxiliary Hospital	35 2 4	.....	.....	.....
Refrigeration Plant—Installation	233 4 0	.....	.....	.....
Laundry Plant	231 10 2	.....	84 18 6	.....
X-Ray Apparatus, etc.	.....	.....	1,682 8 3	.....
Total	12,096 14 4	12,096 14 4	118,586 10 8	118,586 10 8
Grand Total £	13,089 3 6	13,089 3 6	120,123 3 1	120,123 3 1

TABLE XI.—SUMMARY TABLE, showing the work of the Prince Henry Hospital and its cost each year, from 1890 to 1934.

Year.	No. of Patients admitted.	Average residence of discharged patients in days.	Rate of Mortality on cases treated.	Infectious Diseases included in foregoing columns.																				Average daily number.	Cost per occupied bed.	Wines, spirits, etc., cost per head (included in foregoing columns).
				Typhoid Fever.		Variola.		Measles.		Scarlet Fever.		Whooping Cough.		Diphtheria.		Influenza.		Plague.		Erysipelas.		Other Epidemic Diseases.					
				Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.	Admissions.	Deaths.				
																									£ s. d.	£ s. d.
1890	1,529	42·00	7·03	140	21	...	...	5	...	14	...	19	...	1	...	...	...	...	...	19	...	7	...	178·00	55 7 5	0 5 11
1891	1,748	40·09	3·23	88	8	...	...	1	...	22	...	25	2	4	...	...	...	...	...	31	...	7	...	193·00	50 2 6	0 5 2½
1892	1,644	44·06	4·04	61	10	...	...	2	...	39	...	29	2	6	3	...	...	...	...	24	...	16	...	200·03	44 17 11¼	0 7 6½
1893	2,274	32·08	4·05	83	10	...	...	281	8	195	12	7	...	9	3	...	...	...	...	36	...	7	...	193·05	47 8 6	0 10 1
1894	2,158	27·06	4·03	143	12	...	...	7	1	118	9	28	3	9	3	...	...	...	...	36	3	26	...	176·04	55 7 4¼	1 3 6¾
1895	2,451	24·06	3·07	96	6	...	...	1	...	60	...	25	1	45	1	...	...	...	...	51	...	10	...	176·03	59 1 11	1 1 6¾
1896	2,213	31·03	5·04	236	19	...	...	2	...	61	2	3	...	11	1	...	...	...	...	63	...	1	...	204·06	51 6 1⅔	1 4 4
1897	2,307	32·06	5·05	128	11	...	...	...	...	235	3	...	...	25	...	...	...	...	...	100	7	6	...	224·04	50 19 2⅔	1 9 10
1898	2,694	31·04	5·38	163	18	...	...	319	15	350	7	...	...	27	4	...	...	...	...	70	2	...	...	231·00	64 14 10⅔	1 14 3½
1899	2,359	36·30	4·79	148	13	...	...	10	...	134	2	42	10	25	2	...	...	...	...	54	...	8	...	224·25	73 10 11⅔	1 13 10
1900	2,513	30·10	5·20	247	25	...	...	29	...	116	2	2	...	7	2	...	...	...	...	33	2	4	...	214·40	72 18 8½	1 8 2⅔
1901	2,688	31·24	5·75	214	21	...	...	131	1	150	5	15	...	65	4	...	...	...	...	49	5	11	...	255·50	59 4 3½	0 16 1¼
1902	2,672	30·94	6·29	144	5	...	...	73	...	313	20	26	...	64	5	...	...	128	26	109	8	6	...	256·85	66 9 4½	0 13 10½
1903	3,359	31·72	4·67	166	20	...	...	62	1	585	21	13	3	92	...	...	...	2	...	84	6	16	1	300·76	61 17 11½	0 5 2⅔
1904	3,439	30·94	5·17	178	24	...	...	81	1	371	11	40	4	301	11	...	...	10	4	113	5	44	...	305·16	63 2 11½	0 7 8½
1905	3,298	31·81	5·20	139	20	...	...	43	1	284	6	1	...	313	10	...	...	16	4	100	6	7	...	289·32	59 12 0⅔	0 8 4
1906	2,965	37·03	3·56	84	7	...	...	55	...	503	11	...	...	267	9	...	...	15	4	89	4	3	...	308·67	56 13 1⅓	0 4 0⅓
1907	3,051	37·16	5·93	101	12	...	...	157	5	336	5	93	20	389	23	...	...	41	11	58	...	...	...	307·41	58 17 8½	0 4 5⅓
1908	3,147	32·89	5·44	114	13	...	...	17	1	420	10	6	1	360	11	...	...	7	2	62	7	...	...	306·83	61 11 5	0 4 0⅔
1909	2,971	31·13	5·53	96	8	...	...	55	...	339	6	4	...	500	12	...	...	22	7	72	3	...	...	295·33	63 5 4½	0 4 1⅔
1910	3,538	30·52	5·39	85	7	...	...	189	12	150	6	74	15	909	18	...	...	...	...	40	3	41	...	312·66	62 2 0⅔	0 2 5⅓
1911	3,474	29·19	5·32	66	8	...	...	70	...	134	...	67	12	974	24	...	...	...	...	48	4	...	...	322·62	64 0 1⅓	0 4 0⅓
1912	4,170	29·54	5·76	67	8	...	...	475	46	108	4	29	5	1284	36	...	...	...	...	73	8	5	...	335·45	77 15 1⅓	0 4 1⅓
1913	3,702	31·83	5·13	77	10	...	...	93	...	287	7	64	14	994	28	...	...	...	...	48	5	22	...	335·51	87 6 6¼	0 3 3⅓
1914	4,032	32·35	3·81	73	12	4	...	82	1	628	7	36	4	977	10	...	...	...	...	34	1	20	...	373·11	74 7 5	0 1 0⅓
1915	4,106	30·09	4·12	123	10	6	...	337	2	1279	19	4	...	925	35	...	...	...	...	42	8	12	3	440·00	69 5 7	0 2 3½
1916	4,618	32·29	3·07	59	8	14	...	206	1	835	22	53	9	1101	32	...	...	...	...	55	1	244	...	447·00	77 4 11	0 4 1⅓
1917	4,320	36·49	3·73	16	2	4	...	147	6	498	4	21	4	1328	11	...	...	...	...	79	7	207	...	433·12	94 19 9	0 5 4
1918	4,556	39·60	4·20	31	6	1	...	321	13	314	9	63	8	1251	13	...	...	...	...	92	10	38	...	513·41	98 12 2	0 4 8
1919	5,556	20·67	8·13	25	1	1	...	62	3	213	5	20	1	571	10	2,966	313	...	...	66	2	20	...	385·2	159 0 4	0 8 3
1920	5,945	29·72	7·37	61	5	...	...	581	62	212	1	130	18	904	14	83	...	...	...	86	13	44	...	477·62	159 0 0	0 5 7
1921	6,450	29·3	5·6	49	12	...	...	36	4	174	...	40	4	1360	15	215	16	1	1	102	4	52	...	522·3	156 17 8	0 7 7
1922	6,894	27·54	5·6	33	15	...	...	163	5	229	3	37	2	905	11	118	1	29	6	109	7	514	3	520·16	149 12 4	0 5 8
1923	8,289	34·38	6·37	48	5	...	...	642	35	607	3	32	5	855	13	170	3	...	...	195	12	258	...	563·47	141 10 2	0 13 2
1924	8,171	24·35	5·31	51	4	...	...	85	...	1024	9	39	7	1107	16	158	1	...	...	111	4	79	...	575·20	153 1 1	0 13 0
1925	8,458	23·61	6·41	50	4	...	...	252	11	842	12	89	11	787	3	94	...	...	...	98	4	43	3	578·06	143 9 2	0 11 3
1926	10,175	23·74	5·9	60	4	...	...	701	35	1668	38	46	5	1018	13	251	5	...	...	76	5	62	...	668·09	140 18 7	0 9 10
1927	10,163	27·8	5·6	33	4	...	...	76	1	2183	53	34	5	1997	15	141	1	...	...	109	10	59	2	709·96	151 10 1	0 9 1
1928	10,102	24·5	6·5	15	2	...	...	510	62	1714	44	5	...	1149	18	150	4	...	...	130	5	23	...	737·4	154 0 0	0 7 8
1929	10,454	24·1	6·8	53	3	...	...	199	18	1572	32	79	11	1111	29	208	1	...	...	119	12	100	2	740·00	172 11 10	0 5 3½
1930	11,001	25·2	6·9	27	3	...	...	506	58	1516	26	30	2	1180	15	62	...	...	...	132	10	55	4	758·00	162 6 10½	0 9 0½
1931	11,069	23·8	6·7	25	2	...	...	93	9	1636	12	62	5	1033	11	155	4	...	...	127	13	35	4	773·00	154 8 6⅔	0 9 9
1932	10,467	26·9	6·9	23	1	...	...	86	3	1560	17	1	...	1177	20	82	7	...	...	114	3	51	...	773·00	138 4 5	0 13 2
1933	9,632	26·0	7·01	13	2	...	...	267	14	1380	27	2	...	1212	28	99	...	...	...	85	3	24	1	745·00	130 11 10	0 12 7
1934	9,204	25·4	6·8	8	...	...	...	85	7	674	3	148	32	1530	37	93	2	...	...	74	1	22	...	684·00	160 7 1	0 5 7

2.—LEPER LAZARET.

REPORT ON LEPROSY IN NEW SOUTH WALES FOR THE YEAR ENDED 31ST DECEMBER, 1934.

The Medical Superintendent of the Prince Henry Hospital to the Director-General of Public Health.

The Prince Henry Hospital, Sydney, N.S.W.

Sir,

On 1st January, 1934, 19 persons remained under detention at the Lazaret. (*See* Appendix A.)

During 1934 one 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.

Two deaths occurred during 1934, viz.:—F.E.B., case 87; and J.C., case 158. One case was discharged, viz:—L.M., case No. 178.

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 189.* Distributed under nationalities, the account stands as follows at 31st December, 1934:—

	Admitted.	Readmitted.	Discharged.	Repatriated.	Died.	Remaining in at 31 Dec., 1934.
Whites, of European descent—						
New South Wales	51	3	16	.....	31	8
Victoria	3	.....	.....	.....	2	1
Queensland	4	.....	2	.....	2	.....
Northern Territory	1	1	2	.....	.....	.....
Western Australia	1	.....	.....	.....	.....	1
New Zealand	1	.....	.....	.....	1	.....
Fiji	2	.....	1	.....	1	.....
England	13	.....	3	.....	9	1
Ireland	8	.....	2	.....	6	.....
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	.....	.....	.....
Italy	1	.....	.....	1	.....	.....
Coloured patients—						
New South Wales	3	.....	1	.....	1	1
West Indies	1	.....	1 (in 1885).	.....	.....	.....
India	4	.....	1 absconded.	1	2	.....
China	58	.....	2	33	19	4
Java	1	.....	.....	.....	1	.....
New Caledonia	1	.....	.....	.....	1	.....
Pacific Islands	18	.....	.....	6	11	1
Egypt	1	.....	.....	1	.....	.....
Zanzibar	1	.....	1 (Hong Kong at own request).	.....	.....	.....
Syria	2	.....	1	1	.....	.....
	189	4	37	45	95	17

* This is the number of persons admitted; it does not agree with the highest number given in Appendix B in numeral which indicates the number of cases observed, whether admitted or merely described and recorded.

Thus the number remaining in the lazaret on 31st December, 1934, was 17 persons; 15 males and 2 females.

Appendix A shows particulars of each case under detention since the year 1912.*

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 1934.

	1934. £ s. d.
Salaries	1,607 16 6
Provisions	627 2 7
Fruit and vegetables	71 2 5
Uniforms, clothing, &c.	94 2 11
Printing, stationery and postage	7 10 0
Fuel and light	132 4 11
Wines, ales, &c.	48 4 3
Ironmongery, brushware, &c.	26 10 4
Drugs, dressings, &c.	126 16 4
Sundries	187 9 9
	£2,929 4 0

Average number of patients resident, 18·71, being equal to an average of £156 11s. 2d. per inmate per annum in 1934.

STATEMENT showing the total Expenditure of the Lazarets (for men and for women) at Little Bay during the year 1934, and from what sources the amounts were paid.

EXPENDITURE.	1934. £ s. d.	HOW PAID.	1934. £ s. d.
To working expenditure, as per statement.	2,929 4 0	From vote—Maintenance of lepers by Department of Public Health	2,354 4 3
		Transfers from the Prince Henry Hospital stock.	574 19 9
Total .....£	2,929 4 0	Total ..... £	2,929 4 0

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 Prince Henry 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.,

H. V. D. BARET,

Medical Superintendent.

* For particulars of cases under detention from 1883 see Annual Reports 1913–1930.

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.	128	
L.J.T.	,, ...	N.S.W.	School	12	14 Aug., ,,	Lismore	129	Discharged, 21 July, 1916.
S.M.	,, ...	Mallicolo	Labourer	50	27 ,, ,,	Maclean	130	Died, 23 April, 1919.
J.F.	,, ...	N.S.W.	Van-driver	28	19 Sept., ,,	Glebe	131	Discharged, 1 Jan., 1920 re-admitted, 7 Nov., 1927; died, 18 Mar., 1930.
W.D.	,, ...	,,	Fisherman	22	24 June, 1913	Ulladulla, South Coast...	132	Discharged, 10 Feb., 1921.
J.M.	,, ...	New Hebrides ...	Labourer	60	28 Nov., ,,	Tweed River	133	Died, 17 Mar., 1917.
J.C.M.	,, ...	N.S.W.	Miner	26	28 Jan., 1914	Homeville, W. Maitland	134	Died, 17 June, 1915.
W.B.	,, ...	England	Dealer	33	4 Mar., ,,	Sydney	135	Died, 14 Aug., 1915.
A.C.P.	,, ...	N.S.W.	School	15	23 June, ,,	Lismore	136	Discharged, 12 Oct., 1922; re-admitted, 16 Jan., 1925.
E.W.	,, ...	South Sea Is....	Labourer	50	17 Nov., ,,	Cudgen	137	Discharged, 19 Oct., 1932.
H.H.	,, ...	England	,,	36	19 May, 1915	Hornsby	138	Died, 7 Jan., 1924.
A.D.	Female	New Hebrides ...	Domestic	19	1 Sept., ,,	St. Kilda, Victoria	139	Died, 18 July, 1923.
C.F.	Male...	China	Cabinet-maker ...	50	18 Dec., ,,	Waterloo, N.S.W.	140	Discharged, 10 Mar., 1917.
L.F.	,, ...	England	Showman	45	9 Mar., 1916	Campbelltown	141	Discharged, 2 June, 1917.
F.H.	,, ...	China	Gardener	45	25 May, ,,	Sydney	142	Died, 15 June, 1916.
D.M.	,, ...	N.S.W.	Publican	46	25 ,, ,,	Armidale	143	Discharged, 19 May, 1917.
W.J.P.	,, ...	,,	School	12	25 Nov., ,,	Lismore	144	Discharged, 5 Nov., 1924; re-admitted, 1 July, 1927.
E.L.P.	,, ...	,,	,,	11	25 ,, ,,	,,	145	Died, 27 Dec., 1922.
E.M.	,, ...	Germany	.....	56	3 April, 1917	Liverpool, N.S.W. ...	146	Repatriated as Prisoner of War, 27 May, 1919.
C.W.	,, ...	England	.....	80	14 ,, ,,	Sydney	147	Died, 18 Feb., 1923.
C.D.	Female	N.S.W.	Domestic	54	30 Oct., ,,	Casino, N.S.W.	148	Discharged, 12 June, 1920.
P.P.	Male...	Greece	Cafe-proprietor ..	33	21 Feb., 1918	Melbourne, Victoria ...	149	Died, 24 Feb., 1931.
J.C.	,, ...	Ireland	Miner	84	5 Feb., 1919	.....	150	Died, 19 Nov., 1920.
M.T.	Female	Victoria	Housewife	63	25 ,, ,,	Sydney	150A	Died, 1 May, 1919.
J.P.	Male...	Malta	Labourer	29	18 June, ,,	.....	151	Absconded, 14 Sept., 1919.
J.S.	,, ...	,,	,,	30	22 Dec., ,,	Kempsey	152	Died, 29 July, 1921.
A.S.	,, ...	China	Gardener	64	3 Aug., 1920	Kandos, N.S.W.	153	Died, 2 Aug., 1923.
C.T.P.	,, ...	,,	Labourer	30	19 Oct., ,,	Nauru Is., S. Pacific...	154	Discharged, 25 April, 1921;
E.T.D.	,, ...	N.S.W.	Teamster	32	10 Nov., ,,	Bellingen, N.S.W. ...	155	Discharged, 1 Dec., 1925. re-admitted, 28 Sept., 1931.
T.F.	,, ...	Ireland	Civil servant ...	57	20 Dec., ,,	Hobart, Tasmania	156	Discharged, 18 June, 1921.
A.W.	Female	Sweden	Seamstress	62	18 Feb., 1921	Newcastle	157	Died, 24 Feb., 1930.
D.A.	Male...	N.S.W.	Teamster	71	26 May, ,,	Newcastle	90	Died, 16 July, 1921.
J.C.	,, ...	N.S.W.	Fisherman	22	18 Aug., ,,	Tilba Tilba	158	Died 6 Aug., 1934.
A.S.	Female	Queensland	Domestic	20	29 Jan., 1922	Redfern	159	Returned to Peel Island, Queensland, 20 Mar., 1922.
Y.M.B.	Male...	France	Labourer	67	7 June, 1922	Hunter's Hill	160	Died, 12 Aug., 1922.
E.	,, ...	Ceylon	Sailor	24	13 Dec., ,,	Not fixed	161	Repatriated, 26 June, 1923.
R.B.	,, ...	N.S.W.	Coach-painter ...	42	18 June, 1923	Taree, N.S.W.	95	Died, 5 Aug., 1923.
C.E.B.	,, ...	Northern Terr....	Garage proprietor	35	11 Aug., 1924	Darwin, N.T.	162	Discharged, 16 Sept., 1925. Re-admitted, 7 July, 1933. Discharged, 12 Dec., 1933.
H.L.S.	,, ...	N.S.W.	Invalid pensioner	37	26 Oct., ,,	Liverpool Asylum	163	
J.B.	,, ...	Ireland	Bush worker ...	61	28 Jan., 1925	Liverpool	164	Died, 24 June, 1931.
A.C.	,, ...	Germany	Importer	45	6 Mar., ,,	Sydney	165	Absconded, 21 Aug., 1925.
K	,, ...	Hawaii	Musician	...	7 ,, ,,	,,	166	Repatriated, 11 Mar., 1925.
A.M.	,, ...	China	School	12	12 ,, ,,	,,	167	Repatriated, 16 Dec., 1925.
A.D.	,, ...	N.S.W.	,,	7	21 April, ,,	,,	168	Discharged, 1 Dec., 1925.
Wong Toe...	,, ...	China	Gardener	46	22 Nov., ,,	Clarence River	169	
H.P.	,, ...	N.S.W.	Farmer	39	14 Dec., ,,	Queensland	170	Discharged, 9 Sept., 1926.
G.T.	,, ...	Scotland	Chemist	56	8 May. 1926	Sydney	.....	Discharged, 21 July, 1926.
E.S.G	Female	Queensland	Domestic	33	27 April, 1927	Hunter's Hill	171	Died, 29 Jan., 1930.
A.R.B.	Male...	N.S.W.	Farm labourer ...	41	6 July, ,,	Croydon	172	Died, 26 Nov., 1928.
W.C.	,, ...	Mauritius	Sugar-worker ...	47	7 Feb., 1928	Queensland	173	Discharged, 4 July, 1928.
D.E.O.	Female	Queensland	Domestic	31	29 Mar., ,,	Northern Territory	174	Discharged, 15 Feb., 1932.
Ah Hoey	Male...	China	Gardener	49	28 May, ,,	Liverpool	175	
P.T.I.	,, ...	N.S.W.	Labourer	17	9 Dec., ,,	Tweed River	176	Died, 15 Dec., 1933.
J.L.	,, ...	,,	,,	47	22 ,, ,,	Macksville	177	
L.M.	Female	,,	Domestic	59	14 Sept., 1929	Lismore	178	Discharged, 30 Nov., 1934.
E.W.	,, ...	,,	,,	33	4 Feb., 1930	Sydney	179	Died, 6 Feb., 1930.
T.G.J.D.	Male...	,,	School	13	4 July, ,,	Lismore	180	
R.C.	,, ...	W. Australia	,,	12	6 Aug., ,,	Sydney	181	
L.B.	,, ...	Italy	Labourer	39	13 Sept., ,,	Queensland	182	Repatriated to Queensland, 15 Jan., 1931.
A.M.	Female	N.S.W.	Home-duties	19	1 April, 1931	Adamstown, N.S.W.	183	
W.L.	Male...	China	Gardener	60	12 Sept., 1931	Kogarah, N.S.W.	184	
J.T.	,, ...	England	Bootmaker	60	29 Jan., 1932	Queensland	185	
A.D.	,, ...	N.S.W.	Engine-driver ...	53	30 Sept., 1933	Lakemba, N.S.W.	186	
E.C.H.L.	,, ...	Victoria	Student	42	15 April, 1934	Manly	187	

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 the 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.

APPENDIX A—*continued.*

RETURN showing admissions, discharges, &c., of Patients suffering from leprosy for the years 1919–1934.

	1919.	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.	1930.	1931.	1932.	1933.	1934.
In Lazaret on 1st January	24	24	24	22	21	16	15	17	15	17	20	20	20	20	19	19
Admitted during the year	4	4	3	3	1	2	8	1	4	5	1	4	3	1	2	1
Died during the year	2	1	2	2	5	2	...	1	2	1	1	4	2	...	1	2
Discharged	2	3	1	2	...	1	4	2	...	1	...	...	...	2	1	1
Repatriated	...	...	2	...	1	...	2	...	...	...	...	...	1	...	...	...
Remaining in Lazaret on 31st December — Total	24	24	22	21	16	15	17	15	17	20	20	20	20	19	19	17
Remaining in Lazaret on 31st December — Males	19	20	17	16	12	11	13	11	14	16	15	17	16	16	16	15
Remaining in Lazaret on 31st December — Females	5	4	5	5	4	4	4	4	3	4	5	3	4	3	3	2

Birthplaces of Lepers.—The inmates of the Lazaret at the close of the year 1934 were of the following nationalities:—New South Wales, 9; West Australia, 1; Victoria, 1; Australian Aboriginals, 0; Pacific Islands, 1; China, 4; England, 1. Total, 17.

Working Expenses of Lazaret.—During the year 1934, the total cost of the management of this Institution was £2,929 4s. Calculated on the average number of inmates, the average cost per inmate per annum was £156 11s. 2d.

3.—DAVID BERRY HOSPITAL.

Berry, New South Wales.

REPORT of the Secretary for the year ended 31st December, 1934.

Administrative Staff.—Visiting Medical Officer, Dr. H. M. Hollingworth; Matron, Miss D. G. Cawood; Secretary, A. F. Hale.

Resident Staff.—Matron, 2 Registered Nurses, 5 Pupil Nurses; 4 Domestic Staff, and 2 Attendants.

Number of Wards and Beds.—Wards, 6; beds, 22; cots, 4.

General Cases.—Beds, 20; cots 2. *Infectious Cases.*—Beds, 2; cots, 2.

Sir,

I have the honour to submit herewith the annual report of this hospital for the year 1934:—

Admissions and Discharges.—Remaining in on 1st January, 1934, 20; admitted during the year, 451; births, 7; discharges, 435; deaths, 32; remaining in on 31st December, 1934, 11.

In-patients.—The total number of in-patients treated in 1934 was 478, as against 385 in 1933. Daily average, 21, as against 22 for 1933.

Out-patients.—The number of out-patients attended to was 237, as against 181 for 1933.

Infectious Cases.—Diphtheria, 1 case; scarlet fever, 4 cases; whooping-cough, 1 case.

Anaesthetics.—The total number of operations performed was 210 (major, 105; minor, 105); 77 visits were made by the Nowra doctors in connection with these operations: Dr. Ryan, 28; Dr. Rodway, 25; Dr. Thompson, 24.

Collections.—The collections for the year totalled £406 13s. 9d., compared with £368 15s. 10d. for 1933.

Buildings and Grounds.—These are in fair order.

A. F. HALE,
Secretary.

4.—LADY EDELINE HOSPITAL FOR BABIES, GREYCLIFFE, VAUCLUSE.

REPORT for period 1st January to 14th September, 1934.

Visiting Medical Officer.—Dr. L. R. Parker.

Honorary Staff of Consultants.—Dr. R. N. Paul, Consulting Dermatologist; Dr. R. S. Godsell, Consulting Ear, Nose and Throat Surgeon.

Resident Staff.—Matron, Miss H. J. Turner; 2 Staff Nurses and 6 Pupil Nurses.

Number of Wards.—General, 6; (48 cots, 4 beds). Isolation, 1 (1 cot, 1 bed). Total, 49 cots, 5 beds.

Return of Admissions and Discharges for the period 1st January to 14th September, 1934.—Remaining in hospital on 31st December, 1933, 24; admitted from 1st January to 14th September, 1934, 72; discharged 92; died, 4. Total number treated, 96. Daily average of cots occupied, 18. Out-patients treated, 23. Cost of maintenance and treatment, £1,206 0s. 5d. Average cost per occupied bed, £67.

The Visiting Medical Officer reported that 96 babies were treated between 1st January and 14th September, 1934, mainly for gastro-enteritis, nutritional and pneumonic conditions. There were only four deaths, two of which were due to gastro-enteritis, one to pneumonia and one to marasmus.

MATRON'S REPORT.

The following table shows the ages on admission of babies treated during 1934 and the number of deaths.

Admissions.	3 months.	3–6 months.	6–9 months.	9–12 months and over.	Total.
	36	15	5	40	96
Died	...	...	1	3	4

Gastro-enteritis cases numbered 48, with two deaths; malnutrition, 27; colitis, 2; broncho-pneumonia, 11 cases (one death); bronchitis, 1; convulsions, 3; pink disease, 1; nephritis, 1; marasmus, 1 (one death); infected glands, 1; total cases treated, 96.

This hospital was closed for the admission of patients on 14th September, 1934.

The Lady Edeline Hospital for Babies was opened on 19th November, 1913, by the then Premier (the late Hon. W. A. Holman) at a time when gastro-intestinal infections among infants were extremely prevalent and extremely virulent. In 1913 there were no Baby Health Centres, and "summer diarrhœa" was an outstanding cause of the high infant mortality rate, especially in the metropolitan area, where the deaths from gastro-enteritis numbers 523 in 1912; 474 in 1913; and 457 in 1914. There were insufficient hospitals available for the treatment of infantile complaints, and it was decided to supplement the existing accommodation by utilising "Greycliffe" for the treatment of sick babies up to the age of two years, special provision being made for admission of infants suffering from diarrhœa and gastro-enteritis. In 1914, the first three Baby Health Centres were established at Alexandria, Woolloomooloo and Newtown, and from that time onward they have progressivly increased in number and are now distributed throughout the metropolitan area in such a manner that practically every suburb is supplied with a Centre.

The increasing activities of these Centres, and the Tressilian Mothercraft Homes—(established respectively in 1921 (Petersham) and 1929 (Willoughby) by the Royal Society for the Welfare of Mothers and Babies)—have resulted in a steady reduction in the infant mortality rate from 78·3 per 1,000 in 1913 to 36·76 per 1,000 in 1933—in the latter year deaths from gastro-enteritis numbered only 36.

Maintenance of "Greycliffe" for hospital purposes was therefore no longer necessary; but while the demand for hospital accommodation for gastro-enteritis cases had declined, the demand for Mothercraft training had increased to such an extent that it was extremely difficult to meet the requirements of the Baby Health Centres in the preventive field.

A recommendation was therefore made for discontinuance of the building as a hospital and for placing it at the disposal of the Tressilian authorities for use as a Mothercraft Home.

Ministerial approval was received to carry out this recommendation, and on 1st March, 1935. "Greycliffe" was formally handed over to the Royal Society for the Welfare of Mothers and Babies to be used as a Mothercraft Home along lines similar to those of the Tressilian Homes at Petersham and Willoughby, on the following conditions:—

The Royal Society for the Welfare of Mothers and Babies to utilise the Hospital for a period of five years, provided that in case of emergency and on due notice being given, the hospital shall revert temporarily to the Government.

If during the five years mentioned no emergency has arisen and the present indications that the decline in the infant mortality rate is permanent be confirmed, consideration be given to vesting the premises in the Society.

The building known as "Greycliffe" was originally the home, and was built for, Mrs. Fanny Catherine Reeve, a daughter of William Charles Wentworth. The property came under Government control in 1912, when action was taken for resumption of large areas of the Harbour foreshores.

5.—STRICKLAND CONVALESCENT HOSPITAL FOR MEN AND WOMEN, "CARRARA," ROSE BAY.

REPORT of the Matron for the year ended 31st December, 1934.

Visiting Medical Officer—Dr. L. R. Parker.

Staff:—Resident staff at 31st December, 1934—Matron (Miss V. K. Angus); three trained and two pupil nurses; other female staff, six; attendants (male), two.

Admissions and discharges.—For the year ended 31st December, 1934, the admissions to "Carrara" totalled 1,149 patients, of whom 364 were males and 785 females. Discharges numbered 1,136 (368 males, 768 females) 65 patients (22 males, 43 females) remained in residence on 1st January, 1935. The daily average of occupied beds for the year was 63 (23 males, 40 females). Average annual cost per occupied bed, £67 14s. 9d. Total expenditure for the year, £4,267 7s. 4d.

Extensions and Improvements.—As mentioned in the Annual Report for 1933, a new block to accommodate 40 male patients was erected on a portion of the extensive grounds at "Carrara" during that year, and opened for use in September, 1933.

The main building "Carrara House" has been used continuously as a convalescent hospital for women since December, 1914. To meet the demand for increased accommodation an additional female block of 40 beds was erected early in the year. This block, replete with every modern convenience, was opened for use on 30th April, 1934.

In carrying out the alterations to the hospital special attention was given to the provision of sheltered arcades and wide verandah spaces for day time rest out of doors.

Special attention has also been given to the artistic laying out of the grounds with shade trees, shrubs, rockeries and gay flower beds. This hospital should prove of the greatest value in restoring to normal health men and women recovering from serious illness and operations, as every comfort is available in happy and beautiful surroundings.

Patients can be provided with every comfort in a convalescent hospital at less than half the cost required for the upkeep of a general hospital; the general surroundings of a convalescent hospital are also more conducive to a patient's speedy restoration to normal health than are the conditions in the wards of a general hospital, where close contact with patients seriously ill or suffering acutely cannot be avoided.

6.—WATERFALL SANATORIUM.

Annual Report of the Medical Superintendent for the year ended 31st December, 1934.

Honorary Consulting Physicians.—Dr. Cecil Purser and Dr. E. W. Fairfax.

Honorary Radiologist.—Dr. A. T. Nisbet.

Resident Staff.—Medical Superintendent, Dr. H. W. Palmer; Acting Senior Medical Officer, Dr. O. W. Mater; Junior Medical Officer, Dr. J. R. Shannon; Manager, Mr. R. C. Rowe; Clerk and Storekeeper, Mr. A. Douglass; Matron, Miss K. Walsh; 1 Sub-matron, 32 Nurses, 1 Junior Clerk, 14 Male Attendants, 5 Cooks and 9 Artisans. A Dentist visits the Sanatorium two full days each month.

Bed Accommodation.—There are 292 beds for males and 136 beds for females. Total beds, 428.

Number of tuberculous patients dealt with during 1934, 910.

Number of patients remaining in on 1st January, 1934, 352; admitted during 1934, 558, of whom 3 were non-tuberculous. Total under treatment, 907, and 3 non-tuberculous cases. Discharged, during the year, 501 (arrested 5, quiescent, 45; much improved, 150; improved, 177; stationary, 83; worse, 41); died 68. Remaining in residence on 31st December, 1934, 338 patients (males 234, females 104).

Average daily number of beds occupied, males 243·58; females, 116·66.

Total cost of maintenance, £31,715 7s. 4d.

Average annual cost per patient, £88 1s. 7d.

CONDITION on discharge and average residence in days of the 501 tuberculous patients discharged in 1934.

Condition on Discharge.	No. of Patients.	Average Residence in days.
Arrested	5	3,469
Quiescent	45	403
Much Improved	150	217
Improved	177	124
Stationary	83	280
Worse	41	342
Died	68	309
Total	569	243

"Arrested": A case where no tubercle is present in sputum, and where the disease has been quiescent for over two years.
"Quiescent": To have no symptoms or signs of tuberculosis, except such as are compatible with a completely healed lesion.
"Much Improved": Is where the general health is good, and the signs and symptoms of tuberculosis materially diminished, while working capacity is more or less restored.

This is the scheme for classification of tuberculous patients formulated by the New South Wales Board of Control for the Campaign against Tuberculosis, and adopted by the various organisations.

CONDITION of patients on Admission and Discharge.

Condition on Admission.	Arrested.	Quiescent.	Much Improved.	Improved.	Stationary.	Worse.	Died.
L1, T1	...	5	8	1	2	...	...
L2, T1	1	14	37	32	13	3	3
L3, T1	...	12	45	52	27	9	10
L1, T2	...	1	3	2	1	...	...
L2, T2	1	4	12	21	6	1	3
L3, T2	...	9	38	51	29	19	35
L1, T3	...	...	...	...	...	...	...
L2, T3	...	...	...	...	...	...	...
L3, T3	3	...	7	18	5	9	17

L1. signifies disease limited to part of one lobe of a lung, or slightly to two lobes.
L2. signifies extensive disease limited to one lobe, or moderately to two lobes.
L3. where there is more disease than in L2.
T1. is where toxic symptoms are slight, or complications not extensive.
T2. is where toxic symptoms are present but not serious, or complications are not extensive.
T3. where toxic symptoms or complications are more serious.

This is the classification of tuberculous patients formulated by the Board of Control of the Campaign against Tuberculosis, and adopted by the various organisations.

OCCUPATIONS of Patients Discharged or Died during 1934.

Occupation.	Number.	Occupation.	Number.	Occupation.	Number.
Labourers	109	Shop assistants	38	Seamen	15
Housewives	98	Building trades	20	Outdoor Trade	14
Housework	54	Mechanics	19	Government employ	14
Indoor trades	47	Mining (quartz)	14	Children	12
Clerks	40	,, (coal)	4	Professions	10
Factory hands	39	Farm Work	17	Nurses	5

BIRTHPLACE of Patients Discharged or Died during 1934.

Country.	Number.	Country.	Number.
New South Wales	327	Europe	19
Other Australian States	68	Wales	11
England	86	New Zealand	11
Scotland	18	Other Countries	8
Ireland	21		

TABLE showing the Age Period at which the first symptoms of infection arose, and the number of male and female persons infected in each period, of all patients admitted since 1909. No re-admitted case is included a second time in this table.

Sex.	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 years.	Over 59 Years.
Male	67	136	338	1,685	1,757	1,532	915	69
Female	73	169	396	1,221	797	373	180	49

Careful inquiry was made in every case for any history of contact infection. Among the male cases 9·2 per cent. gave such a history while 15.7 per cent. gave such a history among the female patients.

Among all cases 11·4 per cent. of cases gave some history of risk to infection.

TABLE showing the relative incidence of Infection among different Members of the Families giving Tuberculous Family History.

Member of Family Infected.	Female Patients.	Male Patients.
	Per cent.	Per cent.
Mother	19·2	11·2
Father	9·0	11·2
Sister	17·8	13·3
Brother	9·0	24·0
Mother and father	2·4	2·7
Mother, father, brother and sister	2·6	2·3
Brother and sister	3·6	4·4
Father and brother	1·6	3·1
Mother and brother	·8	1·1
Mother and sister	2·1	2·0
Father and sister	3·0	·9
Mother, brother and sister	3·0	·5
Father, brother and sister	·2	·2
Husband or wife	9·2	9·0
Husband or wife with son	·7	1·3
Husband or wife with daughter	2·1	·6
Daughter	4·1	1·4
Son	1·5	2·5
Other infected persons	8·6	8·3

TABLE of Yearly Results, 1930 to 1934.

Year.	In Residence beginning of Year.	Admitted during year.	Arrested and Quiescent.	Much Improved.	Improved.	Not Improved.	Died.
1930	372	509	20	60	175	94	103
1931	407	490	21	80	172	111	91
1932	414	476	29	60	139	150	106
1933	403	481	44	71	157	161	99
1934	352	558	50	150	177	124	68

GENERAL REVIEW OF THE YEAR'S WORK.

The foregoing tables show the number of patients undergoing treatment during the year 1934, and the condition of those discharged. The results are a distinct improvement on all previous yearly results, which is certainly due to the better working of our present system of co-ordination. The figures are really better than they appear, for 10 per cent. of all cases discharged stayed less than a fortnight, most of whom helped to swell the large number of stationary cases. Although these results are satisfactory, and more cases were admitted in an earlier and hopeful condition, far too many cases are admitted with the disease too advanced for any improvement to be possible.

The present system of co-ordination for the control of tuberculosis has been in operation for a number of years, but the results have not been gratifying, for the simple reason that little has been done to get in touch with the infected individual, before the disease has a firm hold. With the present means of treatment, almost all cases could be arrested were they discovered before the disease was well established. Some means must be provided whereby such early cases can be brought under supervision and treatment. In almost every annual report the importance of this basal factor in the control of tuberculosis has been stressed, but no organised attempt has been made to attack the problem. Although there certainly are difficulties to be overcome, much could be done by the systematic education of the public concerning tuberculosis, special attention being drawn to the early signs and symptoms of the disease, to the extreme danger of delaying treatment, if recovery is to be obtained, and to the many facilities that are available at the different clinics for diagnosis and advice. The general medical practitioner also should be closely connected with this propaganda, and his wholehearted support obtained. This should not prove difficult, once he was shown what assistance the present organisation could be to his own practice. By some such methods it would be possible to get in touch with many cases now missed, but to keep such cases under supervision and treatment, certain inducements or force would probably be required. In the case of a bread winner of a family, with little disease present, the desire to support his family is paramount, while the treatment of the disease is considered of little account. Unless this man can be induced to undergo treatment, his earning capacity will soon disappear, and he will become a future burden on the State. It has been frequently pointed out that it would be wise forethought and economy to provide for such a person's family, while the infected person undergoes proper treatment, the expense to the State probably being less than under present conditions, while such provision would allow of these cases obtaining the right treatment at the earliest stage possible, with every prospect of being able to fully support their families for the future.

Although there have been a few more early cases admitted far too many old chronic phthisical cases and those in the advanced stages of the disease have had to be admitted.

If beds are not available elsewhere, they need must be sent here, and though the advanced active case has a depressing effect on the hopeful case, this can be counteracted, to some extent, by confining them to special wards, as few of them are able to move about. With the chronic phthisical case, however, it is quite different. These cases should not be admitted to a sanatorium where other cases are treated. The chronic type does not require special treatment, has little chance of any improvement, no matter how much is done for him, and because he does not improve like others, becomes discontented. It is from this group that the chronic grumblers come, who not only make trouble for the administration, but by persistent insidious propaganda, undermine the confidence of improving patients, thereby doing incalculable harm. All chronic patients have the invalid pension, so should be able to live outside, but they enjoy sanatorium conditions and when discharged, they soon manage to be re-admitted. These cases should either be sent to a special institution, where shelter and plain food only is provided, or live outside on their pensions, in preference to being kept in an institution by the State.

Of the male patients discharged during the year, 27 men, all much improved, were transferred to the Red Cross Home at Exeter, and 6 practically quiescent cases were transferred to the Picton Lakes Village Settlement. Of the patients who were unimproved by their stay at Waterfall, 39 men and 12 women were transferred to the Randwick Auxiliary Hospital.

The basis of all treatment is according to sanatorium rules, with special attention to individual cases, so that the special need of each case is fully met. All active cases are kept strictly at rest in large open air wards, allowing of the maximum of sunlight and fresh air. Special attention is paid to the dietary, which is liberal and varied, menus being so arranged that similar meals can only be repeated at long intervals. With the improvement in each patient's condition graduated exercise is allowed, and when progress is satisfactory light work is provided. For patients capable of heavier exercise there is a carpenter's shop equipped with motor power. For patients interested in gardening, vegetable plots are available where patients can raise necessary crops, the vegetables grown being bought by the sanatorium at current market prices.

Pneumothorax treatment was applied in 52 cases, 8 of whom proved unsuitable from one cause or another, several of these being haemorrhage cases, 2 of whom died.

Halivol oil given in conjunction with bicalcium phosphate was again used in certain cases, and a number of cases were tested with a Hungarian remedy called " Karyon Mit " without any marked benefit. Solganol B, a gold preparation, was used on a number of cases, the preparation in oil appearing to be the better preparation. Although no striking results have been obtained, these patients do show some slight benefit. " Mirdol " improved mutton bird oil also has been used in a number of cases and compares favourably with similar oils.

Blood sedimentation test is done in all cases, and is also used to control improvement.

Maintenance of Buildings, Improvements, etc.—The erection of six open air chalets for two patients each, and 2 dormitory blocks for the working inmates was completed by the Public Works Department, and a new blacksmith shop was erected by our own staff.

The hot water service was overhauled and considerably improved, and the hot servery tables in both men's and women's division repaired.

The reticulation service of the water system has been causing trouble and will require replacement in the near future. The general condition of the interior of all buildings is good, but it has been impossible to deal with the outside painting owing to shortage of labour, and no available funds.

It has been difficult, for the same reasons, to effect many improvements, but the general surroundings and entrance have been satisfactorily laid out.

Owing to special funds having been provided for new equipment, a large number of necessary replacements were made in most articles in ordinary use, all worn out sinks were replaced and provided with Monel metal draining boards throughout the institution, as well as other extra requirements. Opportunity was also taken to obtain a diathermy apparatus, a binocular microscope, and a set of ophthalmic lenses. It is now possible to test the eyes of patients, without it being necessary to go to Sydney specially for that purpose. Certain requirements were also obtained for the X-Ray department, but others have yet to be provided.

All essential services have been well maintained.

The milk supply is most satisfactory, half the supply being obtained from the Berry Agricultural Farm and half from Sydney distributing agents.

The patients were well supplied with amusements during the year. Concert parties visited the sanatorium on various occasions, and "talkie" performances were given twice a week. Our thanks are due to the film proprietors, the Hon. R. B. Orchard, Esq., O.B.E., Mr. R. Lawson, the Smith Family, and all the visiting artists, who have made these entertainments possible and successful.

In addition to these forms of amusement, there is a complete wireless installation with head phones to each bed; also good libraries for men and women patients, while the men have two billiard tables and the women one full sized billiard table as well as a large ping pong table. For outdoor amusement the men have a large bowling green and the women a croquet lawn.

There is a canteen controlled by the patient's committee. Any profits from sales are devoted towards providing amusements. Last year this committee decided to instal a "talkie" machine and during the present year they have been enabled to finally pay off the whole cost of the installation.

Few children were admitted during the year. As children do exceptionally well here, it is a great pity more use is not made of the accommodation available. A special ward for boys is provided, and the Education Department has erected a school building and provided the teacher, so that affected children are well provided for.

The dentist has paid regular visits throughout the year and his time has been fully occupied.

Dr. A. T. Nisbet has paid several visits to the Sanatorium and has supervised the requirements of the X-Ray department. He also reports on all films taken, and his reports have been most helpful. The X-Ray technician visits twice weekly, and all new admissions are filmed and screened. Frequent screening of all pneumothorax cases is done and any other case considered necessary.

For the greater part of the year each Saturday was occupied in the demonstration of cases to Sydney University medical students in their final years of study. Students visit the Sanatorium in groups of eight or ten, and spend the whole day at clinical work. As part of their medical course, each student is required to pay two full time visits.

H. W. PALMER,
Medical Superintendent.

7.—LIDCOMBE STATE HOSPITAL AND HOME.

Report of the Medical Superintendent for the year ended 31st December, 1934.

Honorary Medical Staff.—Honorary Staff Surgeon, H. C. Rutherford Darling, M.D., M.S., F.R.C.S.; Honorary Assistant Surgeon, J. A. Lawson, M.B., Ch.M.; Honorary Ear, Nose and Throat Surgeon, N. M. Macindoo, M.B., Ch.M.; Honorary Ophthalmic Surgeons, Falkner J. Blaxland, M.D.; A. E. F. Chaffer, Ch.M.; Honorary Urologist, C. M. Edwards, M.B., Ch.M; Honorary Dermatologist, E. C. Hall, M.B., Ch., M.D.; Honorary Radiographer, Colin R. Cole, M.B., Ch.M.

Resident Medical Staff.—Medical Superintendent, R. M. McMaster, M.B., Ch.M., D.S.O.; Senior Medical Officer, J. McManamey, M.B., B.S.; Junior Medical Officers, R. Segal, M.B., B.S.; and V. G. Crowley, L.M.S.S.A.; Manager, R. J. Brown, J.P.; Assistant Manager, S. J. Warner, J.P.; Matron, Miss E. M. E. Mance; Sub.-Matron, Miss E. M. Copeman.

Nurses.....49	Other Female Staff..... 2
Attendants.....72	Other Male Staff 18

A Dentist visits the institution each week, and an X-ray Technician twice a week.

Number of Wards and Beds.

Hospital Division.		General Division.		Total Accommodation.	Number of Beds.
Ward No.	Number of Beds.	Dormitories.	Number of Beds.		
4	27	9	60		
5	43	12	60		
6	61	21	75		
7	58	22	75		
10	71	23	75		
11	96	24	75		
14	50	25	75	Hospital Division	950
16	61	26	75		
17	61	28	25	General Division	692
18	61	34	27		
19	61	35	25		
20	50				
27	110	Emergencies (Casuals)	6		
28	92	Outside Locations	39		
Infectious Division	48				
15	950	...	692	Total	1,642

The foregoing figures represent the total capacity of the various hospital wards and dormitories, and show accommodation for 950 patients and 692 inmates, a total of 1,642.

Admissions and Discharges.—1934—Remaining in on 31st December, 1933, 1,452; admitted, 1934, 2,800; discharged, 2,193; died, 588; remaining in on 31st December, 1934, 1,471—hospital division, 907; dormitories, 564.

Average Daily Number of Persons Resident.—1929, 1,639; 1930, 1,591; 1931, 1,563; 1932, 1,556; 1933, 1,539; 1934, 1,516.

1934—Total cost of maintenance and treatment of patients and inmates, £76,003 16s. 11d. Average annual cost of patients and inmates, £50 2s. 8d.

Work of Honorary Medical Officers.—The various honorary surgeons continue to do excellent work. Apart from their valued advice in consultations and diagnoses, the following operations were performed by them during 1934:—Dr. Darling, 52; Dr. Lawson, 17; Dr. Blaxland, 6; Dr. Chaffer, 39; Dr. Macindoe, 42; Dr. Edwards, 69; Dr. Cole, Honorary Radiologist, paid 32 visits; Dr. Hall paid 10 visits.

Dr. Hall, the honorary dermatologist, paid his first visit here on 24th August, 1934.

Work of the Staff.—The resident medical staff carried out 38 major and minor operations. The work of the whole staff continues of the same high standard.

X-Ray Department.—This department, opened in September, 1930, has given excellent service; 1,024 X-Rays were taken in 1934.

Massage Department.—The massage department continues to do good work, 132 individual cases received treatment, of whom 54 can be classed as recovered, 36 relieved, 15 unrelieved; 27 patients are still under treatment.

Infectious Division.—This section containing 48 beds for both sexes of all ages, which was opened in November last year, has proved a most useful addition to the available accommodation for infectious diseases in the metropolitan area. It is regretted that owing to a numerically inadequate nursing staff, it has been possible to utilise only 36 of the 48 beds.

During the year, 322 patients were treated, the great majority of cases being scarlet fever and diphtheria.

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. The new kitchen, opened early in January, has proved of immense value in the supply of a more valuable dietary, but an additional staff cook is required to enable this unit to be utilised to the utmost advantage.

Laundry.—The new laundry opened in December, 1933, has given great satisfaction in providing increased cleanliness and much improved appearance of the laundered articles. Two additional drying chambers have yet to be added to give the necessary help in inclement weather.

Recreation.—Numerous high-class entertainments have been provided by many kind friends who have attended to give pleasure to our patients. We are particularly indebted to the "The Smith Family" who, despite unusually heavy demands upon their funds by outside claims, made their customary distribution of Christmas Cheer to the whole of our patients and inmates. "The Smith Family" also provided "broadcast" concerts from our hall, which, with the community singing introduced thereat, were greatly enjoyed by those present at these entertainments.

Picture Shows.—It is regretted that the weekly programme of silent pictures which had been provided free of cost by the Universal Film Manufacturing Co. (Australia) Ltd. for many years past has been discontinued, that class of moving picture being unobtainable. The installation of a movietone cinema to fill the gap created by this loss is now urgently needed.

Radio Installations.—The wireless installations provided by the generosity of the late Mr. James Hennessy, a former grateful patient of this hospital, continues to give much pleasure. The separate units more recently installed in other hospital divisions have also been very much appreciated.

Billiard Room.—The billiard room in the main division of the institution has maintained its popularity amongst the limited number of inmates able to utilise it. It is hoped that the enlargement of this room and the provision of another table will shortly be established facts.

Bowling Green.—The bowling green continues to be extensively used and is a very popular "centre of attraction" to both players and onlookers. Several matches were played with outside clubs and sister institutions, visits being interchanged with much pleasure to those participating. Several trophies were competed for by our men and the interest shown by the donors of these trophies is very much appreciated.

Outdoor Sections.

Gardens and Grounds.—In the outdoor sections of the institution the work has been considerably hampered by a continued shortage of suitable inmate assistance, and the greatest difficulty has been experienced in maintaining in the gardens and grounds the standard of ornamentation and efficiency reached in previous years.

Dairy and Farm Work.—The standard of our milking herd has been further improved by carefully selected additions of young stock from tested dams and the regular judicious culling out of weak production and unprofitable cows. The testing of our cows under the Department of Agriculture's Herd Improvement Scheme has been of great assistance in building up and improving the milking qualities of the herd. Another important factor in this improvement was the importation from New Zealand in 1929 of a young bull, carefully selected from one of the highest production herds in that Dominion. As this animal is now becoming old a further importation is very desirable. In "Show" points our Friesians have again had a successful year securing numerous awards at the Royal Agricultural Society's Show and also at the local shows at Granville and Parramatta.

The health of the herd continues excellent, the result of the annual tuberculin test being again highly satisfactory. During the year 85,243 gallons of milk were produced at the average cost of 10·26 pence per gallon. This supply fully provided for the requirements of the hospital and general inmate population. One hundred and four tons of green fodder were grown in our cultivation areas, thus assisting to reduce the cost of milk production.

Vegetable Garden.—155,934 lb. of vegetables of all kinds valued at £974 11s. 9d. were produced in the vegetable gardens.

Piggery.—The piggery has again proved to be a valuable asset to the institution. Sales during the year amounted to £1,188 0s. 3d., and pork to the value of £114 11s. 3d. was consumed by the inmates.

Guinea Pigs.—In order to meet the needs of the institution laboratory—now in course of erection and equipment—and also to supplement the requirements of the Department's laboratories in Sydney the breeding of guinea pigs was commenced towards the end of the year—the necessary hutches being erected in the centre of the vegetable garden areas for convenience of food supply.

R. M. McMASTER,
Medical Superintendent.

8.—LIVERPOOL STATE HOSPITAL AND HOME.

Report of the Medical Superintendent for the year ended 31st December, 1934.

Honorary Visiting Staff.—Consulting Surgeon, B. T. Edye, F.R.C.S.; Surgeon, I. D. Miller, M.B., F.R.C.S.; Assistant Surgeon, C. H. Swanton, M.B., F.R.C.S. (on leave); Assistant Surgeon, A. L. Webb, M.B., F.R.C.S.; Relieving Assistant Surgeon, J. A. Lawson, M.B., Ch.M., F.R.A.C.S.; Anaesthetist, J. Goldman, M.B., Ch.M.; Ear, Nose and Throat Surgeon, H. L. Clowes, M.B., Ch.M., F.R.C.S.; Dermatologist, W. A. McDonald, B.A., M.B., Ch.M.; Medical Officer, J. Pirie, L.R.C.P., L.R.C.S. (Edin.), L.F.P.S. (Glasgow).

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, 1934.—Medical Superintendent, Junior Medical Officer, Manager, Matron, Sub-Matron, Nurses 18, Clerks 2, Storekeeper, Dispenser, Male Attendants 18, other Male Staff 10, other Female Staff 1. A Dentist visits the Institution fortnightly.

Number of Wards and Beds.—Hospital Division, 13 wards containing 322 beds (plus 23 emergency beds); General Division, 13 dormitories, containing 569 beds. Total accommodation, 891 beds.

Admissions and Discharges for the year ended 31st December, 1934.—In residence 1st January, 1934, 853; admitted, 2,362; total, 3,215; discharged, 2,080; died, 284; remaining 31st December, 1934, 851; average daily number, 861. Total cost of maintenance and treatment (patients and inmates), £38,487 18s. 3d; average cost per inmate, £44 14s. 0d.

Summary of Patients Treated in the various Wards during 1934.

Hospital Section.	In Hospital, 1st January, 1934.	Admitted during year.	Discharged during year.	Died during year.	In Hospital, 31st December, 1934.
Cancer Wards	60	146	75	67	64
General „	225	758	566	190	227
Totals	285	904	641	257	291
District Ward	23	388	362	27	22
Grand Totals	308	1,292	1,003	284	313

Out-patients.—18,883 attendances were recorded during the year, including 4,335 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.

Hospital Wards.—The general hospital accommodation was fully utilised throughout the year. 189 operations were performed under general anaesthesia, 64 of which could be classed as major operations.

Improvements.—The following works were completed during 1934:—Out-patient's department and Medical Officer's residence.

Recreation of 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 entertainments 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 in the vegetable garden and dairy.

D. WALLACE,
Medical Superintendent.

MANAGER'S REVIEW OF OUT-DOOR WORK FOR THE YEAR ENDED 31ST DECEMBER, 1934.

The supply of inmate labour was fairly well maintained throughout the year, and satisfactory progress was made with out-door work.

Dairy Farm.—37,286 gallons of milk were produced.

Piggery.—Revenue derived from the sale of pigs amounted to £107 2s. 6d.

Farm, Vegetable Garden and Orchard.—These sections yielded 48,553 lb. of vegetables, 2,030 lb. of fruit, and 30 tons of green feed in 1934.

Bakery.—The usual high standard of quality was maintained. The total bread consumption was 260,670 lb.; buns, 250 dozen; and cake, 18,750 lb.

Condition of Buildings.—All Institution buildings were maintained in a reasonable state of efficiency.

Gardens and Grounds.—The condition of the gardens and grounds has been well maintained throughout the year.

J. J. RANSHAW,
Manager.

9.—NEWINGTON STATE HOSPITAL AND HOME FOR WOMEN.

Annual Report for the year ended 31st December, 1934.

Honorary Medical Staff.—Surgeon, Walter A. Ramsay Sharpe, M.B., M.S., F.R.C.S. (Edin.); Ophthalmic Surgeon, F. G. Roberts, M.B., Ch.M.; Neurologist, Andrew Davidson, M.D.

Staff.—Medical Superintendent, Howard K. Denham, B.A., LL.B., M.B., Ch.M.; Visiting Medical Officer, Francis H. Furnival, M.R.C.S. (Eng.), L.S.A. (Lond.); Medical Officer, Lottie Sharfstein, M.B., Ch.M.; Manager, S. T. Creagh; Matron, Emily Wood; Dispenser, 1; Sub-Matron, 1; Clerk, 1; Junior Clerk, 1; Storekeeper, 1; Nurses, 41; other Female Staff, 5; other Male Staff, 13.

A dentist visits the institution fortnightly.

Total Admissions and Discharges.—In Institution on 1st January, 1934, 590; admitted during year, 1,308; discharged during year, 1,055; died during year, 270; remaining on 31st December, 1934, 573; average daily number resident, 610. Total expenditure, £26,166 18s. 4d. Average annual cost per bed, £42 17s. 11d.

Hospital Division Statistics.—Beds available, 392. The statistics for the year 1934 are as follows:—In hospital 1st January, 1934, 308; admitted during year, 941; discharged, 670; died, 270; remaining in hospital on 31st December, 1934, 309.

Classification of Cases Discharged.—General diseases, 98; alimentary, 30; circulatory, 238; genito-urinary, 45; osseous and arthritic, 31; nervous, 76; respiratory, 79; skin and glands, 73; wounds and fractures, 50; senility, 188; miscellaneous, 32. Total, 940.

Result of Treatment.—Cured, 154; relieved, 362; unrelieved, 154; died, 270. Total, 940.

Review of Work.

Considerable work was performed during the year consequent upon funds being made available; prominent amongst such being the provision of an efficient domestic water supply for the Institution; the completion of the installation of a feed boiler which gives adequate steam and hot water services.

In addition one of the two colonial boilers has been reconditioned and can be put into commission immediately.

The roof guttering on the administrative building and the yard dormitories was renewed. A new dormitory for male working inmates was erected and occupied. The addition of a new dining room to G ward has proved of great benefit to the inmates therein. Repairs to the steam kitchen were effected, and the whole kitchen block painted.

A new morgue building was erected.

New steam service to the dairy was provided, and the hot water service to the men's bathroom was improved.

The new quarters for nurses, which were completed towards the end of last year, were furnished and occupied.

The Manager entered into residence, and the cottage formerly occupied by nurses was reconditioned and occupied by an officer of the engineer's staff.

It is pleasing to report that a start has been made on the roadwork within the grounds of the Institution. Progress is being made and it is hoped that funds will be available to complete the work required to be done in this connection.

Electric fans were installed in wards J1, J2, A and B.

Equipment.

The following were procured and put into use:—Diathermy apparatus; steam sterilizer; new furniture.

A loud speaker wireless was obtained and installed in the amusement hall. This radio has given excellent service, and is much enjoyed by the inmates in the Home Section of the Institution.

Entertainments were provided by organisations and individual parties through the year with special functions during the festive season of Christmas and New Year. The thanks of the administration to all concerned is tendered for the entertainments and the gifts supplied to inmates.

H. K. DENHAM,
Medical Superintendent.

Farm and Dairy Operations.

The production for the year was as under:—

Vegetables, 67,098 lb.; fruit, 1,732 lb.; milk, 36,305 gallons; fodder, 83 tons.

Consequent upon the opening of the new quarters for nurses, the surrounding grounds were laid down in lawns and gardens.

A new orchard has been planted, and when the trees come into bearing, the old orchard will be cleared and the area utilised for farm crops.

Revenue Collections.

	£	s.	d.	£	s.	d.
Farm produce, etc.	260	10	0			
Other sales	98	2	5			
				358	12	5
Maintenance—						
Collected from sundry persons	1,055	8	9			
Paid through Pension Office	5,822	8	9			
				6,877	17	6
Total				£7,236	9	11

S. T. CREAGH,
Manager.

10.—STATE HOME FOR AGED AND INFIRM MEN, GEORGE-STREET, PARRAMATTA.

Report for the year ended 31st December, 1934.

Staff.

Visiting Medical Officer.—Dr. W. S. Brown.

Officer-in-Charge.—G. M. Strange. Attendants, 5.

Number of beds in hospital, 16; in dormatories, 338; total, 354.

Admissions and Discharges.—Remaining in on 31st December, 1933, 219; admitted during 1934, 1,687; discharged, 1,712; deaths, 8; remaining in on 31st December, 1934, 186; average daily number resident, 216; total cost of maintenance, £6,592 3s. 9d.; average annual cost per inmate, £30 10s. 5d. Number in hospital on 31st December, 1933, 15; admitted during 1934, 90; discharged, 84; died, 8; remaining in on 31st December, 1934, 13. Transferred to other institutions 79. Number of visits by Visiting Medical Officer, 237. Inmate workers transferred to other institutions, 675.

General.—The buildings were maintained in a reasonable state of efficiency by Inmate labour. All boards and trestle beds were replaced by stump bedsteads.

Recreation and Amusements.—In addition to the regular entertainments provided by wireless, concerts have been arranged by various concert parties during the year. Special thanks are due to the "Smith Family" for their annual distribution of Christmas cheer.

11.—STATE HOME FOR THE BLIND AND MEN OF DEFECTIVE SIGHT AND SENILITY, MACQUARIE-STREET, PARRAMATTA.

Report for the year ended 31st December, 1934.

Staff.

Visiting Medical Officer: Dr. W. S. Brown. *Acting Officer-in-Charge:* A. Manning; Attendants, 4; Bakers, 2.

Total number of beds, 228.

Admissions and Discharges.—Remaining in on 31st December, 1933, 203; admitted during 1934, 865; total, 1,068; remaining in on 31st December, 1934, 200; daily average number resident, 205.

Dental Work.—A qualified Dentist visits the Home monthly.

Bakery.—932,437½ lbs. of bread and 47,544 lb. of currant cake were baked in the Home, the whole of which was distributed to the State Hospitals at Waterfall, Lidcombe, and Newington and the George-street and Macquarie-street Men's Homes. 755 dozen buns were also distributed at Easter.

General.—Inmates' clothing, bedding, etc., with the exception of boots and hats, were made in the Home, and all carpentry work, repairs to buildings, painting, bricklaying, etc., are carried on by inmate labour under the supervision of the Officer-in-Charge.

Recreations and Amusements.—Inmates have been entertained by various concert parties during the year, and at Christmas time the Salvation Army and the "Smith Family" distributed gifts to the inmates. The department tenders its thanks to everyone who have helped with these functions.

12.—STATISTICAL SUMMARY.

TABLE I.—Summarised Statement of Expenditure for the year ended 31st December, 1934

STRICKLAND CONVALESCENT HOSPITAL.

Head of Expenditure.	Amount.
	£ s. d.
Salaries and payments in the nature of Salaries	1,484 15 4
Gratuities to Inmates	300 11 6
Provisions	1,627 19 1
Drugs, Dressings, etc.	10 13 3
Fuel and Lighting	246 5 11
Materials for Minor Repairs, Additions, and Renewals to Buildings and Plant	160 15 5
Transport Expenditure, including Freight and Cartage	24 1 1
Clothing and Drapery	209 3 7
Hardware—Ironmongery and General Stores	46 14 2
Furniture	88 3 7
Office Expenses, Telephones, Stationery and Printing	58 7 0
Garden Requisites	3 5 3
Miscellaneous	14 8 3
	£4,275 3 5
Add Exchange	8 9 9
	4,283 13 2
Deduct Exchange	16 5 10
Total	£4,267 7 4
Average Daily Number of Patients	63
Average Annual Cost per Occupied Bed	£67 14 9
Annual Contributions towards Maintenance	£47 11 1

STATISTICAL SUMMARY.

TABLE II.—SUMMARY STATEMENT of Expenditure, State Hospital and Homes of Lidcombe, Liverpool, and Newington, Parramatta Homes (George and Macquarie street), and Waterfall Sanatorium for the year ended 31st December, 1934.

Head of Expenditure.	Lidcombe.	Liverpool.	Newington.	Waterfall Sanatorium.	Parramatta.		Total.
					Macquarie-st.	George-st.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Salaries and Payments in the Nature of Salaries	29,355 3 1	11,969 2 0	10,972 9 11	11,857 18 9	2,183 18 0	1,634 19 8	67,973 11 5
Gratuities to Inmates	4,347 6 8	3,277 15 11	2,031 4 4	2,020 17 0	473 1 4	407 9 11	12,557 15 2
Provisions	17,854 18 4	11,027 0 8	6,398 4 7	10,190 13 10	4,878 18 0	2,612 12 10	52,962 8 3
Drugs, Dressings, Surgical Appliances, etc.	2,203 0 3	1,586 16 5	815 9 7	455 6 1	12 15 4	10 16 3	5,084 3 11
Fuel and Lighting	2,710 1 2	2,111 17 1	1,430 13 10	1,828 10 1	333 8 7	210 1 5	8,624 12 2
Forage	3,313 3 5	1,277 3 1	1,478 5 1	189 6 3	.....	20 3 4	6,278 1 2
Materials for Minor Repairs, Additions and Renewals to Buildings and Plant	3,042 18 7	1,335 12 10	904 19 8	1,187 19 10	29 6 5	144 16 6	6,645 13 10
Transport Expenditure, including Freight and Cartage	1,542 6 3	860 18 6	689 13 4	1,698 16 1	161 0 2	168 18 9	5,121 13 1
Clothing and Drapery	6,512 7 0	2,439 13 7	1,667 4 4	1,026 1 10	250 13 9	474 4 2	12,361 4 8
Hardware, Ironmongery, and General Stores	1,142 16 9	763 14 7	258 5 6	558 1 6	91 0 3	98 13 9	2,912 12 4
Furniture	2,973 15 4	1,710 7 0	639 0 1	431 7 6	.....	369 11 8	6,124 1 7
Office Expenses, Telephones, Stationery and Printing	586 10 11	254 4 7	277 3 1	194 10 3	37 2 8	52 16 1	1,402 7 7
Livestock and Farm and Garden Requisites	195 5 8	125 13 7	89 5 2	97 10 8	0 10 9	3 10 3	511 16 1
Miscellaneous	389 5 9	165 8 0	185 1 6	348 14 6	29 3 0	16 7 6	1,134 0 3
	76,168 19 2	38,896 7 10	27,837 0 0	32,085 14 2	8,480 18 3	6,225 2 1	189,694 1 6
Add Exchange	2,756 5 10	323 13 0	1,055 12 8	527 4 5	370 10 8	759 2 5	5,792 9 0
	78,925 5 0	39,220 0 10	28,892 12 8	32,612 18 7	8,851 8 11	6,984 4 6	195,486 10 6
Deduct Exchange	325 15 2	1 7 0	1,398 15 2	.....	4,018 18 11	109 14 6	5,854 10 9
Total	78,599 9 10	39,218 13 10	27,493 17 6	32,612 18 7	4,832 10 0	6,874 10 0	189,631 19 9
Stock on hand 31st December, 1933	6,412 19 2	3,264 18 3	2,320 2 3	1,601 8 8	896 19 2	595 8 10	15,091 16 4
Grand Total	85,012 9 0	42,483 12 1	29,813 19 9	34,214 7 3	5,729 9 2	7,469 18 10	204,723 16 1
Deduct—							
Stock on hand 31st December, 1934	7,408 10 4	3,658 7 0	3,288 9 0	2,046 14 5	532 4 4	836 3 2	17,770 8 3
Proceeds of Sales, etc.	1,600 1 9	337 6 10	358 12 5	452 5 6	108 10 1	41 11 11	2,898 8 6
Total Deductions	9,008 12 1	3,995 13 10	3,647 1 5	2,498 19 11	640 14 5	877 15 1	20,668 16 9
Total Cost	76,003 16 11	38,487 18 3	26,166 18 4	31,715 7 4	5,088 14 9	6,592 3 9	184,054 19 4
Average daily population	1,516	861	610	482*	205	216	3,890
Average annual cost per inmate	50 2 8	44 14 0	42 17 11	65 16 2	24 16 6	30 10 5	47 6
Annual contributions towards maintenance	14,931 6 6	5,573 9 6	6,877 17 6	3,081 15 7	1,107 12 0	397 18 2	31,969 19 3

* Patients 360 (£88 1s. 7d.), or plus inmate workers 122 (£65 16s. 2d.).

SECTION IV.

Report of the Principal Microbiologist for the year ending 31st December, 1934.

Staff.

Principal Microbiologist.—Ernest Leslie Morgan, M.B., Ch.M.

Assistant Microbiologists.—Elsie J. Dalyell, M.B.; Marie M. Hamilton, M.B., Ch.M. (resigned March, 1934); Stanley M. King, M.R.C.S., L.R.C.P.; Isobel M. Brown, M.B., B.S.; Karen Helms, M.B., Ch.M.; Muriel C. Letchford, B.Sc. (resigned August, 1934).

Senior Laboratory Assistant.—John O. Sergeant. 1st and 2nd Laboratory Assistants; and 8 Assistants; Attendants, 4.

Clerk and Librarian.—Florence Stuart Wearne; Shorthand-writers and Typists, 3; Messenger, 1.

Sir,

I have the honour to submit the following summarised report dealing with the work performed in the Microbiological Laboratory during 1934.

The amount of revenue collected from examinations, sale of sera, etc., was £365 4s.

The volume of work for the year as represented by the number of specimens examined is set out below.

	1933.	1934.
General laboratory examinations	69,151	79,226
Examination of rats for plague	4,032	3,758
	73,183	82,984

Diphtheria.—An epidemic of this infection caused a great increase in laboratory work in 1934. 14,425 swabbings were examined in 1934, and 191 tests performed for toxicity, compared with 6,027 swabbings in 1923 and 53 toxicity tests.

Large numbers of these specimens are from outlying suburbs and from country centres where hospitals are greatly concerned with the problem of retaining numbers of convalescent cases of diphtheria over a long period as indoor patients.

A campaign of immunisation in these areas should be of much practical help in this matter.

Typhoid.—Examinations for this condition were fewer than in the previous year.

The incidence of this disease in the State was low.

Gonorrhoea.—Bacteriological examinations for Gonorrhoea have increased 50 per cent. and reached 12,785 during the year.

The increase is due to the expansion of the V.D. Clinic for men.

Malaria.—There has been no increase in the number of examinations for this condition. The more frequent communication with infected areas in New Guinea makes it probable that cases occur oftener in this State, as most of the positive cases examined have acquired the infection during visits to New Guinea.

Anthrax.—Two human cases from infected shaving brushes occurred during the year. In both cases either the brush used by the patient, or other brushes of the same batch, were found to be infected with anthrax. (See a further note concerning action taken with the infected brushes, p. 27.)

Haematology and Histology.—Examinations in haematology and histology maintain a yearly increase. In the past seven years the haematological specimens examined have trebled, and the histological examinations have doubled.

Serology.—Serological work has this year reached 35,457 examinations, which shows an increase of 1,000 on the previous year.

Biochemistry.—In the Biochemical section, the medical officer has been relieved of some of the work previously done for Prince Henry (formerly the Coast) Hospital, which now has its own Biochemist.

Biochemical examinations from private practitioners are required in increasing numbers, and this section is likely to show steady expansion.

Examination of Milk for the Milk Board for Tubercle bacilli and Brucella abortus.—Examinations of milk specimens for the Milk Board number 572 as compared with 405 in 1933. This includes examinations made in Newcastle by one of the laboratory officers. Provision is being made for extension of this branch of work.

Since November, 1933, it has been the practice to examine samples of milk on behalf of the Milk Board for the presence of tubercle bacilli and Brucella abortus. Up to the end of 1934, 266 samples of milk were examined with the result that 5 (1·88 per cent.) showed the presence of tubercle bacilli, while Brucella abortus was found in 37 (13·9 per cent.).

In the case of Brucella abortus, the blood of the inoculated guinea pig is tested for agglutination against the organism, and cultures are made from the spleen and enlarged glands. Should any doubt still remain, these organs are sectioned and examined histologically.

Overcrowded Condition of the Laboratory.—No relief has been afforded for the overcrowding which has handicapped the laboratory for many years. The conditions of work are dangerous and unsatisfactory, particularly for the technical staff, who have to handle infected material under conditions which are a serious reflection on a Board of Health.

Attention has been called repeatedly to the lack of provision for a wash room or lunch room for the staff, but without result.

The expansion of work is inevitable, since all hospital activities are expanding, and this laboratory is the only provision that exists for the needs of suburban and country hospitals.

Since it has to serve as a general clinical laboratory as well as a Public Health Department, it is but reasonable to require that it be adequately staffed and housed.

E. DALYELL.

October, 1935.

TABLE showing the Routine Examinations made for the Various Branches of the State Department of Public Health, other Government Departments, Subsidised Hospitals, etc.

	Number of Examinations. Comparative Statement.	
	1933.	1934.
Department of Public Health—		
Head Office Submissions	9,447	15,958
Prince Henry (formerly Coast) Hospital	7,969	5,216
,, ,, ,, (Night Clinic for V.D.)	1,273	.....
David Berry Hospital, Berry	47	49
Lady Edeline Hospital for Babies	6	14
Lidcombe State Hospital and Home	3,671	4,951
Liverpool State Hospital and Home	901	719
Newington State Hospital and Home	1,394	589
Waterfall Sanatorium	32	47
Medical Officer of Health, Metropolitan District	6	.....
,, ,, ,, Hunter River District	4	.....
Commonwealth Government	65	86
State Departments—		
Agriculture and Stock Department	.....	1
Board of Fire Commissioners	5	.....
Chief Secretary (Fisheries Department)	1	.....
Education Department	194	108
Milk Board	423	566
Police Department	49	45
Prisons Department (Long Bay Gaol, etc.)	427	255
Public Works Department	55	29
Railways and Tramways Department	3	2
State Insurance Office	6	1
Water Conservation Commission	.....	5
Workers' Compensation Commission	2	.....
Private Practitioners	19,335	21,065
Public Hospitals and Institutions other than State Hospitals	23,766	29,476
Municipal and Shire Councils	70	44
	69,151	79,226
Total Examinations—		
General	69,151	79,226
Rats for Plague	4,032	3,758
Total	73,183	82,984

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.)			
	1933.		1934.	
A.—Microbiological Examinations.				
1. Of materials from diseased persons and animals—				
Actinomycosis	4		10	
Bilharzia	1		1	
Brucella abortus	8		12	
Diphtheria (swabbings)	6,027		14,425	
,, (toxicity)	53		191	
Dysentery	22		14	
Gonorrhœa (smears and urine)	8,617		12,785	
,, (complement deviation test)	5,464		5,294	
Hæmolytic streptococci	77		67	
Hydatids (sputa, smears, etc.)	24		16	
,, (complement deviation test)	55		74	
Leprosy (human)	5		4	
,, (rat)	1		.....	
Malaria	26		11	
Mastitis (bovine)	.....		2	
Meningitis	164		121	
Syphilis (Wassermann reactions)	14,732		16,020	
,, (Kahn's flocculation test)	14,134		14,069	
,, (spirochætes)	136		85	
Tetanus	2		3	
Tinea	9		16	
Tuberculosis	4,452		3,896	
Typhoid (Widal reactions)	368		310	
,, (urine, fæces)	464		211	
,, (miscellaneous, water, milk, etc.)	4		8	
Unclassified: "No growths" from pus, etc.	1,465		1,393	
Typhus	3		9	
Vincent's Angina	51		52	
Whooping Cough	1		.....	
		56,369		69,099
2. Examinations for Anthrax—				
Human beings	3		2	
Shaving brushes, etc.	1		14	
		4		16
3. Of Materials, etc.—				
Chemical closet contents	.....		10	
Disinfectants	72		29	
Lead Ortho Phosphate	2		.....	
Sewage, effluents, etc.	2		.....	
Soil	.....		2	
Water	95		60	
Water from swimming baths	119		244	
		290		345
4. Examination of Foods for Bacterial Contamination—				
Condensed Milk	.....		4	
Meat	1		.....	
Milk				
Special bacterial counts, Sydney milk supply, including examination for tubercle bacilli	18		251	
Milk samples for bacteriological count submitted by the Milk Board	405		321	
Miscellaneous milks for bacterial counts, etc.	52		16	
Onions	1		.....	
Oysters (parcels)	1		.....	
Sausages	1		.....	
		479		592
5. Examinations for Food Poisoning	4		4	
		4		4
B.—Pathological Examinations.				
1. Of Animals—				
Mammals	6		4	
Fish	.....		.....	
		6		4
2. Of Body Fluids—				
Blood for full and differential count	1,108		1,131	
,, ,, blood typing	7		1	
,, —coagulation time	5		10	
Chemical Examinations—				
Blood for sugar	2,320		327	
,, ,, ,, tolerance	87		59	
,, ,, urea	1,127		1,271	
,, ,, ,, and creatinin	13		33	
Urine for sugar (quantitative)	69		46	
,, ,, urea	1,154		886	
Test meal specimens	1,236		530	
Calculus	11		6	
Casoni Tests	5		.....	
Miscellaneous	337		451	
Fæces	64		59	
Urine (general examinations)	1,448		1,367	
		8,991		6,177

Division of Routine Work, etc.—*continued.*

	Number of Examinations. (Comparative Statement.)			
	1933.		1934.	
Brought forward		66,143		76,237
B.—*Pathological Examinations*—continued.				
3. Of Tissues—				
Malignant tumours	531		568	
Tubercular	22		27	
Other conditions	1,505		1,469	
		2,058		2,064
C.—*Examination of Parasites.*				
Ecto-parasites (fleas, ticks, etc.)	2		1	
Endo-parasites (round and flat worms)	10		25	
Protozoa	9		6	
Insects (including flies and mosquitoes) and spiders	7		4	
		28		36
D.—*Medico-Legal Examinations.*				
Examination of Exhibits for—				
Blood stains	9		7	
Gonococci	12		12	
Seminal stains	34		39	
Spermatozoa	28		28	
Other examinations	3		.....	
Poison tests	.....		.....	
		86		86
E.—*Examination of Specimens for Preparation of Vaccines.*				
Preparation of Autogenous Vaccines from sputa, urine, acne pustules, boils, wounds and other septic conditions	836		803	
		836		803
Total		69,151		79,226

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, 1934.

Month.	Sydney.				Newcastle.			
	R.R. Rattus.	*Rattus Norvegicus.*	*M. Musculus.*	Total.	*R.R. Rattus.*	*Rattus Norvegicus.*	*M. Musculus.*	Total.
1934.								
January	242	53	20	315	6	...	...	6
February	263	61	59	383	12	2	...	14
March	224	7	14	245	2	...	...	2
April	139	7	...	146	10	4	5	19
May	326	62	70	458	14	5	4	23
June	372	46	36	454	16	4	8	28
July	312	76	116	504	17	1	4	22
August	325	77	56	458	3	4	2	9
September	179	20	7	206	8	3	2	13
October	224	24	43	291	11	6	3	20
November	148	18	5	171	20	9	1	30
December	95	7	25	127	9	5	2	16
Total	2,849	458	451	3,758	128	43	31	202

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