

[Report of the Medical Officer of Health for London County Council].

Contributors

London County Council (London, England). County of London.
Hamer, William H.

Publication/Creation

1917.

Persistent URL

<https://wellcomecollection.org/works/ek2fnhry>

License and attribution

You have permission to make copies of this work under a Creative Commons, Attribution, Non-commercial license.

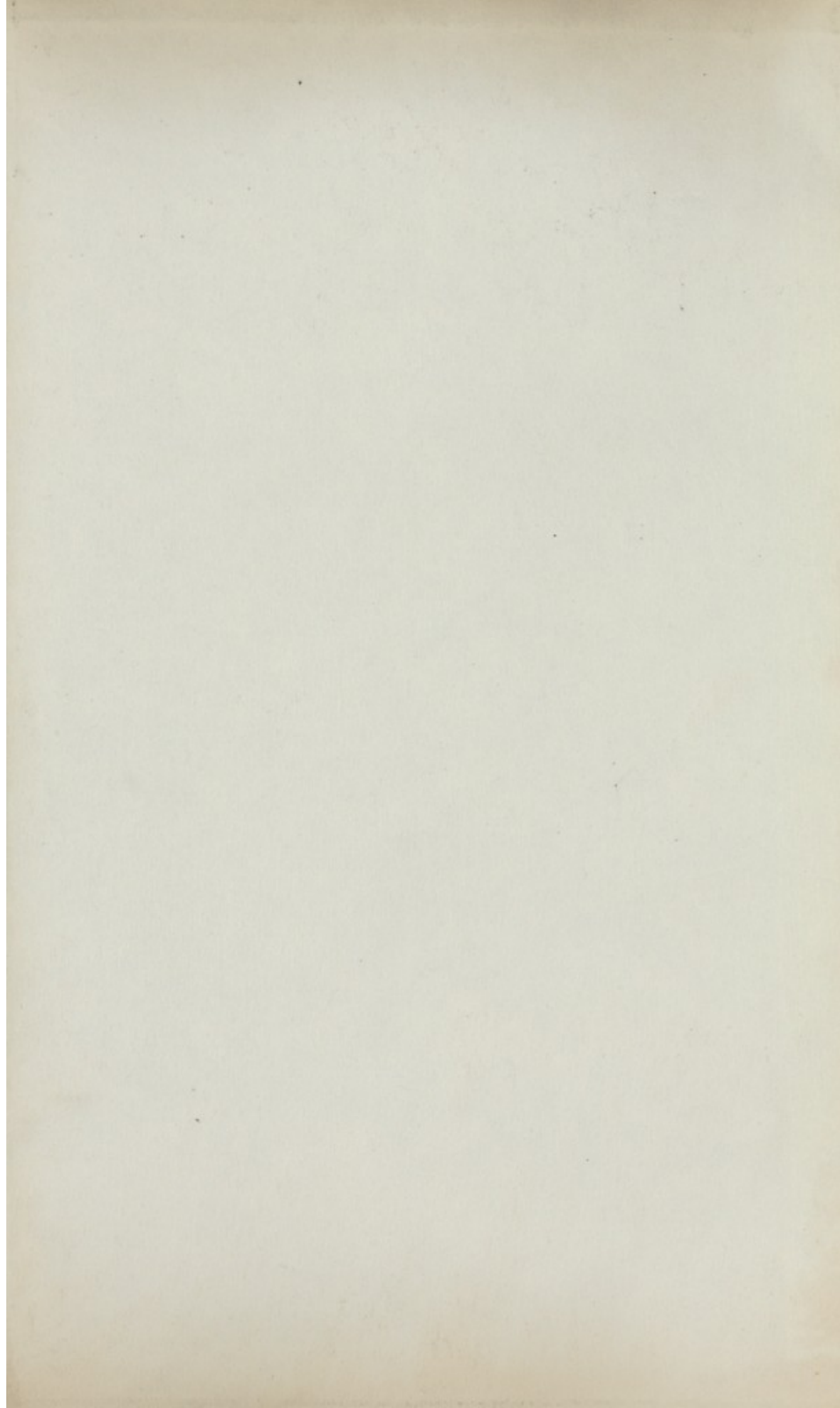
Non-commercial use includes private study, academic research, teaching, and other activities that are not primarily intended for, or directed towards, commercial advantage or private monetary compensation. See the Legal Code for further information.

Image source should be attributed as specified in the full catalogue record. If no source is given the image should be attributed to Wellcome Collection.

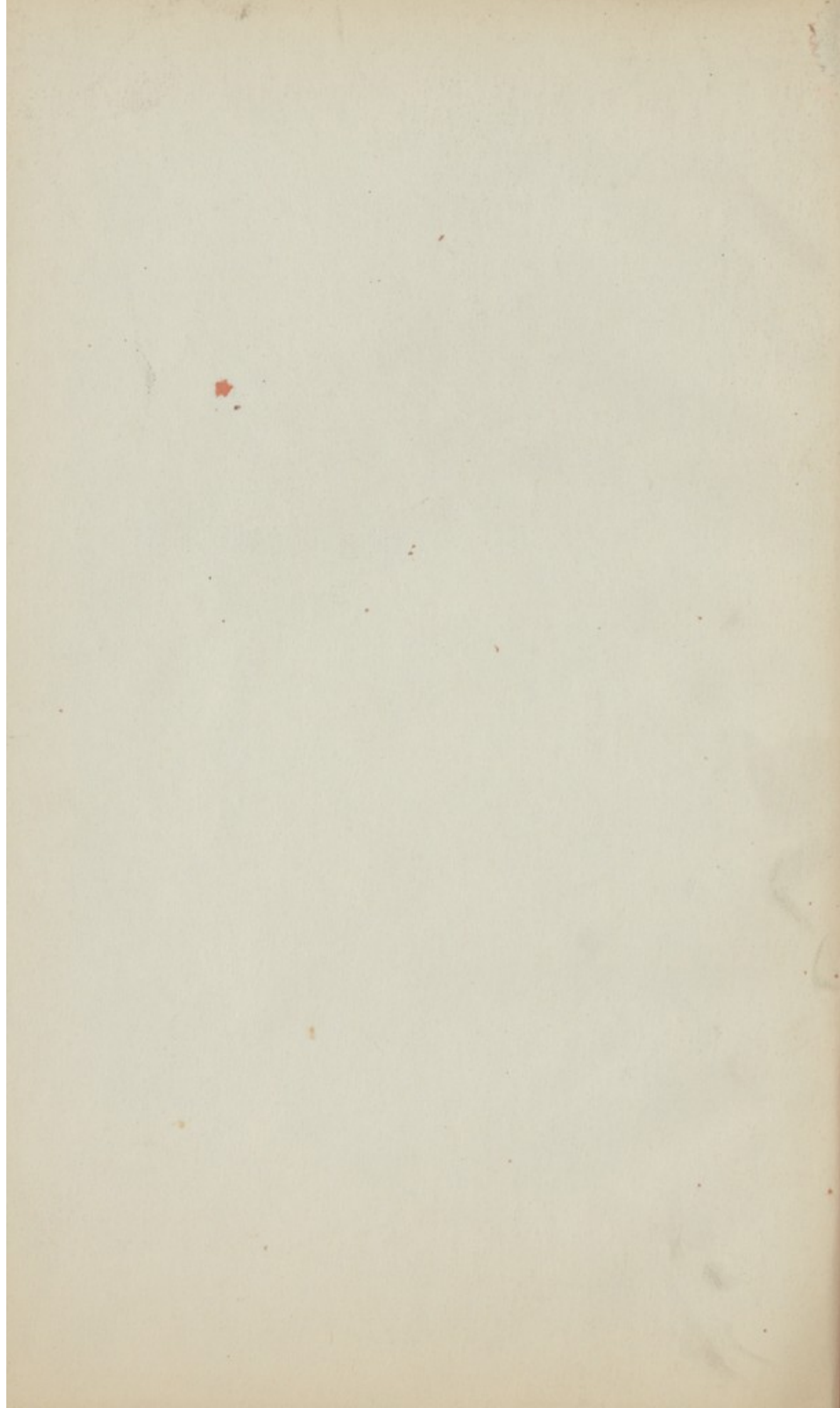


Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

43/3







London County Council.

RECEIVED
LCC 25

REPORT OF THE COUNTY MEDICAL
OFFICER OF HEALTH AND SCHOOL
MEDICAL OFFICER FOR THE YEAR
1916.

2, SAVOY HILL,

VICTORIA EMBANKMENT,

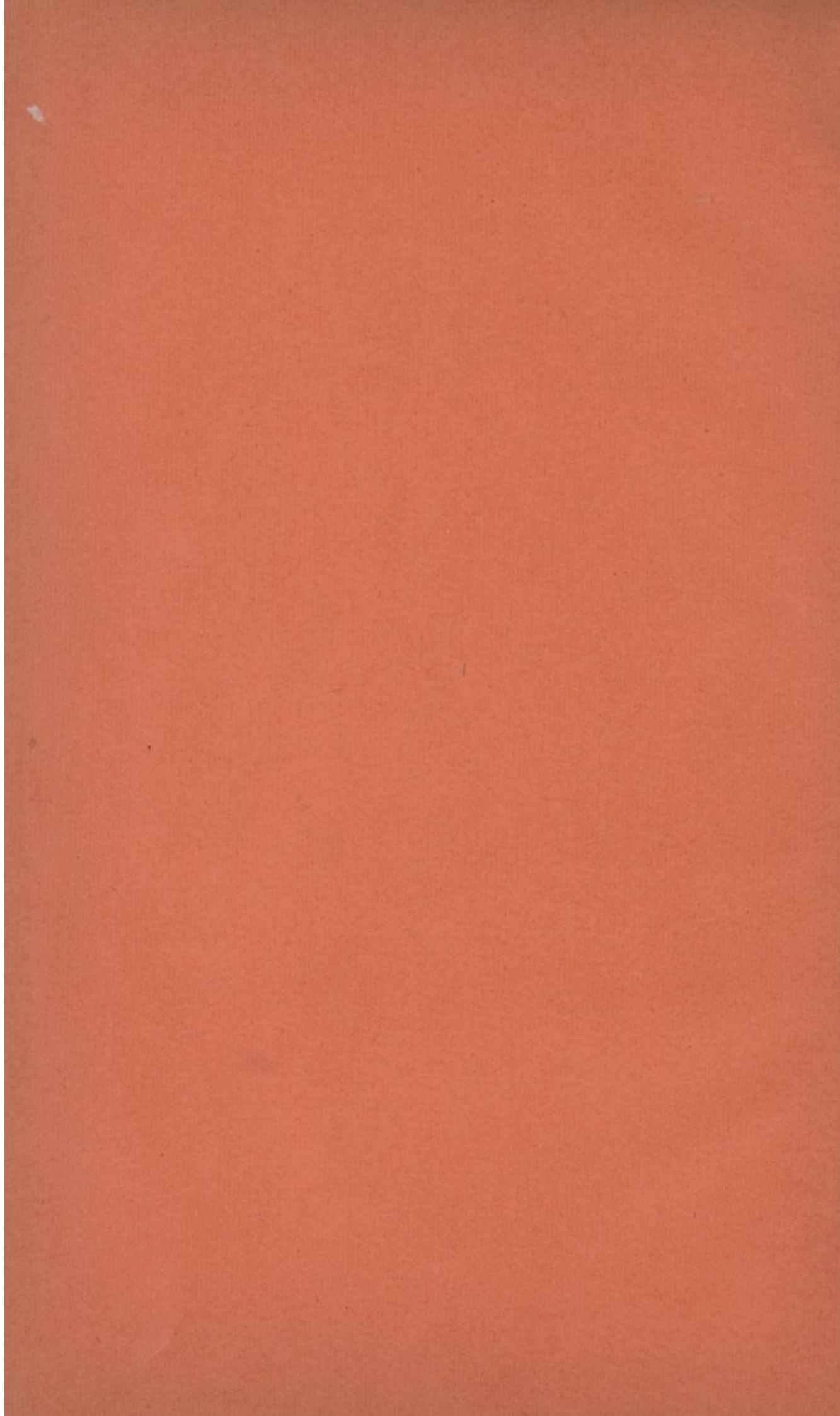
LONDON, W.C.

July, 1917.

PRINTED FOR THE LONDON COUNTY COUNCIL BY ODHAMS LIMITED,
and may be purchased, either directly or through any Bookseller, from
P. S. KING AND SON, LIMITED.

2 AND 4, GREAT SMITH-STREET, VICTORIA-STREET, WESTMINSTER, S.W.
Agents for the sale of the Publications of the London County Council.

No. 1900. Price 1s., post free, 1s. 2d.



ADMINISTRATIVE COUNTY OF LONDON.

REPORT OF THE COUNTY MEDICAL OFFICER OF HEALTH (DR. W. H. HAMER) FOR THE YEAR 1916.

PART I.—GENERAL.

INTRODUCTION.

The health of London during the year compares favourably with that of 1915. The year 1916 was one in which, in a literal and perhaps in a metaphorical sense also, more water than ever before known, flowed under London Bridge. The present type of distribution of rainfall has prevailed since 1909, *i.e.*, for seven years; 1912 was especially remarkable for amount of rain; the floods of the early part of 1915 were the highest since November, 1894, and there followed, in 1916, a flow of water in the Thames (875 thousand million gallons), exceeding even that of 1915 and actually the highest since 1883, when the present system of keeping records was first instituted. The phenomenal weather conditions have unquestionably exercised considerable influence upon the public health, and are doubtless in far larger degree accountable for the reduction in the mortality of infants, of that from epidemic throat diseases and from typhoid fever and epidemic diarrhoea, and also for a freedom from the ordinary nuisances prejudicial to health, than is generally realised. The early workers in epidemiology attached great, perhaps undue, importance to meteorology, and certainly the suspicion came to be entertained twenty or thirty years ago, that there had been too much "talking about the weather." The recent rapid extension of enquiry into regions hitherto unexplored, and the growing importance attached to laboratory methods, has led to some neglect of the knowledge which had been carefully and laboriously acquired in earlier days. Thus, there is now a marked tendency to attribute falling mortality rates to causes such as stimulation of the activities of phagocytes and exploitation of newly discovered antibodies, rather than to obvious elemental agencies the influence of which was apparent to our forefathers.

The study of the death and sickness rates for 1916 is, however, complicated not only by abnormal weather conditions, but by the many disturbances incidental to the great European war. The threatened dangers of famine and of the introduction of formidable epidemic diseases, have so far not materialised; the general condition as regards nutrition of the mass of the people has probably rarely, if ever, been better, and there has been freedom beyond the most sanguine anticipation from most of the war diseases.

It needs to be realised, however, how much has been due to the absence of trying seasons, to the restrictions upon freedom of communication and traffic, especially with countries abroad, which the war has brought about, and to the gradually accumulated effect of the code of sanitary precautions worked out during the last 60 or 70 years by the health service of the country. The trying seasons will come in due course, the termination of the war will favour spread of infectious disease, and the need for the maintenance of the sanitary service is becoming increasingly apparent as the months pass by. In particular, depletion of sanitary staffs constitutes at the present time, a source of serious danger; it is further most regrettable that public opinion, while tolerating a ready acceptance of new and comparatively untried measures for combating disease, is not strong enough to secure that reasonable protection against smallpox should be afforded to the child population; the fact is the more remarkable when it is appreciated that the original vaccination is not only directed against the most formidable of the scourges of the human race, but also that it has withstood for more than a century all critical assaults.

In making comparisons of this year's rates with those of previous years, it has to be borne in mind that the estimates of population upon which the rates are calculated are still less to be relied upon than were the similar figures for 1915. When the National Register was compiled in the summer of 1915, the marked local changes of population which the war has caused, were only just beginning, and that Register, originally not absolutely reliable, does not, of course, record the subsequent movements of the population.

The number of marriages registered in 1916 fell considerably short of the abnormal record of 1915, but still compares favourably with the previous figures. The Registrar-General estimates the marriage-rate at 19.0 per 1,000. The marriages registered, of course, include marriages of members of the forces, and for that reason the rate cannot be calculated on the *civil* population. If the population be taken roundly at four and a half-millions, the rate would be 19.4 per 1,000, comparing with 25.9 similarly calculated for 1915. The average rate during the five years 1909-1913 was 17.8.

The Registrar-General estimates the birth-rate in 1916 at 21.5 per 1,000, as compared with 22.6 Births. in 1915, and 25.0 in the period 1909-13. It is obvious that the birth-rate calculated on published population estimates (23.4), does not compare with pre-war figures. The abnormally high marriage-rate since the war commenced, must have tended to augment the birth-rate, and thus have provided a set-off against the decline associated with war.

The London death-rate in 1916, is calculated by the Registrar-General at 14.7 per 1,000 among the *civil* population, as compared with the corresponding figure for 1915 of 16.8. The decrease in the death-rate is greatest at the extremes of life, and is, generally speaking, the result of the more favourable climatic conditions which prevailed as well in the winter as in the summer months.

Infectious diseases.

With regard to infectious diseases, the record of 1916 was in essential particulars, not unlike that of the preceding year. There was evidence of introduction into London of pediculosis and scabies by returned soldiers, but typhus did not obtain any footing. Smallpox was imported from time to time and small outbreaks occurred in the north of England, but there was no serious prevalence. Soldiers who had been in contact with a case of this disease, were brought into a hospital in London, but the military authority did not immediately notify the civil authority. Fortunately, no harm resulted, the Public Health Committee of the Council communicated the facts to the Local Government Board, and steps were at once taken with a view to obviating a recurrence in the future of such omission. In marked contrast to this instance stand the numerous cases of notifications of the discharge from hospitals of convalescents from dysentery and typhoid; these were all systematically transmitted to borough medical officers, and no mischief was heard of as having been traced in any case. In a few instances, notices of the arrival in London, even of persons suffering from tuberculosis, in one case a list of contacts of chickenpox, and in several, lists of contacts of cerebro-spinal fever or poliomyelitis were received. In dealing with cerebrospinal fever, the difficulty has been particularly acute, as the cases in which special restrictive measures have been urged have been numerous. The practice adopted has been to offer facilities for bacteriological examination, to advise "positive contacts" to be as much in the open air as possible, to examine them repeatedly, if desired, until they could be pronounced free, to refuse to countenance restrictions being placed upon their liberty, and when the question has been seriously pressed, to discuss each particular case with the borough medical officer of health, who has invariably been in accord with the Council's officer as to the reasonableness of the course recommended. The behaviour of typhoid fever in recent years has been extremely interesting, and it is considered in detail on pp. 6-9. The prevalence of this disease is, says the Medical Officer of the Local Government Board, perhaps the best single gauge of the sanitary condition of a community, and he notes that the death-rate in the country in the last few years is only about one-eighth of that of the "seventies." It is highly satisfactory to record that there has been an almost equal freedom from the disease in the Army in France. In this connection it is customary to hear it stated that "inoculation has done much." Upon this the criticism may be made that it cannot of course, be claimed that inoculation has appreciably affected the civilian mortality, and that being so, there is a possibility that some of the influences which it is agreed have proved sufficient at home, may have operated abroad also. It is of course possible, however, that inoculation may have modified the type of the disease observed in the Army in France, and from a bacteriological point of view, at any rate, this would seem to have been the case.

The remarkable decline in scarlet fever is made the subject of special consideration in Part II. of this Report under the heading Infectious Disease.

The scheme for dealing with tuberculosis has been further proceeded with; the arrangements for institutional treatment of cases have been continued in spite of war conditions; the work of the dispensaries has further developed; and special consideration has been devoted to after-care by the Interim Tuberculosis Committees, which were hard at work throughout 1916.

Early in the year there appeared the Report of the Royal Commission on Venereal Diseases. It was realised at once that an opportunity was now to hand for promoting a scheme for treatment. The medical officers of health concerned recognised that London and the Home Counties could most profitably avail themselves, by means of a combined scheme, of facilities offered by the large London hospitals; after some preliminary arrangements a conference was held at the Local Government Board, and it was then decided that negotiations with twenty-two hospitals should be conducted by Dr. F. N. K. Menzies, on behalf of the ten participating authorities concerned; the scheme rapidly matured; it met with the approval of the ten councils, of the medical profession generally and of the Local Government Board, and came into operation on 1st January, 1917. The Report of the Commission appears to suggest that the prevalence of syphilis has not lessened in recent years; such a conclusion is, however, open to considerable question (see p. 13). The estimate accepted by the Commission that 10 per cent. of the population of the large cities has been infected is largely based upon the Wassermann test, but the value of this, as of most other laboratory tests, depends upon its being precisely studied and appraised in relation to extra-laboratory observations.

Administration.

During the year the registration and regulation of lying-in homes under the Council's newly-acquired powers, were proceeded with. In a report on maternity mortality in connection with child-bearing, published by the medical officer of the Local Government Board in 1916, the county and metropolitan boroughs are classed in seven groups, according to their rates of mortality from child-bearing per 1,000 births. It is interesting to note that 10 metropolitan boroughs, including several very poor boroughs, appear in the best group, with mortality under 3 per 1,000 births; 12 in the second group, with mortality from 3 to 3.5 per 1,000 births; 3, 2, and 1, respectively in the next three groups; none in any of the remaining lower groups. A comprehensive report on the provision of midwifery service in the County of London was prepared during the year by Dr. Janet Lane Claypon, and was published by the Local Government Board early in 1917. The Local Government Board advised that the Council's staff of midwifery inspectors should be strengthened, and two additional inspectors were appointed early in 1917. Reference to work done in co-operation with maternity and child-welfare centres will be found in Part II. of this Report.

The task of dealing with seamen's lodging-houses occupied by Chinamen was attended with some difficulty, and the help of the Local Government Board and of the Board of Trade was sought in this connection. The Board of Trade agreed to strengthen the by-laws by altering the definition of "a seaman."

The depletion of sanitary staffs was brought under the notice of the Local Government Board, and in the closing months of the year difficulties with regard to removal of house refuse in two or three London boroughs assumed serious proportions, and representation was made to the Board on this subject also.

The report concludes with statements relating to the Mental Deficiency Act, the Midwives Act, lying-in homes, and the work carried out in the chemical and analytical branch of the public health department.

Thanks are especially due to borough medical officers of health for help freely given, and for enabling the summary in the table on p. 20 to be prepared.

A.—VITAL STATISTICS.

The population of London County at the census of 3rd April, 1911, was 4,521,685, and it was estimated by the Registrar-General to have decreased to 4,518,021 by the middle of 1914; this latter estimate being based in part on the records of births and deaths since the census year, is the last reliable one made of the London population. In the middle of 1915 the total *civil* population of the county was estimated by the Registrar-General at 4,310,030, this figure being deduced from the National Register of persons aged 15-65, compiled in August, 1915. The Registrar-General estimates the corresponding population in the middle of 1916, at 4,237,387, based upon the register of 1915, as amended by records of subsequent movements of the registered population.

There is reason to believe that this estimate is too low. Attention has been directed in previous reports to the continued outward movement of the London population, and it was shown in the report for 1913 (p. 3) that this migration mainly affected persons below 15, whose movements would not be recorded in the National Register. While there is no reason to doubt that this outward movement continued during 1914, and though to a diminished extent in 1915, it is certain that the gradual cessation of all building operations since 1914 has practically put an end to all outward movement from London to the outlying districts. Decreased railway services and increased fares have tended to set up an opposite movement inwards. From the beginning of 1915 to the end of 1916, the births in London exceeded the deaths by nearly 67,000, and to this increase must be added thousands of refugees who have found accommodation within the County; few, if any, of the important London factories or workshops are idle, and there has been little unemployment except in the first months of the war. Against the factors tending to maintain or increase the civil population, account must be taken of the decrease due to enlistment, which, while it undoubtedly in the course of 1916 exceeded the gain as well by inward movement as from natural increase and immigration, probably did no more than maintain an even balance up to that time. These observations may throw some light upon the estimates of the Registrar-General. In the middle of 1914, the estimate was 4,518,021—practically all civilians. In 1915 the civilians numbered 4,310,030; hence it was calculated that about 200,000 represented not the number of enlistments, but the balance between, on the one hand, immigration of refugees, plus natural increase, plus inward movement from the suburbs, if any, and on the other, civilians withdrawn for active service. From the middle of 1915 to the middle of 1916, the decrease is estimated by the Registrar-General at about 73,000. Regard being had to the fact that the Derby Scheme came into operation at the end of 1915, and Conscription early in 1916, it will be seen that these estimates allow a considerable augmentation of the civil population of London during this period, and this augmentation must have been mainly due to inward movement from the outlying districts—plus natural increase. This inward movement of population will undoubtedly result in increase of overcrowding in the county, a fact of serious import to the public health.

The population of the metropolitan boroughs in the middle of 1916, as estimated by the Registrar-General, is given by him in the 14th weekly return of 1917, and is reproduced in the table appended to this report (page 19).

Marriages.

The marriages registered in London numbered about 43,800, as compared with 58,354 in 1915 and 43,373 in 1914. The decrease in 1916 is greatest in the latter half of the year, and the abnormally high number of marriages during the progress of the war probably fairly corresponds with the movements of enlistment. In the fourth quarter of 1916 the marriages numbered 10,859, as compared with the corresponding pre-war figure in 1913 of 10,929. In the first quarter of 1917 the marriages numbered 8,070, as compared with 7,257 in the corresponding quarter of 1914; hence, in this respect, normal conditions appear to have been re-established. The calculation of a marriage rate for comparison with pre-war figures is a matter of difficulty owing to the fact that the marriages include men on active service, while the published estimate of population relates to civilians only. The Registrar-General calculates a rate of 19 per 1,000 for 1916. In 1915 the rate was probably about 26 per 1,000.

Births.

The births in London County during 1916 numbered 99,336, as against 102,117 in 1915 and 109,952 in 1914. The births in 1916 are not evenly distributed in the four quarters of the year as would normally be the case, there being, relatively speaking, an excess in the second quarter. In part, this excess is no doubt due to the increased number of marriages in the summer of 1915.

The estimation of a birth-rate comparable with pre-war conditions is, for the reasons mentioned above in regard to the marriage rate, a matter of difficulty. The Registrar-General gives a rate of 21.5. The corresponding rate in 1915 would probably be about 22.5 per 1,000, and these rates may be generally compared with the 1914 rate of 23.6 and that of 25.0 in the pre-war period 1909-13.

Deaths (all causes).

The deaths among the civil population of London during 1916 numbered 62,325, as compared with 72,393 in 1915 and 66,037 in 1914. The Registrar-General calculates the death-rate at 14·7 per 1,000. The death-rate in 1914 was 14·6, calculated on the total population in the middle of the year. Thus with fewer deaths in 1916, the death-rate is stated to be higher. This is, however, an anomaly resulting purely from the use of a "civil" population without correction for the change in age and sex constitution resulting from the withdrawal of males of military age from the total, the military age being a period of low mortality compared with other ages of life. Had there been no war the death-rate in 1916 calculated on a normal population would have been below the rate of 14·6 recorded in 1914, and probably would not have greatly exceeded the record rate for 1912 of 13·6.

The distributions of the deaths by ages in 1915 and 1916 are both compared with that in 1914 in the following table:—

Year.	0—	1—	2—	5—	10—	15—	20—	25—	35—	45—	55—	65 +	All ages.
1914	11,477	3,189	2,654	1,511	916	1,188	1,361	3,647	5,365	7,445	8,597	18,687	66,037
1915	11,464	4,044	3,413	1,772	998	1,231	1,369	3,450	5,515	7,859	9,524	21,754	72,393
1916	8,864	2,622	2,298	1,402	866	1,161	1,171	3,206	4,736	6,780	8,628	20,591	62,325
1915 incr. (+) dec. (—) on 1914	—13	+855	+759	+261	+ 82	+ 43	+ 8	—197	+150	+414	+927	+3,067	+6,356
1916 on 1914	—2,613	—567	—356	—109	— 50	— 27	—190	—441	—629	—665	+ 31	+1,904	—3,712

It was remarked in last year's report that the increased deaths in that year over 1914 could not be ascribed to the depressing influences of the war, but were due to clearly definable causes, notably the high prevalence of measles, respiratory diseases, and influenza; this is confirmed by the figures for the present year, inasmuch as the deaths show a decided decrease upon the 1914 figures at all ages except those over 55. The decrease in the deaths at age 0-1 is, of course, in a measure due to the decrease in the birth-rate, but not more than 10 per cent. of the decrease can thus be accounted for.

Infant
mortality.

The deaths at age 0-1 in London during 1916, numbered 8,864, or 89 per 1,000 births, (as compared with a rate of 112 in 1915 and 104 in 1914) the lowest infant mortality rate ever recorded in the county, the lowest previous rate recorded being 91 in 1912. There can be little doubt that the favourable conditions of moderate summer temperature have had a preponderating share in the result. In other directions, however favourable influences have undoubtedly been at work, which are reflected in reduction of deaths from suffocation and perhaps in less degree, from prematurity. It is probable that these causes of death have declined as a result of the restriction on the sale of intoxicants. The reduction in the deaths in prematurity, may in part be due to less drunkenness amongst expectant mothers, and it is worthy of note that the decrease does not follow so immediately upon drink restrictions, as in the case of overlaying.

Year and Quarter.	1914.				1915.				1916.				1914.	1915.	1916.
	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.	1st.	2nd.	3rd.	4th.			
Suffocation in bed	106	65	56	72	79	47	23	45	47	32	27	41	299	194	147
Prematurity	531	469	480	503	510	416	384	473	448	371	374	430	1,983	1,783	1,623
Atrophy, debility and marasmus	279	241	271	261	288	223	237	277	228	220	187	272	1,052	1,025	907

It will be seen that the change in incidence of prematurity is not correspondingly evident in atrophy, debility, etc.

It will be remembered that in the early days of the war, limitations in the hours of sale of intoxicants to women were introduced, and later, restricting orders were made.

The decline in infant mortality has not, as was noted last year, taken place *pari passu* with that in the death-rate at higher ages, indeed, it has only become marked during the present century and particularly so during the last 6 or 7 years. It has been recently attributed to such causes as the passing of the Midwives Act in 1902, the passing of the Children Act, the institution of Schools for Mothers in 1906 and onwards, and the Notification of Births Acts of 1907 and 1915. It would be more reasonable, however, to attribute schools for mothers and notification of births to the influences which have brought about the decline of infant mortality. Some of these influences were considered in the annual report for 1914; broadly, they are summed up in the changed character, moral and physical, of the parent generation; but special note should have been there made in this connection of the fact that the fathers and mothers of children born after 1900, had, for the most part, received the benefits of elementary education. A military authority recently informed the President of the Board of Education that the men of to-day make good soldiers "in spite of the Board Schools," and there are some authorities

who would probably, similarly, incline to the view that women nowadays, make better mothers, "in spite of their having enjoyed the advantages of elementary education." It is quite clear that the establishment of a first milk depot, in 1904, and following upon that of a first school for mothers, in 1907, cannot have been responsible for the marked decline in mortality under one year of age, which actually dates from 1900 and potentially, of course, from long before that year. Doubtless the influence of schools for mothers and infant welfare centres is just beginning to be felt, and it is to be hoped this influence will steadily grow; but it should be recognised that so far as schools can be said to have any effect in producing the decline in infant mortality of the last 16 or 17 years, it is the schools established under the Education Act of 1870, and not the schools for mothers which date from 3 or 4 years ago, that are in question. The decline has, moreover, as already stated, been markedly favoured by the present cycle of cool seasons and by the amount of attention increasingly devoted to home environment and to limitation of spread of infectious disease and to sanitary circumstances generally, particularly during the last 15 or 20 years.

Infectious diseases.

Although limited outbreaks of smallpox occurred during the year in various parts of the country, Smallpox. 156 cases having been notified in all, mostly in the Northern Counties and Wales, London was comparatively free from the disease, only two cases having been notified. The first was that of a soldier in one of the London military hospitals. He was seen on the 12th April by Sir Shirley Murphy and Dr. Cameron, who were both of the opinion that the diagnosis of smallpox was open to considerable doubt. The patient was removed to North Wharf, where he was kept under observation. The diagnosis of smallpox was not confirmed.

The second case was that of a Belgian at Earl's Court Refugee Camp, who was removed to the Western Hospital on 2nd May, suffering from chickenpox. The case was subsequently diagnosed as smallpox and was removed to North Wharf. The patient was one of a party returning from Russia, who were landed at Newcastle on 24th April, and were brought the same day to the camp. The infection was therefore contracted abroad. All precautions were taken at the camp under the direction of the Local Government Board, and no further cases occurred.

The Council's smallpox experts were called in for consultation purposes in nine cases in which smallpox was suspected, but in each case the diagnosis of smallpox was excluded.

In a number of instances during the course of the year, vessels arrived in the Thames from foreign ports with cases of smallpox on board. In every such case the names and addresses of passengers and crew, proceeding to destinations in London, were forwarded to the borough medical officers concerned and to the county medical officer, in order that the persons might be kept under observation.

In only one instance was there failure to notify the arrival of contacts in London. The circumstances were briefly as follows: The s.s. *Dover Castle* arrived at Southampton on 30th March from Port Said with a large complement of wounded soldiers. On the afternoon of the arrival, one of the soldiers sickened, and was thought to have measles. The case was later diagnosed as smallpox, and the patient died on the 4th April. Meanwhile the other soldiers on board were distributed to various hospitals throughout the country, and a number of officers left for unknown destinations. In all, 103 men were sent to various military hospitals in London. It was not ascertained by the Council's Public Health Department until 5th April, and then only accidentally, that these men had been in contact with smallpox. The Local Government Board was apprised of the facts and enquiries were immediately made. As a result steps were taken to secure more effective co-operation between the military and civil authorities in the future.

The civilian deaths from measles in London during 1916, numbered 822, as compared with 2,286 in 1915 and 1,376 in 1914. Since 1st January, 1916, the notification of measles and German measles has been compulsory and in the County of London the number of cases notified was 47,470. Measles, scarlet fever, diphtheria, and whooping-cough.

The civilian cases of scarlet fever notified in London during 1916 (52 weeks) numbered 8,746, as compared with 16,974 in 1915 and 25,015 in 1914. There were fewer cases in 1916 than in any year since 1891, when notification first became compulsory.

The diphtheria cases notified among the London civil population in 1916 (52 weeks) numbered 8,743 as compared with 9,094 in 1915 and 9,118 in 1914. This is the first year in which the diphtheria cases have exceeded the scarlet fever cases.

There were 802 deaths from whooping-cough in London during 1916, as compared with 1,158 in 1915 and 921 in 1914. Cases of whooping-cough were notifiable in Holborn, Lambeth and Greenwich during the year.

One case of typhus occurred during the year. The patient, a woman aged 50 years, was taken ill about the 21st December, and the rash appeared about the 25th or 26th December. There was considerable difference of opinion as to the diagnosis, but ultimately the occurrence of a crisis excluded typhoid fever, the original and tentative diagnosis of typhus fever first made was reverted to and the case was notified accordingly. The patient lived with her husband, who was a cobbler, in two rooms of an eight-roomed tenement house in Stepney. The patient recovered. In a second case notified from Bermondsey, the diagnosis was not confirmed. Typhus fever

During 1916, 461 cases of typhoid fever were notified, as compared with 789 in 1914 and 607 in 1915. The figures are not quite strictly comparable, as the practice relating to inclusion of military cases was not the same in 1916 as in the two preceding years. There were, however, only nine deaths in London of soldiers in 1916, thus it is clear that there was a distinct lowering of the case-rate, and the statement holds good even when allowance is made for the absence of men of military age on war service. The number of cases among men aged 20-45 was, in 1915 and 1916, in contrast with pre-war experience, much lower than that in women of those ages. Typhoid fever.

The number of cases, rather less than half the total, in which particulars were forthcoming as to possible sources of infection, was as follows: Fish, shell-fish, etc., are referred to in 85 instances; 15 cases were soldiers or sailors; in 28 cases the disease was said to have been contracted outside London; 26 were ascribed to contact infection (this number included 10 nurses, 4 of whom sickened between 3rd November and 2nd December; they were engaged in nursing in a ward in an institution and their illness was suspected to have been contracted from a patient who had old Potts disease, and who was found to give a positive Widal reaction); two cases were ascribed to river bathing; 2 to drains and bad smells; 3 to water; in 3 there was a history of previous typhoid fever; 5 were attributed to "other causes," and 57 were found not to be cases of typhoid fever.

The year 1916 was the fifth in succession in which there was a marked *smoothing out of the autumnal rise* in London. Before entering upon a critical examination of this phenomenon, it is desirable to state briefly the historical sequence of events. Typhoid fever has shown fairly steady decline in London since its first appearance in medical returns; moreover, examination of mortality figures indicates roughly a fourfold division based upon the statistics available:—

- (i.).—1869-1884.—High mortality, averaging about .25 per 1,000 per annum.
- (ii.).—1885-1902.—Lower mortality, averaging about .14 per 1,000 per annum.
- (iii.).—1903-1911.—Still lower mortality, averaging about .05 per 1,000 per annum.
- (iv.).—1912-1916.—Still lower mortality, averaging about .025 per 1,000 per annum.

Study of notification figures, which afford a much more precise test than mortality figures, shows that the year 1909 was the first in which a marked smoothing out of the autumnal rise was observed; in the September and October of both 1910 and 1911 there were distinct exacerbations of prevalence due in the main, as was shown (see the Annual Reports for those years), to localised outbreaks of the disease traced to fish; since 1911 the autumnal rise has, again, been inconspicuous.

It should be added that in the Annual Report for 1914, account was given of an outbreak due to infected food—possibly fish. In commenting upon this prevalence, attention was called (page 22) to the tendency to lay stress on one or other of two types of theory of causation of typhoid fever—the theory of Koch and the food theory properly so called. In both types infected food materials are believed to play an important role; but on the theory of Koch and his followers the food is supposed to become infected by healthy carriers at the place of local distribution, and great importance is therefore attached to dealing with these healthy carriers; while, on the other theory, incriminated foods (generally speaking—shell-fish or fish), are held to have been infected on the gathering ground, or in the well, lake, river, or estuary, and little importance is attached to the healthy carrier. Some epidemiologists are inclined, indeed, to doubt the causal significance of the typhoid bacillus altogether; to suspect, in fact, that it may prove to be no more than an epiphenomenon, the result of changes brought about in the intestinal organisms consequent upon invasion of the body by the as yet undiscovered virus which produces typhoid fever.

When war was declared in 1914, the believers in the causal role of the bacillus and in the healthy carrier hypothesis, strongly advocated protective inoculation, more especially of soldiers, though in some instances of civilians also; they further laid stress upon the possible risk to civilians due to the return of soldiers from abroad, and urged the need of practising segregation methods. Study of facts observed during the South African War casts doubt upon both these articles of faith; it shows that the results of the inoculations then practised were not so definitely favourable as could have been desired, though it must, on the other hand, of course, be admitted that a great deal has been learnt concerning the typhoid bacillus in the last 15 or 16 years, and that improvements in the technique of inoculation have been made. As regards widespread infection by returned convalescents and healthy carriers, there are many reasons for being altogether sceptical; thus, it will be remembered that typhoid, which had attained an unusually high level just prior to the South African War, notably declined during the years succeeding it (loc. cit. p. 23). It was argued accordingly (loc. cit. p. 24) that all the evidence goes to show that London itself is "an eminently unfavourable field for growth and cultivation of the typhoid poison; the areas from which infection is derived are no longer near at hand, but are to be found in distant polluted foreshores and in remote estuarial waters . . ." On this hypothesis, fears as to spread of disease by returning soldiers and refugees are held to be alarmist and groundless, but on the other hand "disturbances of the operations of the fishing fleet in the North Sea, and possible interference with the shell-fish industry brought about by the war," require to be closely scrutinised in their relation to altered behaviour of typhoid fever.

The experience of 1916 confirms that of 1915 in respect of absence of any evidence of notable increased dissemination of disease by direct human agency; indeed, as has been already seen, after making due allowance for the absence abroad of large numbers of susceptible male persons, the prevalences of typhoid in London, in 1915 and 1916, were actually lower than ever before previously known, despite the addition to the population of an appreciable number of returned typhoid convalescents, and presumably also of healthy carriers from abroad.

The phenomena tally quite well, however, with the rival theory of food causation. Here, to begin with, the fact that since 1909 the weather conditions have been those usually associated with low typhoid fever rates, finds more ready explanation on a theory of maturation of a virus in the estuary or on the foreshore than on that of storing up of infective potentiality in the healthy carrier. It should be borne in mind, moreover, that steady improvement as regards elimination of dangerous shell-fish, has been brought about during the last twenty, and especially during the last ten, years. A full account of the conditions formerly existing is given in Dr. H. T. Bulstrode's earlier report of 1896 on oysters, and in his later report of 1911 on shell-fish other than oysters in relation to disease. Moreover in 1900, a fish outbreak occurred in London, and the suspicion was soon after confirmed that the

ingestion of small ungutted dabs or plaice was responsible for a considerable amount of typhoid fever. In 1906 the London County Council communicated a report by its medical officer to the City Corporation urging the need for regarding such fish as a possible source of danger. There was some reason for thinking already at that time, that certain portions of the North Sea, near the mouth of the Elbe, must be regarded with suspicion. In 1909 the Corporation reported upon the question of inspection of the Billingsgate Market, and in 1910 a report, in which attention was directed to the possible risk of consumption of small plaice, derived from "nursery grounds" on the Danish and German coasts near the mouth of the Elbe, was sent by the London County Council to the Corporation. In 1911 this particular area of supply of plaice again came under suspicion and it was felt, therefore, that the effect of any action taken, in the last few years, to discourage British fishing in this region, should be carefully watched.

In the Annual Report for 1915 the subject was briefly referred to; it was pointed out that typhoid was at a low ebb in that year; that the autumnal rise was almost entirely wanting; and the experience of London was compared with the somewhat similar experience of Grimsby, Hull, and some of the Midland towns. In 1916 typhoid was still lower, the autumnal rise was again absent, and the changed behaviour of the disease, noted now since 1909, and which was particularly marked since the outbreak of war, clearly demanded further inquiry.

In a report published in 1915 on the "Distribution of Plaice," by Dr. Masterman, the Superintending Inspector in Charge of Fisheries, certain particulars are given which are here summarised inasmuch as they are of great interest in connection with the above observations.

First.—In reference to the shallow, so-called A_2 "nursery grounds" for plaice, the following statements are made:—

"The headquarters of the young plaice of the North Sea, the nurseries of the species, lie along the Continental littoral from the Skaw to the Straits of Dover, but especially in the neighbourhood of Denmark and the Western coast of Germany. In their gradual extension seawards in the search for fish, and with the circles of intensity of fishing ever widening Eastwards from the English ports, the trawlers came more and more, especially during certain seasons of the year, to frequent these grounds and to capture enormous quantities of the young and immature plaice, a large proportion of which are unmarketable (p. 8).

"The Dutch plaice fishery is largely in the Continental nursery grounds and close inshore, where very small plaice abound (p. 13)."

Second.—There are the facts as to disuse of this area by English fishermen in recent years:—

"The typical nursery areas are shown to have been given an almost complete rest by the English trawlers for the past few years. . . ."

"As far as plaice is concerned, the intensity of fishing in the Danish waters has been immensely reduced almost to cessation (p. 71)."

Third.—There are certain detailed particulars as to use of this area by (a) Grimsby boats; and (b) Hull boats:—

"The Grimsby boats which have been wont to frequent the two Danish areas have transferred their energies to grounds lying further South. The reasons for this are not clear."—(p. 76).

"Large quantities of plaice are landed at this port (Hull) from the White Sea and other regions outside the North Sea."

"This comparatively recent opening up of sources of plaice supply, outside the North Sea, has an importance which it is difficult to over-estimate in the plaice problems. Just in so far as the supply of cheap White Sea plaice tends to lower the demand and the price of North Sea small plaice, so will the trawlers tend to abandon the nursery grounds of the North Sea and reduce the intensity of their fishing in these areas."

"Since this problem (suggestion of a minimum size limit) was stated in concrete form, the White Sea plaice fishery has been developed, and the trawlers have in recent years almost entirely abandoned the very grounds from which they were to be excluded by the indirect action of legal restriction."—(p. 108).

It will be seen then, that a considerable change has been brought about during the last 14 or 15 years as regards use of the area (known as A_2), which includes "the Continental nursery grounds and close inshore waters where very small plaice abound." The area has been increasingly abandoned by English trawlers, and this has been especially the case since about 1907; indeed, about six years ago, first the Hull, and then a year or two later, the Grimsby boats, altogether discontinued going there.

The following facts thus emerge to view concerning use of this area during the last three of the four periods mentioned at the outset:—

In the second period (1885-1902), there was probably growing use of the A_2 area, reaching a maximum in 1899 and 1900. The Blue-Book on the Distribution of Plaice contains the statement that, speaking generally, "the fishing power of North Sea steam trawlers, as represented by numbers of vessels, reached its climax at or about the commencement of the twentieth century." London typhoid, it will be remembered, reached a maximum in 1899 and 1900.*

In the third period (1903-1911), there was diminishing use of the A_2 area.

In the fourth period (1911-1916), there was initially very little use of this area, and during the last four or five years, it has not been visited at all by English boats.

* In the discussion on the Bill to provide against the destruction of undersized fish, introduced in 1899, it was urged that it was especially necessary to prevent the sale in this country of the small fish imported from foreign countries (Belgium, Denmark and France) in which their sale was already prohibited by law.

There are further exhibited on the lower part of the chart, records, for Grimsby, London and Home Counties and Hull, and for certain county areas, which show the relation in successive years of the extent of autumnal prevalence (broken lines) to that of mean annual prevalence (continuous black lines). It is interesting to note that the marked decline in the rate since 1911, with close approximation of the broken and continuous black lines in the four succeeding years, are conspicuous phenomena in the Grimsby, and in less degree in the Hull curves. If the particular type observable in the Grimsby curve be taken as a standard for comparison it will be found that the London curve is intermediate between the curves for Grimsby and for Hull. In the case of Hull and of some neighbouring towns, the rise in 1911 is conspicuous, but the autumnal flattening is not particularly well marked in 1913 and 1914. Comparison with curves for other parts of the country shows that the groups of counties marked 1-4 very closely, and those marked 5-7 rather less closely, conform to the Grimsby type. The groups of counties marked 8-12 markedly deviate from that type. It is worthy of note that conformation to the Grimsby type fairly closely follows accessibility, by reason of facility of railway communication, to Grimsby fish supplies. The conformity of South Wales and Monmouth to the Grimsby type is not readily explicable, but it may be that the mining areas of Glamorgan and Monmouth receive at times chance supplies of fish of the kind that has been known to be distributed in the poorer areas of London. If England and Wales be divided into areas largely supplied, less largely supplied, and least likely to be supplied from the A_3 area, the curves of annual and autumnal typhoid prevalences in those areas present corresponding approximation to or divergence from the Grimsby type.

The whole question of variations in the type of the typhoid curves in different parts of the country merits close study, but three facts are at any rate clear. First, typhoid fever reached a high level in London in the years when there was a maximum use of the A_3 area. Second, a decline followed upon the gradual disuse of this area. Third, a further decline with smoothing out of the autumnal prevalence has occurred in the last eight years, save in 1908, 1910 and 1911, when there were small autumnal outbreaks, traced to small ungutted flat fish.

The facts at any rate justify discouragement as a source of supply to this country of undersized plaice and dabs from the mouth of the Elbe.

On a review of all the facts as to disuse of suspected sources of supply to this country of shell-fish and of fish, it will be apparent that the great decline of recent years in prevalence of typhoid fever has proceeded practically *pari passu* with abandonment of consumption of shell-fish and fish from polluted sources, and, with removal of layings, etc., to a distance from sewer outfalls. In particular it should be noted that the classical reports of Dr. H. T. Bulstrode, and the adoption of the precautionary measures outlined in them, must be regarded as having been very largely responsible for the great reduction in the prevalence of and mortality from typhoid fever brought about in the last 20 years. Just at the time, however, when the carrying into effect of epidemiological teaching was beginning to exert appreciable influence, a new bacteriological method of prevention of typhoid fever was first advocated. This new method has been but little practiced in civil life, save by the campaigners of South-West Germany, but it has been somewhat widely employed in the British, German, and French armies. It has been assumed not only that this method has been productive of great results from a preventive point of view in the case of those armies, but the corollary is apparently drawn that if it had been adopted twenty years ago among civilians in this country there would have followed not merely the huge decline in typhoid that has actually occurred, but an even greater decline. To the epidemiologist this is very hard of acceptance; he inclines to think that more benefit, as regards further reduction of typhoid fever in this country, is likely to result from pursuing the older epidemiological methods than from giving effect to the new principles advocated by Koch and his followers. In particular, further care for the purity of shell-fish layings and entire prohibition of the sale of ungutted flat fish are to be looked upon as the main lines upon which further advance can be made.

At the close of the year, the Port of London Sanitary Authority made an order prohibiting the selling of shell-fish from the whole of the area between Canvey Island and Shoeburyness, unless in the case of oysters they had been relaid for a month in other waters; or in the case of cockles, mussels, and winkles, unless they had been boiled before being despatched to market.

Deaths from diarrhoea and enteritis during 1916 numbered 2,009 as compared with 3,098 in 1915 and 3,624 in 1914. Of the total deaths, 1,380 occurred during the first year of life and 228 in the second year, the corresponding figures for 1915 being 2,126 and 430 respectively. Zymotic enteritis was notifiable throughout the year in Woolwich and during the summer months in Poplar and Greenwich.

The deaths in London during 1916 attributed to puerperal fever, numbered 158, as compared with 132 in 1915 and 195 in 1914. There were 277 cases of puerperal fever notified in 1916 (52 weeks), the figures for 1915 and 1914 being 276 and 393 respectively. (See p. 17.)

Phthisis.

The civilian deaths from phthisis in 1916 numbered 6,491 as compared with 6,875 in 1915, and 6,476 in 1914. The increased deaths in 1915 were attributable mainly to adverse climatic conditions in the winter of that year, and these are reflected also in the increased deaths from bronchitis, pneumonia and influenza. In England and Wales the deaths in 1915 numbered 23,630 males, including deaths in the forces, and 18,046 females, as compared with 21,412 and 16,414 in 1914; the increase was therefore slightly greater among males than females. The corresponding figures for London are not available.

The calculation of a death-rate on the civil population from the above figures, would give a result in no way comparable with the pre-war rates: for not only has the war left in the civil population practically all the pronounced phthisics, but fatal cases among persons accepted for service and in those subsequently discharged for tubercular disease are in part recorded as civilian deaths.

The age-distribution of the civilian deaths in the last three years is as follows:—

Year.	0—	1—	2—	5—	10—	15—	20—	25—	35—	45—	55—	65 +	All ages.
1914	62	54	91	98	140	396	573	1,307	1,478	1,263	688	326	6,476
1915	57	65	125	108	165	469	579	1,305	1,618	1,354	692	347	6,875
1916	38	54	89	101	146	471	529	1,294	1,475	1,214	736	344	6,491
Increase (+) '15 on '14	— 5	+ 11	+ 34	+ 10	+ 25	+ 64	+ 6	— 2	+ 140	+ 91	+ 4	+ 21	+ 399
Decrease (—) '16 on '14	— 24	— 0	— 2	+ 3	+ 6	+ 75	— 44	— 13	— 3	— 49	+ 48	+ 18	+ 15

It is worthy of note that there is a decrease in 1916 on the 1914 figures at military ages.

The number of "primary" cases of tuberculosis notified during 1916 (52 weeks) was 17,631, as compared with 18,661 in 1915. Of these, 13,547 were pulmonary and 4,084 other forms of tuberculosis, compared with 14,712 and 3,949 in 1915.

The following is an analysis of the cases notified in London in 1916 (52 weeks).

Form of tuberculosis notified.	Sex	Notifications on Form A. (Total of primary notifications received in London boroughs, other than elementary school cases, <i>infra</i>).												Total.
		0—	1—	5—	10—	15—	20—	25—	35—	45—	55—	65+	Age not stated	
Pulmonary tuberculosis	M.	20	146	346	273	445	574	1,747	1,783	1,189	628	235	1	7,387
	F.	16	117	373	377	604	777	1,451	1,106	641	295	148	1	5,906
Other tuberculosis ...	M.	153	444	565	334	158	60	107	70	50	22	10	—	1,973
	F.	98	365	440	313	163	110	128	56	46	15	19	—	1,753
All forms of tuberculosis	M.	173	590	911	607	603	634	1,854	1,853	1,239	650	245	1	9,360
	F.	114	482	813	690	767	887	1,579	1,162	687	310	167	1	7,659

Form of tuberculosis notified.	Sex.	Notifications on Form B. (Primary notifications of cases discovered through medical inspection in elementary schools).					Notifications on Form C. (Secondary notifications from institutions receiving cases).	
		0—	5—	10—	15+	Total.	Poor law.	Other.
Pulmonary tuberculosis	M.	3	68	50	2	123	2,233	1,941
	F.	1	63	66	1	131	1,019	1,220
Other tuberculosis ...	M.	1	123	67	2	193	257	54
	F.	3	92	68	2	165	170	59
All forms of tuberculosis	M.	4	191	117	4	316	2,490	1,995
	F.	4	155	134	3	296	1,189	1,279

Influenza, bronchitis and pneumonia.

The civilian deaths from influenza numbered 915 in 1916, as compared with 1,058 in 1915, and 613 in 1914. It should be noted that nearly 350 of the deaths in 1916 occurred during the last month of the year.

The deaths from bronchitis were 5,593 in 1916, 7,058 in 1915, and 5,292 in 1914; the deaths in 1915 compare favourably with those for 1914 in the first three-quarters, but in the last quarter the bronchitis deaths exceeded 2,000, and were higher than in any autumn quarter since 1905.

In 1916 the deaths from pneumonia numbered 5,222, as against 7,133 in 1915, and 5,604 in 1914. The deaths from lobar pneumonia in 1915 were below the recorded deaths in the four preceding years.

Cerebrospinal fever.

There were 425 cases of cerebrospinal fever notified among the civil population of London in 1916 (52 weeks), as compared with 627 in 1915. The high incidence of the disease in England

and Wales on the services, may be gathered from the fact that in 1915 the male civilian deaths numbered 742, while deaths in the forces numbered 605. These figures become more significant if the number (488) occurring at ages below 15 be deducted from civil deaths. The relative numbers of deaths among males and females are as follows:—

Age group.	Males.	Females.
0-15	488	381
15-40	757	181
40+	102	65
All ages	1,347	627

These figures do not include posterior basal meningitis.

The Registrar-General in his annual report for 1915, at page xli., refers to the fact that in London cases of posterior basal meningitis are required to be notified under the heading cerebro-spinal fever, while elsewhere there is no uniformity of practice in this respect. This fact alone renders the use of the crude figures relating to registered deaths from this disease and notified cases, of little value for the calculation of fatality rates. Even if it were possible to obtain a figure which would approximately represent the notified cases, exclusive of those relating to posterior basal meningitis, and to this were applied the registered deaths for the determination of a case-mortality rate, there would still remain a number of considerations for which allowance would need to be made in using the fatality rates thus obtained. Among these considerations may be mentioned the widely recognised difficulties of diagnosis, the relatively large proportion of cases in which confirmation of the diagnosis on notification is wanting, and the considerable number of instances in which it is found that registered deaths have not been previously notified. In view of all the difficulties, therefore, fatality rates have not been calculated, it being evident that the records of deaths from cerebro-spinal fever for London bear no consistent relation either to the cases of cerebro-spinal fever notified or to the actual number of deaths from this cause.

During the year, 31 patients suspected to be suffering from cerebro-spinal meningitis, were examined either by Dr. Brincker or Dr. Ross at the request of borough medical officers or private practitioners. In 10 cases the diagnosis was confirmed either microscopically or culturally; in 4 cases the meningococcus was not identified, whilst in 6 cases insufficient material was obtained for bacteriological examination. On 11 occasions lumbar puncture was not performed for various reasons. In addition to the cases in which the patients were seen by the Council's medical officers, bacteriological reports were furnished on 12 specimens of cerebro-spinal fluid removed from suspected patients, or on other material from the brain or cord taken after death. Of these, only 4 were found to contain the meningococcus. Of the 29 cases in which the meningococcus was not identified, 13 cases proved ultimately to be cerebro-spinal fever, 5 were tubercular meningitis, whilst in two other instances the bacteriological examination indicated that they were cases of pneumococcal meningitis. The ultimate diagnosis of the remaining 10 cases was as follows: influenza (2 cases), pneumonia, broncho-pneumonia, intestinal toxæmia, febricula, cerebral hæmorrhage, seborrhœic eczema, strangulation of bowels.

In addition to the examination of suspected cases, 291 contacts of cerebro-spinal fever were swabbed, with the result that 23 were found to be carrying the meningococcus in the naso-pharynx, or 8 per cent. of the total number examined, as compared with 11 per cent. last year. In most cases the carriers were free from the germs in a comparatively short time; the longest period was five weeks. Generally speaking, the selection of contacts to be examined, was determined upon the ground of intimacy of contact or relationship with the patient.

The relationship between influenza and cerebro-spinal fever.—It will be seen then that in 1916, as in the two preceding years, outbreaks of influenza, accompanied by increase in mortality from pneumonia, bronchitis, and cerebro-spinal fever occurred. The outbreak of 1914-15 was the most fatal of the three; it commenced in November, 1914, attained its maximum in February, 1915, and came to an end about May. The cerebro-spinal fever, in this outbreak, appeared to lag somewhat behind the influenza, pneumonia, etc., but as pointed out in last year's report, it "was only gradually realised that a 'new disease' was in question, and this may account for the later attainment of the maximum in cerebro-spinal fever." During the latter part of 1915, there was marked diminution in the mortality from influenza, cerebro-spinal fever, and the other associated diseases; then at the end of the year came a recrudescence, and now the influenza and cerebro-spinal fever developed practically *pari passu*, reaching maximum prevalence in March and April. This outbreak did not attain the dimensions of that of the preceding year; it was followed again in its turn by a period of comparative quiescence, and then once more, in November and December, the influenza deaths rapidly augmented in number, reaching a maximum in the last week of the year; there was in this outbreak, also, some tendency for the cerebro-spinal fever to lag behind, inasmuch as the maximum for the latter was not attained until the last week of February. The number of influenza deaths was highest in the third outbreak—that of 1916-17; the number of cerebro-spinal fever cases was highest in the first of the three outbreaks—that of 1914-15.

The question of the relationship between cases of cerebro-spinal fever and influenza colds, coughs, catarrhs, etc., in epidemic and non-epidemic periods was considered in last year's Annual Report. It is now possible to add to the analysis of the figures for the four periods then examined—those for two

further periods—the non-epidemic period from May to December, 1916, and the epidemic period January to April, 1917.

Table showing the relationship between cases of cerebro-spinal fever and influenza, colds, coughs, catarrh, etc., in epidemic and non-epidemic periods.

	1914.	Jan.-May, 1915.	June-Dec., 1915.	Jan.-April, 1916.	May-Dec., 1916.	Jan.-April, 1917.
Number of cases of cerebro-spinal fever in which information was obtained.	61	462	214	196	250	227
Number of cases with history of influenza within a fortnight, or with history of recent influenza, date not precisely specified. The figures in brackets give the cases with influenza within seven days of onset of cerebro-spinal fever.	Nil.	33 (27)	1 (1)	6 (5)	3 (3)	16 (13)
Number of cases with history of cold, cough, catarrh, etc., within a fortnight or with date of such recent illness not precisely specified. Figures in brackets as above.	10 (6)	61 (42)	15 (11)	29 (24)	30 (17)	45 (34)
Number of cases with history of contact within 14 days, with persons suffering from influenza	1	23	2	4	3	5
Number of cases with history of contact within 14 days with persons suffering from cold, cough, catarrh, etc.	3	38	4	10	6	10

If the second and fourth rows of figures in the six columns of the above table be added together they give a fair indication of the extent to which a history of suffering from, or one of being exposed to infection by, an illness resembling influenza, just precedent to attack by cerebro-spinal fever, was forthcoming in 3 non-epidemic and in 3 epidemic periods. The percentages of such cases to the total number of cases in the 6 periods were as follows:—

Three Epidemic Periods.

Jan.-May, 1915	12.0 per cent.
Jan.-April, 1916	5.1 „
Jan.-April, 1917	9.1 „

Three Non-epidemic Periods.

The year 1914	1.6 per cent.
June-Dec., 1915	1.4 „
May-Dec., 1916	2.4 „

The question as to how far these excessive percentages in the epidemic periods can be regarded as mere chance coincidences resulting from the wider dissemination throughout London of influenza, was considered in the Annual Report for 1914, and it was concluded that the number of cases of cerebro-spinal fever giving a history of (a) recent attack by; (b) contact with cases of influenza; was "*greater than might have been expected as a matter of chance.*"

Since the question of relationship between influenza and cerebro-spinal fever was discussed for the first time in the Annual Report for 1914, the subject has received a good deal of attention from both military, naval, and civilian medical officers. It has become quite clear that the relationship referred to demands precise study, and now that it is thus recognised that the epidemiological can no longer be subordinated to the bacteriological aspects of the problem, there is ground, as was suggested two years ago, for hoping that it may be possible to attain more correct notions with regard to the ætiology and treatment of cerebro-spinal fever.

During 1916 there was an increase in the number of notified cases of this disease in London; 197 cases in all were notified, the highest figure previously recorded being 145 in 1913. There was also increase throughout the country generally, and this was the subject of some comment in the press, inasmuch as a serious outbreak of the disease was reported in New York about the same time.

Anthrax.

During the year 9 cases of human anthrax occurred in London. In 8 the source of infection was attributable to the nature of the patient's employment—5 having been engaged in handling hides, 2 were workers in Persian wool and 1 was a brushmaker. The ninth case was that of a woman engaged in purely household duties. It was ascertained, however, that she was in the habit of paying frequent visits to her mother, who made brushes from fibre. The fibre was obtained from firms of hair dealers who kept their stocks of hair and fibre in close proximity in the warehouse. In every instance the patient

was removed to hospital, and all except 1 recovered after treatment. Two further notifications of anthrax were received, but were subsequently, as the result of further diagnosis, withdrawn.

As an interesting sequel to the discovery in London of anthrax infection as a result of the use of cheap shaving brushes, an account of which appeared in the Annual Report for 1915, it was reported during 1916 that other consignments of shaving brushes in various parts of the country had been found to be infected with anthrax, and had been destroyed. It appears very desirable that more stringent regulations governing the importation of hair should be made.

Venereal Diseases.

The final report of the Royal Commission on Venereal Diseases was issued in March, 1916. Reference to the scheme for giving effect to the recommendations of the Commissioners will be found on p. 16. There are certain questions concerning prevalence of syphilis in recent years, upon which a report to the Public Health Committee of the Council (6th April, 1916) was submitted, and some of the notes made on this subject are here reproduced.

(1) The general impression conveyed by reading Section II. of the Report is, that the prevalence of the disease is being maintained. Mr. J. E. Lane, one of the Commissioners, however, stated four years ago that it might be taken for granted "that the extent of syphilis is considerably less than formerly and that it is of a less virulent type"; an opinion of this kind will no doubt carry more weight than any inference drawn from the statistics, though it might well be argued that the figures and charts referred to in Section II. of the Report, may be interpreted as confirming Mr. Lane's view. Again, the Commissioners think the great reduction (between the years 1870 and 1911) from 160 to 20 "candidates refused on account of syphilis per 10,000 offering for enlistment" cannot be regarded as a "conclusive indication of decreasing prevalence among the civil population." It may be noted that this large fall is cited by Dr. Stevenson as one of five considerations, which seem to him "to point, though indecisively, in the direction of a genuine fall"; and he adds that he knows of no considerations "arising from the figures which have an opposite effect."

(2) Secondly, in their statistical inquiry the Commissioners, in the absence of reliable death or morbidity statistics, appeal to the Wassermann test; and they draw conclusions as to the extent of prevalence of syphilis at the present time, from experience gained by the use of this test. They conclude that at least 10 per cent. of the whole population in the large cities has been infected (p. 23); this estimate being, apparently to some extent, based on a generalisation from the results obtained in 1,000 London hospital patients not presenting obvious evidence of syphilis. Such a population is, however, a special population, which has been selected in two ways; it includes persons of a particular social class, and it also consists of people who are ill. It is stated that "it would have been very valuable to endeavour to extract admissions of syphilis" from the cases giving positive results, and inquiries were actually made as to a history of syphilis in four of the persons in question, three of whom admitted the possibility of having been infected. The inquiries were resented and the investigation was no further proceeded with. It is interesting to compare the results obtained with those revealed in two other estimates of a somewhat similar character, which were not, however, made with quite the same object in view. Alexander Fleming tested over 500 persons who were "supposed not to have syphilis," patients attending hospital for various diseases, and others, and he obtained only 12 positive results (2·2 per cent.). Again, Hecht obtained 1 positive result in 142 normal persons (·7 per cent.). There are wide divergencies between 10 per cent., 2·2 per cent. and ·7 per cent. The three populations examined were probably not strictly comparable, but the great discrepancies in the results seem to indicate that caution is needed in applying any of these percentages to so large and diverse a population as that of London. Thus the difference between 10 per cent. and ·7 per cent. would mean a difference between 450,000 and 31,500 persons; and on the ·7 per cent. basis upwards of 400,000 persons would be passed as unaffected who would stand condemned on the 10 per cent. basis.

Despite the extended experience gained in recent years there still seems need for a word of caution concerning the interpretation of the Wassermann test. It is perhaps worth bearing in mind that the test is not a specific one, and it is definitely known to be complied with, in the case more particularly of diseases which are rare in this country, and in patients in whom syphilis can be almost certainly excluded. Sir Henry Morris in summing up the results of a "Discussion on Syphilis" four years ago said, "with such uncertain, variable and paradoxical results as I have quoted, are we really in a position at present to say what the precise meaning and value of the Wassermann reaction is?" He then refers to the complicated nature of the test, and he concludes "it seems to me—whose line of life is not bacteriological research—as I have said, all very intricate and wonderful" . . . "but of this I feel sure that only very competent and well practised workers are fit to be entrusted with these investigations."

Doubtless the question as to the extent of prevalence of this disease will be further elucidated as time goes on, but meanwhile caution seems to be necessary in the interpretation of results, and especially with regard to estimates of widespread taint in the population which are based upon observations of this character.

B.—ADMINISTRATION.

The administrative section of this report has been altered in arrangement, and considerably curtailed; the statistical information available being summarised in a general table.

Tuberculous Milk—L.C.C. (General Powers) Acts, 1904, Part V., and 1907, Part IV.

The Council's inspectors obtained 1,198 samples from churns of milk consigned from the country to the various London railway termini, and these were submitted to the Lister Institute for bacteriological examination. The milk was sent to London from 31 counties. Of 1,160 completed examinations, 101 or 8·7 per cent. yielded tubercle bacilli, as against 6·5 per cent. in 1915 and 7·9 per cent. in 1914. In connection with these samples, the Veterinary Inspector visited 106 farms and examined 3,570 cows. It was found that 70 cows—i.e., 1·96 per cent. showed signs of tuberculosis in one or more of its forms, or were otherwise unhealthy. In the case of each cow suffering from tuberculosis, the farmer undertook to have the animal slaughtered, and meanwhile not again to use the milk. In addition the inspector re-visited 92 farms, and inspected 3,814 cows; all the animals examined at these re-visits were found to be in a satisfactory condition. In consequence of the suspension of the Tuberculosis Order, 1914, owing to the war, the powers of the Council in respect of the examination of cows in London cowsheds have been exercised under the Dairies, Cowsheds, and Milkshops Order of 1899, and Part V. of the L.C.C. (General Powers) Act, 1904. During the period 14th February, 1916, to 26th January, 1917, there were four inspections of the cows kept in the 154 London cowsheds. In all, 9,000 examinations were made. No cases of tuberculosis of the udder were detected, but in 76 cases other unhealthy conditions of the udder were found. Five cows were found presenting symptoms of pulmonary or general tuberculosis, and these were slaughtered or disposed of by the owners.

Housing of the Working Classes Acts.

Owing largely to conditions brought about by the war, the provisions of section 17 of the Housing and Town Planning Act have not been utilised to any great extent during the year. The action taken by the metropolitan borough councils under the Act with regard to the making of representations and closing orders is shown in the following table—the figures for the years 1914 and 1915 being included for comparison.

Metropolitan borough.	No. of representations.			No. of closing orders.			No. of houses demolished.		
	1914.	1915.	1916.	1914.	1915.	1916.	1914.	1915.	1916.
Battersea	185	—	—	38	—	—	—	—	—
Bermondsey	—	—	—	—	—	—	36	—	—
Bethnal Green	31	3	31	25	3	16	—	2	—
Camberwell	—	—	—	—	—	—	—	—	—
Chelsea	3	—	—	—	—	—	—	—	8
Deptford	5	5	2	5	5	2	6	2	—
Finsbury	—	2	—	—	2	—	—	—	—
Fulham	—	1	—	—	1	—	—	—	—
Greenwich	193	—	—	—	—	—	—	—	—
Hackney	—	29	—	—	29	—	—	—	—
Hammersmith	37	26	—	6	26	12	—	3	22
Hampstead	9	3	4	9	3	4	5	—	—
Holborn	2	3	—	2	1	—	—	—	—
Islington	21	8	—	1	8	—	6	1	—
Kensington	13	9	—	3	9	—	—	—	—
Lambeth	7	—	—	7	—	—	7	—	—
Lewisham	—	6	—	3	12	4	6	—	—
Paddington	5	1	1	5	1	—	—	—	—
Poplar	10	17	5	10	17	5	2	—	—
St. Marylebone	1	3	—	—	2	—	6	—	—
St. Pancras	37	18	15	—	29	9	—	—	—
Shoreditch	—	3	—	—	3	—	—	—	7
Southwark	—	—	—	—	—	—	—	—	32
Stepney	6	23	—	6	23	34	—	—	—
Stoke Newington	—	—	—	—	—	—	—	—	—
Wandsworth	—	—	—	—	—	—	—	—	6
Westminster, City of	—	2	4	—	4	1	11	8	31
Woolwich	18	11	6	9	9	4	7	—	4

Depletion of Sanitary Staffs.

Inquiries were made during the year in order to ascertain the extent to which the sanitary staffs of metropolitan boroughs had been affected by the war. It was found that there was approximately a depletion of some 16 per cent. in these staffs, and the Council called the attention of six Borough Councils to the serious extent of the depletion, and suggested that if male substitutes could not be

obtained for sanitary inspectors the desirability of employing health visitors should be considered. At the same time, the Local Government Board was urged not to permit any further reduction in the sanitary staffs in the county.

In four of the six boroughs above referred to, improvement was made by the appointment of health visitors, and at the end of the year the conditions in the other two boroughs were under consideration.

During the early part of the year, complaints were received as to non-removal of house refuse in the Metropolitan Borough of St. Pancras, and as to difficulties experienced with regard to the removal of trade refuse particularly in West London. These difficulties apparently arose from shortage of labour, but similar failure to remove house refuse was not found to exist in London generally. There were, however, for a time, considerable accumulations at the various wharves, due, primarily, to the difficulty of obtaining barges. The conditions in St. Pancras were attributed to shortage of stokers at the destructor works. The Council entered into correspondence with the borough council on the matter, and improvement was affected during the summer months, but at the end of the year the trouble was again becoming serious.

National Insurance Acts, 1911-13.—Treatment of Tuberculosis.

As in 1915, the work of the Council in respect of the treatment of tuberculosis, was confined within the limits existing at the commencement of the war. The arrangements for dispensary treatment are in the hands of the metropolitan borough councils and the Council continued its grant of 25 per cent. of the net expenditure incurred by them in respect of uninsured persons. Schemes are in operation in 26 boroughs (including the City of London), and in another borough a scheme has been conditionally approved, but the work had not yet commenced. Under the approved schemes, municipal dispensaries have been provided in 8 cases, and in the remaining 18 cases, voluntary dispensaries have been utilised. There are further 3 voluntary dispensaries at work in Stepney. Authority was renewed for the use of 231 children's beds and 100 adult beds in voluntary institutions at the cost of the Council, and for the acceptance of such beds as were available in the institutions of the Metropolitan Asylums Board, the cost of the latter beds being borne by that Board. Particulars as to the number of children treated under the scheme and the institutions in which they were accommodated are given in the section of this report dealing with the school medical service. The following statement shows the number of adults treated during the year and the number remaining under treatment on 31st December, 1916:—

Name of institution.	Total number treated, including patients under treatment, on 1st January, 1916.	No of patients under treatment on 31st December, 1916.
----------------------	---	--

I.—VOLUNTARY INSTITUTIONS.

Brompton Hospital and Frimley Sanatorium	205	57
Maltings Farm, Sanatorium	59	9
National Sanatorium, Bournemouth	8	2
National Sanatorium, Ventnor	15	2
Grosvenor Sanatorium	6	1
Metropolitan Hospital and Cranbrook Convalescent Home	3	1
Royal Sea Bathing Hospital, Margate	10	7
Eversfield Chest Hospital, St. Leonards	1	1
St. Catherine's Home, Ramsgate	1	—
City of London Chest Hospital, Victoria Park	7	—
London General Hospitals	37	6

II.—M.A.B. INSTITUTIONS.

Winchmore Hill Sanatorium (Women)	218	16
Downs Sanatorium (Men)	36	4
Total number of adult persons treated under scheme	588*	106

*Included in the numbers given under Brompton and other hospitals, 21 patients were subsequently transferred to one or other of the sanatoria given in the list. Allowance has been made for this in the totals.

By the extension of the facilities afforded by the Metropolitan Asylums Board the Council has been enabled to provide for a limited number of advanced cases. 27 women and 4 children have thus been sent to St. George's Home, Milman Street, Chelsea, and 3 men to a special section allotted for advanced cases at Downs Sanatorium. At the end of the year 14 women and one child were under treatment.

Reference was made in last year's report to the fact that the Council was endeavouring to appoint, where possible, committees known as Interim Tuberculosis Care Committees in connection with each tuberculosis dispensary, with the object of bringing together the various local agencies engaged in ameliorating the lot of tuberculous persons in the areas served by the dispensaries, and of ensuring that suitable after care and employment are obtained following institutional treatment; the intention

being that these committees shall operate until the metropolitan borough councils are in a position to appoint tuberculosis care committees for each borough area in accordance with the scheme approved by the Council on the 15th June, 1915 (Council minutes, page 881-5).

The committees are widely representative of all the interests at work, including officials of the borough council, representatives of the School Medical Service and the Council's School Care Committee workers. It is noteworthy that the Council had established during the year 28 Interim committees covering the whole of the administrative county, with the exception of the City of London and Wandsworth. Stepney has three committees, one attached to each of the Central Fund Dispensaries in the Borough, and while this report was being written, it has been possible to establish another Committee to serve part of Wandsworth. These committees have fully justified their appointment, particularly in connection with children. Visits are made to the homes to ensure that patients comply with the instructions given as to admission to institutions, to assess and collect the contributions to be made by parents, to see that the home conditions are made as satisfactory as possible for the return of the children, to arrange for the provision of extra feeding where necessary and to endeavour to secure suitable employment after leaving school, etc.

The Council has arranged a scheme of co-operation with the Invalid Children's Aid Association. In return for grants made by the Council from the contributions paid by parents, the Invalid Children's Aid Association undertake to arrange for the provision of surgical instruments, treatment at convalescent homes, and accessories to the treatment of cases dealt with in hospitals and sanatoria under direct agreements made by the Council.

In addition, it is found that a considerable number of cases for which sanatorium treatment is applied for, particularly gland cases and surgical cases requiring open air life and surgical dressings following operation, can be equally well dealt with in institutions of the type available through the Invalid Children's Aid Association as in sanatoria. Such cases are referred to the Invalid Children's Aid Association instead of being sent to sanatoria and equal benefits are available from the Council's grant in respect of these children as in cases referred to the Invalid Children's Aid Association after treatment in institutions as Council cases.

As an experiment for six months, similar privileges are available for children referred direct by hospitals to the Invalid Children's Aid Association. During the year 1916, 115 children were assisted through the Invalid Children's Aid Association with the aid of the Council's grant, which amounted to £150.

Scheme for the Treatment of Venereal Diseases.

As the outcome of the findings of the Royal Commission, the Local Government Board, in July, 1916, issued the Public Health (Venereal Diseases) Regulations, together with an explanatory memorandum by their Medical Officer. These regulations were accompanied by circulars to the Councils of Counties and County Boroughs, Governing bodies of Hospitals and Boards of Guardians, wherein the attention of the councils were drawn to the necessity in the national interest, for taking immediate steps to carry out the recommendations in the Report of the Royal Commission, and it was stated that it was the duty of the Council to proceed at once with the formulation of a scheme for the provision of the necessary facilities for the diagnosis and treatment of venereal diseases.

The Regulations provide that the Council (a) shall, subject to the approval of the Board, make arrangements for enabling any medical practitioner practising in the area of the Council to obtain, at the cost of the Council, a scientific report on any material which the practitioner may submit from a patient suspected to be suffering from venereal disease, and (b) shall prepare and submit to the Board a scheme for the treatment at and in hospital or other institution of persons suffering from venereal disease, and for supplying medical practitioners with Salvarsan or approved substitutes for the treatment and prevention of venereal diseases. It was further suggested that full use should be made of existing institutions and that more than one authority might arrange for the treatment of these cases at the same centre. At an early stage of the deliberations, it became evident that great advantage would accrue if the local authorities adjoining the county of London, would co-operate with the Council in the utilisation of facilities to be afforded by the London hospitals. Conferences were accordingly arranged between representatives of the counties of London, Buckingham, Essex, Hertford, Kent, Middlesex, and Surrey, and of the county boroughs of Croydon, East Ham and West Ham. The following decisions, among others, being arrived at:—

(1) That any scheme provided for London would be utilised by many patients from the surrounding areas, and that it would be equitable for the councils of these areas to contribute towards the cost of the scheme.

(2) That it was desirable to leave the preliminary negotiations with the hospitals in London to the London County Council, and that it should be made clear to the authorities of these hospitals that the facilities provided would be required for patients not only from London but also from the surrounding areas.

The Council thereupon entered into negotiations with the governing bodies of the principal London hospitals on behalf of all the local authorities concerned, with the result that 22 of these institutions intimated their willingness to undertake the treatment of patients, the pathological examination of specimens and the supply of Salvarsan to authorised persons. The services which it was proposed should be undertaken by the hospitals, included the appointment of a Committee of the hospital staff to draft a scheme for carrying out the special work at the hospital relating to the diagnosis and treatment of venereal disease, and to organise and superintend the arrangements within the hospitals; the appointment of a competent staff; the provision of beds for patients the treatment of out-patients

at evening sessions and at other suitable times; the supply by the hospital of Salvarsan or its substitutes to medical practitioners on an approved list; the supply to practitioners of apparatus for taking samples of blood, etc., and the furnishing of reports on specimens sent by practitioners; the supply of statistical information of work done; the provision of free instruction for practitioners and students; opportunities for practitioners to act as clinical assistants at approved rates of remuneration; the employment of women doctors in clinics for women; and the issue of printed instructions for the guidance of patients and practitioners.

The Local Government Board signified its approval, of the scheme prepared and it came into operation on 1st January, 1917. The gross cost of the scheme to the London County Council during the experimental year is estimated at £49,000, of which sum the Local Government Board will repay 75 per cent.

Mental Deficiency Act, 1913.

Information was received by the Clerk of the Asylums and Mental Deficiency Committee from various sources of alleged cases of mental defect in 492 cases during 1916, and 418 of these were dealt with by the local authority. The remainder of the cases were still under consideration at the end of the year or were otherwise disposed of. Among the 418 cases dealt with, 141 were sent to institutions, 221 were placed under supervision, 3 were placed under guardianship, 53 were sent to places of safety pending the presentation of a petition, and 43 were referred to the Poor Law. Dr. F. C. Shrubbsall, has made the following analysis of 1,044 cases, which have been ascertained since the Act came into operation.

	Feeble-minded	Imbecile	Idiot	Total		Feeble-minded	Imbecile	Idiot	Total
*Primary amentia and cases of undetermined origin	155	316	15	486	Oxycephaly	4	2	—	6
Epilepsy	47	88	28	163	Cretin	6	15	—	21
Epilepsy and cerebral paralysis	10	10	18	38	Mongol	—	76	11	87
Cerebral paralysis	13	49	8	70	Ateleiosis	1	—	—	1
Following meningitis	4	8	—	12	Spinal paralysis	3	10	2	15
Following injury to head	7	8	—	15	Achondroplasia	1	—	—	1
Hydrocephaly	5	10	2	17	Blind and partially blind	4	—	3	7
Microcephaly and sub-microcephaly	11	56	12	79	Deaf	1	7	2	10
					Total	272	655	101	1,028

*Under the heading "Primary Amentia, etc.," are included cases of disseminated sclerosis, cerebral tumour, chorea, and cerebral syphilis not accompanied by epilepsy or paralysis.

In addition there were 16 moral imbeciles making a grand total of 1,044. During the same period 117 cases were medically examined and deemed to be not defective under the provisions of the Mental Deficiency Act, 1913.

Midwives Act, 1902.

The number of midwives with London addresses is 5,763, of whom 579 notified their intention to practise in the county during the year. Of these, 375 were enrolled as a result of examination, 138 held a certificate of training, granted before the passing of the Midwives Act, and 66 were in *bona fide* practice for at least a year before the Act was passed. During the year the inspectors of midwives made 1,069 inspections.

The number of births notified under the Notification of Births Act, 1907, by certified midwives during the period under review was 43,450, and 3,540 notifications were received by the Council that medical aid had been advised by certified midwives. The occurrence of 674 stillbirths was reported, the foetus in 370 cases being macerated and in 254 cases not macerated; in 50 cases no particulars were given. During the year inquests were held on the bodies of 17 women and 110 children, upon whom certified midwives had been in attendance.

Under the order made by the Council extending the provisions of Section 55 of the Public Health (London) Act, 1891, to ophthalmia neonatorum, 773 notifications were received, 277 being in respect of cases in the practice of certified midwives.

In all, 278 cases of puerperal fever were notified in the county, and the Registrar-General records 153 deaths from puerperal septic disease. Of the notified cases 104 proved fatal, the remaining 49 deaths recorded by the Registrar-General not having been notified. If these 49 cases be added to the 278 notified cases, a total of 327 cases is obtained, 90 of which occurred in the practice of certified midwives. The Registrar-General also records 237 deaths from other accidents of childbirth, of which 27 were in the practice of midwives.

The establishment of *prima facie* cases of malpractice, negligence or misconduct on the part of 12 midwives was reported to the Central Midwives Board, the names of 5 being subsequently removed from the roll of midwives. Of the remainder, 6 were censured, one of whom was at a later date in the year, struck off the roll, and the remaining midwife succeeded in proving her innocence of the charge brought against her. Another midwife was convicted of drunkenness, her name being subsequently removed from the roll. One woman was convicted of having practised midwifery when not certified,

and was bound over. Letters of caution were addressed by the Council to women who were practising in a similar manner.

During the year, 183 premises were registered as lying-in homes.

Maternity and Child Welfare.

In 16 boroughs voluntary schemes are in operation; in 1 an official scheme; and in 11 both official and voluntary schemes. The work of the Council's inspectors under the Midwives Act stands in close relation with that of the several maternity and child welfare centres, and the Local Government Board recognise this work for purposes of grant.

Census of Homeless Persons.

In accordance with the practice which has obtained for several years, a census of homeless persons in the County of London was taken on the night of 3rd March, 1916. The area covered was practically coincident with that of previous censuses. The night was clear and bright, but very cold. Few people were found in the streets, and a visit to the great railway termini, with a view to ascertaining whether soldiers were experiencing any difficulty in obtaining accommodation had a negative result, as very few soldiers were seen. As on previous occasions, the homeless persons were mostly found in the more centrally-situated portions of the area covered. Persons sheltering under arches or on staircases were found only in that portion of the Eastern district bordering on the City of London: There were 7—all females—the lowest number yet recorded.

The homeless persons in the streets also showed a considerable reduction. On the night in question there were 21 men and 16 females, as compared with 108 men and 56 women in 1915, and 296 men and 76 women in the early part of 1914 before the war.

The common lodging-house population was less numerous than on any previous occasion, there being 15,254 inmates, as compared with 17,305 in 1915 and 20,173 in the early part of 1914; and the inmates of London casual wards fell from 179 in 1915 to 123.

In the free shelters and labour homes not licensed as common lodging-houses there was also a great reduction in the number of inmates. A labour home with accommodation for 200 men had but 23 beds occupied, whilst at a large free night shelter only 63 of the 360 beds were made use of.

Work of the Chemical and Analytical Branch of the Public Health Department.

The work conducted at the Council's laboratory, 2, Savoy Hill, includes the examination of samples received under the Fertilizers and Feeding Stuffs Act, 1906, the Petroleum Acts, London County Council (General Powers) Act, 1912, and the London Building Acts. A considerable portion of the work consists in the examination of materials used in connection with works or contracts undertaken by or for the Council, and samples of stores supplied. Special investigations are made in connection with complaints concerning materials in use. Samples of the meals and milk supplied to necessitous children at the Council's schools are examined periodically. Of 181 samples of milk examined during the year, 29, or 16 per cent., were found to contain added water. This represents an increased percentage of unsatisfactory samples as compared with previous years. The results of an extended inquiry into the quality of milk meals have become even more unsatisfactory at the present time (May, 1917). The medical officers of the metropolitan boroughs in which such unsatisfactory samples are found, are communicated with in order that further samples may be examined by the public analysts under the Sale of Food and Drugs Act, with a view to proceedings being taken where necessary. In a number of these cases proceedings have been taken and fines imposed.

In addition to the work done at the central laboratory, systematic analyses of sewage effluent and sludge have been made at the outfall laboratories. The special examination of the River Thames, investigations in connection with the bacteriological treatment of sewage, and other questions arising in connection with sewage treatment have also been dealt with at these laboratories.

TABLE I.
COUNTY OF LONDON.

Vital statistics for the several metropolitan boroughs and the County of London in the year 1916.
(Rates per 1,000 of civil population),

		Estimated civil population, 1916.	Births. (a)	Deaths.	Infant mortality (per 1,000 births).	Measles.	Scarlet fever.	Diph- theria.	Whoop- ing- cough.	Typhoid fever.	Diarrhoea and Enteritis age 0-2 (per 1,000 births).	Phthisis.	Cancer.	Cases of notifiable infectious disease (b)					
														Scarlet fever.	Diph- theria.	Typhoid fever.	Erys- ipelas.	Puerperal fever (per 1,000 births).	Cerebro- spinal fever.
Western	Paddington ...	130,668	19.1	14.4	94	.03	.03	.07	.17	.02	21.4	1.38	1.58	2.1	1.6	.16	.8	3.0	.07
	Kensington ...	152,144	18.3	15.4	86	.04	.01	.06	.07	.01	13.2	1.26	1.54	1.4	1.0	.13	.6	3.6	.14
	Hammersmith ...	117,965	20.3	14.2	86	.21	.03	.13	.10	.01	13.1	1.51	1.23	1.8	1.8	.05	.4	3.1	.03
	Fulham ...	149,428	23.1	13.3	88	.12	.03	.13	.21	.01	17.0	1.41	1.22	1.9	2.1	.03	.5	5.9	.08
	Chelsea ...	57,298	18.2	16.9	94	.07	—	.26	.30	.02	17.7	1.48	1.57	1.9	1.8	.14	.5	1.8	.09
Northern	Westminster, City of	132,853	12.4	13.9	87	.07	.01	.10	.06	.04	16.1	1.29	1.50	1.3	1.1	.18	.4	4.5	.08
	St. Marylebone ...	98,573	16.9	15.7	100	.07	.02	.06	.21	.03	16.5	1.54	1.52	1.2	1.4	.13	.7	—	.08
	Hampstead ...	81,470	13.1	10.7	65	.01	—	.05	.10	—	5.2	.74	1.41	1.7	1.2	.07	.5	1.7	.06
	St. Pancras ...	196,812	21.2	15.5	85	.21	.05	.12	.20	.03	10.8	1.78	1.40	2.2	2.2	.18	.6	4.0	.10
	Islington ...	309,359	21.6	15.7	89	.27	.06	.15	.19	.03	15.3	1.56	1.37	2.1	1.9	.10	.5	2.9	.13
Central	Stoke Newington ...	49,776	18.5	13.0	61	.02	.08	.12	.02	—	9.0	1.39	1.37	1.7	2.2	.06	.4	4.0	.14
	Hackney ...	209,636	22.0	13.8	84	.19	.02	.12	.18	.01	13.9	1.43	1.21	2.0	1.7	.13	.8	1.6	.11
	Holborn ...	38,161	15.6	17.6	97	.08	.05	.26	.10	—	16.9	1.97	1.10	1.7	2.6	.24	.6	3.1	.08
	Finsbury ...	74,230	24.7	19.4	123	.50	.03	.18	.16	—	19.5	2.16	.79	2.7	2.5	.05	.8	2.0	.26
	London, City of	20,113	5.7	11.6	120	—	—	—	.05	—	—	1.34	1.24	1.7	1.2	.10	.3	8.0	.10
Eastern	Shoreditch ...	99,932	27.4	18.3	123	.34	.10	.20	.36	.05	32.2	2.20	1.01	3.2	3.1	.11	1.3	1.0	.18
	Bethnal Green ...	115,552	27.3	15.3	106	.19	.04	.20	.38	.02	22.4	1.73	.91	3.4	3.3	.16	1.4	4.7	.16
	Stepney ...	258,395	25.6	14.9	91	.27	.05	.15	.29	.03	16.9	1.90	.93	2.8	3.6	.14	.9	1.4	.12
	Poplar ...	155,095	27.0	16.3	103	.32	.05	.18	.28	.03	23.2	1.61	.92	2.0	2.2	.12	1.0	3.7	.12
	Southern	177,166	25.4	17.3	99	.47	.03	.23	.25	.01	17.8	2.24	1.18	1.7	2.5	.07	1.0	3.3	.14
Southern	Southwark ...	113,661	28.0	17.4	101	.37	.04	.24	.13	.02	16.2	1.71	1.12	2.2	2.3	.10	.9	.6	.15
	Bermondsey ...	283,729	20.9	15.2	90	.17	.03	.16	.17	.00	19.7	1.52	1.37	1.7	1.5	.06	.4	3.3	.11
	Lambeth ...	159,402	21.8	13.9	84	.17	.04	.17	.19	.01	14.8	1.44	1.24	2.2	2.3	.09	.6	2.6	.10
	Battersea ...	310,858	18.2	11.9	80	.08	.02	.18	.16	.02	10.7	1.05	1.29	2.2	1.7	.15	.5	3.3	.09
	Wandsworth ...	249,749	22.5	13.7	73	.09	.04	.12	.13	.01	14.2	1.61	1.09	2.0	1.9	.05	.7	1.8	.04
London	Canterbury ...	107,696	24.9	15.5	88	.31	.05	.12	.13	.01	18.2	1.63	1.30	2.8	2.4	.06	1.0	1.7	.06
	Deptford ...	94,452	23.1	15.2	83	.53	.04	.23	.24	.06	16.0	1.42	1.13	2.0	3.9	.15	.6	2.5	.06
	Greenwich ...	162,901	18.9	11.9	73	.09	.01	.12	.17	.02	13.4	1.07	1.24	1.9	1.5	.07	.4	1.8	.06
	Lewisham ...	130,313	21.6	13.1	69	.18	.03	.09	.25	.01	7.2	1.30	1.02	1.7	2.0	.07	.7	4.9	.05
	Woolwich ...	4,237,387	21.5	14.7	89	.19	.03	.15	.19	.02	16.2	1.53	1.24	2.1	2.1	.11	.7	2.8	.10

(a) These rates are not calculated on the civil population shown, but have been supplied by the courtesy of the Registrar-General.

(b) Three cases of small-pox were notified, one each in Fulham, Bermondsey and Woolwich; the two latter cases were, however, subsequently found not to be small-pox.

TABLE II.

COUNTY OF LONDON.

Statistics of the administrative work carried out during the year 1916.

Sanitary Authority.	Cow-sheds.		Slaughter-houses.		Offensive trades.		Smoke nuisances.		Under-ground rooms.		Over-crowding.		Housing of the Working Classes Acts.				Houses let in lodgings.		Common lodging houses.		Cleansing of persons and rooms.			Water supply.		Milk-shops.		Ice cream premises.		Other food places.		
	No. licensed.	No. of inspections.	No. licensed.	No. of inspections.	No. licensed.	No. of inspections.	Observations.	Complaints.	No. illegally occupied.	No. closed or otherwise remedied.	Instances found.	No. remedied.	Houses inspected.	Representations made.	Closing orders.	Remedied without closing orders.	No. on register.	No. of inspections.	Prosecutions.	Houses licensed.	Authorised lodgers.	Adults.	Children.	Premises or rooms.	Townment houses extra supply.	No. on register.	No. of inspections.	No. on register.	No. of inspections.	No. of places.	No. of inspections.	
City of London	—	—	—	—	—	—	218	18	—	—	—	2	2	112	—	—	—	197	1,554	—	1	455	2	46	12	—	—	163	201	1,093	4642	
Battersea	2	4	3	436	3	4	115	5	—	26	26	28	28	2,061	—	—	—	82	82	—	2	147	475	1,773	59	90	146	550	194	338	168	499
Bermondsey	—	—	1	56	13	115	26	16	16	—	—	8	8	490	—	—	—	223	361	—	4	1,196	22	864	1,630	1	286	683	102	80	1,005	5,546
Bethnal Green	12	63	3	18	1	1	60	2	2	—	—	141	141	230	31	16	—	254	985	—	9	453	17	—	5,001	—	254	985	108	254	323	1,595
Camberwell	7	118	7	104	2	7	64	5	14	—	—	51	51	—	—	—	—	292	341	—	5	466	54	2,110	101	—	560	1,340	276	421	188	376
Chelsea	—	—	—	25	—	—	—	—	—	—	—	—	—	—	—	—	4	—	—	—	4	236	42	96	722	—	105	145	30	36	102	145
Deptford	—	—	—	55	5	20	5	1	1	—	—	16	16	1,784	2	2	—	280	578	—	8	1,231	—	1,604	925	—	253	408	138	184	121	95
Finsbury	12	8	12	78	1	10	38	15	5	7	7	24	24	75	—	—	—	1,073	5,203	—	5	368	18	—	786	1	180	216	66	88	257	333
Fulham	—	—	—	66	—	—	—	—	—	—	—	46	46	92	—	—	92	—	—	—	2	98	2	66	185	25	104	432	79	203	—	780
Greenwich	3	12	5	33	3	3	26	2	—	—	—	20	20	—	—	—	—	247	148	—	3	121	—	431	112	—	139	117	104	66	46	1
Hackney	13	190	19	293	1	12	28	36	—	—	—	25	25	19	—	12	7	2,707	709	—	6	450	53	1,234	—	—	280	1,696	—	—	—	—
Hammersmith	—	—	7	224	—	—	61	17	7	—	—	—	—	—	—	—	—	405	705	6	—	—	4	201	33	63	95	256	72	164	476	1,007
Holborn	—	—	1	2	—	—	20	—	6	11	11	14	14	—	—	—	—	627	907	—	19	1,320	47	—	75	—	163	263	58	47	—	1,832
Islington	4	42	24	1,332	7	114	55	3	3	16	16	23	23	1,723	—	—	—	2,064	7,337	1	13	625	155	1,468	347	18	190	1,220	188	179	715	1,239
Kensington	1	50	8	373	—	—	604	7	9	4	4	23	23	—	—	—	—	372	4,464	—	5	645	—	—	897	8	252	1,512	—	—	—	—
Lambeth	6	14	15	192	3	36	—	—	33	38	38	58	58	—	—	—	—	8	23	—	1	30	—	—	11	—	145	363	—	2	62	156
Lewisham	10	—	11	167	—	—	15	3	3	—	—	6	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paddington	1	4	5	261	—	114	203	21	—	—	—	80	68	99	1	1	—	1,404	6,513	4	5	221	—	—	117	—	113	160	72	80	331	982
Poplar	10	38	12	97	6	32	17	—	—	—	—	127	127	11	5	5	6	1,214	5,538	—	7	994	158	2,824	2,305	—	293	871	93	140	273	1,082
St. Marylebone	5	18	3	5	2	2	685	3	—	4	4	17	17	—	—	—	1	1,167	2,026	—	10	1,102	3,077	2,193	734	15	201	75	117	6	695	695
St. Pancras	5	64	12	226	2	59	69	16	4	28	28	39	39	1,042	15	9	1,027	2,364	4,389	—	5	504	400	4,277	1,041	13	242	581	284	145	—	4,530
Shoreditch	3	18	3	4	1	4	5	—	4	6	6	160	160	1,226	—	—	—	283	754	—	8	507	—	—	272	3	283	754	61	67	258	636
Southwark	3	36	5	59	4	18	9	5	7	—	—	207	207	—	—	—	—	1,282	2,415	22	28	3,228	73	2,710	12,882	14	527	1,399	202	18	296	865
Stepney	30	52	5	11	6	26	58	4	16	30	30	237	237	—	—	34	—	761	1,172	—	37	5,971	267	—	1,274	5	477	1,838	144	305	409	1,286
Stoke Newington	1	21	4	14	—	—	60	2	1	—	—	1	1	384	—	—	—	259	259	—	1	37	5	272	100	—	65	130	19	38	—	380
Wandsworth	11	61	13	242	5	22	41	7	2	—	—	45	45	—	—	—	—	292	1,241	—	6	185	16	2	227	—	405	755	343	466	224	264
Westminster	1	26	—	—	—	—	1,728	27	53	15	15	53	53	10	4	1	4	1,230	3,136	—	7	2,003	56	642	189	31	452	1,122	150	293	2,300	4,026
Woolwich	15	51	9	36	—	—	6	5	5	7	7	111	111	5,736	6	4	1	430	553	—	18	518	59	1,065	213	2	96	103	46	102	64	141

NOTE.—In the columns above a dash signifies a nil return.

Common lodging houses: Licensed number, 252; lodgers, 24,308; visits-day, 21,190, night, 1,028; convictions, 1; penalties, 15s.

Seamen's lodging houses: Licensed number, 11 in Poplar, 408 lodgers; 34 in Stepney, 829 lodgers; visits-day, 1,422, night, 193; convictions, 17; penalties, £313.

Prosecutions: Milkshops—Bethnal Green, 5, Chelsea 3, Hammersmith, 1, St. Pancras, 1, Stepney, 1, Woolwich 2; overcrowding—Poplar, 1, Southwark, 2.

* Continuous supervision during the regular hours of slaughter. When slaughtering is required at other hours, the Slaughterhouse Bye-laws provide for notice being given to the Medical Officer of Health in order that arrangements may be made for an Inspector to be present.

† In addition to these premises, there are Cold Stores, Butchers' Shops and the Central Meat Market, all of which are kept under constant supervision.

REPORT OF THE SCHOOL MEDICAL OFFICER (Dr. W. H. HAMER) FOR THE YEAR 1916.

PART II.—EDUCATION.

INTRODUCTORY NOTE.

In the Annual Report for 1915 some account was given of difficulties encountered up to the end of that year as the result of the war, and it was stated that despite these difficulties the standard of efficiency previously attained had not been materially lowered. The difficulties have not lessened during the past year, though there was, fortunately, during 1916, no such suddenly developed difficulty as had to be met in the early days of the war, when twenty school doctors volunteered for war service. As stated in last year's report, thanks to the special effort made by the older men and the women already employed as school doctors, it has been possible to engraft successfully into the service new temporary officers (women or older men), and to carry out with a considerable measure of success the work of medical inspection.

It has unhappily to be recorded that two of the Council's assistant medical officers, Dr. Walsh and Dr. Owen Peters, have lost their lives while on Military Service.

The difficulty with regard to securing the services of doctors and dentists for the treatment of children in the hospitals and centres included in the Council's scheme became from time to time very acute during the year under review, but it has hitherto been successfully surmounted.

There was at first great difficulty in retaining a sufficient staff of nurses, but this was largely met, so far as the Council's own nurses were concerned, when the Council decided, in February, 1915, that in the interests of the public health, the staff must not be further depleted. Towards the end of 1916, it became clear that the position must be further safeguarded, and the Council, in February, 1917, on an urgent recommendation by the Committee concerned, decided to pay war wages to its permanent nurses, and to raise the rate of pay of the temporary nurses. Following upon this, it was decided to make a similar payment of war wages to assistant organisers. The work of following up has been rendered particularly difficult by reason of the large reduction in the number of voluntary workers on care committees. Special efforts have been made by the Central Care Sub-Committee to cope with this difficulty, and the following up of the children has, on the whole, suffered less than it was at one time anticipated might be the case. Special attention has necessarily been paid to schemes such as that of the Heckfield-place area, whereby the care committees of adjacent schools have grouped themselves together, with a view to effecting economies in home visiting, and thus carrying on the work of following up the more urgent cases, in each school in the group, with a smaller total number of workers.

During the year, 256,847 children in the age groups were brought before the school doctors in elementary schools, and of this number 88,415 were found to require treatment for one or more defects. A parent was present in 55.2 per cent. of the cases examined. This percentage is lower than in 1914, when it was 67.8, the decrease being due to the number of mothers who are now working at munition factories, etc.; the falling off occurred, however, chiefly between 1914 and 1915, the percentage in the latter year being 56.4. Medical inspection.

A further 2,487 children in the age groups were inspected in special schools, and 39,375 elementary school children not in the age groups were specially examined, giving a total of 298,709 children seen during the year at primary inspections. In addition, the school medical staff inspected 4,781 children for scholarship awards; 8,721 students in secondary schools and training colleges; and 14,296 children in connection with special defect in special schools.

As already mentioned in last year's Annual Report, the Council had in November, 1915, approved the substitution of a preliminary inspection of entrants, followed by a detailed inspection of those apparently ailing. This resulted in economy equivalent to the time of 4½ doctors and corresponding nursing staff. It should be noted, however, that under the new procedure only 22.7 per cent. of all the entrants were found to require treatment as compared with 35 per cent. in previous years.

The results of inspection of the older children showed no falling off in the improvement, which was such a marked feature in the previous year, in their general condition. A detailed analysis of these results has been made by Dr. C. J. Thomas, and is given on p. 23.

With regard to medical treatment, the work previously undertaken has been continued, and, in addition, two new dental centres have been provided, and the provision at certain of the existing centres has been slightly increased. There are, however, some dental and nursing treatment centres which have been authorised by the Council and Board of Education and which are not yet opened, but there is every prospect that most of them will be opened during 1917. The number of children who received treatment under the Council's arrangements was 111,456, as compared with 103,139 in 1915. Details as to the numbers of cases treated under each class of ailment, and of the results of treatment are given on page 28. Medical treatment.

181,035 re-inspections were made of children who, at primary inspections, had been found to be ailing. As a result, it was found that 41.7 per cent. of the children had been brought under treatment. Re-inspection.

within six months, as compared with 49.6 per cent. in 1914. This falling off is the result of the pre-occupation with other National interests of hospitals, doctors, parents and voluntary helpers. The "leakage" is greatest in conditions requiring operative interference.

Co-operation
between
Maternity
Centres and
School
Medical
Service.

Closer co-operation has been established between the authorities of maternity centres and the school medical service. In many instances arrangements have been made for the record cards of children who have attended the maternity centres to be passed on to the Council when the children attend the elementary schools. In two cases, the school treatment centre premises and equipment are also used by the maternity centres for the treatment of the mothers and of children under school age. This arrangement, in addition to being an economical one, has the further advantage that the centre becomes fully known to the parents, and it enables more complete records to be kept of the children's medical history. Similar schemes of co-operation are nearly completed at four other centres.

Registration
of atten-
dances at
Treatment
Centres.

In 1914, the Board of Education agreed to recognise, under certain conditions, the attendances of children at treatment centres as school attendances. In order to satisfy the requirements of the Board in connection with the registration of these attendances, a large amount of work was undertaken by the teachers and the officers at the treatment centres. In view of the relatively small amount of grant received, compared with the administrative expenses, representations were made during the early part of this year to the Board with the object of simplifying the procedure. As a result of conferences between officers of the Board and of the Council, arrangements have now been made whereby the teachers have been relieved of all clerical work in connection with the registration, and a considerable saving in postage has been effected.

Government
grant.

The grant awarded by the Board of Education under Part I. of the Medical Grant Regulations for the year ending 31st March, 1917, amounted to £47,736 1s. 0d., and was again assessed at the maximum rate, representing 50 per cent. of the Council's expenditure on medical inspection and treatment and ancillary work. As regards the rate at which the grant has been assessed, the Board direct attention to their letter of the 28th March, 1916, and state that the warning contained therein represents the considered intention of the Board, and that they will not be prepared to continue to pay grant at the maximum rate unless such improvements and extensions as they may deem to be necessary are carried out when circumstances permit.

Open-air
schools.

The open-air schools at Birley House and Shooters Hill were both kept open throughout the year. The Kensal House school for tuberculous children has been continued, and some of the play ground classes were, as in the past, held in the public parks.

Special
schools.

In all, 5,422 children were examined with a view to admission to special schools; of these, 2,813 were certified as suitable for admission, and the remainder were either returned to the elementary schools, or found to be unsuitable for any of the Council's institutions. The results of the periodical re-examination of children in the schools for the mentally and physically defective, are shown in the report.

Personal
Hygiene
scheme.

The Council's cleansing schemes have been in operation throughout the year. There are now 24 stations, and at 20 of these treatment has been extended by the inclusion of scabies. 988,288 examinations of children were made, in 24,705 cases the children were found to be verminous; 11,314 children were cleansed by the parents, and 13,391 children were cleansed by the Council and the borough councils. 3,213 children, suffering from scabies, were given a total of 17,583 baths. This is a large increase on the number shown last year, and the cause is attributed to infection by soldiers from the front. Verminous children attending schools in outlying districts are now brought within the scope of the scheme, and are conveyed to the cleansing stations by means of ambulances. In some instances, moreover, borough councils are now giving special facilities for hot baths to be obtained by school children and members of their families.

Infectious
diseases.

The year 1916 stands out as specially remarkable for diminished prevalence among school children of infectious diseases as a whole. In the case of scarlet fever the figures are particularly noteworthy; indeed, during two weeks in August, and again, in three weeks in December, the scarlet fever cases notified in the whole of London descended below 100, being only about one-third, or less than one-third, of the average for corresponding weeks of the last five years; much more markedly below the figures of the early years of notification; and representing prevalence of the disease presumably far below that of 50 years ago. This very exceptional behaviour of the figures merits careful examination and on pp. 35-37, an attempt has been made to study some of the influences which may have been operative in producing so striking a result. The effects of altered nomenclature, of climatic influence, and of flea prevalence are referred to, and the question as to relationship of scarlet fever and diphtheria is also considered. As regards flea prevalence it was, of course, realised 8 years ago, when the close similarity of the seasonal curves of fleas and scarlet fever was first commented upon, that it was desirable to ascertain whether the maximum for fleas did or did not ante-date that for scarlet fever. The records show that it has done so each year. Moreover, study of the fluctuations in annual prevalence for the eight years is now seen to yield a striking correspondence in the yearly variations of the flea and scarlet fever curves.

The importance of the part played during the last half century by hospital isolation, in limiting the mischief wrought by scarlet fever, is taken for granted—the discussion in detail of this influence is far too large a question to enter upon here—but it is pointed out that it has been, indeed, a fortunate circumstance that, during the year under review, the low level reached by scarlet fever has freed many beds in the hospitals of the Metropolitan Asylums Board for use for other purposes.

Measles was for the most part at a low ebb, but showed signs of increasing in prevalence particularly in South-East London, towards the end of the year. The figures relating to notified cases of cerebro-spinal fever and poliomyelitis somewhat exceeded the average for the preceding 5 years, but were lower than in 1915.

The Results of Medical Inspection.

The entrant children were not, as formerly, examined in detail; all entrants were submitted to a preliminary inspection by the school doctor, and only those selected by him were summoned for detailed inspection, and the parents informed. The normal number of entrants in an ordinary year is about 85,000; during the present year 84,088 entrants were inspected under the new procedure, and out of these 13,223 boys and 12,746 girls—i.e., 30 per cent. were in fact selected for detailed inspection. There must necessarily be some apprehension that by this method a certain number of children, who may be the subject of hidden defect, may escape notice. A comparison of the results with those of the years immediately preceding, shows that there has been good ground for apprehension on this point, and it will be necessary to revert to the former practice of examining each entrant infant in detail as soon as the conditions of National Service make it possible to do so. In 1914, 94,723 entrants were examined in detail, and out of these 33,532, or 35 per cent., were found to have defects necessitating advice. In 1915, 83,419 entrants were examined, and 29,249, or again, 35 per cent., were referred for treatment. During the present year, out of 84,088 entrants originally presented to the school doctors for preliminary inspection, only 19,076, or 22·7 per cent. were finally found to require medical advice. The difference between 22·7 per cent. and 35 per cent. is too great to be explained on any other ground than that of a less effective method of procedure during 1916, and although it might be that most of the 12 per cent. or so, of children who were missed, represented the slighter and less serious cases, and therefore the alteration in procedure may be looked upon as justifiable as a war measure, it is not safe to assume that every child among the 12 per cent. was free from serious defect of the internal organs such as the heart and lungs; the more so as the superficial defects of skin, ear, nose, and eyes which are often slight, would nevertheless be detected at the preliminary inspection.

Altered procedure with regard to inspection of infants.

A closer analysis of the figures bears out this view; while most cases of anaemia and malnutrition appear to be detected at preliminary inspections, many cases of ear disease, tuberculosis, and other diseases of the lungs do not come to light. Thus in 1915 ear disease was found in 2·6 per cent. of the infants, while in 1916, only one-half of this proportion—viz., 1·3 per cent. was detected. Lung complaints in 1915 were found in 6·5 per cent., but in 1916, only in 2·4 per cent.

With regard to the routine examination of the older children, 42,965 boys and 42,811 girls were inspected at the intermediate age, and 43,301 boys and 43,682 girls as leavers.

Routine inspection of older children.

The following table gives the percentages of boys and girls at each older age group referred for treatment in the present and previous years:—

		Intermediate Age Group.		Leavers.	
		Boys.	Girls.	Boys.	Girls.
1913	..	39·0	42·0	42·0	43·0
1914	..	42·1	42·3	40·8	43·1
1915	..	34·2	40·2	38·7	40·5
1916	..	40·0	41·2	39·2	40·2

Owing to the new and urgent claims on the parents' time, a falling off was experienced in 1915 in the numbers of parents meeting the doctor at the time of inspection. It is satisfactory to note that the falling off this year, as compared with last, is so small as to be almost negligible. In 1915, the percentage of parents present was 56·6; this year, it was 55·2.

Attendance of parents at the inspections.

The figures still show greater solicitude on the part of the parents in regard to the entering babies, in fact, the falling off in the attendances of the mother in these cases, as compared with pre-war experience, is very slight, and this may be looked upon as further argument for a return as soon as possible to the former procedure of complete inspection.

Percentage of Parents Present at Examinations.				
Entrants Examined in Detail.		Intermediate Age Group..	Leavers.	Total.
Boys	73·2	54·9	40·7	55·2
Girls		61·7	52·2	

It was pointed out last year that the analysis of the figures relating to the clothing and footwear, to nutrition and to cleanliness, affords important indications with respect to the home circumstances of the children, and, since every one of the quarter of a million children examined each year is placed in one of these categories, which may be described as good, fair, and poor, it is possible to use the figures as indices of the effect of economic conditions on the life of the people. Dr. C. J. Thomas has analysed the figures for the present year, together with those of the three previous years, and they are given on page 24, *in extenso*, for the two older age groups.

Indices of the effects of economic conditions.

It is possible to see at a glance that the steady improvement of previous years in clothing and footwear and in cleanliness has been fully maintained during the present year, and that in regard to the nutrition of the children there has been no receding from the high-water mark reached last year. This fact is presumably attributable in some measure to improved economic conditions, but is no doubt largely due to the maintenance of the medical and cleansing work now carried on for some years past in the schools.

These splendid results, which show that none of the horrors of war have been allowed to affect the general condition of the children, or to interfere with the growth of that solicitous care for their welfare, which has distinguished recent years, are a matter for profound joy and satisfaction. They may well encourage us to face the future with complete confidence, for a community that can thus protect

its children while putting forth the most prodigious martial efforts the world has ever seen, must be sound to the core.

		CLOTHING AND FOOTGEAR.						NUTRITION.					
		Intermediate age group.			Leavers.			Intermediate age group.			Leavers.		
	Year.	Good.	Fair.	Poor.	Good.	Fair.	Poor.	Good.	Fair.	Poor.	Good.	Fair.	Poor.
Boys	1913	47.5	45.4	7.1	49.1	45.4	5.5	22.0	62.2	15.8	26.4	58.9	14.7
	1914	47.8	45.9	6.3	52.6	41.9	5.5	19.9	70.1	10.0	26.4	61.1	12.5
	1915	51.4	44.6	4.0	52.5	43.4	4.1	21.2	69.8	9.1	29.0	63.8	7.2
	1916	52.4	44.1	3.5	54.3	42.2	3.5	23.6	67.0	9.4	29.4	63.8	6.8
GIRLS.	1913	51.4	43.9	4.7	51.8	44.8	3.4	25.1	61.4	13.5	30.6	55.1	14.3
	1914	51.6	45.0	3.4	55.9	40.8	3.3	22.8	68.2	9.0	29.9	58.6	11.5
	1915	55.0	43.0	2.0	58.2	40.1	1.7	23.3	69.0	7.7	32.8	60.9	6.3
	1916	55.6	42.8	1.6	58.9	39.8	1.3	26.4	65.6	8.0	31.4	62.3	6.3

		CLEANLINESS OF HEAD.						CLEANLINESS OF BODY.					
		Intermediate age group.			Leavers.			Intermediate age group.			Leavers.		
	Year.	Clean.	Nits.	Verminous	Clean.	Nits.	Verminous	Clean.	Dirty.	Verminous	Clean.	Dirty.	Verminous
Boys ...	1913	87.1	12.3	0.6	87.3	12.3	0.4	72.0	25.1	2.9	73.1	24.3	2.6
	1914	86.9	12.6	0.5	88.5	11.2	0.3	75.3	22.9	1.8	75.1	23.0	1.9
	1915	88.4	11.4	0.2	90.9	8.9	0.2	76.6	22.0	1.4	77.9	20.9	1.2
	1916	89.2	10.6	0.2	90.6	9.2	0.2	79.3	19.7	1.0	79.2	19.8	1.0
GIRLS ...	1913	67.3	30.3	2.4	67.2	30.4	2.4	73.7	24.2	2.1	74.8	23.1	2.1
	1914	66.3	31.6	2.1	68.8	29.3	1.9	77.8	20.8	1.4	78.0	20.7	1.3
	1915	69.2	29.4	1.4	72.6	26.2	1.2	77.6	21.4	1.0	80.7	18.5	0.8
	1916	68.8	29.9	1.3	70.8	28.1	1.1	80.5	18.8	0.7	81.7	17.8	0.5

The continued improvement in the condition of the children at medical inspections, as regards cleanliness, is a testimony to the success of the arduous work of the school nurses. In a later portion of this report, an account of their work under the cleansing scheme is given. There it will be seen that owing in part, to war conditions, a very large increase indeed has taken place, this year, in the number of children brought to the cleansing stations.

In the last Annual Report of the Chief Medical Officer of the Board of Education, a table was given in which London was compared with 39 other areas of various types. Were the examinations in London strictly comparable with those carried out in other areas, a very serious excess of uncleanness among the children of the Metropolis would thus be revealed. However, the examinations are not comparable. In most country districts the inspecting doctor is not aided by a nurse, with the result that the fraction of his time spent on investigating the condition of the children as regards cleanliness is infinitesimal, whereas, in London, the estimation of this condition is a main part of the work of the nurse in preparation for inspection, and this single point thus receives in London as much attention as is paid in many of the compared districts to the whole twenty-odd items in the Schedule of Medical Inspection. Then, too, the parents are warned of medical inspection, and the children come to school newly scrubbed, with shining morning faces and clad in fresh raiment for the occasion, while, when a nurse makes a preliminary visit, nothing of this kind occurs. Sir George Newman recognises the justice of the former explanation, as he says, in his comment upon the table: "the lower percentage of clean conditions which obtained in London is due probably to the acknowledged requirements of a somewhat higher standard than exists elsewhere in the country."

The Chief Medical Officer gives no clue to the identity of the areas with which London is compared, but a random examination of reports by school medical officers shows quite clearly the justice of the foregoing contentions.

Thus Liverpool pays very great attention to the assessment of uncleanness, as is evidenced by the fact that head cleanliness is there classified under seven categories, and body cleanliness under five. Note is also made in this city, as in London, of the number of children marked by flea-bites. The Liverpool figures are, therefore, likely to be fairly comparable with the London figures; they were for 1915:—

	London.	Liverpool.		London.	Liverpool.
Head—Clean ..	81.66	65.01	Body—Clean ..	83.29	79.6
Nits ..	17.58	34.99	Dirty ..	16.71	19.42
Verminous ..	7.6	2.58	Verminous ..	3.32	.98

*It is evident that children with pediculi are also included in the percentage of children with nits.

In the Wolverhampton (1915) report, children with clean heads are given as 57·3 per cent., while those with nits or vermin equal 42·7 per cent. With regard to the body only 0·9 per cent. are given as dirty, although it is expressly stated that the other 99·1 per cent. include those only "fairly clean." The school medical officer here further states that "unfortunately the results of unexpected examinations are never the same as those of the routine examination, when the parent has notice beforehand."

In the Derbyshire (1915) report, it is stated that 93·7 per cent. of the children have clean heads, and only 6·3 per cent. have nits and vermin, "but, in regard to visits by school nurses, without any notice being given to the parents, 15·1 per cent. have dirty heads." Similar statements also occur in the Cheshire and Brighton (1915) reports.

It is clear, therefore, that the London practice, under which the estimation of cleanliness is made by the nurse at a preparatory visit of which the parents have no knowledge, represents accurately the real conditions, and necessarily gives figures more to be relied upon than those obtained at visits of the school doctor, of which the parents are warned.

Nutrition and Malnutrition was the subject proposed for special consideration, this year, by the Medical Officer of the Board of Education. The conditions under which the work has been carried on during the year have not admitted of extensive special inquiry upon this subject, but Dr. C. J. Thomas has made a brief analysis of the facts ascertained. In addition to the three groups—good, fair, and poor—as regards nutritional state, a fourth group is added—namely, those who are so under-nourished as to be placed in the category commonly designated by those engaged in hospital out-patient practice as "wasting." Children suffering from this degree of mal-nutrition are rare at the present time in the schools. The attention now paid to the children is so great that conditions leading to emaciation are discovered at an early stage, and such children, presented to the school doctors as special cases, are rapidly referred to appropriate agencies for relief, and are only exceptionally discovered at the routine inspection of the age groups. During the past year, 1,099 children, or 0·4 per cent. of those inspected, were placed in this fourth class. The weights and heights of a group of these children showed an average deficit, in boys, of 4·7 kilograms and 8·9 centimetres from the average of their age, and in girls of 6·2 kilograms and 9·7 centimetres. About twice as many of the younger, as compared with the older, children examined were placed in this category, but the incidence was at each age identical upon the sexes. The proportion of children thus suffering from malnutrition was slightly lower than in the previous year, when 0·51 per cent. were placed in this group. Each child so reported upon is referred for special observation and care, and in the Annual Report for 1913, a special study of nearly a thousand such cases was given.

In that report, the close connection of tuberculosis with malnutrition was pointed out, and in 19·27 per cent. of the cases tuberculosis could be definitely recognised, while in a large additional percentage, its presence was suspected. It was there stated that the general measures adopted to combat the one condition are those that must be applied to the other.

Turning now to the actual classification of the children, the figures relating to which are given for the past four years, it is to be remarked that the state of nutrition of the children generally has been better during the war than in the period immediately preceding. As in previous years, the younger children, both boys and girls, show figures that are less satisfactory than those of the older children, and at each age, the boys are slightly worse than the girls. While the figures for both 1915 and 1916 stand in complete contrast with those of the previous years, and themselves compare very closely together, there are nevertheless some interesting differences between the two last years, which may repay close attention. Thus, in 1916, while the proportion of younger children classed as of good nutrition has definitely increased both in boys and girls, amongst the older children there has been only a fractional increase amongst the boys, and a definite decrease amongst the girls.

Although a definite proportion of younger children has passed during the year from fair to good, there has also been a very small proportion passing from fair to poor. This tendency is not seen among the older children. These variations will be watched with close scrutiny during the coming year. They seem to show that the younger children more readily re-act than the older to conditions affecting the nutritional state.

The dominant influence of social conditions in nutrition is to be seen in the returns for the various London boroughs. Very generally a map showing the nutritional state of the children would correspond with one showing the social conditions. Limitations of space and time prevent this being worked out in detail for the whole of London, but taking two boroughs, Lewisham, a typical residential suburban district, and Bethnal Green, in which conditions of poverty and overcrowding are more prevalent, the following returns have been made:—

Percentage in each group of children marked Good, Fair, and Poor.

	YOUNGER BOYS.			YOUNGER GIRLS.			OLDER BOYS.			OLDER GIRLS.		
	Good.	Fair.	Poor.	Good.	Fair.	Poor.	Good.	Fair.	Poor.	Good.	Fair.	Poor.
Lewisham ...	67·1	30·0	2·9	67·6	29·8	2·6	75·3	24·2	2·5	73·3	23·7	3·0
Bethnal Green...	9·0	58·4	32·6	8·0	72·2	19·8	7·9	66·7	25·5	11·7	69·9	18·4

This is a very striking contrast.

Dr. E. M. McVail has made a comparative study of the nutrition of 250 Jewish and 250 Gentile boys, all of whom had been twice medically inspected—viz., at the ages of 11 and 13 years. The average nutrition of the Jewish boys was more satisfactory than that of the Gentiles at both ages, but it is curious to note that while at the age of 11 the Gentile boys were returned as very considerably below the Jewish, they had in the interval between 11 and 13 improved comparatively to such an extent that the percentage showing good nutrition, which was no less than 17.6 below that of the Jews at the age of 11, was at the age of 13 only 2.4 below. Similarly, the percentage showing poor nutrition, which was 5.2 worse amongst the Gentile boys at 11 was only .8 worse at the age of 13.

The actual numbers at each age were as follows :—

Age 11—250 Gentiles—Good, 53 ; Fair, 143 ; Poor, 54.
 Age 11—250 Jews—Good, 97 ; Fair, 112 ; Poor, 41.
 Age 13—250 Gentiles—Good, 77 ; Fair, 143 ; Poor, 30.
 Age 13—250 Jews—Good, 83 ; Fair, 139 ; Poor, 28.

A comparison of the heights and weights of the two groups of boys showed that while the average weight of the Jews was considerably above the normal London average at 11, and was still further above at 13, that of the Gentile boys was slightly below the average at each age ; with regard to height, however, a very different state of affairs was found, thus while the Gentile boys reached the London average at both 11 and 13 years, the Jewish boys from slightly below the average at 11, shot up to considerably above the average at 13.

These facts lead to the supposition that the state of nutrition of the children is to be explained only partly by the greater care exercised by Jewish parents, as compared with Gentile parents of the same social grade, and that there is an important racial factor determining the rate of growth at each age, which also has an effect upon nutrition.

Condition of
the teeth.

Although much dental defect is still found, the steady improvement in the condition of the children's teeth recorded during the last few years is well maintained. Amongst the selected entrants the conditions were naturally much more unsatisfactory than amongst the entrants, as a whole, examined in previous years. No less than 31.4 per cent. of the boy entrants and 31.9 of the girl entrants examined in detail, had severe caries associated with oral sepsis, whereas the proportion of entrants, as a whole, with mouths in this condition, as shown in the figures for previous years, is less than 15 per cent.

There was an increase in the percentage of children in the intermediate age groups with sound dentures—viz., 47.6 per cent., and 47.7 per cent., in boys and girls respectively, as compared with 45.9 per cent. and 46.6 per cent. in the previous year. Amongst the leavers, the results of continued following up and progressive increase in the facilities for obtaining treatment, is shown by the percentages of children with severe caries and oral sepsis in this age group, which show a steady decline during the four years 1913-1916. Boys, 1913, 10 per cent. ; 1914, 9.2 per cent. ; 1915, 7.2 per cent. ; 1916, 6.5 per cent. Girls, 1913, 8.6 per cent. ; 1914, 7.7 per cent. ; 1915, 6.7 per cent. ; 1916, 5.8 per cent.

Adenoid
growths and
enlarged
tonsils.

A conspicuous feature of the results of medical inspection has been the considerable decline in the number of children referred for treatment for tonsils and adenoids. This decline still continues, and the figures for the present year are the lowest yet recorded. The intermediate age group shows a larger percentage (Boys, 5.0 per cent. ; Girls, 4.8 per cent.) than the leaver group (Boys, 3.4 per cent. ; Girls, 3.7 per cent.), but at each age the incidence on the two sexes is nearly the same.

Skin and
external eye
diseases.

Although there was an increased number of children suffering from communicable diseases of the skin, and on that account excluded from school, the number of children found at the routine inspections to be suffering from skin diseases remains unaltered, forming 1.9 per cent. and 1.5 per cent. amongst boys and girls respectively, at the intermediate age, and 1.7 per cent. and 1.3 per cent. at the leaving age. Amongst children presented as urgent or special cases, the percentage found to be suffering from skin complaints was 6.7, and from external eye diseases was 5.1.

Vision.

A high percentage of the children inspected fail to reach the normal acuity of vision. 20.2 per cent. of the boys, and 21 per cent. of the girls in the intermediate age group, and 21.6 per cent. of the boys, and 23.3 per cent. of the girls in the leaver group are returned as having relatively severe and uncorrected visual defect. On the other hand, the percentages reaching normal visual acuity increased from 40.6 in boys and 36.0 in girls at the intermediate age, to 54.4 in boys and 48.4 in girls at the leaver group. Attention must again be drawn to the constant excess of visual defects amongst girls, which never fails to be brought out in the results of medical inspection and appears to constitute a conclusive demonstration that close application to fine work is a potent means of producing defect in childhood.

It is regrettable that the figures for visual defect show some increase over those of the previous year. This is no doubt due to the loss of facilities for treatment which became apparent during the year owing to many hospitals being compelled to refuse treatment for refraction cases.

Ear disease
and defective
hearing and
defective
speech.

Diseased conditions of the throat and ears found in school children appear to have no selective incidence upon one or the other sex. The percentages of children reported with ear disease and defective hearing are again, this year, practically identical for boys and girls—viz., ear disease, 1.9 and 2.1 for boys and girls respectively at the intermediate age, and 2.1 alike for boys and girls at the leaving age ; defect of hearing, 1.5 and 1.6 for boys and girls respectively at the earlier age, and 1.7 and 1.8 at the later.

Defects of speech, including stammering, are rare among the children in the schools. Boys constantly exhibit a greater amount of speech defect than girls. At the leaving age, only .5 per cent. of the boys are stammerers, and .5 per cent. have other speech defects, while amongst girls the percentages are, .2 and .4 respectively. In the special schools for the mentally defective, speech defect is much

more frequent, affecting 4.5 per cent. of the children examined; this figure is practically entirely made up of defects of articulation other than stammering.

Heart defect was found in 3.5 per cent. of the boys and 3.4 per cent. of the girls at the earlier age, and 3.4 per cent. of the boys and 4.4 per cent. of the girls at the later age. This represents a fractional increase on the previous year. The excess of about 1 per cent. in the case of older girls recurs each year, and may correspond with some difference in the mode of life of boys and girls between the ages of 8 and 12, but on the other hand, it is possibly connected with the greater strain upon girls of the active growing period which occurs in them towards the end of this period, but occurs later amongst boys. Heart disease.

Anæmia is commoner in girls than in boys at both age periods, the percentage being at the intermediate age, 3.6 in boys, and 4.3 in girls, and at the later age, 2.7 in boys, and 3.6 in girls. These percentages are uniformly higher than in the previous year, and will be watched in the immediate future with some anxiety. Anæmia.

There was a rise in the incidence of lung complaints, other than phthisis, among the younger children—viz., 4.4 per cent. in boys, and 4.1 per cent. in girls, as compared with 3.2 per cent. and 3 per cent. in the previous year. In the older children, these troubles were less frequent and practically stationary, as compared with last year. Lung complaints, phthisis and other diseases.

Phthisis was detected at the routine inspections in only 0.2 per cent. of the children examined, and its incidence was uniform at both ages and in both sexes.

Other tuberculous conditions were also uniformly distributed, and, like phthisis, affected .2 per cent. of those examined. It should be pointed out, however, that 18.4 per cent. of all children absent from school for long periods on account of health suffer from tuberculosis, and of the 39,375 children outside the age groups specially examined, 1.9 per cent. were found to be suffering from phthisis or other tuberculous disease.

Amongst the younger children, 1.2 per cent. of the boys and 1.3 per cent. of the girls were affected with nervous diseases, and amongst the older, 0.9 per cent. of the boys and 1.5 of the girls. These figures correspond very closely to those of former years, and lend no credence to the fears from time to time expressed that the children generally have been adversely affected by the military operations of the enemy. Nervous diseases.

Deformities, chiefly those of the spine, are found amongst the older girls to a greater degree than among the boys of corresponding age, and than among the younger girls. It might have been anticipated that owing to the greater need for the girls' help in household tasks, there would be some increase, but as a matter of fact, slightly less deformity was found even among the older girls than in the previous year—viz., 3 per cent. in place of 3.5 per cent. Deformities.

These include ailing children, not in the age groups, presented to the doctor at his routine visits to the schools, children suspected to be mentally defective, children sent to special centres for examination owing to the appearance of urgent symptoms, or because the doctor's next visit to the school is too remote, children examined on account of suspected infectious disease, or to ascertain their freedom from infection after exclusion, children examined in connection with school journeys and playground classes, and children out of school on alleged medical grounds on whom the school attendance officers wish to obtain an opinion. Special and urgent inspections.

The number of children thus specially inspected was 39,475, comprising 18,134 boys and 21,341 girls; 11,928 (30 per cent.) of these were referred for treatment. The ailments most frequently found were skin complaints, throat conditions, external eye disease, defects of vision, and disease of the ear. In addition to children included in these inspections are the cases seen by the Council's ophthalmologist and otologist. Increasing use is being made of the arrangements whereby exceptionally difficult cases of eye and ear defect are referred by the school doctors to these specialists at the central office, and many of the children thus seen are found to require special education. An account of this work is to be found in the section of this report dealing with Special Schools.

Under the arrangement referred to in the previous Annual Report, the school doctors have attended at the Old Ford, Finsbury, Marylebone, St. George's Mission, and Greenwich Treatment Centres for a short time after school hours on certain fixed days, for the purpose of inspecting children referred by care committee workers, teachers, school nurses, and attendance officers, with a view to securing that suitable steps should be taken in each case, and that those urgent cases found to be suitable for treatment under the Council's scheme should be referred immediately to the proper department. During the year, the number of children seen in this way, and the conditions found as a result of these examinations, were as follows:— Special examinations of children referred for nursing treatment.

Total number seen—2,532. Conditions of the Skin (1,465)—including impetigo, eczema, septic wounds and abscesses, cuts, scabies, ringworm, (body and scalp), psoriasis, urticaria, chilblains, boils, burns, herpes. Conditions of the eye (403)—Conjunctivitis, phlyctenules, blepharitis, corneal ulceration, hordeolum, iritis, squint, tumour, dacryocystitis, foreign body, ptosis. Conditions of the ear, nose, and throat (315)—Otorrhea, enlarged glands, tonsils and adenoids rhinitis, tonsillitis. Conditions of the teeth (38). Unclassified (206)—including mumps, chorea, sprain, anæmia, tuberculosis.

These urgent inspections have been much appreciated by the teachers of the schools in the neighbourhood of the centres, and have been frequently the means of detecting contagious conditions requiring the exclusion of the children from school. Arrangements have now been made to hold these inspections at five additional centres—viz., Fulham, Shoreditch, Poplar, St. George's Dispensary, and Camberwell. The regular visits by the school doctors to these centres entail additional cost in lighting and heating, and the present allowance made by the Council does not cover the cost of the necessary drugs, dressings,

etc. It has, therefore, been agreed in the case of these ten centres that an extra payment of £10 a year should be made, provided the necessary facilities are given by the centre committees.

The arrangements which it is proposed to make will enable the following important aims to be furthered: (1) Increased co-ordination between the inspecting and treating doctors; (2) Readier and more efficient machinery for dealing with urgent cases, among which should be included those presenting incipient signs of disease such as may require a prompt diagnosis in order that advice may be forthwith given as to obtaining appropriate treatment; (3) Readier and more efficient following up of all cases, including the more extended visiting of homes by the district nurses and the securing to a greater extent of the interest of the parents.

Medical and Dental Treatment.

During the year the chief variations in the arrangements for the medical and dental treatment of school children have been the opening of two new dental centres at Holloway and Soho, and the increase in the provision at certain of the existing centres for the treatment of defects of vision, minor ailments and teeth. Owing to the difficulties of the present time, six dental and minor ailment centres which have been sanctioned have not yet been established, but premises have been obtained for two of the centres, and it is anticipated that these will be ready for opening during the next two months. It is also hoped that another dental and minor ailments centre, sanctioned early in 1917, will be established at an early date.

For comparison with the figures given in previous reports, the numbers under the agreements in force during the year were as follows:—

Eyes—23,272; ear, nose, and throat, 13,700; ringworm, 2,114; minor ailments, 20,289; teeth, 53,515; Total, 112,890.

Eye Defects.—The number of cases dealt with under the Council's arrangements was 26,905 as compared with 25,216 during the previous year. The increase has been mainly due to the fact that the authorities of some of the hospitals, not included in the Council's scheme, are at present unable to receive school children. Spectacles were prescribed for 20,597 children, and were obtained in 17,389 cases.

Ear, nose, and throat defects.—There is a still further decline in the number of children treated for ear, nose, and throat defects, although the decrease is less than in 1915. The number of children treated as new cases was 10,365, being 794 less than in 1915, and 2,596 less than in 1914. There were 6,064 operations performed during 1916.

Ringworm.—1,466 children were referred to the Council's centres for the treatment of ringworm, this number being 4 lower than the figure for 1915. X-ray treatment was applied in 1,198 cases.

Minor Ailments.—The centres for the nursing treatment of minor ailments have again been particularly well attended. 22,876 new cases were treated, as against 20,419 in 1915. As showing the vast amount of work performed in connection with the treatment of minor ailments, it may be mentioned that during the year the 22,876 new cases, together with the 4,252 cases still under treatment at the beginning of the year, made 418,339 attendances at the centres. In addition, 38,156 visits were paid by the nurses to the children's homes, and in 5,299 cases arrangements were made for convalescent treatment, or other forms of after care.

The following report, which has been received from Dr. G. H. Lock, the doctor engaged in the treatment of minor ailments at the Notting Dale Centre, gives an illustration of the work carried out at a minor ailments' centre:—

"Summary for 1916.—New cases, 1,389; Visits to centre, 27,754; Home visits, 1,133; Discharged, 1,240; Still on books, 219.

Skin trouble of some kind was present in 414 children, mostly due to grime. Ingrained dirt does not seem to cause much irritation until disturbed by misdirected attempts to attain cleanliness. A common toilet history is this—A small hand basin, a large cake of a popular disinfectant soap and (incredible as it may appear) successive washings by different persons in the same scanty supply of water. The result is the drying on the skin of a terrible mixture, which causes itching and its inevitable corollary, scratching. In these cases, it is impossible to shake the mother's conviction that the child's "blood is out of order," but nothing except external remedies has been used at the centre, always with the happiest results. It is surprising what excellent skins these children have when treated with a little consideration. These "eczemas" should be considered cases of injury to, rather than disease of the skin. On the other hand, 53 children were suffering from skin disease of undoubted constitutional origin. If the proposal of the L.C.C. to provide a few simple drugs for internal medication in suitable cases is carried out, the usefulness of the centre will be increased.

A widespread and insidious epidemic of scabies has been responsible for considerable demands upon the Cleansing Station; this institution has been most useful, though a little tact has been necessary at times to overcome a certain amount of prejudice aroused by its candid name.

Eye cases have been fewer than in 1915, numbering 171, and have all done well.

Ears.—221 cases of running ears have been treated, with the following results: 52 have been discharged, well; 84 have discontinued treatment; 3 have been sent to hospital; 82 remain under observation or treatment.

Some progress has been made. The standard for discharge has been, "ears healed, hearing good and nose and throat normal." To attain this standard cases coming to the centre in 1914 required an average duration of treatment of 7 months, 8 days; during 1915, 6 months, 15 days; during the past

year, 3 months, 8 days. These cases are now doing better because they are not so severe, or of such long-standing as when the centre was started.

Discontinuance of treatment gives the nurse a good deal of work, for every case is personally visited by her, and the reason for non-attendance asked for. In a few cases, the child has left school or the neighbourhood; but in the majority the parents say that the child is well, and that there is no need for further attendance. To say that all these cases relapse would be, I think, to take too gloomy a view, many are undoubtedly cured. At the same time, the parents' statement cannot be accepted without question; it is safer to class such cases as doubtful. The children sent to hospital and on the books are doing well, on the whole.

The above figures represent in the aggregate a considerable amount of suffering, borne very bravely and uncomplainingly. Further, the regularity with which these children present themselves for, and the fortitude with which they undergo, what are sometimes (of necessity), painful methods of treatment, show a spirit of discipline and confidence which is very pleasing and encouraging."

Dental Treatment.—Mr. C. E. Wallis reports that in spite of many difficulties contingent upon the war, the Council's Dental Treatment Scheme has been maintained in full working order. 81,794 children have been examined in the schools by the Council's inspecting dentists, and 49,844 children have received treatment at the Council centres.

The results of dental treatment for the year 1916 are as follows:—

Total number of children attended	...	...	49,844	No. of other operations, e.g., scaling, immediate regulation, application of AgNO ₃ , etc.	...	8,581
No. of attendances	...	...	77,186	No. of general anaesthetics—		
No. of teeth or roots extracted—				Nitrous oxide	...	9,831
Temporary	...	...	186,067	Ethyl chloride	...	7,945
Permanent	...	...	24,865	Other general anaesthetics	...	610
No. of stoppings	...	...	39,442			

To each dental treatment centre is allotted a "sphere of influence," in the shape of so many schools, for the dental inspection and treatment of which it is responsible. During the opening year of a new centre the treatment is mainly confined to children aged 6, 7, and 8, an additional year of age being added every subsequent year, so that ultimately children will be inspected, and when necessary treated, year by year throughout their school lives.

Two new centres have been established since the last report, at Soho and Holloway, and have been for some months in full working order. Seven more centres have been sanctioned, which will make provision for the treatment of about 12,000 additional children per annum. At three centres women dentists have been appointed.

It is important to note that each dental centre forms part of a complete dental scheme, in which prevention and treatment of dental disease go hand in hand. Not only are the children regularly inspected and treated, but special efforts are made to instruct parents and children in the elements of dental hygiene, both during part of the school dental inspection session and also when attending the centre for purposes of treatment. It is an essential part of the scheme that the mothers should, as far as possible, accompany the children when attending for treatment in order that they may receive instruction from the "centre" dentists in regard to the teeth of their children.

Equipment of Centres.—Owing to the increase in the cost of dental apparatus, the Council has found it necessary to increase the grant allowed for the initial equipment of a centre from £50 to £60.

Schools for Mothers.—An interesting development is being initiated by the provision of dental treatment at certain of the Council's dental centres in connection with "schools for mothers." The committee of the Fulham Treatment Centre utilises the centre premises and equipment for the treatment of the teeth of expectant and nursing mothers. This treatment is provided on two evenings weekly from 6 to 8, and besides affording great benefit to the mothers themselves, it provides a connecting link between the dental treatment of mothers and the subsequent treatment of their children.

Similar schemes are under consideration at Notting Dale, Hammersmith, and Woolwich Centres and at one centre steps are about to be taken for the dental inspection and treatment of infants not yet attending school, and therefore ineligible for treatment under the Council's arrangements.

Re-inspections and Following up of Ailing Children.

No less than 181,035 reports upon children who had previously been found to require observation or treatment were made by the medical staff during the course of the year. The work of following up the children found at primary inspections to present symptoms of illness is therefore assuming vast proportions.

According to the scheme, adopted for the purpose of ensuring orderly and complete re-inspection, the cases coming before the school doctors for review during the year comprised, in each term, the following groups of children:—

Term.	1st re-inspection of children found ailing in	2nd re-inspection of children found ailing in
I.	2nd term, 1915	3rd term, 1914
II.	3rd term, 1915	1st term, 1915
III.	1st term, 1916	2nd term, 1915

120,000 children were due for first re-inspection during the year. Of these, 6,208 had removed and could not be traced, and reports were left outstanding in 12,745 instances, owing to absence of the children from school or other cause. Of the 101,047 remaining, 37,624 were discharged as cured, and

63,423 were found still to be in need of treatment or observation, and were scheduled for further re-inspection two terms later; 59,631 children due for second re-inspections were reported upon; 9,431 were reported removed, of the remainder, 16,155 were reported cured, and 34,045 were still in need of treatment or observation. Moreover, 29,788 cases marked for observation, owing to doubtful signs of illness, were reported upon; of these, 10,868 were discharged, and 18,920 were scheduled for further observation.

Appendix IV. gives the detailed results of re-inspection under the headings of various ailments. Of the 108,257 cases seen at first re-inspections, 45,152 were found to have sought treatment within six months—i.e., 41.7 per cent., as compared with 42.3 per cent. in 1915, and 49.6 per cent. in 1914.

Of the 51,588 cases seen at second re-inspections—i.e., those who had not sought treatment or had not been discharged as cured within six months after primary inspection, 16,170, or 31.3 per cent. were found to have sought treatment by the end of 12 months, compared with 34.6 per cent. in 1915, and 43.1 per cent. in 1914.

These figures show that owing to the diminution of voluntary help for following up, and to the pre-occupation of the parents with other matters, there has been a falling off in the proportion of children obtaining treatment, but that the falling off occurred chiefly between 1914 and 1915.

Of children seeking treatment for defective vision, 77 per cent. obtained it through institutions included in the Council's scheme. The percentage is higher than ever recorded before, and this is due to the fact that hospitals outside the Council's scheme have been obliged, owing to other and urgent calls upon them, to reduce facilities for the examination of school children for refractive errors. 50 per cent. of the children referred for errors of refraction came under treatment within six months, and 70 per cent. within 12 months of the discovery of the defect.

Of children found at statutory inspections to require nursing treatment for "minor ailments" including sores, inflammation of the eyes, running ears, etc., a little more than 50 per cent. had sought treatment within 6 months, and 70 per cent. within 12 months. 56.4 per cent. of those seeking relief obtained it at the nursing treatment centres established by the Council.

35 per cent. only of the children referred for defects of the ear, nose, and throat, obtained treatment within 6 months, and 52 per cent. within 12 months. 60 per cent. of those treated were attended to at centres or hospitals, with which the Council has arrangements—the remaining 40 per cent. obtaining relief elsewhere.

Of the children in the age groups recommended for treatment for defective teeth, 39 per cent. obtained treatment within 6 months, and 56 per cent. within 12 months. 63 per cent. of those treated obtained it under the Council's scheme.

With regard to other ailments, including all those for which the Council has not made provision, such as organic diseases of the heart and lungs, 35 per cent. of the children referred had commenced to receive treatment within 6 months, and 54 per cent. within 12 months.

The greatest amount of "leakage," therefore, took place amongst children requiring treatment for defects of ear, nose, and throat. The great majority of these require operation for enlarged tonsils and adenoid growths. The Council has recognised that in cases involving an operation, the same amount of pressure cannot be applied as in other cases, and no doubt the fear of operation is a great factor explaining the comparatively greater amount of "leakage" in these conditions. With regard to the results of re-inspection of children found to have defective teeth, it must be remembered that we are here dealing not merely with children in the special age groups (6 to 8 years), for which the Council's arrangements, as sanctioned by the Board of Education, are primarily designed, but with the whole of the children seen by the school doctors, including those aged 13. For the latter there is admittedly at present a want of facilities for treatment in London, and, under these circumstances, the fact that 63 per cent. obtain treatment within a year represents a considerable achievement, as the result of "following-up."

The Board of Education, on 24th June, 1913, in reviewing the arrangements for the medical inspection and treatment of children in London, stated that, having regard to the fact that a certain proportion of the cases of discharging ears were of a serious nature, it seemed desirable, with a view to ensuring adequate treatment, that facilities should be provided for an examination by an expert aural surgeon where that appeared to be necessary. With regard to this suggestion, the Council (2nd July, 1914) replied to the Board that careful consideration had been given to this question, and that it was intended that provision should be made for certain of the school doctors who had had exceptional experience, to pay attention to this side of the work. During 1915, a special inspection centre for ear cases was arranged at Paradise-road, Stockwell, under the supervision of Dr. A. G. Wells, one of the Council's assistant medical officers. The work done at this centre has greatly improved the following up of chronic ear cases, in the neighbourhood served by the centre.

The divisional treatment organiser in the North-Western division has devoted a very great amount of care and attention to the minute following up and indexing of ear cases. During the period April, 1915, to August, 1916, 2,760 notifications were received from nurses and head teachers. In many instances, single cases were notified from several sources, and chronic cases have been repeatedly notified, the actual number of individual children concerned being 1,266. All these cases were referred to the care committees for arrangements to be made for treatment. 350 detailed reports were received in reply, as well as a large number of applications for vouchers for the aural departments of hospitals and centres. The cases have been most carefully followed up, and considerable trouble has been taken by honorary secretaries of care committees to get the children quickly under treatment. The record obtained up to the present shows that, of the 1,266 cases, 952 are being dealt with by care committees, at least 112 of these being cases of long-standing difficulty, and 314 have been satisfactorily treated, the ailment being cured or in abeyance, or non-existent.

Children showing errors of refraction.

Children requiring nursing treatment.

Children requiring treatment for defects of ear, nose and throat.

Children requiring dental treatment.

Children with other ailments.

"Leakage."

Discharging ears.

An arrangement was made at the beginning of the summer term, 1916, by which lists of cases which had been notified during the past 12 months by nurses and teachers, but had not necessarily been seen by any inspecting doctor, were referred to the school doctors during the term for special inspection at their routine visits to the schools. Lists concerning 650 children in 106 schools were dealt with. Of these cases, 214 were found to be free from ear discharge; 73 have been untraced; 22 were absent from school on the doctor's visit, and not seen; 72 had left or been transferred, and were not seen. In 219 cases, treatment was found to be still required, but already arranged; 50 cases were found to be in an unsatisfactory condition. These are long-standing cases of great difficulty and with many social complications. They include cases also needing major operations and institutional treatment which is not available at the present time.

The amount of work entailed in the following up of these cases has been great, and it is proposed to modify the arrangements by keeping lists of discharging ear cases in the schools, which will avoid duplication of notifications, and by arranging that the school doctors shall see the ear cases before they are referred to the care committees for following-up purposes.

In addition to these measures it was contrived, at the beginning of last summer term, that Dr. Wells should hold regularly an inspection centre at the divisional offices, in order to advise upon the more difficult cases in the same way as had already been found so advantageous in the South-Western division.

One great difficulty which remains to be solved is that of obtaining suitable treatment for those children who require radical operations for the purpose of curing the disease, and who should be admitted to hospitals as in-patients. The need for accommodation of this kind is a pressing one, and it was suggested that the Council should enter into negotiation with the authorities of one or two hospitals in London with a view to arranging for the reservation of five beds for the purpose of enabling children referred by the Council suffering from serious ear trouble to be admitted as in-patients, and that expenditure not exceeding £260 a year should be authorised for this purpose.

The Council approached the Board of Education with a view to ascertaining whether the Board would be prepared to recognise expenditure in this connection as a part of the Council's expenditure under arrangements for treatment approved by the Board. The Board, in their reply, deprecated any departure of this kind under the existing circumstances and the proposal has therefore, for the time being, dropped.

Education (Provision of Meals) Act.

All questions of alterations and modifications of the menus are referred to the school medical officer. Actual samples of meals provided are forwarded to the public health department from time to time for analysis, and the results are transmitted to the education officer with recommendations as to the improvement of the dietary in cases where this appears to be inadequate. Similar provision exists for examining samples of milk supplied to the schools. Supervision of dietaries.

Of 182 samples of milk supplied, 15 could only be described as "fairly satisfactory, being of poor quality, and 17 per cent. of the remainder were found to be definitely "unsatisfactory," being deficient in fat to an extent varying from 3 to 60 per cent. of the normal amount, whilst 16 samples were reported as containing extraneous water varying between 5 and 30 per cent. In all cases where the results of the examination in the Council's laboratory showed the samples to be unsatisfactory, the attention of the medical officer of the borough, in which the milk was purchased, was called to the matter with a view to samples being taken under the Sale of Food and Drugs Act. One sample of milk was examined and found to contain dirt to such an extent as to render it unfit for food. Three samples were found to be artificially coloured, but the presence of preservatives was not detected in any case. Of 51 meals supplied, 21 were reported as being deficient in nutritive value for a complete meal, the average deficiency in amount being about 25 per cent.; in a few cases, the deficiency was as much as 40 per cent. With only two exceptions the quality of the food supplied at feeding centres has been satisfactory.

Children out of School for Long Periods.

The arrangement has continued whereby the attendance branch of the Education Officer's Department submits each month to the school medical officer, medical certificates concerning all children out of school for a period of three months on account of ill-health, but it has not been possible to keep up fully the card index of the cases. The number of such children who were reported as absent from school on the 1st November, 1916, and the conditions from which they were suffering were as follows: rheumatic, including heart disease and chorea, 463 (19·83 per cent.); nervous, 152 (6·51 per cent.); tuberculous, 430 (18·41 per cent.); anaemia and debility, 209 (8·95 per cent.); ringworm, 49 (2·10 per cent.); other diseases, 1,003 (42·92 per cent.); illegible and unsatisfactory certificates, 29 (1·24 per cent.).

The rheumatic group of diseases forms the highest proportion—nearly 20 per cent. of the total—among the causes that produce protracted absences from school. Next comes tuberculosis in various forms, with nearly 18·5 per cent. All cases of tuberculosis and epilepsy are still being registered, and apparently unsatisfactory or doubtful conditions are being followed up, especially such conditions as ringworm, scabies, and minor ailments.

Tuberculosis.

The Council continued during the year 1916 the work initiated under the scheme approved in May, 1914, for the treatment of tuberculosis. An account of the work is given in the general section

(Part I.) of this report. With regard to children, however, it may be here stated that, at the beginning of the year, the Council had in use 240 beds, of which 75 had been provided by the Metropolitan Asylums Board, at Queen Mary's Hospital, Carshalton. The remaining 165 beds were obtained by the Council in various voluntary institutions. For part of the year, the number of beds for children at Carshalton was raised to 100, but later, some of these beds had to be given up as they became vacant, partly owing to demands upon the accommodation by Boards of Guardians, and partly to staffing difficulties, so that at the end of the year the number of beds occupied at Carshalton was 71. The Metropolitan Asylums Board were, however, able in July, 1916, to place at the disposal of the Council 27 beds for girls between 10 and 16 years of age at the Northern Hospital, Winchmore Hill. These were all in use on 31st December, 1916. The number of beds at Nayland Children's Sanatorium was increased from 62 to 85, and the Council obtained 15 beds at Holt Children's Sanatorium, Norfolk. Other institutions included in the scheme, in 1915, were able to increase the number of beds, so that, at the end of the year, the Council had 231 children's beds in voluntary institutions, and beds in two institutions belonging to the Metropolitan Asylums Board already mentioned.

The following table shows the number of children treated during the year, and the number remaining in each institution on 31st December, 1916 :—

Institution.	Total No. treated.	No. of beds occupied on 31st Dec., 1916.	Institution.	Total No. treated.	No. of beds occupied on 31st Dec., 1916.
Nayland Children's Sanatorium ...	287	85	Victoria Park Chest Hospital ...	3	—
Harpenden ...	42	10	Holt Sanatorium... ..	25	15
Fleet ...	26	14	Queen Mary's Hospital, Carshalton ...	180	71
Victoria Home, Margate ...	15	10	Winchmore Hill Children's Sanatorium	45	27
St. Vincent's Cripple Home, Pinner	1	1	London General Hospitals ...	42	1
Great Ormond Street Hospital and Cromwell House, Highgate	130	40	Metropolitan Convalescent Institution, Bexhill	1	1
Alexandra Hospital and Clandon House	49	33	Cranbrook Sanatorium	3	2
Ide Hill Sanatorium ...	15	6			
Brompton Hospital ...	46	10	Total	910	326

Open-Air Schools.

The two open-air schools, at Shooters Hill, with 64 boys and 40 girls, and at Birley House, with 57 boys and 41 girls, continue their activities. Dr. Kerr has made a careful study of the record cards of the children, and has compared the results with those relating to children in playground classes and in the ordinary schools. He finds from study of the actual weight measurements, made at four weeks' intervals, that the open-air school children show a stationary weight for the first 3 months, and after that a comparatively rapid and steady increase.

It has been further possible to make a comparison between girls in open-air schools, in playground classes, and in ordinary schools, and the result of the analysis is given in the following table :—

Girls only.	Numbers in each group, and average age in years and months.			Heights in centimetres at eighth week, and weekly percentage increase for 20 weeks.			Weights in kilos, at eighth week, and percentage weekly increase for 20 weeks.		
	Open-air schools.	Play-ground classes.	Controls in ordinary schools.	Open-air schools.	Play-ground classes.	Controls in ordinary schools.	Open-air schools.	Play-ground classes.	Controls in ordinary schools.
Age last birthday.									
13	13 13-3	27 13-3	6 13-3	...	145-5 -079%	145-3 -066%	37-5 -173%	36-0 -286%	36-1 -353%
12	13 12-6	52 12-6	6 12-7	...	139-7 -075	140-6 -090	34-8 -230	33-0 -263	34-5 -275
11	11 11-5	69 11-6	22 11-6	...	134-8 -075	135-4 -090	26-7 -224	29-0 -231	29-5 -296
10	10 10-7	49 10-8	19 10-5	...	130-0 -083	132-3 -088	23-9 -313	26-7 -228	27-6 -247
9	6 9-4	55 9-5	9 9-3	...	123-3 -088	125-0 -091	24-0 -270	23-2 -257	24-5 -301
8	6 8-6	87 8-5	18 8-4	...	120-3 -078	120-8 -113	22-5 -311	22-0 -304	23-1 -334
7	...	61 7-6	10 7-5	...	117-8 -074	113-9 -066	...	20-7 -284	19-0 -305

It will be seen that the weights of the comparatively invalid or convalescent children in open-air schools and playground classes are frequently below those of the other children, but the main point to notice is that the rates of increase of growth in the playground children are, as a rule, below those of the children in the ordinary schools. Thus, if the largest group in the above table (the girls age 11 last birthday) be examined in more detail, say at intervals of four weeks, it is found that while the playground class shows a steady increase in weight throughout the whole 28 weeks, representing a gain per cent. in weight of 4.74, the girls in the ordinary schools show a steady but rather larger increase amounting on the whole period of 28 weeks to 6 per cent.

A similar effect is noticeable at other age groups, so that it appears that the children selected for playground classes are so delicate, and the effect of the open-air schools is so marked, that more efforts directed towards nutrition are required for them than for the children in the ordinary school classes.

The school has been under the regular supervision of Dr. R. S. Walker, who is also the medical officer of the Paddington Tuberculosis Dispensary, from which the children are drawn. The number of children on the roll on 1st January was 108, and on 31st December 104—the average for the year was 106. There was a marked variation in the average attendance from month to month, the lowest being 78, in September, and the highest, 93 in May. During the year, 27 children left school. Of these 3 went to sanatoria, 7 returned to ordinary elementary schools, 3 were excused further attendance after attaining the age of 14 years, 9 left the district, and 5 were excluded by the school medical officer on medical grounds.

Kensal
House
School.

Remedial Exercises Classes in Elementary Schools.

Since 1912 a relatively small number of remedial exercises classes has existed in the Council's schools. In 1913, they numbered 28, but since that time the number has unfortunately diminished. At the beginning of 1916, there were 16 of these classes, but five have been discontinued during the year; this falling-off is no doubt to be explained by heavy calls which have been made upon the time of the teaching staff. The classes that are left, however, have attained a high degree of efficiency. Special mention in this connection must be made of the classes in the North-Eastern medical division where the divisional medical officer (Dr. Lewis), in conjunction with the Council's inspector of physical exercises (Miss Kingston) has devoted a great amount of time and attention to their care.

In the North-Eastern division, three classes for girls have been held continuously during the year at Chequer-street (Finsbury, E.), Moreland-street (Finsbury, E.), and Hungerford-road (Islington, W.), and one for boys at Winchester-street (Finsbury). During the autumn term a fourth class for girls was started, at the request of the head teacher, at Canonbury Road (Islington, E.). The classes are composed of children who are found to be suffering from postural curvature, deficient expansion of the chest or muscular defects of a nature not serious enough to require orthopaedic treatment at a hospital, but yet requiring regular skilled exercises. A special deformity card is made out by the school doctor for each child. The height, weight, degree of curvature, if present, and the chest expansion are noted, and this examination is repeated each term. The children are carefully selected, and no case included in which the condition is judged to be too bad for school treatment. Cases with heart lesions or severe anaemia are excluded and careful attention is paid to the nutritional state. The age of the children is limited to ten and upwards. Extra nourishment is required by those attending the classes and arrangements are made with the parents for milk to be provided at the school when the exercises are being carried out. The class is always taken by a teacher specially selected by an inspector of physical exercises and the table of exercises is carefully graduated in severity and progression. The number in each class is strictly limited to 20. The results of the medical examinations show that 75 per cent. of the children were greatly improved after a period of stay in the classes varying from 3 months to 2 years. Reports have been received from the school doctors in regard to four other classes of the same nature in other divisions.

At Johanna-street (Lambeth, N.) a class for boys is held under the direct supervision of the head master; 27 selected boys have 2 hours and 40 minutes drill every week, and Dr. Edis reports that the results are excellent.

A class for 24 girls was conducted at Camden-street (St. Pancras, E.). Dr. Norman points out that social conditions here militated very greatly against success. Many of the children do an amount of housework quite unsuitable and harmful such as scrubbing floors, carrying pails of water and taking the baby (aged 2 or 3 years) out in their arms. Deformities of the foot are very prevalent in this class, in many cases threatening permanent crippling. Short and improperly shaped boots seem to be the cause of these conditions in growing children. In spite of these drawbacks Dr. Norman reports that the special exercises have resulted in considerable improvement in many of the children.

At Cook's-ground (Chelsea), the selected children were chosen from girls of 7 or 8 years of age, and the class is carried on in connection with the Chelsea Polytechnic Training School. Dr. Arnell reports that medical examination at the end of the year showed that a large proportion of the children had greatly benefited, in many instances the defects for which they had been selected having been completely eradicated.

These remedial classes, although diminished in number, have attracted much attention lately. It is clear that many teachers in the schools, when aided by skilled advice and supervision, are able with success to conduct classes for those children who are in need of special physical training on account of incipient deformity, and an extension in due course of the facilities of the sort already provided would be of great assistance to the Council's schemes of medical inspection, care and medical treatment of children.

Personal Hygiene.

The duties of the school nurses with regard to cleansing were steadily pursued throughout the year, but the absence on war duty of a large number of the more experienced nurses has naturally affected the work to some extent. The duties consist of a general inspection of the children, and the application of the Council's schemes for dealing with those who are found to be (1) verminous in head only; (2) verminous in body and clothing; (3) suffering from scabies. The schemes have been set out in detail in previous reports.

Rota visits—
General
inspection.

A complete record of the number of examinations and the conditions found was made, and the following figures show the amount of work done: number of examinations, 2,399,280; number found clean, 1,786,621; number found verminous, 612,659; percentage found verminous, 25.5 per cent. The number found verminous includes all degrees of unsatisfactory conditions from the case of a few nits on the hair, to cases of head, body, and clothing infested with pediculi.

Verminous
heads.

The number of examinations conducted under the scheme for dealing with verminous heads only, was 4,440; 3,360 were found clean; 613 slightly dirty; 467 were verminous. The parents of 39 children were prosecuted, and fines varying from 2s. 6d. to 10s., with costs, were imposed. The percentage, in the schools where the head scheme has been applied, of children verminous amongst children examined, was 10.5 in 1916, as compared with 10.0 in 1915. The number of examinations conducted under this scheme has been greatly decreased, owing to the fact that it is now possible to include many outlying schools under the general scheme, and to convey the children attending such schools to the cleansing stations by means of ambulances.

Verminous
persons and
clothing.

There are 24 stations for the cleansing of verminous children. The total number of examinations made by the nurses under the cleansing scheme proper was 988,228, and 24,705 children were found to be verminous to such an extent as to call for action under the scheme; of these, 11,314 were cleansed by the parents; the remainder, 13,391 children, were dealt with at the cleansing stations; 19,395 cleansings were carried out at the Council's stations, and 35,550 at stations of the local sanitary authorities. This number is an increase of 11,061, or 25.3 per cent., when compared with the number for 1915. The parents of 236 children were prosecuted, and fines varying from 2s. to 11s., with costs, were imposed. Of the total number of children cleansed, 1,373 were conveyed by the Council's ambulances. These ambulances are drawn by horses, and as the children must be conveyed during school hours, a considerable amount of valuable time was spent in travelling. To overcome this objection, the Council has decided to substitute a motor vehicle for the two omnibuses, and it is anticipated that it will now be possible to deal with 35 schools a week, instead of 20, as at present.

At each stage of the scheme, a notice indicating the condition in which a child is found, is sent to the local sanitary authority in order that action may be taken with regard to clothing and bedding in the home under the London County Council General Powers Act, 1904, Part IV.

Scabies.

The arrangements for the bathing of children suffering from scabies were continued. The total number dealt with during the year was 3,213, an increase of 2,154, when compared with the figures of the previous year, and of 11,241 in the total number of baths given. Cases in which the family has been found infected after the visit of a soldier, have come under the notice of the school medical staff, and the number of cases of scabies amongst school children dealt with at the cleansing stations has, as will be seen from the figures given, largely increased.

Country
Holiday
Fund.

The school nurses again assisted the executive committee of the Children's Country Holiday Fund by examining for the detection of any infectious disease (*e.g.*, ringworm), or any form of uncleanness, the children whom it was proposed to send to the country as soon as the summer vacation began.

Secondary
schools.

The personal hygiene scheme in girls' secondary schools and kindred institutions has continued in operation. The scheme was applied also to one boys' school, but no verminous heads were found. The proportion of verminous heads found in the girls' schools was 4.1 per cent., a decrease of .9 per cent. when compared with the figures for 1915.

Examinations of Candidates and Medical Inspection in Higher Education Institutions.

The total number of candidates medically examined was 5,396, a decrease of 354, when compared with the figures for 1915. In addition to the foregoing examinations, 1,420 references in regard to the health of employees in the Council's service were considered. This number shows an increase of 131 when compared with the figures for the previous year.

The medical inspection of pupils in L.C.C. training colleges and secondary and trade schools and of pupils in attendance at non-maintained secondary schools was continued, and the results are given in Appendix I. The pupils in the secondary schools are, for the period of the war, however, medically inspected biennially, instead of annually, and during the year under consideration, it was only possible to inspect those who had not been formerly examined; those who were not examined in the year 1915; those who were found at previous examinations to be suffering from defects; and those in regard to whom the head master (or mistress) desired to consult the doctor.

Infectious Diseases.

Scarlet fever
and
diphtheria

The record of 1916 in respect of epidemic throat illness was unique, inasmuch as the notifications of diphtheria actually exceeded those of scarlet fever for the whole year, and from September onwards this excess was marked; the strange comment was, indeed, made in the daily press that the position was a serious one, inasmuch as diphtheria was actually more widely prevalent in London than scarlet fever; the real situation being, of course, that the figures for scarlet fever were so exceptionally low as to render those for diphtheria unsatisfactory by contrast.

The lesson to be drawn is one which has been again and again pointed out by writers on epidemics, namely, that prevalences of throat illness should be studied as a whole; regard must not exclusively be paid to scarlet fever on the one hand, or to diphtheria on the other. As long ago as the eighteenth century, there was much confusion with reference to epidemic throat disease. It was not until 1831 that the term "diphtheria" was employed; up to 1855, diphtheria and scarlet fever were still classed together by the Registrar-General; and in German statistical returns, the heading "Scharlachdiphtherie" has continued in use up to the present time. The discovery of the diphtheria bacillus by Klebs and Loeffler, in 1883 and 1884, led to the adoption of bacteriological methods for confirmation of the diagnosis of diphtheria, and probably in large degree as a result of this, there has been increasing use of the term "diphtheria" during the last 30 years; such altered practice as regards nomenclature has apparently been especially followed in London and some other large towns.

It is important, therefore, to note that facts with regard to these diseases, which had been brought clearly to view during the eighteenth and the first three-quarters of the nineteenth century, have been rather thrown into the shade as the result of the bacteriological investigations of the last 20 or 30 years; in the first place, there are the remarkable relationships, in times of prevalence and in area of distribution, between scarlet fever and diphtheria; then again, there are important climatic relationships. It must, moreover, be realised that epidemic throat affections manifest variations of type and tend to approximate more closely to, or to diverge from, one another, during periods of widespread or of limited diffusion, as compared with other times. If the prevalences of diphtheria during the last 50 or 60 years be studied, it will be seen that one great wave crest was developed at the close of the "fifties," and this was followed by another almost comparable epidemic elevation in 1893; since that date, there has been descent into a trough of low prevalence. Again, two similar "major waves" of scarlet fever culminated, the first about 1859 and the second about 1893, the earlier being much the more formidable of the two. Upon this greater movement, the wavelets of scarlet fever prevalence are seen much more clearly displayed than is the case with the minor waves of diphtheria; the ripples of the former disease are mimicked, speaking in a general way, by those of the latter, but there are exceptions—for there is nothing to correspond to the scarlet fever ripple of 1869-70 in the diphtheria records.

Epidemiological relationship of these diseases.

It is noteworthy that two observers, Dr. Longstaff and Sir Arthur Newsholme, have exhaustively analysed the relationship between dry years and one or both of these diseases. Dr. Longstaff found the correspondence close in the sixties and early seventies, but less marked in later years. Sir Arthur Newsholme, dealing with diphtheria alone, but collecting data from every civilised country, concludes that the "essential factor in the production of epidemic, and still more of pandemic diphtheria, is the occurrence of a succession of years of deficient rainfall, associated as they must be with abnormally dry conditions of the soil and sub-soil." Careful examination of the work done in this connection leads, it may be affirmed, to the conclusion that prevalence of both diphtheria and scarlet fever is definitely favoured by the occurrence of a series of abnormally dry years.

Increasing use of the term diphtheria in death returns

The question of the influence of nomenclature was very carefully considered by the late Dr. J. F. J. Sykes, in 1894; he emphasised the extent to which "alterations in classification" and "variations in nomenclature" had confused the issues, and propounded the question "whether the variations of nomenclature may not be due to a change of type in disease of the throat." It may be stated finally that the more the figures are studied, the more is the impression strengthened that varying fashion, as regards nomenclature, has played a great part in connection with these two diseases; it may, moreover, be taken as certain that at the crests of the major waves the epidemic type approximates more nearly to what may perhaps be styled the diphtheritic, and between the crests to what may perhaps be styled the scarlatinal type.

Variations in nomenclature.

The peculiar geographical distribution of "diphtheria," demonstrated during the third quarter of the last century by Dr. Longstaff, becomes perhaps more comprehensible when a broad view of the phenomena is taken. Diphtheria was specially incident upon rural areas in the prevalence of 1859-60 rather less markedly so in the decade 1861-70, and again distinctly less so in 1871-80; since that decade it has been held to be much more common in the towns. The disease prevailing in 1859, and in immediately succeeding years, was one in which severe throat complication was particularly marked; and the recorded prevalence of this disease in the rural areas was undoubtedly emphasised by the prominence given at that time to the supposed invasion of this country, by the "Boulogne sore throat," and by the attention thereupon concentrated upon the researches of Bretonneau with regard to diphtheria. London had already passed through the worst of the outbreak before the altered nomenclature became fashionable and before the rural areas were widely involved, and in London for many years after 1859 there seems to have been a decidedly conservative tendency in the matter of describing epidemic throat diseases.

Geographical distribution of diphtheria and scarlet fever

In confirmation of this view, Mr. Netten Radcliffe's report may be cited. He stated that in London "scarlet fever underwent a prodigious increase in 1858, and prevailed in that year to a greater extent than in any previous year of the 19" (viz., 1840-59); again, he says, "the mortality from croup advanced year by year from 1854"; and, he adds, "London was invaded by diphtheria already, in 1857." Finally, Newsholme, summarising the evidence, concludes that "in London, diphtheria was steadily increasing in amount from 1854 onwards, being widely epidemic early in 1857." Bearing all this in mind, and remembering that major waves of scarlet fever, in the country as a whole, stand chronicled for 1840, 1848, 1852, and 1858, it seems clear that the generally described epidemic throat illness of 1859, really corresponds to the fall of a wave of prevalence which had already swelled in 1854-57. The country districts suffered, however, later than the towns, and perhaps on this account, the impression was created that the disease now designated diphtheria was preferentially a rural disease. Longstaff states that at that time "scarlet fever was believed to be the form assumed by epidemics in the towns, and diphtheria

the form assumed in rural areas." Later on, as isolation of scarlet fever was increasingly introduced in the towns, there was unquestionably a tendency to include all cases of membranous sore throat in the category of scarlet fever—this tendency certainly existed in London, in 1887, at which time, indeed, cases certified to be of diphtheria were only just beginning to be admitted to hospitals of the Metropolitan Asylums Board. Gradually, too, as years passed by, cases of laryngeal diphtheria, until then known as "croup," were swept into the diphtheria net; so it came about that the London diphtheria death-rate, which had already, in 1878, outstripped that for the country as a whole, maintained a distinctly higher level for the next succeeding 10 years; then, in 1888, the London rate began to show a still more marked rise which continued until, in 1893, it more than doubled that in England and Wales. This invasion of the towns, as contrasted with the rural areas, has been ascribed to various causes; it was suggested quite soon after its development that "school influence" was playing a part in promoting it; there can surely be no doubt that in some measure it was due to the much more extended use of methods of bacteriological diagnosis in the towns as contrasted with the country areas.

Enough has been said to show that in studying the behaviour of throat illness in recent years, attention must be directed to scarlet fever as well as to diphtheria, and that regard must be paid to the particular phases exhibited by the waves of epidemic prevalence of both these diseases.

Flea prevalence in relation to waves of scarlet fever prevalence.

Inasmuch as major waves of throat illness culminated in 1907 and in 1914, and as the last-named wave was declining in 1915, it was to be expected that there would be low prevalence in 1916. In point of fact, diphtheria was only slightly prevalent, and scarlet fever was at a phenomenally low level. On examination of the special circumstances associated with this very low prevalence of scarlet fever two possibilities, which may themselves stand in cause and effect relationship one with the other, present themselves. It has been suggested in previous reports that fleas are concerned in transmitting scarlet fever. In 1916, as in the preceding 7 years, a flea curve was constructed, and it was again found, as in each of the previous years, that the maximum of flea prevalence shortly ante-dated that of scarlet fever. As regards annual variations in flea prevalence, it would appear that in 1915 and 1916, the figures showed decline after the rise which had culminated in 1914. There is, in point of fact, noteworthy correspondence between the curves showing annual prevalence of fleas and scarlet fever during the last 8 years—the periods for which records are available. The figure for 1910 was somewhat exceptional, but the probable reason for this was stated in the Annual Report for 1911 (p. 62). The record which has been kept for eight years thus establishes three facts of interest with regard to flea and scarlet fever prevalence. First, there is striking similarity of the two seasonal curves; second, the flea maximum always antedates the scarlet fever maximum; third, the curves showing annual variations of fleas and scarlet fever manifest close correspondence.

Influence of dry seasons.

Turning now to the second possibility; the question as to the effect of dry seasons which has been already adverted to, needs to be considered. The year 1916 was a wet year, and particularly so in South-East England, and in London; this is a fact which has had a considerable influence upon mortality returns for the year. Low diarrhoea prevalence and lessened mortality from scarlet fever and diphtheria may undoubtedly be in part ascribed to this cause. Dr. Hugh Robert Mill prepares each year for "British rainfall" a map showing the percentage deviation from the average rainfall in different parts of the British Isles. The map for 1916 shows that in South-East England the deviation from the average was notably excessive, and the "culmination of this wet area was in a rough circle extending from London to Maidstone, and from Enfield to Horsham, where the excess was more than 30 per cent., and about East Grinstead, where it rose to 40 per cent. Within part of this circle the rainfall has been above the average every year since 1908, and a spell of 8 consecutive wet years is so rare that we may confidently expect the swing of the pendulum at an early date."

Dr. Mill adds, "In conclusion, may I be allowed to answer No, to the inevitable question? The data do not justify us in attributing the wetness of the past 3 years to the war. For amount of rain 1912 was much more remarkable, while as to distribution of rain in the South-East of England, where, if anywhere, the effect of gunfire on rainfall should be clearest, the same general type of distribution has prevailed since 1909, and the years 1910, 1912, 1915, and 1916 are remarkable for their similarity and must, I think, owe that similarity to similar conditions in the flow of the great rain-bearing air currents over the Atlantic." As regards the first reason, the fact that 1912 was very wet does not materially affect the argument, and no great importance can attach to the second ground of objection taken. As a matter of fact, Dr. Mill's maps show the special characteristics more particularly in 1915 and 1916, and though 1910 and 1912 also present some approach to similarity of type, this does not preclude the possibility of special influence having been at work in 1915 and 1916. (1914 hardly counts for war effects were comparatively little developed in that year.) This view of the question seems to be held by Sir John Moore (*British Medical Journal*, Feb. 10th, 1917, p. 207). He agrees that "gunfire" *per se* has probably had little to do with the wetness of 1915 and 1916, but is not so sure that "the vast quantity of dust thrown into the air by the myriad explosion of shells and bombs has not had a causal relation to the extraordinary prevalence of cloud, and consequent abundant precipitation during the past 2 or 3 years." He adds, "It is to be remembered, as proved experimentally by Mr. John Aitkin, of Falkirk, that each particle of dust in the atmosphere acts as a condenser of aqueous vapour."

It would be indeed, a strange result of the European War if it should be proved that dust due to explosion of shells was in part responsible for the notable falling off in the admission of cases of scarlet fever to Metropolitan Asylums Board hospitals. Whatever the cause may have been, the falling off was very marked, and had the effect of obviating any difficulties that might have resulted from the many other claims made on these hospitals during the last 3 years.

While it is of course natural to conclude that the low prevalence of scarlet fever in 1916, which was particularly marked in London, may, in some small degree, be explained by the excessive rainfall, there can be no doubt that in the main this low prevalence is due to the fact that 1916 falls in the trough of a major wave of prevalence of epidemic sore throat.

It is noteworthy that, in 1916, this low degree of prevalence of scarlet fever was particularly emphasised by the entire absence of the autumnal rise. It may be argued, assuming that 1916 was a year in which the susceptible units in the child population were in large degree exhausted, would it not still be expected on the assumption that fleas play a part in producing scarlet fever, that during the autumnal prevalence when fleas increased in numbers scarlet fever would also increase? Mr. Harold Russell states that "in Northern Europe the human flea takes about 4 weeks in summer and 6 weeks in winter to pass through its metamorphosis." If then in 1916 the wanted more rapid development of fleas occurred, how is it that no rise in scarlet fever accompanied it? The fact is not, in itself, incompatible with the flea hypothesis—the effect (scarlet fever) is the result of a number of causes, and it must not be expected that it will vary directly in correspondence with variations in each particular cause. In 1894, 1903, and 1910, years of low prevalence following upon epidemic years, there was similar almost entire absence of autumnal rise of scarlet fever. (See the charts published in previous Annual Reports).

In accordance with the Order of the Local Government Board, dated 27th November, 1915, Measles, measles and German measles became compulsorily notifiable diseases on the 1st January, 1916. The number of cases notified among all persons during 1916 was 47,450, as compared with 19,317 school cases.

The Central Council for District Nursing have issued a comprehensive report containing the outlines of a scheme for the district nursing of measles, German measles, and whooping cough. The object of the scheme is "to secure the provision of timely nursing care—in proper relation to medical advice—with a view to saving the lives and preventing permanent injury to the health of young children attacked by measles and whooping cough." The report reviews the whole subject in the light of compulsory notification, and the incidental powers of local authorities in respect of medical or nursing aid. It is pointed out that under Section 12 of the Children Act, 1908, failure to provide medical aid may be deemed to be "neglect" within the meaning of the Act; and by Section 97 of the Public Health (London) Act, 1891, any borough council is empowered, with the consent of the Local Government Board, to "provide or contract with any person to provide a temporary supply of medicine and medical assistance for the poorer inhabitants of their district." It is hoped that as far as possible sanitary authorities in London will utilise increasingly their powers in this direction.

With the object of deriving full benefit from compulsory notification in connection with the control of measles in the schools, an arrangement has been made with Dr. Davies, Medical Officer of Health of Woolwich, whereby full particulars of all cases of measles notified under the Order are at once reported to the school medical officer in order that immediate steps may be taken at the school concerned to limit the spread of infection. As a tentative measure, the principle of class closure for short periods, instead of merely excluding those children who have not previously suffered from measles, has been adopted in Woolwich with a view to discovering whether by such means greater control over the spread of measles in schools can be secured. The scheme has only been in operation a short time, and, therefore, the results cannot as yet be determined.

There was also a decline in the number of cases of whooping cough among school children; only Whooping cough. 8,595 cases having been reported, as compared with an average of 10,213 for the previous 3 years. Whooping cough is still compulsorily notifiable in the Boroughs of Greenwich, Lambeth, and Holborn.

There has been a progressive reduction in the number of cases of ringworm during the past few Ringworm. years, as will be noted in the following comparison with previous years:—

	Fresh Cases.	Cured Cases.	Cases outstanding at end of year.
1911	6,214	5,872	2,458
1912	5,311	5,131	2,204
1913	5,573	5,257	2,277
1914	4,449	5,902	1,638
1915	3,747	3,928	1,334
1916	3,115	3,081	1,232

The number of children who were known to be suffering when lost sight of, owing to removals and other causes, is not shown in the above table. The increasing proportion of cases treated by X-rays has risen from 30 per cent. to nearly 56 per cent. of the cured cases. It is gratifying to note that in spite of military needs in connection with radiography, the percentage of cases of ringworm cured by X-rays has, if anything, increased during the war.

The number of hair specimens sent up by the school nurses, from time to time, and examined microscopically during the year was 2,494. Of these, 1,176 were found to contain ringworm fungus, 21 contained favus, and the remainder showed a negative result.

Favus.—During 1916, 11 fresh cases of favus were discovered, chiefly in the East End schools, as compared with 29 in 1915, 38 in 1914, and 49 in 1913. Of the 11 fresh cases, only 2 have been under X-ray treatment, and the remainder have been treated by ointments and lotions at hospitals, etc. At the end of the year there were only 7 children known to be suffering from favus.

Industrial Schools, Residential Special Schools, Places of Detention.

The standard of health, so far as infectious illness is concerned, in the Council's residential, special, and industrial schools, has been very satisfactory. Beyond a number of cases of minor infectious or contagious ailments, there is nothing of note to record.

There were no outbreaks of infectious illness to record in connection with the Council's places of detention. Apart from cases of skin affections, such as scabies, impetigo, etc., the majority of which were detected upon admission, places of detention have been practically free from communicable diseases.

Defective Children.

During the year, 3 new schools have been opened, 2 for physically defective children, and one for partially deaf children; 2 schools for physically defective children have been closed.

The total number of examinations under the special Acts during the year was 5,422, as compared with 5,777 for 1915. Of these, 1,251 were deemed suitable to attend elementary schools, 660 were invalided, 60 were deemed suitable to attend a blind school, 261 a school for myopes, 83 were sent to deaf and 67 to partially deaf schools, 606 were epileptic, 993 suitable for physically defective schools, 1,349 for mentally defective schools, 81 were deemed imbecile, and 11 idiot.

The following table shows the nature of the conditions found among the children certified suitable for admission to physically defective schools at the admission examinations during the year:—

Certified.	No. attending School.			No. out of School.			Certified.	No. attending School.			No. out of School.		
	Boys.	Girls.	Total.	Boys.	Girls.	Total.		Boys.	Girls.	Total.	Boys.	Girls.	Total.
Infantile paralysis ...	22	10	32	60	47	107	Heart... ..	60	139	208	40	58	98
Cerebral paralysis ...	7	6	13	18	16	34	Congenital deformities ...	8	10	18	13	13	26
Various paralyses ...	3	1	4	6	5	11	Various deformities ...	32	27	59	47	35	82
Tubercle ...	42	41	83	120	89	209							

Rota visits.

The special schools were visited at least once a quarter, and every child present was seen at least once during the year. During these visits the scholars were re-classified, and 254 were transferred to elementary schools, 5 to blind and myope schools, 4 to schools for the deaf and partially deaf, 25 from physically defective to mentally defective schools, 6 from mentally defective to physically defective schools, 57 were excluded from mentally defective schools as imbecile, 26 were invalided on medical grounds, and 57 over 14 years of age were excluded as no longer certifiable. In addition, 989 special examinations were made of children already on the rolls of special schools, in connection with applications for non-enforcement of attendance, committals to industrial schools, etc.

The following return gives the numbers of exceptional children recorded on 31st December, 1916:—

	Blind and partially blind.	Deaf and hard of hearing.	M.D. excluding imbeciles and idiots.	Physically Defective.	Epileptics.
Attending public elementary schools ...	298	36	36	10	...
Attending certified special schools ...	546	732	7,569	3,815	69
Not at school ...	39	7	...	36	(a)
	883	775	7,605	3,861	69 (a)

(a) 28 Children are on the waiting list for admission to special schools or colonies. The number of epileptic children out of schools for epileptics cannot be ascertained since the date of the last scheduling—viz., May, 1915. At that time, 115 children between the ages of 7 and 16, and 4 between the ages of 3 and 7 were out of school.

In the age groups, out of 256,847 children examined, the following were found to be the mental conditions. Dull or backward age group 8-9 years boys, 7.2 per cent., and girls, 5.8 per cent.; leavers boys, 8.5; girls, 8.5 per cent.; mentally defective, age group 8-9 years, boys and girls, 0.2 per cent., leavers, boys and girls, 0.0 per cent.

The examinations of children reported for serious defect of the eyes, the periodic examinations of the children in the blind schools and myope classes, and also the examinations of the eyes of children in certain types of trade schools for the physically defective, in the schools for the deaf, and in some of the industrial schools, have been made by Mr. Bishop Harman (the Council's ophthalmologist); 501 children were examined, of whom 60 were passed for blind schools, and 261 for myope classes.

Children noted by the teachers as partially deaf are examined at the schools or at special centres by the school doctors, and all cases in which there is marked impairment of hearing are referred for special investigation by Mr. Yearsley (the Council's otologist). In the year ended 31st December, 1916, 249 children were thus examined. Mr. Yearsley has analysed the cases which have passed through his hands during the past 9 years, and is able to show a great preponderance of acquired over congenital deafness. Out of 1,863 cases, 74 were found to be congenital and hereditary, 571 were cases of sporadic congenital deafness, and 9 were cases of congenital aphasia. Of 1,209 cases of acquired deafness, 416 were the result of infectious diseases, 180 were due to diseases of the nervous system, 448 followed primary ear disease, 70 were due to injury, and 95 were of uncertain origin.

Dr. Langmead, who investigated the conditions in 313 cases of heart disease at present in the schools for the physically defective, found that 5 presented the lesions of mitral stenosis, 154 of uncomplicated mitral incompetence, 86 of mitral incompetence complicated by other lesions, 3 of aortic incompetence, and 65 of congenital defects. In 13 cases of acquired heart lesions, the heart condition

Admission examinations.

Blind and myope.

Classes for the deaf and partially deaf.

Heart disease.

was complicated by pericardial adhesions, and 6 cases of congenital lesions were complicated by severe associated lung disease of a fibroid character.

The proportion of cases of congenital to acquired heart disease is higher in this sample— $\frac{6.5}{24.0}$ —than is shown in the Annual Report for 1912— $\frac{1.18}{7.43}$.

The same association of acquired heart disease with rheumatism and chorea was noted, but the proportion of girls suffering from chorea to such a degree as to necessitate special school education is found to be much higher than boys—4 to 1.

During the year there were referred by the local education authority to the local authority under the Mental Deficiency Act, 1913, 227 cases of which 63 were feeble-minded, 145 imbeciles, 18 idiots, and 1 was a moral imbecile. Mental Deficiency Act, 1913.

There are 8 residential and industrial schools, 6 residential special schools (2 for blind, 3 for deaf, and 1 for mentally defective children), with a total accommodation for 1,897 residential and 252 day scholars. To each institution is allocated a medical officer and a dentist, whose duties have been set out in previous reports. The dentists made 125 visits to the schools, conducted 2,096 examinations and treated 858 cases. Residential institutions.

During the year, 1,022 boys were admitted to Harrow Road place of detention, 1,755 to Pentonville Road place of detention, and 955 girls and young boys to Ponton Road.

The teeth of children attending the Council's blind, myope, deaf, and hard of hearing schools, are examined and attended to by a dentist specially engaged for the purpose by the Council. The dentist visits each day school twice a year, and the consent of the parents is obtained in all cases before children receive treatment. Where accommodation permits, facilities for tooth-brush drill are also provided. During the year the dentist made 2,253 examinations, and treated 834 cases, but some of the children were treated more than once. Objections to inspection or treatment or both were received in 214 cases. In addition to this work, the dentist also made 115 examinations in connection with children boarded out from industrial schools, and treated 50 cases. Dental inspection and treatment of children in blind, myope, deaf and hard of hearing classes.

During the year, 38 children were scheduled as suitable for admission to colonies. On the 31st December, 1916, 69 children were attending certified schools for epileptics, and 28 were on the waiting list for admission to special schools or colonies. The number of epileptic children out of school could not be ascertained, but at the date of the last scheduling—viz., May, 1915, 115 children between the ages of 7 and 16, and 4 between the ages of 3 and 7, were out of school. A register is now being kept of all children found in the course of the examinations to be epileptic, and, on the 31st December, 1916, contained 490 names (234 boys and 256 girls). Epileptics.

513 children (375 boys and 138 girls) in the age groups, were found to suffer from stammering. In the Annual Report for 1915, attention was drawn to the two experimental classes for adults provided by the Council, and taught by teachers of the deaf by oral methods; these classes were very successful and were continued until the summer holidays, 1916. One of the classes is still open, but it is probable that more effective work would be done if the problem were faced at an earlier age, and if one or two visiting teachers were appointed to attend each district once or twice a week and give instruction to such children as attend for it at an elementary school central to the district. The Council has also made provision for the students in the training colleges to be instructed in the theory and practice of speech, and the "speech clinic" is being continued by the authorities of St. Thomas's Hospital. Stammering.

APPENDIX I

MEDICAL INSPECTION IN TRAINING COLLEGES, SECONDARY SCHOOLS AND TRADE SCHOOLS.

Institutions.	No. examined.	Defects.													
		Teeth.	Vision.		Throat and nose.	Ears.		Heart.	Lungs.	Anæmia.	Back.		Nutrition.	Cleanliness.	Various.
			Defective.	Signs of eye-strain.		Hearing.	Discharge.				Round.	Curvature.			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(i.) L.C.C. TRAINING COLLEGES, SECONDARY AND TRADE SCHOOLS.															
(a) Training colleges—															
Females ...	764	100	197	7	8	—	1	4	1	31	46	14	22	3	48
(b) Secondary schools—															
Males ...	1,431	338	241	17	46	6	6	14	6	58	17	11	10	9	114
Females ...	3,720	989	800	122	176	21	15	81	14	167	430	194	218	46	405
(c) Trade Schools—															
Males ...	313	55	52	—	7	2	—	3	—	4	3	2	3	—	27
Females ...	488	109	93	17	16	10	6	7	1	14	42	30	22	7	38
(ii.) SECONDARY AND TRADE SCHOOLS, AIDED BUT NOT MAINTAINED BY THE COUNCIL.															
Secondary schools—															
Males ...	428	86	63	1	11	—	—	1	—	—	5	1	3	5	14
Females ...	652	131	100	11	11	—	2	3	—	17	21	7	27	25	43
Trade schools—															
Males ...	251	57	31	1	9	1	4	5	1	5	1	—	—	—	15
Females ...	674	156	124	—	13	5	1	10	2	21	30	11	1	31	46

APPENDIX II.—Table showing the results of medical inspection.

	Elementary schools.										Special schools.				
	Estrants.			Intermediate.		Leavers.		Total.	Urgent and special.		Myope.		Deaf.		Mentally defective.
	Selected Boys.	Girls.	Total*	Boys.	Girls.	Boys.	Girls.		Boys.	Girls.	Boys and Girls.	Boys and Girls.	Boys and Girls.	Boys and Girls.	
Number examined ...	13,222	12,746	84,088	42,965	42,811	43,301	43,682	256,847	18,134	21,241	140	—	195	—	2,152
Skin diseases ... (f)	459	349	808	803	654	716	560	3,541	1,295	1,351	7	5	5	2	50
Enlarged Tonsils ... (x)	278	205	483	412	329	328	265	1,817	976	999	2	3	3	1	19
Adenoid growths ... (f)	3,414	3,179	7,593	4,927	5,692	3,800	4,575	25,587	410	569	11	12	62	198	9
Tonsils or adenoids ... (x)	1,944	1,458	3,402	2,365	1,959	1,350	1,092	10,168	390	406	5	6	3	163	7
Other nose & throat defects (f)	1,937	1,641	3,578	2,142	2,060	1,469	1,625	10,874	486	578	4	2	2	121	5
Enlarged glands of neck (f)	627	469	1,096	1,538	988	1,206	839	5,667	291	309	7	6	3	128	5
External eye disease (x)	180	127	307	325	214	277	185	1,308	214	224	1	—	—	21	1
Vision test † 6, 6 R. and L. eye ...	1,960	1,763	3,723	4,161	3,832	2,875	2,919	17,150	188	208	13	8	4	159	7
6, 6 R. or L. eye ...	136	115	251	151	145	71	89	707	84	93	—	—	—	5	0
6, 12 or worse R. or L. ...	1,287	1,245	2,532	1,657	1,697	1,241	1,261	8,388	928	1,064	14	8	4	135	6
Vision ... (x)	897	854	1,751	754	742	482	468	4,197	736	807	—	—	—	58	2
Ear disease ... (f)	546	543	1,089	802	897	901	930	4,619	641	589	6	4	28	14	8
Defective hearing ... (x)	355	364	719	451	468	537	487	2,662	525	479	—	—	15	7	55
Stammering ... (f)	163	155	318	643	698	754	795	3,208	191	206	3	2	—	89	4
Other speech defects (f)	45	43	88	224	270	287	284	1,153	156	149	2	1	—	28	1
Heart defects ... (x)	28	14	42	151	53	196	71	513	13	1	—	—	—	6	0
Anæmia ... (f)	153	96	249	362	194	233	158	1,196	29	7	—	—	7	3	90
Lung complaints ... (x)	1	3	4	10	4	4	5	27	11	4	—	—	—	—	—
Nervous diseases ... (f)	442	393	835	1,521	1,476	1,465	1,929	7,226	439	595	5	3	12	6	115
Phthisis ... (x)	24	26	50	85	82	93	138	448	60	112	1	1	—	5	0
Other tubercular disease (f)	907	790	1,697	1,555	1,834	1,161	1,563	7,810	368	480	6	4	37	19	102
Rickets ... (x)	370	413	783	442	616	287	510	2,638	222	299	1	6	6	3	32
Deformities ... (f)	1,056	949	2,005	1,883	1,747	1,196	1,091	7,922	460	460	6	4	18	9	100
Infectious disease ... (x)	320	303	623	433	394	190	184	1,824	182	1	1	6	2	2	1
Malnutrition ... (f)	196	207	403	511	572	392	638	2,536	508	606	3	2	5	2	82
Glands other than throat (f)	33	32	65	84	86	55	88	378	195	259	1	0	—	16	0
Other defects ... (x)	28	25	53	91	88	84	79	395	182	213	—	—	—	9	0
No. noted for treatment	11	6	17	35	24	27	30	133	89	83	—	—	—	4	0
No. where parent present	66	42	106	104	86	76	62	447	173	194	1	0	1	0	9
	22	15	37	34	31	14	11	138	89	83	—	—	—	—	4
	573	312	885	1,018	500	696	326	3,425	53	39	—	—	6	3	94
	89	48	137	26	10	6	11	190	27	24	—	—	—	3	0
	275	139	414	832	755	979	1,305	4,285	165	169	3	2	5	2	82
	57	34	91	147	178	164	282	862	75	98	—	—	2	1	15
	29	27	56	26	25	12	18	137	63	66	—	—	—	—	1
	18	15	33	12	10	4	11	70	26	32	—	—	—	—	1
	110	133	243	281	281	147	147	1,099	57	71	2	1	1	0	17
	57	81	138	167	177	80	90	652	35	38	1	0	1	0	9
	16	9	25	34	33	35	151	278	11	18	—	—	—	—	12
	4	2	6	5	4	7	15	37	6	9	—	—	—	—	6
	476	418	894	925	1,052	844	1,037	4,752	778	1,034	3	2	3	1	54
	261	234	495	451	513	358	458	2,275	484	632	1	0	2	1	27
	9,661	9,415	19,076	17,185	17,632	16,960	17,562	88,415	5,588	6,340	29	20	45	23	970
	9,637	9,396	19,033	17,185	17,632	16,960	17,562	88,415	5,588	6,340	29	20	45	23	970

(f) Signifies defects found. (x) Cases noted as requiring treatment. * Including preliminary examinations, 55,120 children. † The percentages refer only to the cases in which the vision was tested. ‡ Percentage present at detailed examinations.

APPENDIX III.

Number and percentage of children in each age group classified as regards condition of clothing, nutrition, cleanliness, teeth and mental capacity.

			Clothing and Footgear.			Nutrition.			Cleanliness of Head.			Cleanliness of Body.			Condition of Teeth.			Mental Condition.			
			1	2	3	1	2	3	4	1	2	3	1	2	3	1	2	3	1	2	3
Entrants—Boys	...No.	7,339	5,599	284	3,785	8,372	1,050	15		11,848	1,329	45	10,718	2,380	124	3,786	5,287	4,149			
13,222	... %	55.4	42.4	2.2	28.6	63.4	7.9	-1		89.6	10.1	-3	81.0	18.0	1.0	28.6	40.0	31.4			
Girls	... No.	7,170	5,373	203	3,630	8,100	1,007	9		9,228	3,322	196	10,231	2,421	94	3,454	5,222	4,070			
12,746	... %	56.2	42.2	1.6	28.5	63.5	7.9	-1		72.4	26.1	1.5	80.3	19.0	-7	27.1	41.0	31.9			
Intermediate—Boys	No.	22,514	18,954	1,497	10,164	28,791	3,981	29		38,305	4,574	86	34,071	8,449	445	20,459	17,947	4,559	39,741	3,146	78
42,965	... %	52.4	44.1	3.5	23.6	67.0	9.3	-1		89.2	10.6	-2	79.3	19.7	1.0	47.6	41.8	10.6	92.6	7.2	-2
Girls	...No.	23,794	18,317	700	11,318	28,079	3,391	23		29,437	12,803	571	34,453	8,057	301	20,403	17,858	4,550	40,220	2,516	75
42,811	... %	55.6	42.8	1.6	26.4	65.6	7.9	-1		68.8	29.9	1.3	80.5	18.8	-7	47.7	41.7	10.6	94.0	5.8	-2
Leavers—Boys	No.	23,502	18,200	1,539	12,738	27,613	2,932	18		39,238	3,994	69	34,290	8,589	422	22,995	17,501	2,805	39,597	3,701	3
43,301	... %	54.3	42.2	3.5	29.4	63.8	6.8	-0		90.6	9.2	-2	79.2	19.8	1.0	53.1	40.4	6.5	91.5	8.5	-0
Girls	No.	25,729	17,387	566	13,732	27,209	2,736	5		30,920	12,289	473	35,683	7,755	244	24,025	17,106	2,551	39,982	3,682	18
43,682	... %	58.9	39.8	1.3	31.4	62.3	6.3	-0		70.8	28.1	1.1	81.7	17.8	-5	55.0	39.2	5.8	91.5	8.5	-0
Total—198,727	No.	110,048	83,890	4,789	55,367	128,164	15,097	99		158,976	38,311	1,440	159,446	37,651	1,630	95,122	80,921	22,684	159,540	13,045	174
...	...	55.4	42.2	2.4	27.9	64.5	7.6	-0.5		80.0	19.3	-7	80.3	18.9	-8	47.9	40.7	11.4	92.3	7.6	-1
Special Schools—Boys and		848	1,444	195	482	1,639	362	4		1,708	724	55	1,632	776	79	1,216	963	308			
Girls—2,487	...	34.1	58.1	7.8	19.4	65.9	14.5	0.2		68.7	29.1	2.2	65.6	31.2	3.2	48.9	38.7	12.4			

APPENDIX IV.

Table showing result of 1st re-inspections carried out during 1916. Percentages in italic figures.

	Treatment provided.						Not treated.	
	By doctor.		Under Council scheme.		At other hospitals.		Treatment no longer required.	Treatment still required.
	Cured.	Not cured.	Cured.	Not cured.	Cured.	Not cured.		
Refraction (23,715)	226 <i>1.0</i>	145 <i>.6</i>	6,448 <i>27.2</i>	2,790 <i>11.8</i>	1,415 <i>6.0</i>	848 <i>3.6</i>	1,991 <i>8.4</i>	9,852 <i>41.6</i>
Nursing treatment cases (10,677)	501 <i>4.7</i>	84 <i>.8</i>	2,323 <i>21.8</i>	814 <i>7.6</i>	1,371 <i>12.8</i>	434 <i>4.1</i>	3,148 <i>29.5</i>	2,002 <i>18.7</i>
Ear, nose and throat ... (15,054)	149 <i>1.0</i>	50 <i>.3</i>	2,889 <i>19.2</i>	328 <i>2.2</i>	1,589 <i>10.6</i>	236 <i>1.6</i>	3,064 <i>20.4</i>	6,749 <i>44.8</i>
Teeth (46,581)	1,867 <i>4.0</i>	888 <i>1.9</i>	11,077 <i>23.8</i>	759 <i>1.6</i>	2,880 <i>6.2</i>	728 <i>1.6</i>	3,606 <i>7.9</i>	24,716 <i>53.0</i>
Other ailments (12,230)	613 <i>5.0</i>	232 <i>1.9</i>	131 <i>1.1</i>	178 <i>1.5</i>	1,852 <i>15.1</i>	1,307 <i>10.7</i>	5,127 <i>41.9</i>	2,790 <i>22.8</i>
Total (108,257)	3,356 <i>3.1</i>	1,399 <i>1.3</i>	22,868 <i>21.1</i>	4,869 <i>4.5</i>	9,107 <i>8.4</i>	3,553 <i>3.3</i>	16,996 <i>15.7</i>	46,109 <i>42.6</i>

Table showing results of 2nd re-inspections carried out during 1916.

	Treatment provided.						Not treated.	
	By doctor.		Under Council's scheme.		At other hospitals.		Cases no longer requiring treatment.	Treatment still required.
	Cured.	Not cured.	Cured.	Not cured.	Cured.	Not cured.		
Refraction (11,060)	77 <i>.7</i>	29 <i>.3</i>	1,977 <i>17.9</i>	1,251 <i>11.3</i>	583 <i>5.3</i>	400 <i>3.6</i>	1,571 <i>14.2</i>	5,172 <i>46.7</i>
Nursing treatment cases (4,391)	107 <i>2.4</i>	55 <i>1.3</i>	585 <i>13.3</i>	371 <i>8.4</i>	383 <i>8.7</i>	223 <i>5.1</i>	1,383 <i>31.5</i>	1,284 <i>29.3</i>
Ear, nose and throat ... (7,800)	65 <i>.8</i>	14 <i>.2</i>	1,063 <i>13.6</i>	115 <i>1.5</i>	710 <i>9.1</i>	111 <i>1.4</i>	2,076 <i>26.6</i>	3,646 <i>46.8</i>
Teeth (22,178)	817 <i>3.7</i>	431 <i>1.9</i>	3,217 <i>14.5</i>	334 <i>1.5</i>	1,137 <i>5.1</i>	361 <i>1.6</i>	2,722 <i>12.3</i>	13,159 <i>59.4</i>
Other ailments (6,159)	195 <i>3.2</i>	97 <i>1.6</i>	67 <i>1.1</i>	87 <i>1.4</i>	698 <i>11.3</i>	610 <i>9.9</i>	3,103 <i>50.4</i>	1,302 <i>21.1</i>
Total (51,588)	1,261 <i>2.4</i>	626 <i>1.2</i>	6,909 <i>13.4</i>	2,158 <i>4.2</i>	3,511 <i>6.8</i>	1,705 <i>3.3</i>	10,855 <i>21.1</i>	24,563 <i>47.6</i>

Cases noted as requiring observation.

	No. of cases.	Discharged as cured.	Still requiring observation or treatment.
First re-inspection	19,403	7,076 <i>36.5</i>	12,327 <i>63.5</i>
Second re-inspection	10,385	3,792 <i>36.5</i>	6,593 <i>63.5</i>

The figures in the above tables refer to defects found. In many cases one child has two or more defects.