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Contributors

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Hamer, William H.

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London County Council.

REPORT OF THE COUNTY MEDICAL
OFFICER OF HEALTH AND SCHOOL
MEDICAL OFFICER FOR THE YEAR
1915.

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VICTORIA EMBANKMENT,

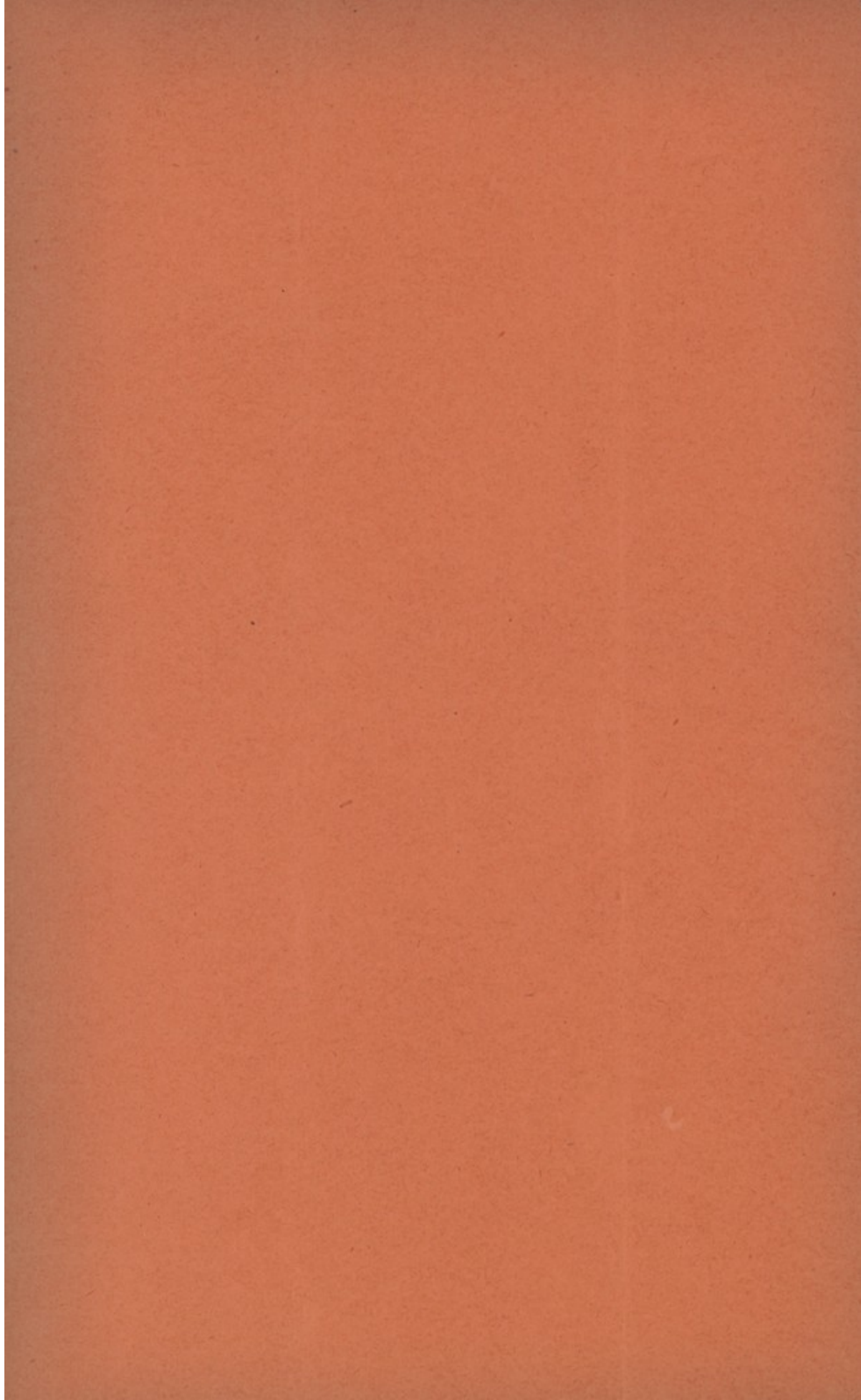
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ADMINISTRATIVE COUNTY OF LONDON.

REPORT OF THE COUNTY MEDICAL OFFICER OF HEALTH (DR. W. H. HAMER) FOR THE YEAR 1915.

PART I.—GENERAL.

INTRODUCTION.

The health of London during 1915 does not compare very favourably with that of quite recent years, not so much on account of any influence of the war, as owing to increase of deaths at relatively high ages attributable to a prevalence of influenza and respiratory diseases during the winter months.

There have been changes in the London population, both as regards the aggregate number of ^{Deaths} residents and their distribution in the county, and it has thus become necessary to calculate mortality rates for the year upon a population from which a deduction is made for men on active service, the deaths being similarly reduced so as to relate only to civilians. The death-rate thus obtained is 16.8. A tabular summary of the vital statistics for London and its constituent boroughs will be found appended to this report (page 17).

The number of marriages registered in London in 1915 was the highest ever recorded. ^{The} ^{Marriages.} calculation of a marriage-rate is attended with difficulty owing to the fact that the estimated civil population cannot be used for the purpose. Assuming the population to be roughly four and a-half millions, the rate, comparable with that of previous years, becomes 25.9, which is higher than that in any previous year. The marriage-rate has shown a slight increase annually since 1908, but the bulk of the increase in 1915 must be directly attributed to the war. There is reason, however, for thinking that an abnormal number of persons whose marriage was registered in London were not London residents.

The birth-rate, which has been falling, for a number of years past, was 23.6 in 1915, as compared with 24.3 in 1914, and 25.0 in 1909-13. ^{Births.} The question as to the extent to which certain influences may have contributed to the decline of the birth-rate is referred to on p. 3.

In regard to the incidence of the principal epidemic diseases in 1915, 10 cases of smallpox occurred ^{Infectious} ^{diseases.} in London, see p. 4. Despite the return to this country of convalescent soldiers and the abnormal conditions of the time, no increase in prevalence of typhoid fever or dysentery was observed. A few cases of typhus occurred in Stepney (see page 6). The mortality from measles was 2,286, as compared with 1,376 in 1914. The deaths from whooping-cough somewhat exceeded those in 1914. Diarrhoea and enteritis at ages 0-2 years fell from 3,057 in 1914 to 2,556 in 1915. Scarlet fever, erysipelas and puerperal fever show decrease as compared with the preceding year; some decline is, moreover, observable in diphtheria and ophthalmia neonatorum: on the other hand, cerebro-spinal fever showed increased prevalence, there being 627 civilian cases during last year, as compared with 73 in the general population in 1914. Owing to the fact that the records in 1915 of notifiable diseases relate mainly to the civil population, the case-rates are rendered less reliable in those diseases which are mainly incident upon persons of military age, such as typhoid and cerebro-spinal fever. Nearly 25 per cent. of the cases of cerebro-spinal fever notified in England and Wales in 1915 occurred in London.

In last year's report the relation between the prevalence of influenza and cerebro-spinal fever was considered. It is now possible to make use of the entire series of figures for the year 1915, and the opportunity has been taken to further examine that relation. It was pointed out that, during the epidemic period February—March, 1915, the number of cases of cerebro-spinal fever, which gave a history of influenza within a week of the onset, was in excess of expectation. A review of the cases occurring during the rest of the year and of cases occurring in the recrudescence of the disease early in 1916 will be found at p. 9, where also reference is made to reports of the Army and Navy authorities.

The deaths from pulmonary tuberculosis in 1915 somewhat exceeded those of 1914. The primary cases notified have exhibited each year since the introduction of notification a decline, presumably due to the diminishing number of cases of old standing notified.

No cases or suspected cases of cholera or plague were reported during the year. Several cases of anthrax occurred, which were associated for the first time in the history of the disease with the use of infected shaving-brushes (see page 13).

The administrative section of the report has been of necessity considerably curtailed. ^{Administra-} ^{tion.} The bulk of the statistical information forthcoming in former years is, however, available, thanks to the courtesy of medical officers of health, and is presented in a single table. War conditions have made the maintenance of the sanitary services of London increasingly difficult, though exceptional efforts have been made by the depleted staffs to maintain the standard of efficiency.

At the date of writing this report five medical officers of health were actually serving with the forces of the Crown. Inquiries made in July, 1916, showed that 53 sanitary inspectors were on war service for whom substitutes had not been engaged. There was thus a depletion of the staff of sanitary inspectors to the extent of about 16 per cent. Some of the poorer boroughs had suffered disproportionately in this respect, and at the time of writing this report, the Council was in communication with the authorities concerned.

During the year under review some further progress was made in the establishment of maternity and child-welfare centres (see p. 15). The Notification of Births Extension Act enabling local authorities to make arrangements for the care of mothers, including expectant mothers and young children came into operation in 1915.

Exceptional attention was devoted during the year to the seamen's lodging-houses in East London, in view of possible risk of the introduction of infectious disease. Special difficulty is encountered in dealing with the houses occupied by Chinamen, and much time has been spent in endeavouring to trace changes of occupation in order to secure that, as far as practicable, these houses shall be duly licensed by the Council. The treatment of tuberculosis under the provisions of the National Insurance Acts, 1911 and 1913, has been largely developed throughout the year, the number of beds now available being 120 for adults, and 236 for children. The prevalence of verminous conditions amongst certain sections of the population has somewhat increased, but it must be borne in mind that to some extent such increase might have been anticipated, having regard to the conditions on the Continent. The report concludes with statements relating to the Mental Deficiency Act, the Midwives Act, the General Powers Act, 1915, Section IV., dealing with lying-in homes, and the work carried out in the chemical and analytical branch of the public health department.

A.—VITAL STATISTICS.

Population.

The population of London county at the census of 1911 (3rd April) was 4,521,685; and it was estimated by the Registrar-General to have been 4,518,021 in the middle of 1914. In the course of 1915 there were considerable changes not only in regard to actual numbers, but also in relative age and sex constitution, and in the distribution among the different metropolitan boroughs. Material for gauging approximately the effect upon the aggregate population of the county, and of the borough populations individually, is provided by the National Register of persons aged 15-65, compiled in August, 1915, from which the Registrar-General has prepared estimates of the average *civil* population of London and its constituent boroughs for that year. The total civil population of London thus estimated was 4,310,030. The populations of the boroughs, abstracted from the fourteenth weekly return of the Registrar General for 1916, p. 221, will be found in the table on page 17. In order to obtain data relating to this population, the Registrar General has excluded deaths occurring among members of His Majesty's forces during the year, and hence rates for the civil population can be calculated for London and for each borough. The resulting rates are the best that can be obtained under the wholly abnormal circumstances, but it is obvious that comparisons of these rates with those of normal years must be made with caution.

The "civil population," as compared with the normal is deficient in males of military age, 19-40, and at these ages the death-rate is considerably below that of the normal population as a whole. Moreover, those of this age on active service form a selected group, since persons found to be suffering from disease are not recruited. For these reasons the rates calculated upon the civil population must be overstated.

One effect of the war which deserves to be taken especially into account in dealing with the population of the County of London is the arrestment of building activity, the result of which has undoubtedly been to check the outward movement of the population which has been going on for some time, more particularly north of the Thames. This factor, in conjunction with the influx of refugees, the movement of working-class persons engaged in munition factories, and the probable inaccuracy of the National Register itself, must be held to account for the great divergency in the percentage of reduction by enlistment which the estimates of the Registrar-General show in different metropolitan boroughs.

Marriages.

The number of marriages in the administrative county of London in 1915 was 58,354, as compared with 43,373 in 1914, and 41,409 in 1913. The increase is observable in each quarter of 1915, as compared with the corresponding quarter of 1914. An almost steady increase in the marriage-rate has been observable for six years past, the rate having risen from 16.9 in 1909 to 19.2 in 1914. The estimated "civil population" in 1915 cannot be used for the calculation of the marriage-rate for that year, since the males married include a number of men on service, but taking a probable population of four and a-half millions, the rate would be 25.9 per 1,000 living. There is, however, reason for thinking that a considerable number of these marriages may not properly belong to the London population, since while the London figures show an increase in 1915 over 1914 of 34 per cent., the corresponding increase for the rest of England and Wales is only 20 per cent.

Births.

The number of births in the administrative county of London in 1915 was 102,117 as compared with 109,952 in 1914. The birth-rate in 1915 calculated on the civil population is, therefore, 23.6, which may be compared with the rate of 24.3 in 1914. The average for 1909-13 was 25.0. As noted above, however, there has been a marked increase in the number of marriages since 1914, and it is probable that this fact may in part account for the relatively small decline so far in the birth-rate. Comparison of the quarterly figures for 1914 and 1915 shows that the births begin to fall off in the second quarter of 1915, as compared with 1914, and fall away markedly in the third and fourth quarters of the latter year. The births registered in the first quarter of 1916 numbered 25,443, as compared with the similar figure in 1915 of 28,240 (and of 28,235 in 1914). In the second quarter of

1916 there was, however, a slight increase, the figure being 27,291 as compared with 27,035 in the corresponding quarter of 1915.

The Notification of Births Act, 1907, is adoptive in character, but was put into operation throughout the whole of the County in 1909 by an order of the Local Government Board made under Section 5 of the Act. By Section 2 (5), the Council receives from the medical officers of health of the City and the metropolitan boroughs particulars of the births within their several districts. The total number of births thus notified during the year was 98,758, of which 2,108 were twins, 48 were triplets, and 2,246 were stillbirths. After correction for institutions the total number of births was 98,265, of which 2,228 were stillborn. The corrected number of births registered during the year was 101,649, an excess of 5,612 over the number notified.

The Notification of Births (Extension) Act, 1915, empowers local authorities (in London, the City Corporation and the councils of the metropolitan boroughs) to exercise any power which a sanitary authority has under the Public Health Acts, 1875 to 1907, or the Public Health (London) Act, 1891, for the purpose of the care of expectant mothers, nursing mothers and young children.

Much has been written concerning the steady fall in the birth-rate which has now been practically continuous for the last 40 years. A theory which has met with some acceptance ascribes it not to natural causes such as the higher age of marriage, economic factors, migration, etc., but to a change in the "moral tone" of the community, and to the artificial limitation of families. One of the most cogent arguments against this is the fact that the fall is widespread throughout Europe and affects certain other civilised communities. As Mr. Udny Yule has observed:—"It was precisely the extraordinary similarity of the changes in very widely different countries that made it very difficult for him to accept the purely moral theory. If there had been a change in that way—and possibly it was the case—why did this change take place in so many different countries in almost the same year? People did not change their morality in a large number of different countries, or even in one country, at a given point of time without some extremely definite cause, and . . . he was still inclined to regard economic factors of some kind as lying behind it."

The decline
in the birth
rate.

On the other hand, in a paper read by Dr. Dunlop on the "Fertility of Marriage in Scotland," a table is given which appears to indicate that the fertility of marriage has been decreasing; the average complete fertility of wives married at 20, previous to 1864, was 8.48; in the quinquennium 1865-69 this fell to 8.42; in the period 1870-74 to 8.04; in 1875-79 to 7.88; in 1880-84 to 7.59; and similar results are shown for each year of age in the table. Various criticisms of these figures have, however, been published, and Dr. Dunlop has examined some of them in a further paper. Dr. Snow has pointed out a serious source of fallacy, inasmuch as the mortality of parents with large families is less than that of parents with small families, and from this it would follow that the figures stated exaggerate the fertility of the marriages occurring before 1880 in comparison with the later ones, owing to the fact that the small families derived from the earlier marriages are not represented in the proper proportion among the surviving parents in 1911. A further point of criticism is that the results are based on data which must, to some extent, be considered as selective, owing to the fact that a considerable proportion of the Scotch population has emigrated (217,418 in 1881-91, and 53,356 and 254,042 in the two following decennia). The opposite influence, exerted by immigration upon a birth-rate, is, it may be observed, strikingly exhibited in Australia. As Sir T. Coghlan says:—"There can be no question but that the women who came to Australia between 1850-1870 were of a type likely to be prolific in children," and again he speaks of the women, who came "in the gold digging days and the two following decades," as being "as a class, above the ordinary fertility of the time." The high birth-rate following upon this immigration and the decline following upon its cessation probably thus in large part find explanation. This view is confirmed by Mr. W. McLean, who has pointed out that the high birth rates of 1871-81 in older women must be attributed to the fact that many of these women came to Australia during the "immigration period" of 1851-61 and thus belonged to a "physically selected class."

The effect of postponement of marriage has hitherto been considered mainly from the point of view of its relation to the duration of marriage, and insufficient allowance has been made for what might be termed the physiological effect. Sir T. Coghlan quotes figures demonstrating "the incorrectness of the popular assumption that the fertility of women marrying at immature ages soon becomes exhausted," and, further, cites figures showing "that the reproductive system, if unused, is apt to become inoperative." Drs. Newsholme and Stevenson have referred to certain Budapest figures, which give different results, but it is at any rate clear that the physiological reasons for assuming that postponement of marriage markedly affects fertility are supported by the figures from New South Wales. If, as seems probable on physiological grounds, a woman's reproductive power may be represented by a curve which rises from zero at about age 15 to a maximum somewhere between ages 20 and 30, and then gradually approaches zero again in the region of age 45, and if this curve undergoes modification with the varying ages at which marriage takes place, it would appear that any conclusions which do not take account of this physiological side of the problem must be accepted with reserve.

Mr. Udny Yule, in his paper of 1906, examined various economic factors, wages, consumption of commodities, exports and imports, and was led to attach special significance to the correlation of the marriage and birth rates with the course of prices. The correspondence between Sauerbeck's index numbers of prices, and the marriage and birth curves is a striking one, and Mr. Yule concludes:—"I feel myself almost compelled to the belief that the course of prices, either directly by its influence on consuming power and on profits, indirectly by effects on trade, or more indirectly (if it be possible) as an index to the course of some other variable, has been, through the past century, the factor of most outstanding importance in the rate of reproduction of the race."

The importance was pointed out in last year's Annual Report of making correction for *qualitative* as well as *quantitative* changes affecting the age constitution of potential mothers and fathers, and it was stated that a particularly important qualitative correction was that rendered necessary owing to the migratory character and the increased urbanisation of the population, during the last fifty years. Mr. Udney Yule's hint as to the indirect effect of trade, or the more indirect influence of some other variable, may be borne in mind here. The fall of prices since 1876 is largely attributable to increased facilities for the transport of commodities, and these same facilities have affected the movement of population as well as that of goods. In particular the growth in capacity of sailing and steam ships was first conspicuously manifested from the seventies onwards, and this growth has undoubtedly had considerable influence upon the constitution of most European populations of child-bearing age. It is a well recognised fact that in dealing with death-rates, the arithmetical correction for age distribution is at best only a partial one, and similarly in the case of birth-rates it clearly cannot be assumed, as there has been some tendency to do, that an arithmetical correction is all-sufficient.

It may be urged, however, that if the decline in the European birth-rate be largely attributable to emigration the countries to which the emigrants go should show high birth rates. The case of Australia has been already referred to; elsewhere, records are imperfect or wanting, but it may be noted that the United States have received nearly 20 millions of young adults from Europe during the last forty years, and as H. P. Fairchild notes, "the high birth rate of our now large foreign born population" is notorious; moreover, the years of this great exodus are precisely those of the declining birth rates throughout Europe. France, as was noted in the Annual Report for 1912, occupies a peculiar position among European countries. There has been little emigration, but the huge losses sustained during the Napoleonic wars doubtless account in large degree for the slow growth of population in the first half of the nineteenth century; while the Italian, Austrian and German wars have certainly played a part in preventing a return to more normal conditions in later years.

Deaths (all causes).

The number of deaths among civilians in the administrative county of London in 1915 was 72,393, as compared with 66,037 in 1914, and the death-rate, calculated on the estimated civil population, was 16.8, comparing with 14.6 in 1914.

The increased deaths appear to be due in greater degree to unfavourable weather conditions in the winter of 1915 than to increase in deaths at military ages attributable to the war. The following figures include deaths in the forces (52 weeks):—

Year.	0—	1—	2—	5—	10—	15—	20—	25—	35—	45—	55—	65+	All ages.
1914 ...	11,395	3,164	2,639	1,487	897	1,151	1,311	3,526	5,234	7,280	8,465	18,442	64,994
1915 ...	11,369	4,015	3,390	1,728	964	1,307	1,636	3,737	5,597	7,810	9,388	21,458	72,399
Increase (+)	-26	+851	+751	+241	+67	+156	+325	+211	+363	+530	+920	+3,016	+7,405
Decrease (-)													

The increased number of deaths at ages 1-5 years is mainly due to the prevalence of measles and respiratory diseases in the winter months. At ages over 55 years, bronchitis, and other diseases of the respiratory system were responsible for the greater part of the increase, to which organic heart disease and influenza both, however, also contribute.

Infant
mortality.

The deaths among children under one year of age in the administrative county of London during 1915 numbered 11,464, being in the proportion of 112 per 1,000 births. The deaths and death-rate in 1914 were 11,477 and 104 respectively. In the summer of 1914 the conditions were less favourable than in 1915, the temperature in June, July and August of 1914 being considerably above the average: hence the deaths from diarrhoea and enteritis among infants aged 0-1 were in excess in 1914, numbering 2,608, as compared with 2,126 in 1915. On the other hand, the winter of 1915 was less favourable and the deaths from diseases of the respiratory system in that year were 2,481, as compared with 1,956 in 1914.

The question of maternal mortality in connection with child-bearing is dealt with by Dr. News-holm in a supplement to the forty-fourth annual report of the Local Government Board. From the statistics presented in the report, it appears that London occupies a very favourable position among the counties of England and Wales in regard to the total death-rate incidental to child-birth.

Smallpox.

Three deaths from smallpox occurred in London during 1915, all three being in Fulham. Thirteen civilian cases were notified, but three of these were subsequently found to have been wrongly diagnosed. In all 20 suspects were examined by Dr. Brincker or Dr. Ross on behalf of the Council.

The ten actual cases must be ascribed to four separate importations of smallpox into London.

(a) This group consisted of six patients in one family and residing in the same house. The primary case, E.H., aged 56, was a bedmaker at Earl's Court Refugee Home. A case of smallpox had occurred in a stewardess on board the *s.s. Mecklenburg*, a Belgian refugee boat, which had arrived in Folkestone, and from which refugees had been sent to Earl's Court. The vessel sailed from Flushing to Folkestone on 23rd January with about 500 refugees on board, and again on 25th January with about

150 refugees. The stewardess remained in her cabin from 23rd to 25th January, and the chance of contact with passengers was very small. It appears that the stewardess had previously been working on board the s.s. *Orange Nassau*, another refugee boat, between the 7th and 15th January, and it is probable that there was an undetected case among the refugees on board that vessel. On the 3rd February, E. H. was found to be suffering from a severe attack of hæmorrhagic smallpox, and she died in the ambulance on the way to North Wharf Hospital. She had fallen ill on the 28th January, and the rash was first observed on 31st January. She was last at work at Earl's Court on the 29th January. In due course five further cases occurred in E. H.'s family. All these were removed to hospital by the Medical Officer of Health of Fulham, in a very early stage of the disease, and no further cases followed them. Of the six patients three died. All necessary precautions were taken at Earl's Court, including vaccination of the staff and voluntary workers.

(b) On 7th February, 1915, the s.s. *City of Marseilles* arrived at Gravesend with a case of smallpox on board, the patient having developed the rash on 29th January. The patient was removed to Denton Hospital on the day of arrival. A number of passengers proceeded to London, and amongst them was a man named C. M., aged 25 years, who, with five companions, had come to London from Ceylon to enlist. C. M., with two of his companions, went to reside at a boarding house in Kensington. Of the remaining three friends, two stayed at hotels in Holborn, and the other went to Bedford. On the 15th February, C. M. was notified to be suffering from smallpox, and was removed to hospital. The date of onset of the first symptoms was the 11th February, and the rash appeared on 14th February. C. M. had been isolated from the rest of the boarders from the day he fell ill; his two companions were, however, with him until the 14th February; both were re-vaccinated and neither of them contracted the disease. No further cases occurred among the passengers from the s.s. *Marseilles* who came to London, but of the contacts detained at Denton Hospital six developed the disease; two belonged to the crew and four to the same family as the original case.

(c) On 11th March, 1915, at the request of the Medical Officer of Health of Greenwich, Dr. Brincker visited a patient (J. H.), and found him to be suffering from smallpox. The man was a Channel pilot, and had been conducting vessels in and out of London, his last pilotage being on the 4th March. He had been unwell for three weeks suffering from indefinite symptoms of dyspepsia; the rash was first observed on March 7th, and he was removed to hospital on 11th March, when the disease was first suspected and the diagnosis made. The patient was unvaccinated. There were five contacts, the pilot's wife (E. H.), and four children. All were vaccinated on the 11th instant, the wife for the first time, the children having been vaccinated before. On the 24th March, E. H., who had been nursing her husband from 7th to 11th March, developed a rash, and on 25th March was notified to be suffering from smallpox. She was removed to hospital. No further cases occurred. Both patients had mild attacks, and were discharged from hospital on the 10th April, 1915.

(d) On the 9th May, 1915, the s.s. *Werdenfels* arrived at Gravesend from Alexandria with a case of smallpox on board. The patient, a fireman, fell ill on the 26th April, and developed the rash on the 30th April. The case was removed to Denton Hospital on the 9th May. The whole of the crew were vaccinated the same day, and proceeded to their destinations, their names and addresses being reported to the medical officers of health concerned. Arrangements were made for the Council's inspectors to keep the seamen's and common lodging houses in London under observation. One of the sailors on board (J. S.) went to the Sailors' Home, Wells-street, E. On the 17th May, the Council's inspector reported from the Sailors' Home that one of the lodgers (J. S.), referred to above, was ill and had a rash. Dr. Ross at once visited and found the man suffering from smallpox. The onset of first symptoms occurred on 16th May, and the rash appeared on May 17th. Vaccination had been performed six days previously, and this accounts for the mild attack from which the man was found to be suffering. The patient was at once removed to hospital. All precautionary measures were taken at the Sailors' Home, and no further cases occurred in London. It was ascertained that the cook on board the s.s. *Werdenfels*, who went to Bristol on the 11th May, developed hæmorrhagic smallpox.

Cases of smallpox were reported during the year on board five vessels arriving at different times in the Port of London. The circumstances relating to two of these, from which secondary cases resulted, are referred to above under (b) and (d) respectively. In the remaining three, no secondary cases occurred amongst the contacts. In every case the patient was removed to Denton Hospital; all precautionary measures were taken on board the vessels, and the names and addresses of passengers and crew proceeding to their various destinations reported, in accordance with the usual practice, to the medical officers of health concerned, for observation.

At the suggestion of the Local Government Board, the Council made an order on 9th March, 1915, extending to chickenpox the application of section 55 of the Public Health (London) Act, 1891, within the administrative county of London, up to and including the 30th June, as an urgency measure. The order was not further extended.

Measles, scarlet fever, diphtheria and whooping-cough.

The civilian deaths from measles in the administrative county of London during 1915 numbered 2,286, as compared with 1,376 in 1914. The incidence in 1915 appears to have been heavy upon the western and south-western boroughs, the total deaths in Paddington, Kensington, Fulham, Wandsworth, and Battersea, which numbered 128 in 1914, rose to 662 in 1915. Measles was a notifiable disease in Paddington throughout the year 1915.

The civilian cases of scarlet fever notified in the administrative county of London during 1915 (52 weeks) numbered 16,974, as compared with 25,015 in 1914. The civilian deaths from this cause

Smallpox on board vessels arriving in the Port of London.

Compulsory Notification of Chickenpox.

Measles.

Scarlet fever.

in 1915 were 327, as compared with 319 in 1914. The decrease in prevalence in London as a whole is shared by each of the metropolitan boroughs with the noteworthy exceptions of Shoreditch and Bethnal Green, where the cases notified increased from 424 to 556 and 654 to 786 respectively.

Diphtheria.

The civilian cases of diphtheria (including membranous croup) notified in the administrative county of London in 1915 (52 weeks), numbered 9,094, as compared with 9,118 in 1914. The number of civilian deaths was 704 in 1915, compared with 713 in 1914.

The prevalence of diphtheria in London as a whole appears generally to rise and fall with that of scarlet fever, but the rule does not hold for each individual borough. In 27 out of the 29 metropolitan boroughs the scarlet fever cases notified in 1915 showed marked decline as compared with 1914, but in the case of diphtheria only 16 showed decrease. This difference is associated with greater tendency to persistence in particular areas of diphtheria as compared with scarlet fever.

Whooping-cough.

The deaths from whooping-cough in the administrative county of London during the year 1915 numbered 1,158 as compared with 921 in 1914. Whooping-cough was a notifiable disease in Holborn, Lambeth, and Greenwich during the year 1915.

Typhus fever, typhoid fever, diarrhoea and enteritis.

Typhus fever.

A small outbreak of typhus fever occurred in the Borough of Stepney in the early spring. There were four notified cases, and two other associated cases of illness, which, though not at first diagnosed as typhus fever, came to be regarded in the light of subsequent events with suspicion.

Case I.
(Suspicious)

On 1st February, Mrs. L., aged 46, engaged in sorting clean rags and tailors' cuttings, was taken ill with "pains about the body" and high temperature. On further examination it was found that she was suffering from lobar pneumonia of both bases, accompanied by foul smelling expectoration. She gradually recovered, and was discharged from the infirmary on 5th March.

Case II.
(Suspicious)

On 20th February, J. C. (male, aged 39, son of E. C., below) returned to London, and visited his wife, Mrs. L., in the infirmary. From the 25th to 28th February he slept at No. 69, C— street, the residence of his mother (E. C.) and sister (F. C.). On 1st March, J. C. was seen by the district medical officer, who recommended his removal to the infirmary suffering from "catarrh and influenza." On admission to the infirmary, he was found to be suffering from pneumonia of both bases. On the following day he became delirious; his condition became progressively worse, and he developed pneumococcal meningitis. On the fourth day he became comatose, and died on 5th March. His body was taken home to 69, C— street, and was seen by the mother and sister and other friends.

Case III.

On 20th March, J. C.'s sister (F. C.) (female, aged 19) was removed to the South-Eastern Fever Hospital, notified to be suffering from enteric fever. On 22nd March, the medical superintendent of the hospital notified the case as one of typhus fever.

Case IV.

On the same day E. C. (female, aged 58), the mother of F. C., was removed to the South-Eastern Hospital, where she also was notified to be suffering from typhus fever. Both patients had been ill since 18th or 19th March. E. C. died on the 29th March, and F. C. was discharged from hospital cured on 1st May.

Case V.

On 26th March, Mrs. S., aged 56, a friend of E. C., was taken ill with pains in the head and body, and was seen by a doctor on 28th March. On admission to the infirmary, she had a temperature of 103 deg., pulse 116, and respirations 26. On 8th April, it was reported that she became slightly delirious and her body was covered with a blotchy morbilliform rash, but the face was quite free. The rash was stated to be definitely petechial. Dr. D. L. Thomas, the Medical Officer of Health of Stepney was called in to consult with the Medical Superintendent, and they both agreed that the case was one of typhus fever. The patient was removed to the Eastern Fever Hospital, and died there on 21st April. In view of the fact that Mrs. S. was a frequent visitor at 69, C— street, and was known to have called there when J. C.'s body was brought from the infirmary on 5th March, and most probably also visited E. C. and F. C. when they fell ill on the 18th or 19th March, there appears to be little room for doubt that Mrs. S. died of typhus fever; the opinion was strengthened by the occurrence of a further case of typhus fever affecting the husband of Mrs. S. (Case VI.)

Case VI.

J. S. (male, aged 58) was taken to the infirmary on 1st May supposed to be suffering from pneumonia. His body was dirty, and it was only after bathing that a "dusky measles" rash was found about the shoulders, forearms, and thighs, especially on the inner sides, and slightly about the trunk. It was not the rash of measles and was similar to that of his late wife. He became worse, and died on 3rd May. A post mortem examination was made, and the conclusion arrived at that the case was one of typhus fever.

In spite of the fact that two of the patients (cases I. and II.) were not recognised as cases of typhus fever, and that doubts were entertained in case V., considering these persons were all related or definitely associated with one another, and assuming that the diagnosis of typhus fever in cases III. and IV. was correct, there are strong grounds for regarding five, if not six, of the cases as typhus fever. There is little doubt that J. C. was an unrecognised case and infected E. C. and F. C., his mother and sister, but whether his wife, Mrs. L., was an unrecognised case and he derived his infection from this source, or whether he himself introduced the disease it was impossible to determine.

Typhoid fever.

The number of cases of typhoid fever among civilians notified in the year 1915 (607) is considerably lower than the corresponding figure for the year 1914 (779). The deaths numbered 120—civilians, 104. From enquiries made it appears that less than twenty deaths from typhoid fever occurred among the military population in London in 1915, and from this fact it may reasonably be inferred that if the whole of the military cases had been notified the total number of cases in London in 1915 would still be substantially below that of the preceding year.

Information with regard to the suspected source of infection was supplied on the returns kindly furnished by borough medical officers, in 380 instances. This information threw suspicion upon food (fish, shell-fish, etc.) in 143 instances; 55 cases were soldiers or sailors, 5 were Belgian refugees; in 43 cases the disease was said to have been contracted outside London, 57 were ascribed to contact infection (this number included 6 nurses), 4 were ascribed to river bathing, 8 to drains and bad smells, 1 to water, 27 to milk, 5 are said to have had typhoid before, and 74 were found not to be cases of typhoid fever. In all these instances the grounds upon which the suspicion as to origin were based must be regarded as only having some degree of probability, far removed in many instances from certainty. For example, the food and milk cases were not definitely determined to be due to the ascribed causes. Again, the cases in nurses do not number, having regard to the size of the nurse population in London, more than might be expected to occur as a mere matter of chance, and it must not, therefore, be assumed that the nurses were infected by reason of any special risk due to their occupation.

Since the beginning of the present century, the prevalence of typhoid fever in London has been low, and especially so during the last ten or eleven years. The marked autumnal prevalence manifested year by year steadily diminished in extent during the first half of the series of 15 years in question, and since 1908 the autumnal rise is only clearly apparent in two years. The first year of the series of 15, in which there is a marked failure of development of the usual autumnal prevalence was 1907, the autumnal excess being then smaller than in any previous year back to the introduction of notification. In 1908, the autumnal rise was again well developed, but in 1909 it was even more noticeably undeveloped than in 1907; it again appears in 1910 and 1911, and then almost entirely disappears in 1912, 1913, 1914 and 1915.

An examination of the incidence of typhoid fever in other towns of England and Wales during the six years of low prevalence 1909-15 reveals correspondences in some of the years, in the movement of typhoid prevalence in the autumn months, with the movement observed in London; but these correspondences are in no instance very close, and even when a town agrees with London for three or four years, it may differ from it in the other years. These differences point to the operation of local causes, superimposed upon the general causes of the prevalence at large. The extension of the comparison to still smaller areas is open to objection, because, in addition to the fact that quite a small and merely local outbreak may suffice to disturb the figures for a whole district, there is also greater liability to error owing to the smallness of the figures in question. With these reservations in mind, however, it is deserving of note that in cases where a noticeable departure from the England and Wales standard is observable in a particular town, the feature is frequently reflected in the figures relating to adjacent towns. Neither Southampton nor Portsmouth reproduce the England and Wales type during the years 1911-15, yet they show similarity to one another, and the same remark applies to Salford, Manchester and Liverpool; on the other hand, the approximation to the general England and Wales and London type is observable in a number of towns, including certain east coast towns, for example, Grimsby, Hull, and also some of the midland towns.

The decreased incidence of typhoid fever since the commencement of the present century is, by no means confined to England and Wales. It appears to be common generally speaking to most European countries. If the deaths in these countries during 1906-10 be compared with those in 1901-5, it will be found that there is a decrease of from 20 to 40 per cent., except in the case of Hungary (decrease 2 per cent.) and in Rumania, where there is an increase of 60 to 70 per cent., but where changes in the extent of registration of causes of deaths may, at any rate, in part account for the figures.

The Public Health (Shellfish) Regulations, 1915, prohibit the sale of shellfish likely to cause danger to health and provide for the closing of shellfish layings where the evidence justifies such action.

The deaths among civilians at all ages from diarrhoea and enteritis in the administrative county of London during 1915 numbered 3,098, as compared with 3,624 in 1914. Of the total deaths, 2,126 occurred during the first year of life, and 430 during the second year.

Zymotic enteritis was notifiable in Woolwich in 1915, and for part of the year in Poplar and Greenwich.

Puerperal fever.

The deaths in the administrative county of London during 1915 attributed to puerperal fever numbered 132, as compared with 195 in 1914. There were 276 cases of puerperal fever notified in 1915 (52 weeks) as compared with 393 in 1914.

During the year 1915 two midwives had four cases each, of which two, both in the practice of one midwife proved fatal: two midwives had three cases each, in one instance all three were fatal and in the other instance the three patients recovered: one midwife had two cases, both of which were fatal, one had two cases, of which one had a fatal termination, and five midwives had two cases each, all of which recovered. In no instance was blame attributed to the midwife concerned.

Phthisis.

Among the civilian population the deaths numbered 6,875, and this gives a death-rate of 1.60 per 1,000 living. There is little doubt that this death-rate is not strictly comparable with that of 1.43 for 1914, when the population was of normal age-distribution. Recruitment for the war reduced the proportion of healthy males aged 19-40, leaving in the civil population all who were rejected for phthisis; and the effect is that a rate calculated on the civil population is overstated, when judged in comparison with 1914.

The age distribution of the total deaths (52 weeks) in 1914 and 1915 was as follows :—

	0—	1—	2—	5—	10—	15—	20—	25—	35—	45—	55—	65+	All ages.	
1914	67	56	92	96	132	387	548	1,259	1,438	1,218	676	312	6,281	
1915	59	63	127	102	160	448	582	1,301	1,594	1,340	672	334	6,782	
Increase (+) ...	}	-8	+7	+35	+6	+28	+61	+34	+42	+156	+122	-4	+22	+501
Decrease (-) ...														

It does not appear that the increase can be attributed to the war, since ages both below and above the years of active service show increase.

Under the Orders of the Local Government Board relating to the notification of tuberculosis, 14,712 cases of pulmonary tuberculosis and 3,949 cases of other forms of tuberculosis were notified as "primary" cases in London during 1915. The corresponding figures for 1914 were 16,467 pulmonary and 3,862 other forms respectively. Systematic notification was not instituted until 1st February, 1913, and in consequence some uncertainty attaches to a comparison of these figures, since at the outset all cases, however far advanced, were notifiable as "primary" cases, and some old standing cases may have escaped notification during the first year or so.

The following is an analysis of the cases notified in London in 1915 (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.	34	181	409	359	508	779	1,817	1,826	1,306	639	219	4	8,081
	F.	10	153	356	474	606	762	1,567	1,255	723	320	151	2	6,379
Other tuberculosis ...	M.	161	455	548	287	137	71	106	66	47	27	24	3	1,932
	F.	99	367	444	295	149	101	105	63	43	12	18	1	1,697
All forms of tuberculosis	M.	195	636	957	646	645	850	1,923	1,892	1,353	666	243	7	10,013
	F.	109	520	800	769	755	863	1,672	1,318	766	332	169	3	8,076

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	53	50	1	107	2,702	2,121
	F.	4	59	82	—	145	1,110	1,196
Other tuberculosis ...	M.	9	108	79	1	197	245	53
	F.	6	60	56	1	123	224	63
All forms of tuberculosis	M.	12	161	129	2	304	2,947	2,174
	F.	10	119	138	1	268	1,334	1,259

Influenza, bronchitis, and pneumonia.

The civilian deaths attributed to influenza, which in 1914 numbered 613, rose to 1,058 in 1915. The deaths from bronchitis numbered 7,058 in 1915, compared with 5,292 in 1914. In 1915 the deaths from pneumonia were 7,133, as compared with 5,604 in 1914.

On comparing the quarterly deaths it will be found that the increase in the deaths from influenza in 1915 over 1914 occurred almost entirely in the first quarter, the total increase in that quarter being 401 deaths in the general population. The increase is apparent at all ages, except the first year of life, but the greater part of the deaths occur at high ages.

Cerebro-spinal meningitis.

During the first seven years following the introduction of compulsory notification in London the disease did not assume epidemic dimensions; after the first nine months (in which 135 cases were notified) approximately some 100 cases only were notified each year, and the number fell in 1914 to 73. During the first five months of 1915 no fewer than 467 cases were notified, there then followed a decided decline, but in the early months of 1916 a slight recrudescence occurred. The total number of cases

notified in 1915, including such military cases as were notified, was 701. It is to be noted that simple meningitis, and tubercular meningitis show some increase coincidentally both with the occurrence of the outbreak of February to July, 1915, and the recrudescence of February to May, 1916.

The following statement shows the number of cases notified each month during the non-epidemic period of 1914, the epidemic period January to May 6, 1916, the rest of 1915, and the early months of 1916, when the disease again became somewhat more prevalent. The deaths from influenza in the corresponding months are also shown:—

		1914.											
		Jan.	Feb.	Mar.	April.	* May.	June	* July.	Aug.	* Sept.	Oct.	Nov.	* Dec.
Cerebro-spinal fever notifications	...	4	9	7	12	6	6	5	4	10	3	2	5
Influenza deaths	...	24	20	18	15	12	8	5	3	4	10	8	13

		1915.												1916.				
		Jan.	Feb.	Mar.	April.	* May.	June	* July.	Aug.	Sept.	* Oct.	Nov.	* Dec.	Jan.	Feb.	* Mar.	April.	* May.
Cerebro-spinal fever notifications		25	64	131	139	108	53	69	18	25	20	23	26	35	29	68	77	51
Influenza deaths		38	61	58	39	16	6	3	4	3	6	9	12	10	12	27	32	60

Months containing 5 weeks are marked with an asterisk (*).

Particulars concerning notified cases were circulated to borough medical officers as heretofore, and also to military authorities. It will be seen that the cerebrospinal fever maximum of 1915 lags slightly behind that of influenza, but in the recrudescence of 1916 the two maxima correspond. It must be borne in mind, as regards 1915, that 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.

The age distribution of the cases was as follows:—

	Total	0-1.	1-5.	5-10.	10-15.	15-20.	20-25.	25-35.	35-45.	45-55.	55-65.	65 and up.
January-December, 1914	73	33	19	8	5	3	1	3	1	—	—	—
January-May, 1915	467	61	99	76	38	60	49	42	20	14	5	3
June-December, 1915	234	50	55	36	31	15	19	18	3	5	2	—
January-April, 1916	209	54	52	20	28	13	12	15	5	6	4	—

It will be seen that in 1914 the percentage under 10 was 82.2; this fell in the epidemic period to 50.5 per cent., and then rose to 60.3 per cent. in the two later periods.

Many of the London cases were seen, on request, by one of the Council's bacteriologists, Drs. Brincker, Forbes and Ross. Reports were made upon cerebro-spinal fluid in some 81 cases, and upon material from the throats of contacts in some 445 cases. As regards the former, it may be stated that in 47 cases the diagnosis of cerebro-spinal fever was confirmed, in 5 cases the examination failed to establish the diagnosis, and in 29 cases another diagnosis was made; this last group includes 4 of tuberculous, 2 of serous, 1 of pneumococcal, and 1 of septic meningitis, and 3 cases of acute poliomyelitis; there were in addition 12 cases of other infectious diseases and 6 other cases. To have examined all the contacts would have entailed an enormous amount of labour; it was, therefore, necessary from the very commencement to make a selection. It was arranged in all cases that investigation should be made of the degree of contact of the persons concerned, and only those were examined who had come in close or repeated contact with the patient. Of the 445 contacts bacteriologically examined, only 49 (11 per cent.) were found to be harbouring meningococci in the nasopharynx.

The question as to whether any variation in this percentage occurred at various stages of the epidemic prevalence was investigated. During the months of special prevalence, February to June, 10 per cent. of positive results were obtained; from July to December 56 contacts were examined, and 9 positive results were obtained, roughly 16 per cent.

It was realised from the first that it was not desirable to attempt to isolate positive contacts; in several instances, however, it proved impossible to persuade those concerned to acquiesce in the ordinary precautions advised, and in these cases some restriction of the activities of the contact was unavoidable, pending receipt of a further specimen of material and obtaining a negative result. As regards persistence of meningococci in the carrier cases, a positive result was obtained in 10 instances on more than one occasion; in 3 of these cases the period of persistent positive results extended to as long as six to eight weeks.

Looking at the experience gained, as a whole, the London results strikingly confirm those placed on record by the Special Advisory Committee appointed to collate the military reports, and thus civilian and military experience are completely in accord in the following respects. First, carriers do not, as a rule, develop cerebro-spinal meningitis; the Advisory Committee, indeed, say that "out of 690 cases reported, only two cases (are) mentioned, one of which is doubtful." In view of the fact, to be noted almost immediately, of the not uncommon occurrence of the meningococcus in the throats of healthy persons, it is indeed difficult to see why any significance should attach to the sequence of events

observed in that one remaining case. Second, in hospitals "cerebro-spinal fever very rarely spreads"; the Advisory Committee refer to one case, that of a nurse at Exeter, "the only case of the kind alluded to in these reports." A similar single case was reported in London. Here, again, in view of the size of the nurse population of the country, no significance, *qua* direct case to case infection, can attach to these two occurrences.

Thirdly, the Committee call attention to the very remarkable findings of Drs. Eastwood and Scott, concerning the prevalence of the meningococcus in the throats of non-contacts in London, during the spring and early summer months of 1915; the former found 10 per cent., the latter 13 per cent., of carriers among those examined. These percentages closely correspond with findings among more or less close contacts, and the results support the hypothesis suggested by the Advisory Committee (p. 39), viz., that the proportion infected in the case of contacts represents "the proportion of carriers already present among the population, where the case had arisen." This simple hypothesis is one which it seems difficult to reconcile with the views hitherto commonly held concerning the causal significance of the meningococcus. The difficulty is, moreover, emphasized by reason of the fact that from the Advisory Committee's and other reports it is clear that question has arisen as regards acceptance of criteria, formerly regarded as reliable for purposes of bacteriological diagnosis; thus, it seems that "scattered Gram positive cocci (may occur) amongst the Gram negative majority"; again certain anomalies are encountered in connection with fermentative reactions; and, finally, it is necessary to realise, as regards failure of growth at 23 deg. C., that "this test, put forward as of diagnostic value, has, in the experience of most of the reporters, proved an unreliable one." Nevertheless the writers of the Advisory report say "it appears to us that the meningococcus is shown to be a good enough species in the natural history sense," though to this statement they add the words "as species go amongst bacteria"; they further safeguard themselves, moreover, by saying "we recognise that the difficult question of specificity amongst bacteria is one as to which we may eventually be compelled to reconsider our opinions."

Influenza and cerebro-spinal fever.—Detailed enquiry was made concerning this subject last year. Occasional references are made in the Army and Navy reports to the same question. Thus the Navy report, written by Surgeon-General Rolleston, contains the following notes:—

"Catarrhal affections—catarrh, influenza, tonsillitis, and sore throat—were numerous during the early months of 1915, and their prevalence roughly coincided with the outbreak of cerebro-spinal fever . . .

"In some barracks and establishments the maximal incidence of cerebro-spinal fever occurred in the month during which catarrhal affections were most numerous.

"In conclusion, there appears to be a relation between the incidence of catarrhal affections on the one hand, and of cerebro-spinal fever cases on the other."

The same question is incidentally noticed also by the Special Advisory Committee appointed to report upon cerebro-spinal fever in the Military Forces. The Army bacteriologists approached the subject from the points of view marked out by two specific inquiries in a questionnaire, the first being—Is catarrh apparently a predisposing factor? The second—Is naso-pharyngeal catarrh common among carriers? Neither of these questions goes directly to the root of the matter so far as influenza is concerned. Moreover, the second has more particularly aroused the interest of the reporters, and thus overshadowed the first. The answers to the second question are summarised on pp. 43-45 of the Committee's report. Two observers' notes are especially interesting. Professor Hutchens (Newcastle) "concludes that there is no connection between catarrh and cerebro-spinal fever, except that the epidemic coincided with a period of the year when catarrh is prevalent"; and Lieut. Bullock (Woolwich) writes in the same sense, and it is added that "as practically everyone had catarrh at some time during the epidemic period, not much importance can be attached to its concurrence with cerebro-spinal fever." The fact, that nearly everyone had catarrh at some time during the epidemic period, does not, however, preclude the possibility of study being made as to the chance that such catarrh should immediately precede or actually accompany an attack of cerebro-spinal fever. In last year's Annual Report, indeed, the attempt was made to learn whether the concurrence of influenza and cerebro-spinal fever was more frequent than mere chance coincidence would account for. The answer, it will be remembered, was in the affirmative.

The only direct light thrown by the army reporters on the relation between "influenza" and cerebro-spinal fever is that shed in their discussion (on p. 54) of the "influence of recent illness." They quote two cases, one of influenza and one of tonsillitis, preceding cerebro-spinal fever, and, thereupon, remark: "These cases are open to the criticism that the supposed influenza and tonsillitis may have been slight or casual cerebro-spinal fever." They then add: "The question of the relationship between cerebro-spinal fever and influenza, tonsillitis and catarrhs, is discussed by more than one of the reporters." One of them thinks it "possible that some cases diagnosed as influenza and tonsillitis were really mild forms of cerebro-spinal fever." Again, it is stated that "it is probable that abortive cases of cerebro-spinal fever occur in which signs of meningitis are ill-marked or absent and which quickly recover; such cases would easily be passed over as influenza." These suggestions, however, are not followed up by the Advisory Committee; indeed, they proceed to refer to two cases which occurred after inoculation against typhoid fever, and three cases which followed vaccination against smallpox, sequences of events which the Committee relegate to the category of casual coincidences.

Two other important reports may be cited in which reference to the same subject is made. Thus Dr. Bruce Low says:—

"In not a few outbreaks, however, though some of the persons attacked have developed the marked features of the disease, many others have suffered concurrently from a mild form of

illness with nasal catarrh, tonsillitis or influenza-like symptoms. As a result, certain French authorities at one time sought to prove that epidemic cerebro-spinal meningitis was closely related to influenza. Some observers recognise as cerebro-spinal fever only those cases in which the characteristic symptoms are present, while others regard the concurrent catarrhal illness as due to the same infection, and therefore to be regarded as a milder manifestation of the same disease. Again, there has been suspicion that cases regarded locally as cerebro-spinal fever were really instances of epidemic poliomyelitis and *vice versa*."

And finally, Captains Foster and Gaskell, in their comprehensive report on cerebro-spinal fever in the Eastern Command, observe: "The diagnosis of early cases of cerebro-spinal fever from influenza presents some difficulty"; and they then consider the points of resemblance and the problem of diagnosis in the early stages of illness. They conclude that: "Mild cases of cerebro-spinal fever may be unrecognised and classed as influenza, but no proof exists that the former disease is ever so slightly marked as not to develop at least some of the diagnostic signs."

Turning now to the particulars with regard to notified cases, which have been carefully compiled by the London medical officers of health, and of which an analysis has already been made for 1914, and the early part of 1915, it is possible by use of the completed returns for 1915 to carry the matter further. It will be remembered that out of 462 cases concerning which information was published in last year's report, 37 gave a history of recent influenza, and 27 had suffered from this complaint within 7 days of the onset of symptoms of cerebro-spinal fever. It was pointed out that chance alone would have led to the expectation that two or three only of the 462 persons would have so suffered. It was added that: "This latter number (27), compared with the 'expected,' is so large as to afford strong ground for the belief that some relationship exists between the two diseases. This presumption is materially strengthened when regard is paid to the large number of cases of cerebro-spinal fever giving a history of contact with sufferers from influenza."

The material now available enables an analysis to be given of the results obtained in four periods:—(a) The non-epidemic year 1914; (b) the epidemic period January to May, 1915; (c) the rest of the year 1915 in which the disease was less prevalent; (d) the period of slight recrudescence extending from January to April, 1916.

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.
Number of cases in which information was obtained ...	61	462	214	196
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)
Number of cases with history of recent 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)
Number of cases with history of contact within 14 days with persons suffering from influenza	1	23	2	4
Number of cases with history of contact within 14 days with persons suffering from cold, cough, catarrh, etc.	3	38	4	10

It will be seen from this table that, dealing with cases of influenza within seven days of onset of cerebro-spinal fever, there were:—

(a) In the first non-epidemic period—no cases.

(b) In the second epidemic period there were 27 cases, while chance would warrant an expectation of only two or three such cases.

(c) In the period of declining epidemic prevalence there was only one case, and this might perhaps be looked upon as a mere chance coincidence.

(d) In the period of slight recrudescence there were five cases, a number in excess of that which might have been anticipated as a mere chance result.

It will be further seen that the numbers of cases with a history of contact with persons suffering from influenza is far higher (23) in the period January-May, 1915, than in the other periods. The percentages of such cases to the total number of cases in the four periods are 1.6 per cent., 5 per cent., 1 per cent., and 2 per cent. respectively.

In opposition to the conclusions relating to the association of influenza and cerebro-spinal fever, it has been suggested that the concurrence of epidemics of influenza and cerebro-spinal fever is merely fortuitous, and critics account for the histories of preliminary influenza leading up to declared cerebro-spinal fever, by the fact that in its early stages the latter disease may closely simulate the former. But the critics have still to explain the frequent association in epidemic prevalences of the two symptom

complexes, and, again, the association of cerebro-spinal fever in particular families with cases of influenza, catarrh, etc., and not, as a rule, with other cases of cerebro-spinal fever.

In this connection it may be pointed out that study of the extent to which development of cerebro-spinal fever occurs among the civil population in those who have been associated with soldiers, or those whose homes have been visited by soldiers, affords an interesting "control experiment," for testing the significance of the relationship of cerebro-spinal fever, and influenza. Out of 462 returns, relating to the epidemic period January to May, 1915, more than 20 per cent. give a history of influenza or catarrh, and nearly 40 per cent. give either such a history or a history of contact with sufferers from influenza or catarrh. The percentage of returns relating to civilians in which association with soldiers is recorded is much lower than this. *A priori* it might perhaps have been expected, in view of the respective extents, of the prevalences of influenza and of cerebro-spinal fever, and of the intercourse between soldiers and civilians, during the months in question, that the first-named kind of association would have been considerably less frequent than the second. As a matter of fact, however, that first-named was actually recorded in nearly 40 per cent. and the second in only about 17 per cent. of the cases. The actual figures are as follows:—

	Jan.-May, 1915.	June-Dec., 1915.	Jan.-April, 1916.
Total number of reports	462	214	196
Military cases—Serving with forces	62	21	17
Working in camps	5	6	4
	— 67	— 27	— 21
Reports on civilian cases	395	187	175
Soldiers billeted in houses	5	4	1
Soldiers visiting home...	41	14	17
Related to a soldier in London who may have visited home	11	5	3
Other association with soldiers	9	4	2
	—	—	—
Total	66	27	23
Percentage of civilian cases associated with possible infection from soldiers	17%	14%	13%

It should be added that in the first of the three periods there were more soldiers quartered in London than in the other periods. While in the first period the extent of association between cerebro-spinal fever and contact with soldiers was 17 per cent., as against 40 per cent. for that between cerebro-spinal fever and influenza or catarrh, in the second period the corresponding figures were 14 per cent. and 10 per cent., and in the third 13 per cent. and 25 per cent.

The very careful report of the Advisory Committee sets out concisely the main difficulties so far as the meningococcus is concerned. The Committee was confronted with the problem presented by an organism which, to begin with, is sometimes difficult to find in the cerebro-spinal fluid. . . . "Most of the reporters admit negative results, and they sometimes amounted to 25 per cent. of the total cases examined" (p. 28); again, "the great majority of the reporters complain of the unsatisfactory results of the method for determining the presence of the meningococcus in the nasopharynx" . . . "The work is tedious and beset with pitfalls, while its results were often found ambiguous" (p. 33); then, thirdly, in the pharynx of actual sufferers "the meningococcus has been much less commonly found during the attack than might have been expected" (p. 29). These difficulties, in conjunction with the freedom from any ill results in the case of carriers, with the non-infectivity of the actual subjects of the disease, and with the common occurrence of the carrier state in non-contacts, make it necessary for the bacteriologist to fall back upon an hypothesis described as one of a "saprophytic epidemic" of the meningococcus "in the throats of the population at large." Major Gordon, by means of the agglutinin absorption test divided meningococci from the meninges into "types," and when he "applied his test to pharyngeal strains he found that only a portion of these were to be included in his types; it is possible that the residue were non-epidemic and less harmful races." Hence arises the theory of "immunological races" and "epidemic strains" of the meningococcus—the organism, it is declared, is "essentially a saprophyte, though with potentialities of parasitism, divided up, as most bacteriological species probably are, into a number, perhaps a large number, of races distinguished by their immunological reactions. At ordinary times, when cerebro-spinal fever is not epidemic, the saprophytic spread of these races is attended only by the development here and there of sporadic cases of declared disease in the most susceptible elements of the population, the posterior basic meningitis of infants. But from time to time, and hitherto very rarely in this country, individual races attain a greater virulence, and their saprophytic spread is attended not only by a larger number of cases of meningitis but by the attack of young adults, who, in ordinary circumstances, are immune. . . . In any epidemic there will occur a saprophytic spread of the epidemic strains, side by side with the domestic and relatively harmless strains indigenous to the locality, so that there are carriers of either, indistinguishable except by serological means." It is a matter for sincere congratulation, to all who may possibly be regarded as coming under suspicion, to find it suggested "that only those carriers need be isolated who bear epidemic strains."

The conceptions above outlined are, it is pointed out, to be regarded as representing a "working hypothesis only"; there can be no "pretence of finality" . . . "it seems doubtful whether these immunological races will be found quite sharply separable" . . . they are defined "by methods the

relative values of which may still be disputed" . . . may depend " upon slight changes in the atom groupings of the bacterial protein determining its reaction with a particular antibody " . . . and " we know very little as yet about the stability of such atom groupings, and the extent to which they may undergo spontaneous variation."

The Committee incidentally declare that " a widely air-borne distribution of the meningococcus " involves " a hypothesis to which all its biological properties are strongly opposed " (p. 52). And yet an ability on the part of something or other to pervade the atmosphere of living rooms, theatres, and places of assembly—limited, it may be, but certainly exceeding that ordinarily associated with " causal organisms,"—seems a *sine qua non* if outbreaks of influenza and catarrh are to receive explanation; and these outbreaks, according to the testimony of both bacteriologists and epidemiologists, occur coincidentally with outbreaks of cerebro-spinal fever. Why not, then, it may be asked, allow that the " potentialities of parasitism," to which the Advisory Committee allude, may be called into activity by this same unknown agency, which would then be regarded as primarily concerned with the development of these epidemic diseases? The manifestations of the influence in question are then, in some subjects accompanied by multiplication of epidemic strains of meningococcus and by cerebro-spinal fever, and in other subjects by development only of harmless domestic strains of meningococcus with no cerebro-spinal fever; but in these latter subjects there may, unfortunately be development of epidemic strains of pneumococci or of streptococci, or of Pfeiffer's bacilli, with corresponding pneumonia, tonsillitis or influenza. The Advisory Committee advise (p. 57) that " cerebro-spinal fever is an epiphenomenon of the epidemic." The alternative view is that the unknown agency is the original cause of the " influenza outbreak," which assumes various types, and the appearance of the corresponding " epidemic strain " in each case constitutes the epiphenomenon.

Anthrax.

During 1915 the following seven cases of human anthrax occurred in London:—(1) On the 19th February, 1915, a man, G.K., aged 52, developed a boil on the back of the neck. He was removed to the London Hospital and operated upon there, but died on the day following the operation. He had been occupied in making rugs at his home from miscellaneous materials, mostly said to be derived from the goat.

(2) On 23rd April, 1915, a skin porter employed at the Leather Market, Bermondsey, developed a pimple on the cheek. He was removed to the Great Northern Central Hospital, the ulcer was excised immediately, specific serum treatment was applied and the patient recovered.

(3) On the 26th June, 1915, J. M., aged 26 years, a tea-packer, developed a boil on the forehead. He was admitted to the Royal Free Hospital, and recovered. The source of infection was not discovered.

(4) On 8th July, 1915, Mr. Luxmore Drew held an inquest on the body of a solicitor's clerk (H. C.), living in Paddington, who died from anthrax at the West London Hospital; the disease began in the neck. The man (aged 38) had had nothing to do with animals or hides, wool, or skins, but it was stated at the inquest that his mother had bought him a new shaving brush at the shop of a local chemist about a week before his death.

Cases of Anthrax caused by infected shaving brushes.

Dr. Elworthy, the pathologist to the hospital, verified the fact that the man had died of anthrax. He also examined the shaving brush and found it to be infected with anthrax spores. His experiments (*see Lancet*, 1st January, 1916) showed that anthrax spores may remain dormant in the hairs of brushes throughout the process of manufacture, and thus the disease may appear after the distribution of the manufactured articles. The brush was one of six obtained by a chemist in Paddington from a wholesale firm in Finsbury on 11th May, 1915. It was the only one of the six sold by the chemist. The others were examined by Dr. Elworthy and found to be infected with anthrax. Enquiries were then extended into the earlier history of the brushes. The bristles were found to be largely composed of mixed hair of Chinese origin, chiefly goat, horse, pig, and human hair. Before the war such consignments of hair were usually sent to dealers in Switzerland, who transmitted them to Germany, where they were graded and cut into lengths after being disinfected, and returned to Switzerland, from whence they were exported to wholesale manufacturers in this country. After the outbreak of war, however, these hairs were imported into this country direct from China, and, being labelled as " goats hair," escaped the Home Office regulations with regard to disinfection.

It appears that a consignment of these hairs conveyed by a Japanese vessel was purchased through certain brokers by a firm in London in September, 1914, who sent them to manufacturers in the Midlands for making into shaving brushes. About 1,500 of these brushes were distributed to various wholesale and retail vendors, both in this country and in the Colonies; amongst these was a firm which supplied the local chemists with the brush used by H. C.

The matter was reported to the Local Government Board, and it was arranged that that Board would take steps to collect the brushes in the provinces, while the London County Council would deal with those sold in London. The medical officers of the City Corporation and the metropolitan boroughs in which the brushes had been distributed were informed, and where the brushes were unsold they were collected and dealt with, but a number had already been disposed of to casual customers and could not be traced.

(5) In the course of enquiries another case of human anthrax was discovered in Deptford, in July, and it was found that the patient, who was a hawker, had obtained a shaving brush from a shop receiving its supply from the suspected consignment. Dr. Elworthy examined the brush used, and found it to be infected with anthrax. It was also ascertained that three other cases had occurred outside London, one at Bristol, another at Southall, and a third at Coventry (*see Lancet*, 29th January, 1916), and in all three instances the infected persons had bought shaving brushes shortly before contracting

the disease. These brushes were obtained by the vendors from the factory in the Midlands previously referred to.

These cases constitute the first known instances of anthrax being traced to infection from shaving brushes, and, but for the timely discovery of Dr. Elworthy, and the subsequent administrative action taken, an outbreak of more serious dimensions might have occurred.

(6) W. E., an electrical fitter employed at the War Office, was notified on 28th November, 1915, as suffering from anthrax. He was removed to the Middlesex Hospital, where, after appropriate treatment, he recovered. Inquiries were made, but no light could be thrown upon the source of infection.

(7) E. M., aged 29 years, was employed by a firm of hair dealers, and notified at Guy's Hospital on 8th December, 1915, to be suffering from anthrax. The local lesion was excised, and the patient recovered.

B.—ADMINISTRATION.

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

Tuberculous milk—L.C.C. (General Powers) Act, 1907, Part IV.

The Council's inspectors obtained 2,765 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 35 counties. Of 2,559 completed examinations, 167, or 6·5 per cent., yielded tubercle bacilli, as against 7·9 per cent. in 1914 and 9·9 per cent. in 1913. In connection with these samples, the Veterinary Inspector visited 168 farms, and examined 6,084 cows. It was found that 105 cows, *i.e.*, 1·7 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 consequence of the suspension of the Tuberculosis Order of 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 under Part V. of the L.C.C. (General Powers) Act, 1904. During the period 27th December, 1914, to 14th February, 1916, there were five inspections of the cows kept in the 154 London cowsheds. In all, 12,499 examinations were made. In four instances there was tuberculosis of the udder, and in 244 instances other unhealthy conditions.

One of the cows affected with tuberculosis of the udder was seized and slaughtered under the L.C.C. (General Powers) Act, 1904; the other three were slaughtered by the owners. In addition to the animals with unhealthy udders, 33 cows presenting symptoms of pulmonary or general tuberculosis were slaughtered or disposed of by the owners.

Housing of the Working Classes.

Having regard to circumstances arising out of the war which prevented the Council from proceeding normally with the execution of the Tabard-street, Southwark, etc., scheme, application was made to the Local Government Board for permission to deviate from the procedure which it prescribed when confirming the scheme, and the Board, in due course, issued an order permitting a modification of the scheme as originally confirmed, by which the Council was enabled forthwith to demolish some 268 buildings in addition to those already destroyed.

Cleansing of Persons Act, 1897, etc.

The practice adopted by the Council in regard to the cleansing of adults from common lodging-houses has been continued during the year 1915, and from information supplied by the Council's inspectors it appears that 607 men and 32 women were, by reason of their beds having been found verminous, sent to have their clothing cleansed.

National Insurance Acts, 1911 and 1913—Treatment of Tuberculosis.

At the end of 1914 the Council had approved a scheme for the treatment of tuberculosis in London, under which responsibility for insured persons rests with the London Insurance Committee, while uninsured persons are dealt with, as regards domiciliary and dispensary treatment, under schemes of metropolitan borough councils approved by the County Council, and, as regards institutional treatment, by the County Council. Tentative arrangements were included in the scheme for following-up patients discharged from residential institutions to ensure appropriate after-care. At that time, 13 borough dispensary schemes were in full or partial operation. Some of the other boroughs were provided with voluntary dispensaries. Before the close of 1915 the number of boroughs with approved or conditionally approved schemes had increased to 25. In two of the four boroughs which had not submitted schemes voluntary dispensaries had been provided by the Central Fund.

With regard to institutional treatment, only a small beginning had been made in 1914, but sufficient beds were obtained to meet the demands then made upon the Council. The numbers treated, in 1914, were 8 men, 33 women, and 87 children, of whom 6 men, 25 women, and 69 children remained under treatment at the end of the year.

Owing to the continuance of the war the Council decided to limit its expenditure on tuberculosis to the sum required to fulfil the obligations already entered into, and to take only such beds as were necessary to render effective the work of the dispensaries. Two hundred hospital and sanatorium

beds for adults and 381 hospital and sanatorium beds for children were considered sufficient for this purpose. Of this number it was arranged to obtain 100 beds for adults and 150 beds for children from the Metropolitan Asylums Board, the cost being borne by them, and the remainder from voluntary institutions at the cost of the Council.

At the end of 1915 the Metropolitan Asylums Board were able to provide 75 beds for adults and 100 beds for children. The number of beds available at voluntary institutions was variable owing to military needs in respect of hospital beds, but the Council was able to meet all the demands made upon it for adult beds, with the exception of a few cases of surgical tuberculosis. In the case of children, the demand for beds has been somewhat in excess of the supply. On the 1st of January of this year 112 adults and 236 children were undergoing treatment.

The supervision of the patients in the home while under dispensary treatment, and after sanatorium treatment, is a matter of considerable importance, and the Council on 15th June, 1916 (*see Minutes*, p. 881-5), adopted a scheme for the appointment of borough tuberculosis care committees fully representative of all the organisations concerned. In the special circumstances of the time, however, the borough councils have felt themselves unable to proceed with the scheme, and temporary arrangements were necessary for dealing with cases accepted by the Council for institutional treatment, particularly children, and the Council has, wherever possible, appointed committees associated with dispensaries known as interim tuberculosis care committees. These committees include as many as possible of the representative persons contemplated in the model scheme already referred to, and their duties although limited to cases referred to the Council are similar to those which would be discharged by the borough tuberculosis care committees.

Mental Deficiency Act, 1913.

The Council has appointed additional medical staff to the equivalent of five sessions a week, and a full-time inspector, and has approved the full-time medical staff for the purpose of conducting medical examinations, and three inspectors, in addition to the one specially appointed, for conveying alleged defectives to places of safety. Cases notified
and action
taken.

Information was received by the Clerk of the Asylums and Mental Deficiency Committee from various sources of alleged cases of mental defect in 1,172 cases during 1915, and 890 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 890 cases dealt with, 70 were sent to institutions, 687 were placed under supervision, 38 were sent to places of safety pending the presentation of a petition, and 50 were referred to the Poor Law. In 17 cases the lack of accommodation prevented action being taken, and 7 cases had already been discharged from prison.

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 a night in February, 1915.

In consequence of the war the main streets were very dark and few persons of the "homeless" type were seen. The highest numbers were recorded in the central district and in that portion of the eastern district bordering on the City. Most of the staircases found tenanted in previous years were inaccessible owing to the entrance doors being locked and the remaining few were very sparsely populated, only 3 males and 11 females being found. Fewer homeless women were encountered in the streets and round coffee stalls, the latter being almost deserted. In a charitable institution in Westminster, formerly used in conjunction with the King's Labour Tents when these were in existence, only 13 men were "sitting up," as against 73 last year.

In all, 178 homeless persons (111 males and 67 females) were found, as compared with 546 on the previous occasion in February, 1914. At the same time the common lodging house population had decreased from 20,173 to 17,305, and the inmates of casual wards, formerly 335, were only 179. It should, moreover, be pointed out that the common lodging house figures now include 652 Belgian soldiers and 66 other Belgian refugees. In shelters not licensed by the Council there were 230 men, including 90 Belgian refugees, 150 women, and 3 children. A noteworthy feature is the great reduction in the casual ward accommodation, now consisting of only 505 beds, or less than 30 per cent. of the number available in the years preceding 1913.

The large reduction in the number of homeless persons may be attributed partly to the scheme (*see Annual Report, 1914, vol. III., p. 63*) now in existence for dealing with this class of persons, and to the absence of the free food and the shelter attractions of former years. There is also evidence that many of the formerly "homeless" class are finding light employment. As an instance of this, an "elevator" accommodating nearly 600 men in normal times, had only 238 men on the night of the census.

Maternity and Child Welfare.

In 8 boroughs schemes have been initiated by the borough councils. In 6 boroughs, both voluntary and official schemes are in operation, and in 13 boroughs only voluntary schemes are in existence. In this connection it is worthy of note that the work of the Council's inspectors under the Midwives Act stands in close relation with that of the maternity and child welfare centres, and the Local Government Board have recognised this work for the purposes of grant. In cases of ophthalmia neonatorum and pemphigus neonatorum occurring in the practice of certified midwives, cultures and swabs

are taken, and hospital treatment is advised; and if the case is not removed to a hospital or infirmary arrangements are made to supplement out-patient hospital treatment by obtaining the services of a district nurse.

Midwives Act, 1902.

The number of midwives with London addresses whose names appear on the roll of midwives for 1914 is 5,972, of whom 591 notified their intention to practise in the county during the whole year or for shorter periods. Of these practising midwives 373 were enrolled as a result of examination by the Central Midwives Board, 144 held a certificate of training granted before the passing of the Midwives Act, and 74 were in *bona fide* practice for at least a year before the Act was passed. During the year the midwives inspectors paid 1,278 visits. In 95 cases the reports were unsatisfactory or presented some unusual feature, and in 374 cases the midwife was absent from home when the inspector visited.

Births notified.

The number of births notified under the Notification of Births Act, 1907, by certified midwives during the period under review was 46,442, and 3,002 notifications were received by the Council that medical aid had been advised by certified midwives. The occurrence of 676 stillbirths was reported, the foetus in 364 cases being macerated and in 265 not macerated; in 47 cases no particulars were given; 374 were males, 300 females, and in two instances the sex was not stated.

Puerperal fever.

During the year 57 notices of the deaths of children were received, and 119 inquests were held, 15 on the bodies of women and 104 on the bodies of children, upon whom certified midwives had been in attendance. In all 276 cases of puerperal fever were notified in the county, and the Registrar-General records 126 deaths from puerperal septic disease; two of these, however, refer to cases notified during 1914. Of the notified cases, 71 proved fatal, the remaining 55 deaths recorded by the Registrar-General not having been notified as due to puerperal fever. Of these 331 cases, both notified and unnotified, 95 occurred in the practice of certified midwives, 20 having a fatal termination.

Ophthalmia neonatorum

Under the order made by the Council extending the provisions of section 55 of the Public Health (London) Act, 1891, to ophthalmia neonatorum, 760 notifications were received, 165 being in respect of cases in the practice of certified midwives.

Negligence and misconduct.

Two certified midwives were temporarily suspended from practice in order to prevent the spread of infection. Four women were convicted of having practised midwifery when not certified. Penalties amounting to £15 in one case, and £1 1s. in another were inflicted, and two women were bound over. Seven certified midwives were reported to the Central Midwives Board for negligence and misconduct.

Lying-in-homes.

As stated in last year's annual report the Council decided on October 21st, 1913, to promote legislation to obtain power to register lying-in homes. Section IV. of the London County Council (General Powers) Act, 1915, now prohibits, after 1st February, 1916, the use of any premises as a lying-in home unless both the premises and the person carrying on the business are registered by the Council. The Council is empowered to refuse registration or to cancel the registration of persons of bad character, and of premises unsuitable or not suitably equipped for the purpose of a lying-in home, or connected with any other premises used for an immoral purpose. Right of appeal to a police court magistrate is given against the Council's decision as to registration. Certain hospitals and institutions, and homes kept by duly qualified medical practitioners are exempt from the operations of the section.

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

The work conducted at the Council's laboratory, Savoy Hill, includes the examination of samples received under the Fertilisers and Feeding Stuffs Acts, 1906, the Petroleum Acts, London County Council (General Powers) Act, 1912, and the London Building Acts.

A considerable proportion of the work consists of the examinations of materials used in connection with works or contracts undertaken by or for the Council, and samples of stores supplied to the Council. Examinations are also made in connection with complaints concerning materials in use.

The analytical work may be classified as follows:—Of 318 samples examined in connection with Statutes, 4 were unsatisfactory; under the heading of works or contracts, 494 samples were examined and 49 were unsatisfactory; of 3,269 samples of stores, 123 were found to be unsatisfactory.

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

ADMINISTRATIVE COUNTY OF LONDON.

REPORT OF THE SCHOOL MEDICAL OFFICER (DR. W. H. HAMER) FOR THE YEAR 1915.

Introductory Note.

The following report on the school medical service is the fourth which has been submitted since the resolution of the Council of 25th July, 1911, reorganising the work of the public health department, and relates to the calendar year 1915.

As a result of the war, considerable difficulties have been experienced in continuing work already undertaken and progress and development have necessarily been retarded, though it may be claimed that, in the main, the standard previously attained has not been materially lowered. It was feared at first that there might be difficulty in finding substitutes for the school doctors, 20 in number, who had volunteered for war service; it was, however, eventually found possible to replace them in all instances and to deal with as much of the work as was absolutely necessary for the maintenance of efficiency. It has, of course, been impracticable to obtain such complete results in these changing circumstances as was possible with a more permanent staff. Want of experience and lack of knowledge of local conditions necessarily militate against a full output of work in the case of newly-appointed officers, and the acquirement of familiarity with all the details of the Council's arrangements necessarily takes time; but it has been practicable to maintain a nucleus of permanent doctors, a few of the older men and a number of women, and with their assistance it has been possible to "carry on."

In the early days the question was raised as to the desirability of handing over the Council's treatment centres to the military authorities, and the suggestion that the dental treatment of school children should be suspended and the centres with their staffs utilised for the treatment of dental defects among soldiers, seemed at one time to be likely to assume quite serious importance. Fortunately, it was not found to be necessary to take this step, and the dental treatment of school children has been continued throughout the year at all the centres at which provision is made for dental defect. It has not been possible, however, to increase the provision made in the same proportion as in the previous year, although four new centres have been opened providing for 6,160 cases, and the numbers at four other centres have been increased by 4,180 cases annually.

The Board of Education on 25th January, 1915, issued a circular stating that they "of course rely upon local education authorities to do their best to carry out the work of the school medical service," and adding that they on their side would "make all reasonable allowance for special difficulties arising out of the war." Later the Board expressed the opinion that the medical inspection of school children of all ages who appear to be ailing, and the maintenance of any treatment at present being undertaken, should be regarded as the first charge on the time of the staff.

On 28th March, 1916, the Board of Education informed the Council that a grant of £47,177. 17s. 5d. ^{Government grant.} would be made in aid of the school medical service connected with public elementary schools. The grant has been assessed at the maximum rate, representing 50 per cent. of the Council's expenditure for medical inspection and treatment. For the year ending 31st July, 1914, the grant made on the same basis was £38,149. 7s. In the letter communicating the amount of grant, the Board direct attention to a previous letter of 29th March, 1915, in which it was stated that the rate of grant would be subject to annual revision, and that in fixing the rates in future years the Board would have regard not only to the maintenance of the existing arrangements as regards scope, character and quality, but also to the extent to which extensions and improvements are made with a view to meeting more completely the needs of the area.

The policy of the Council has been to maintain the work of inspection generally at its former level, although it has been found possible by a slight modification of the arrangements, and by the support which the call upon the staff for special effort has received, to effect some economy. For instance on 9th November, 1915, the Council approved the substitution of a preliminary inspection of entrants followed by further examination of selected children in place of the detailed examination of all entrants. At the same time the school doctors were asked to examine 30 children each session in place of 25, except in the case of selected entrants. These measures resulted in economy equivalent to the time of $4\frac{1}{2}$ doctors, and the staff was accordingly reduced to this extent. Concurrently, the nursing staff was correspondingly reduced. Considerable reduction has been made on the clerical side, many men have gone on war service and these have not been replaced in a number of instances by substitutes. In order to meet the shortage of staff, many returns of a statistical nature have been temporarily dispensed with, and certain sections of the work, such as the register of out of school children, have been given up. With regard to the Board's expression of opinion as to the maintenance of treatment undertaken, the position of things may shortly be stated to be that the arrangements actually in force under the Council's treatment scheme were continued. Some dental treatment and nursing treatment centres, however, authorised at the beginning of the year, have not been opened, but it is hoped gradually to proceed with the arrangements.

Medical inspection.

During the year a total number of 308,959 children were examined by the school doctors inspecting in the schools, and of this number 109,659 were found to require treatment for one or more defects. A parent was present in 56.4 per cent. of the cases examined. Dr. C. J. Thomas has examined the detailed returns and comments upon the improved prosperity in the homes of the poor as indicated by the standard of clothing, nutrition, and cleanliness revealed by the inspection of children in the schools. The condition of the teeth of leavers shows marked improvement, although with regard to entrants a worse condition in this respect is shown as compared with previous years. In accordance with the wishes of the chief medical officer of the Board of Education, special inquiry has been made into the prevalence and distribution of enlarged tonsils and adenoid growths. It is matter for congratulation that these two classes of defect continue to decline, mainly as the result of early treatment.

Having regard to the increased pressure of work only a few special reports have been made, and in the following pages reference is made to the reports received.

Medical and dental treatment.

A slight increase has been made in the number of sessions for refraction worked during the year, and thus it happens that, although provision was made for only 22,700 eye cases, the actual numbers treated were 25,216. The increase has been necessary owing in part to the demand for the treatment of soldiers made upon the general and special hospitals in London. Ear, nose, and throat cases show a further decline in the numbers treated, 11,159 as against 12,961 in 1914. The attendances for nursing treatment (20,419) were most satisfactory, and for the first time exceeded the agreed numbers (19,520); the agreed numbers for the year 1916-17 have been increased at several of the existing centres. It may be noted that 44,875 dental cases were treated, an increase of nearly 39 per cent. on the figures for 1914, the available provision being utilised almost to its full extent.

Following-up.

The following-up work has been continued throughout the year on the lines set out in previous reports, though the activities of many voluntary workers have been diverted by the war. It is very gratifying, however, to find that the attendance at inspections and re-inspections did not materially fall off, and speaking generally, there was very little loss in efficiency, having regard to the wholly exceptional circumstances.

Re-inspection.

During the year 78,308 children were seen at first re-inspections, while 4,394 children due for first re-inspection had removed and could not be traced. 37,663 children were seen at second re-inspection visits. 48.2 per cent. of the children seen at first re-inspection and 27.8 per cent. of those accounted for at second re-inspections were discharged as cured or as not being amenable to treatment. Thus 24 per cent. of children marked for re-inspection had failed to obtain treatment.

Tramway facilities for children attending school treatment centres.

In the last annual report brief reference was made to the facilities offered by the Council to children and parents travelling to and from the school treatment centres and hospitals in the Council's treatment scheme, permitting them to travel any distance in a single tramcar for one half-penny for each person. During the period November, 1914, to August, 1915, more than 16,000 cheap tram-tickets were thus sold, and it is evident that the arrangement has achieved its purpose.

Examination of candidates.

The number of candidates for permanent appointments in the school service and candidates for scholarship awards who were medically examined decreased from 6,015 to 5,750. The pupils in attendance at the Council's institutions for higher education, and the London County Council's scholars in attendance at aided secondary schools, have also been inspected.

Open-air schools.

The open-air schools at Birley House and Shooter's-hill were both kept open throughout the year. The Kensal House school for tuberculous children has been continued, and some of the playground classes were, as in the past, held in the public parks.

Special schools.

In all, 5,777 children were examined with a view to admission to special schools; of these 3,645 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 the children in the schools for the mentally and physically defective and the specific defects of the children in attendance at the latter schools, are shown in the report.

Infectious disease.

Account is given on pages 14-18 of the prevalence of infectious disease in the schools during the year. In connection with scarlet fever reference is made to the relation between the curves of flea-prevalence and scarlet fever, and in connection with diphtheria the complete record of a persistent carrier of diphtheria bacilli is given. Measles was exceptionally prevalent in the earlier part of the year and in November the disease was made notifiable by an Order of the Local Government Board.

Personal hygiene scheme.

The Council's cleansing schemes have been in operation throughout the year. There are now 24 stations, and at 20 treatment has been extended by the inclusion of scabies. 1,006,546 children were examined, of whom 28,063 were found to be verminous, 14,677 children were cleansed by the parents, and 13,386 cleansings were carried out by the Council and borough councils. 1,059 children suffering from scabies were given a total of 6,342 baths. Proposals have been carried out for bringing within the scope of the scheme verminous children, attending schools in outlying districts, by the use of two ambulances which chanced to be available. 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.

Medical inspection.

Number of children inspected.

In spite of the formidable difficulties of the times, the work of school medical inspection was maintained at a high level of efficiency. A detailed statement of the results is given in the tables in the appendices. 258,386 children were inspected in the age groups as compared with 228,414 during 1914, and 97,264 advice cards were issued in regard to defects as compared with 90,154. In addition 47,806 elementary school children were submitted for special or urgent examination, and 2,767 children in special schools were submitted for the age group inspection.

At the routine inspections, 146,305 parents attended, or 56.6 per cent., as compared with 154,927 or 67.8 per cent. in 1914, the falling off being chiefly at the inspections of the older children, particularly the boys, and being no doubt attributable to the new and urgent claims on the parents' time rather than to waning interest.

The three indices of straitened home circumstances, viz., the condition of the clothing, of nutrition, and of cleanliness of the children, reflect the improved prosperity brought to certain of the homes of the poor; 6,735 children were classed as having insufficient clothing or footgear, or 2.6 per cent., as compared with 3.9 per cent. in 1914; 17,032 as below normal in nutrition, or 6.6 per cent., as compared with 9.4 per cent.; 1,968, or 0.8 per cent., as unsatisfactory as regards cleanliness of the head, and 2,537, or 1.0 per cent., as regards cleanliness of body, as compared with 1.1 per cent. and 1.3 per cent. respectively in the previous year.

The difficulties attending the preservation of the long hair of the girls from parasitic infestation, in the homes of the poorer classes, are shown by the much greater percentage of girls compared with boys returned as unsatisfactory as regards cleanliness of the head, although the gradual improvement in this respect manifested in recent years is maintained; 72.6 per cent. of girls at the leaving age were marked as satisfactory in regard to condition of the hair as compared with 68.8 per cent. in 1914.

The condition of the teeth also shows a steady improvement at the leaving age, although the amount of dental disease still remains deplorable. The incoming entrants of 1915 showed a somewhat worse condition in regard to teeth than those of 1914, only 47.6 per cent. boys and 47.1 per cent. girls having satisfactory mouths as compared with 51.6 per cent. and 52.0 per cent.

It is to be hoped that maternity centres and schools for mothers will be able as their work extends to effect improvement in the condition of the children entering school. On the other hand, it is exceedingly satisfactory to note that a larger percentage of children leaving school had satisfactory dentures in 1915 than was the case in 1914; the figures being 53.1 per cent. boys and 55.5 per cent. girls this year, as compared with 51.9 per cent. boys and 54.1 per cent. girls last year.

It is curious to note that each year the teeth of the leaving girls are in better condition than those of the leaving boys, and this in spite of the fact that, speaking generally, the health of leaving boys is superior to that of leaving girls. It is probable that the teaching of hygiene in schools is more generally practised in girls' departments and there finds a readier soil, and the practice of cleaning the teeth night and morning is more likely to be followed by school girls than school boys.

The percentage of children recorded with skin diseases was 1.7 per cent., as compared with 1.8 per cent. in 1914, and 1.9 per cent. in 1913.

The Medical Officer of the Board, in his Annual Report for 1913 (par. 13), suggested that School Medical Officers' Annual Reports for 1915 should contain the results of special enquiry made on the subject of adenoids. The following notes epitomise the results of the inquiry in London.

Catarrhal conditions of the mucous lining of the respiratory passages are rife in this country amongst children of school age. Accompanying these catarrhal conditions is found overgrowth of the natural lymphoid masses, particularly of the tonsils and of the adenoid tissue of the naso-pharynx. Such overgrowths persist for long periods during child life, producing through their secondary effects serious interference with growth and development. Towards the end of school life they tend spontaneously to disappear, but deformities and habits produced by their long persistence remain more or less permanent. The almost inevitable spread to the middle ear of the general unhealthy condition of the throat renders the association of adenoid growth and deafness an extremely close one. As medical inspection of school children became general, the very serious interference with educational efficiency brought about by the widespread prevalence of these conditions soon became apparent; and amongst the complaints for which special arrangements for treatment of school children became necessary under the Administrative Provisions Act, adenoid growths and enlarged tonsils took a prominent place.

From the figures which will be quoted below it will be seen that as the result of school medical inspection the most striking accompaniments of adenoid growths are found to be firstly deafness and ear discharge, and secondly mental dulness and retardation of intellectual progress.

General prevalence and age and sex distribution, 1912-15 (percentages).

Year.	Enlarged tonsils.						Adenoid growths.						Adenoids and tonsils referred for treatment.					
	Entrants.		8-9.		Leavers.		Entrants.		8-9.		Leavers.		Entrants.		8-9.		Leavers.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
1912 ...	10.0	9.6	10.3	11.2	7.5	9.2	8.6	6.8	6.9	6.2	4.9	4.5	10.7	9.2	8.76	8.6	7.92	8.68
1913 ...	13.6	13.2	11.1	12.8	9.6	11.8	9.6	7.8	6.7	5.9	4.8	4.4	8.3	7.4	6.1	6.3	5.3	5.8
1914 ...	14.9	13.9	12.1	13.2	9.0	11.2	8.9	7.7	6.4	5.4	4.5	3.7	8.8	7.7	6.7	6.3	4.7	5.4
1915 ...	14.2	13.5	11.4	12.3	9.0	10.6	7.5	5.7	5.8	4.5	3.0	2.4	6.5	5.8	6.0	5.5	3.8	4.0

It is to be noted that the continuous decline of late years in the number of children with defects so severe as to require recommendation for treatment is this year again conspicuously apparent.

It would be both interesting and useful to attempt to arrive at conclusions which would show to what extent locality and social conditions affect the prevalence of adenoid growths, and returns from various districts have been compared with this object in view. A serious difficulty, however, is at once experienced in the very wide variations in the practice of different observers in recording cases.

The actual demonstration of the presence of overgrowth requires the insertion of the observer's finger into the child's naso-pharynx, an operation which though harmless causes discomfort, and to a

nervous child is even alarming. For these reasons its general use is unsuitable under conditions of school medical inspection and must be reserved until the time of the further examination carried out at the school treatment centre or hospital.

The diagnosis of the existence of adenoids in school practice rests entirely upon interpretation of symptoms exhibited by the child; one observer will record the suspected presence of adenoids where the symptoms are slight, while another will only do so on discovery of the presence of very pronounced effects. The differences in prevalence recorded in various localities, therefore, are often to be attributed rather to the idiosyncrasy of the observers than to any actual differences in the prevalence of the disease.

In London, however, it is the practice to record separately the children who have symptoms so pronounced as to be referred for medical treatment. When attention was limited to these cases it was surmised that there would be greater evidence of standardisation of individual idiosyncrasy, and that very wide variations would be apparent no longer.

Dr. C. J. Thomas has analysed the figures of entrant children referred for treatment for adenoid growths over a series of three years for each borough of London, and finds that three groups of boroughs can be distinguished; six boroughs, Battersea, Lambeth, Shoreditch, Southwark, Wandsworth and Woolwich are much above the average in incidence; twelve are average, Bermondsey, Chelsea, Fulham, Hackney, Hammersmith, Holborn, Islington, Kensington, Poplar, Stepney, Stoke Newington, Westminster; and ten are below average, Bethnal Green, Camberwell, Deptford, Finsbury, Greenwich, Hampstead, Lewisham, Paddington, St. Marylebone and St. Pancras.

Boroughs showing a high percentage of children referred for treatment for tonsils and adenoids:

Borough.	1912.		1913.		1914.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Battersea	12.6	12.9	12.0	13.7	12.2	11.3
Lambeth	12.7	11.2	11.1	10.6	11.3	12.2
Shoreditch	14.7	14.9	16.3	15.5	10.2	5.8
Southwark	13.2	12.1	9.5	10.1	7.3	7.6
Wandsworth	12.5	11.5	11.5	10.2	8.8	7.9
Woolwich	21.7	16.6	17.4	14.4	8.1	7.4

Boroughs showing a low percentage of children referred for treatment for tonsils and adenoids:

Borough.	1912.		1913.		1914.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Bethnal Green	5.7	4.6	3.7	3.2	3.9	4.2
Camberwell	9.1	8.0	5.9	5.1	4.5	4.1
Deptford	14.1	11.9	2.7	2.5	6.9	5.1
Finsbury	5.9	6.6	10.2	6.7	3.8	4.3
Greenwich	8.6	7.7	4.4	3.6	5.9	4.5
Hampstead	5.8	7.0	3.3	2.3	8.6	6.9
Lewisham	8.1	5.6	5.2	4.5	5.5	6.2
Paddington	8.2	6.4	6.2	5.2	12.8	11.4
St. Marylebone	8.6	7.0	5.2	4.7	7.1	4.9
St. Pancras	5.8	6.2	4.0	3.3	7.8	5.9

It is quite clear from this return that a new disturbing factor has appeared; the areas in which the largest number of children are returned for treatment are those in which facilities for treatment were earliest established and better known; indeed, in the case of three of them the school treatment centres were actually the first to be instituted in London. In the light of these results, it will be more than ever clear that great caution is necessary in drawing deductions with regard to local incidence. The differences exhibited by two poor boroughs like Shoreditch and Bethnal Green, for example, are particularly instructive, and they are no doubt to some extent explicable as being due to differing facilities for obtaining treatment in these two boroughs. Another point deserving of note is that an expectant attitude is followed by some school doctors, and this hesitation in recommending operative treatment on the part of particular doctors may explain the great difference to be noted in the small number of children referred for treatment in Bethnal Green as compared with Shoreditch.

Association of the presence of enlarged tonsils and adenoid growths with deafness and discharging ears.—The close association of the unhealthy conditions of the nose and throat with ear discharge and deafness has frequently been pointed out in previous reports. The figures available have been obtained from researches of individual observers directed to this specific question and based upon single examination of children at a definite point of time.

There are now, however, available completed records of the medical history of children who have left school. These records are forwarded from the schools to the public health office and are there accumulated. It is now possible, therefore, to ascertain how far the association of deafness with the throat troubles under consideration is reflected in the medical histories of children resulting from ordinary

school inspections. Dr. C. J. Thomas and Dr. R. H. Norman have examined a series of "random samples" of completed records, with the following results:—

The first series consisted of 1,006 children, comprising 498 boys and 508 girls:—

Boys (498).

No tonsils or adenoids recorded, 395 (79.3%).	Tonsils and adenoids recorded, 103 (20.6%).
No ear discharge or deafness, 379 (76.1%).	No ear discharge or deafness, 89 (17.8%).
Ear discharge or deafness, 16 (3.2%).	Ear discharge or deafness, 14 (2.8%).

Girls (508).

No tonsils or adenoids recorded, 374 (73.5%).	Tonsils and adenoids recorded, 134 (26.3%).
No ear discharge or deafness, 365 (71.8%).	No ear discharge or deafness, 113 (22.2%).
Ear discharge or deafness, 9 (1.7%).	Ear discharge or deafness, 21 (4.1%).

In this series 20.6 per cent. of boys and 26.3 per cent. of girls at some time in their school life presented symptoms of adenoid overgrowth and 6.0 per cent. of boys and 5.8 per cent. of girls symptoms of ear discharge and deafness. The close association of the two conditions is shown very significantly, however, by the following figures, which represent the percentage of cases of ear discharge and deafness found amongst children with and without unhealthy throat conditions—

Children without enlarged tonsils and adenoids—

Boys .. 4.0 per cent.	} have ear discharge or deafness.
Girls .. 2.4 per cent.	

Children with enlarged tonsils and adenoids—

Boys .. 13.5 per cent.	} have ear discharge or deafness.
Girls .. 15.6 per cent.	

In this series of cases, while the association of ear discharge and deafness with recorded enlarged tonsils or adenoid growths is very significant in both sexes, a somewhat larger proportion of the ear discharge and deafness was associated with throat conditions amongst girls than boys. In order to test whether this was an accidental result, a further series was examined.

The second series consisted of 1,378 children, comprising 816 boys and 562 girls.

Boys (816).

No tonsils or adenoids recorded, 636 (77.9%).	Tonsils and adenoids recorded, 180 (20.1%).
No ear discharge or deafness, 616 (75.4%).	No ear discharge or deafness, 139 (17.0%).
Ear discharge or deafness, 20 (2.5%).	Ear discharge or deafness, 41 (3.1%).

Girls (562).

No tonsils or adenoids recorded, 403 (71.8%).	Tonsils and adenoids recorded, 159 (28.2%).
No ear discharge or deafness, 391 (69.6%).	No ear discharge or deafness, 134 (23.9%).
Ear discharge or deafness, 12 (2.2%).	Ear discharge or deafness, 25 (4.3%).

Children without enlarged tonsils and adenoids—

Boys .. 3.1 per cent.	} have ear discharge or deafness.
Girls .. 2.9 per cent.	

Children with enlarged tonsils and adenoids—

Boys .. 22.7 per cent.	} have ear discharge or deafness.
Girls .. 15.7 per cent.	

In this second series of cases 20.1 per cent. of boys and 28.2 per cent. of girls were found to have adenoid overgrowths or enlarged tonsils; while 5.6 per cent. of boys and 6.5 per cent. of girls were found to have ear discharge or deafness. Here, again, the association between the two conditions is shown by the overwhelming preponderance of cases of deafness and ear discharge amongst those with unhealthy throats, but the proportion of cases of ear discharge associated with throat defects is in this series greater amongst the boys.

In both series the percentage of children showing signs of enlarged tonsils and adenoids at some period in their school life is between 20 and 30 per cent., and is higher amongst girls, while approximately 6 per cent. of both boys and girls suffered at one time or another with ear discharge and deafness.

Association of the presence of enlarged tonsils and adenoid growths with subnormal mental capacity.

—It is usual at routine inspections to record the mental capacity of children by the figures 1, 2 and 3. These figures necessarily vary from class to class and from observer to observer, and are found not to be statistically reliable. The educational machine, however, sorts the bright and defective children out very accurately. The brightest children are examined as scholarship candidates, and mentally defective children are drafted into special schools. Dr. Thomas has analysed the results of examinations during 1914 of scholarship children, of normal children examined as leavers in elementary schools, and of children examined at the age 11 to 12 in special schools, with the following results:—

Percentage of children referred for treatment for adenoid growths and enlarged tonsils—

	No. examined	Boys.	Girls.
Mentally defective children (aged 11-12)	1,042	5.8	9.2
Children in Elementary schools (aged 11-12)	67,151	4.7	5.4
Scholarship children (aged 11-12)	3,470	1.9	2.2

No question of personal equation between examining officers arises on these figures, which are also free from any disturbing influence caused by age. They appear to indicate *cæteris paribus* that either the presence of adenoid growths and enlarged tonsils tends to produce mental defect or backwardness in school, or that the conditions which favour the development of adenoid growths also bring about a lowering of mental capacity.

A similar result is obtained by comparing the results of a single term's inspections in central schools and of leavers in ordinary schools respectively:—

No. of Schools.	Type.	Sex.	No. of children examined.	Percentage of adenoid growths recorded.
28	Central schools ...	Boys ...	767	1.5
25	Central schools ...	Girls ...	667	1.9
602	Ordinary schools ...	Boys ...	10,026	3.0
630	Ordinary schools ...	Girls ...	9,595	2.6

The children in central schools are selected from the brighter mentally of those in ordinary schools.

Other conditions associated with adenoid growths and enlarged tonsils.—The records of medical inspections were scrutinised with a view to finding out if any other conditions noted in the children bear any constant relationship with the throat conditions under consideration. Teeth, cleanliness, vision, eye diseases, and malnutrition in turn were examined without any result.

Symptoms of adenoid growths and treatment.—Dr. A. G. Wells has collected information in regard to the symptoms present in a number of school children examined by him before and after treatment for adenoid growths with the following results, the numbers after performance of operation being given in brackets:—

Snoring ...	321 (70)	Defective speech ...	24 (8)	Enlarged glands ...	30 (10)
Mouth breathing ...	328 (95)	Ear discharge ...	114 (46)	Mental dulness (marked) ...	28 (9)
Frequent colds ...	293 (127)	Nose bleeding ...	23 (5)	Frequent sickness ...	7 (2)
Deafness ...	134 (45)	Enuresis ...	37 (24)	Night terrors ...	84 (26)
Frequent sore throats ...	156 (51)	Nasal discharge ...	110 (38)	Miscellaneous ...	11 (2)
				Total ...	1,700 (558)

These results show that very considerable relief is obtained by the operative treatment as generally performed. He points out, however, that although the majority of operations are very successful there is a residue of less satisfactory results varying from 15 to 39 per cent., at one or other of the institutions at which the operation was carried out.

Dr. Wells points out that much can be done towards ensuring satisfactory results by careful attention to details. There is no doubt that the Council's arrangements by which the homes of the children are visited by district nurses after operation have made a great difference to the results of operation for adenoids in the case of London school children, and Dr. Wells instances the example of one of the centres included in the Council's scheme, where every detail was considered which might aid in producing a satisfactory result and where the results were such that great benefit was obtained in every case.

The general opinion is that open air treatment, breathing exercises and similar measures cannot take the place of operative removal of the obstruction, although they are very desirable in all cases in the after treatment of children who have been operated upon. Thus, for example, Dr. Birmingham, in a report on the playground class at Gordonbrock-road School, remarks that "the results are so unsatisfactory in the cases of children suffering from enlarged tonsils, adenoids, mouth-breathing or enlarged cervical glands, that I would advise they be not sent to the playground classes but placed under operative or other treatment more likely to give quick and certain benefit."

The amount of external eye disease recorded is largely dependent upon outbreaks of infective ophthalmia, and although some districts of London, *e.g.*, Wapping, especially suffered in the latter respect, the year was on the whole a good one, and only 3.5 per cent. of the children examined were reported as suffering from external eye disease, as compared with 4.2 per cent. in 1914, and 4.1 per cent. in 1913.

The records of the testing of the children's eyesight show how materially the extension of care activity during school life is benefiting the children themselves and improving the general fitness of the population. It is still unfortunately true that serious defects of vision increase during school life, and that this affects girls to a greater degree than boys. But it is satisfactory to note that the excess of serious defects in the girls is less this year than last. On the other hand, the percentage of leavers recorded with normal acuity of vision has increased from 51.1 per cent. in 1913 to 57.4 per cent. in 1915 amongst boys, and from 43.8 per cent. to 51 per cent. in the case of girls; so that the acuity of vision of the leaving girls in 1915 has reached that recorded in the leaving boys two years ago.

Much attention has been paid to the question of discharging ears during the year. Chronic ear discharge is the despair of hospital out-patient treatment, and a final solution of this difficulty has still to be found. Nursing treatment centres have done much to improve matters, but co-ordination between specialist examination, such as is only in general to be obtained at a special hospital or special department of a great hospital, and the ordinary tedious routine treatment which must in general be followed, is difficult to effect. A centre for special inspection of ear cases has been established under the direction of Dr. A. G. Wells at Paradise-road, Stockwell, with very encouraging results.

The year's inspections show a slight reduction in the number of children found at routine examinations to have ear disease, *viz.*, 2.2 per cent. compared with 2.5 per cent. in 1914.

Children with defective hearing also happily show a slight reduction, *viz.*, 1.3 per cent., as compared with 1.5 per cent. in the previous year, and 1.7 per cent. in 1913.

External diseases of the eye.

Diseases of the ear and hearing.

The percentage of stammerers remained unchanged (·25 per cent.), the incidence as usual being much heavier upon boys (472 boys to 163 girls). Other speech defects showed a slight reduction, ·54 per cent. compared with ·69 per cent. previously. Speech defects.

The number of children with heart disease found at routine medical inspections is tending to increase. Thus, 3·1 per cent of the children were recorded as having defect of the heart in 1915, as compared with 2·7 per cent. in 1914 and 2·2 per cent. in 1913. It is to be noted, however, that the more severe cases of heart disease are sent to physically defective schools, but there has been a growing tendency during the last two or three years to allow well compensated cases of heart disease to remain in the ordinary schools, partly owing to the reliance that is now placed upon the care organisation in the ordinary schools, and partly because of pressure of accommodation in the special schools. Heart disease.

The amount of severe anæmia detected is practically stationary, 2·79 per cent. of the children being recorded as anæmic compared with 2·82 per cent. previously. Entrant boys are more anæmic than entrant girls, but while the boys steadily improve during school life, the girls do not, so that at older ages the incidence is heavier upon the girls. Anæmia.

Lung troubles other than tuberculosis were found in 3·9 per cent. of the children; by far the highest percentages being amongst the entrant infants, who so often have bronchitis associated with rickets. Disease of lungs.

The percentage of children found with nervous disease was 1·07 compared with 0·99 the previous year. Leaver girls show signs of nervous trouble to a much higher degree than do leaver boys. Disease of the nervous system.

Only 498 children were found to be suffering from phthisis (0·19 per cent.), a distinct drop as compared with previous years. Other tuberculous disease was found in 642, or 0·25 per cent., practically the same figure as that formerly found. The smaller number of cases of phthisis must be connected with the provision for treatment for children suffering from the disease, of whom a large number were sent away to sanatoria during the year, and a still larger number were excluded from school at the request of tuberculosis officers of the dispensaries. Tuberculosis.

It is necessary here to point out that although only 498 children were found suffering from phthisis at routine inspections, 513 sufferers from the disease were detected amongst children at special or urgent examinations, or more than 1 per cent. of those brought to the notice of the school doctors in this way.

5,082 children were found suffering from rickets, 1·97 per cent., as compared with 1·72 per cent. last year, and 2·1 per cent. in 1913. The chief incidence is upon entrants, and at each age boys are found to be affected twice as frequently as girls. The disease is usually recognised about the sixth month, and produces its main effects in the first two years of life. Rickets.

Dr. Lawson Dick examined upwards of 1,000 children in East London, of whom about 800 were Jewish. The well-nourished, well-clad Jewish children are, in spite of the care bestowed upon them by the parents, not infrequently rickety. As regards feeding, 81·4 per cent. were breast-fed. Among 300 non-Jewish children at the Hackney Centre for Mothers 57 per cent. were breast-fed entirely and 20 per cent. only partially owing to the mother going out to work. As the majority of these poor mothers nursed their children, the prevalence of rickets is not mainly due to want of breast-feeding. Only 20 per cent. of the 1,000 children were entirely free from signs of rickets, while 72·5 per cent. of breast-fed, and 87 per cent. of bottle-fed babies, present evident signs. In only one-fifth of these rickety children was the nutritional condition poor. The most prominent signs are faults in the calcium nutrition of the teeth and skeleton. Beading of the ribs, chest deformities and thickenings of the skull occurred in 70 per cent. When the teeth are examined, caries is very commonly found, and hypoplasia of the enamel is frequent; this condition exhibits itself in stunted growth of certain teeth with defective formation of the enamel varying from deficiency over the whole crown to irregular coating producing a honeycombed, or a merely pitted appearance. This condition Dr. Dick considers almost pathognomic. Hypoplasia due to inherited syphilis is exceedingly rare, whilst that due to rickets is very common in school children. Investigation of rickets by Dr. Lawson Dick.

The estimation of the frequency of hypoplasia is interfered with by the prevalence of caries. Of 586 rickety cases, 42 per cent. had normal teeth, whilst 58 per cent. were defective; 38 per cent. were carious, and 20 per cent. showed well marked hypoplasia. In cases with caries the lower first molars were affected in about 80 per cent.

Tonsillar enlargement was excessive, while catarrhal conditions, especially bronchial catarrh, were present in about 18 per cent. Physiologically the rickety child is essentially a backward child; in 48 per cent., walking or speech or both were delayed until at least 18 months old. Defective speech, especially lalling, is frequent. The mental condition in early school life is one of dulness, with an apparent awakening about six or seven years of age, but even then the child frequently remains a year or two behind the average. The 800 rickety children were assessed as 11 per cent. bright, 64 per cent. average, and 25 per cent. backward.

The essential social factors causing rickets apparently are defective housing and overcrowding, with absence of sunlight, want of ventilation and confinement, associated with insufficient exercise; if, in addition, there is deficiency in food, especially in the nitrogenous elements, the conditions are aggravated.

The problem of prevention is that of proper distribution of population, town-planning, cheap travelling facilities, and proper feeding in quality and amount. Inasmuch as the chief defects occur in the first two years of life, it is important to have the child under medical supervision as soon as possible.

5,320 children were found with deformities presumably due to other causes than rickets or tuberculosis. This is a higher percentage than previously noted, viz., 2·06, as compared with 1·88. There was a decrease in the amount of deformity amongst the boys, and the difference is entirely due to a larger number of leaver girls reported with spinal curvature, 2,103 girls being found with deformities at this age, compared with 1,022 during the previous year. Deformities.

Malnutrition. 1,318 children were reported as suffering from pathological malnutrition, or 0·51 per cent., compared with 0·48 per cent. in 1912.

Special examinations. 22,676 boys and 25,130 girls were presented for examination on special or urgent grounds apart from the routine inspections. Of these, 5,179 boys and 6,048 girls were found to require treatment for various conditions.

Special examination of children referred for nursing treatment. In their reply on the 2nd July, 1914, to the letter addressed to the Council by the Board of Education on Medical Inspection and Treatment, the Council stated that it was proposed that arrangements should be made whereby the school doctor should inspect at the treatment centres children requiring nursing treatment referred by care committee workers, school nurses, teachers and attendance officers, with a view to referring immediately to the proper department those cases found to be suitable for treatment under the Council's arrangements.

Owing to the conditions which have arisen since the reply was sent, the full carrying out of this proposal has been delayed, but arrangements were made at the end of May, 1915, for the school doctor to attend one treatment centre in each of the five divisions as follows :—

Eastern, Old Ford Centre ; North-Eastern, Finsbury Centre ; North-Western, Exeter-street Centre ; South-Western, St. George's Mission ; South-Eastern, Greenwich Treatment Centre.

Between May and December each of the above centres was visited from twice to four times weekly, the school doctor in each case attending for fifteen to twenty minutes after the close of the school session. The total number of children seen during this period was 1,236, viz., Old Ford 185, Finsbury 272, Exeter-street 421, St. George's Mission 75, Greenwich 283.

The conditions from which the children suffered were very similar at all the centres, and in the great majority were cases requiring urgent attention, and the inspections were frequently the means of detecting contagious conditions requiring the exclusion of the children from school.

The following analysis of the cases seen at the Greenwich Centre serves to show the need which is being met by the inspections :—

Conditions of the skin (162).—Including impetigo, eczema, septic wounds and abscesses, cuts, scabies, ringworm (body and scalp), psoriasis, urticaria, chilblain, boils, burns, herpes.

Conditions of the eye (48).—Conjunctivitis, phlyctenules, blepharitis, corneal ulceration, hordeolum, iritis, squint, tumour, dacryocystitis, foreign body, ptosis.

Conditions of the ear, nose and throat (48).—Otorrhœa, enlarged glands, tonsils and adenoids, rhinitis, tonsillitis.

Conditions connected with teeth (7). *Unclassified* (16).—Including mumps, chorea, sprain.

Medical and dental treatment.

During the year there has been little change in the arrangements for the medical and dental treatment of school children, the opening of the new dental centres at Chelsea and at the Women's Hospital, Paddington, being the only material variations. It has not been possible to put into operation seven of the new centres which have been sanctioned, viz. : South Hackney (teeth), North Islington (nursing treatment and teeth), Mile End (nursing), Peckham-rye (nursing and teeth), St. Georges-in-the-East (teeth), Seven-dials (nursing and teeth), Somers-town (nursing and teeth) ; but it is hoped that two of these centres will be opened shortly. Requests have been received from local associations and school care committees for the provision of further facilities in Chelsea, Hammersmith, Hampstead, and Marylebone, and the question of the inclusion of certain hospitals in the scheme has been considered. The Council has, however, recently decided that the present time is not opportune for extending the scheme beyond the establishment of the centres which have already been sanctioned but not yet opened and, in one or two instances, increasing the provision at existing centres. For comparison with the figures given in previous reports, the numbers under the agreements in force on 1st January, 1916, were as follows :—

Eyes, 22,920 ; ear, nose and throat, 14,360 ; ringworm, 2,246 ; nursing treatment, 19,520 ; teeth, 52,360 ; total, 111,406.

Eye defects.—The number of cases treated under the Council's arrangements was 25,216, against 25,052 during the previous year, and 22,920 the number provided for under the agreements. Towards the end of the year some difficulty was experienced in dealing with refraction cases owing to the inability of the authorities of certain hospitals, not included in the Council's scheme, to continue to treat school children. This has led to congestion at certain of the Council's centres which has to some extent been met by increasing the provision at the Fulham Centre and the Metropolitan Hospital and by authorising a certain number of extra sessions, to be used as required, at all the centres.

Ear, nose and throat defects.—The decline in the number of children referred for ear, nose and throat defects, noted in recent years is again apparent. The agreements provided for the treatment of 14,360 cases, while the actual number treated was 11,159, as compared with 12,961 in 1914. In the arrangements for the year commencing 1st April, 1916, provision has been made for 880 fewer cases.

Ringworm.—There is evidence that the number of children suffering from ringworm is gradually decreasing and it has been possible to reduce the provision slightly. During the year 1,470 cases have been dealt with, as compared with 1,733 in 1914. The number provided for under the agreements was 2,246.

Nursing treatment.—The nursing treatment of minor ailments has been particularly satisfactory. Provision was made for 19,520 cases, and during the year 20,419 children were treated as against 14,634 in 1914. Five additional centres sanctioned have not yet been opened, but it is hoped that two will be in

operation shortly. The arrangements for the year commencing 1st April, 1916, also include an increase from 660 to 990 in the number of cases to be treated at the Camberwell, Notting Dale and St. Pancras centres.

Dental defects.—The arrangements for the inspection by the dental surgeons of children in the contributing schools have been continued. On 31st December, 1915, there were 28 inspecting dentists working in the schools. 69,516 children were seen, of whom 56,864, or 81.79 per cent., were found to require treatment.

During the year 44,875 children have been treated at the Council's centres, as compared with 32,439 in 1914; the number actually provided for in the centres at work was 47,000. As mentioned previously, it has not been possible to establish six of the new centres authorised, but the centres approved at Chelsea and the Women's Hospital for Children were opened during the year. It is hoped that centres at Seven Dials and Peckham-rye will shortly be ready and that the remaining centres will commence work during the course of the ensuing year.

The results of dental treatment for the year 1915 are as follows:—

Total number of children attended	...	...	44,875	No. of other operations, e.g., scaling, immediate regulation, application of AgNO ₃ , etc.	8,000
No. of attendances	...	...	63,943	No. of general anaesthetics—	
No. of teeth or roots extracted—				Nitrous oxide	8,617
Temporary	...	...	154,084	Ethyl chloride	5,964
Permanent	...	...	19,883	Other general anaesthetics	1,408
No. of stoppings	...	...	36,241		

The agreements with the various centre committees provide that treatment shall be given to children of 6, 7 and 8 years of age, and in urgent cases to children of other ages. When the dentist has visited (usually at the end of a year) all the schools on the rota and inspected the children of 6, 7 and 8, he then, in the second year, inspects the children of 6, 7, 8 and 9, and at subsequent visits in each succeeding year the age group inspected is extended upwards by one year. If the necessary provision is made in the course of a few more years, the Council's scheme should enable all children of 6 years of age and over to be inspected and systematically re-inspected at appropriate intervals. The Council has recently decided to insert a clause in the agreements providing for the consequential extension of the ages of the children to be treated.

Following-up and re-inspection of children who are found to present defects.

If the parent is not present the care committee worker visits the home after a short interval to see the parents and, if necessary, to persuade them to take the necessary action. At all stages of following-up the care organisation obtains valuable assistance from teachers and school attendance officers.

The stages of following-up should be entered by the care worker upon the following-up card. In the case of a child attending a centre where the Council has made arrangements, the card is forwarded there for the information of the treating doctor and upon it he enters any recommendations he wishes to make. The following-up card is returned to the school in time for the re-inspection visit of the school doctor.

For each child reported ailing a re-inspection card is made out in the public health offices and is forwarded to the school at the beginning of the second term after the inspection has taken place in order that the school doctor may report upon it what action, if any, has been taken and the results.

Provision is made for the re-inspection of every ailing child during the second term after the primary inspection, thus giving at least a clear term's interval during which action may be taken and affording sufficient time in many instances for a just opinion to be formed as to the results.

Thus the re-inspection work for 1915 comprised:—

Term.	1st re-inspection of children found defective in	2nd re-inspection of children found defective in
I. ...	2nd term, 1914	3rd term, 1913.
II. ...	3rd term, 1914	1st term, 1914.
III. ...	1st term, 1915	2nd term, 1914.

The care committee worker is informed of the date of re-inspection and in the majority of instances during 1915 she attended; if this is the case she learns directly from the doctor whether the result is satisfactory or not, and is able to give him valuable information as to the general circumstances of the cases. When the care committee representative is not present at re-inspection the results are sent to her by post in order that she may take the necessary further action in cases still outstanding. In the unsatisfactory or uncompleted cases, a further re-inspection is made in the second term after the first re-inspection. Complete returns of re-inspections can never be made owing to the loss of many children through removal, but a sufficiently large proportion of the children are re-inspected to enable the results of following up to be gauged.

During 1915, 78,308 children requiring treatment were seen at first re-inspection, while 4,394 children due for first re-inspection had removed; 37,663 children were seen at second re-inspection visits. In addition, 13,767 children noted "for observation" were seen at first reinspection and 6,693 of these at second reinspection. 6,966 were marked off as cured.

Tables are given in the appendix showing the detailed results of the 115,971 re-inspections of the children requiring treatment. 32.6 per cent. of the children had been treated with satisfactory results on first re-inspection, 9.7 per cent. had been under treatment but could not be said to be cured, 15.6 per

cent. had cleared up naturally or were considered not amenable to treatment, and 42.1 per cent. were untreated and still required treatment. Thus 48.2 per cent. of the cases were discharged at first-inspection, and 51.8 per cent. were marked for further following up.

Experience shows that the percentage of cases treated does not vary greatly from term to term, and hence it may be assumed that the cases not yet submitted to second re-inspection will show similar results to those whose second re-inspection has been completed. Assuming that the proportions are fairly constant, the general results of following-up investigated during 1915 are as follows:—

	% cured at 1st reinspection.	% submitted for 2nd re-inspection	% treated or no longer requiring treatment at 2nd reinspection.	% not treated and requiring treatment.
Refraction cases	41.1	58.9	32.8	26.1
Nursing treatment cases	66.2	33.8	25.5	8.3
Ear, nose and throat cases	51.4	48.6	25.2	23.4
Teeth cases	41.3	58.7	23.7	35.0
Other ailments	62.7	37.3	30.3	7.0
Total	48.2	51.8	27.8	24.0

School-leaving examination.

At the final or leaver age group inspection, the school doctor indicates in an appropriate space upon the medical record form whether a further examination is desirable immediately before the child leaves school. The children thus indicated are presented to the doctor in the term preceding that in which they are due to leave. The school doctor enters upon the record card a final opinion relative to suitability for employment, and this is transferred by the head teacher to the school-leaving form (or if desired, entered upon this form by the school doctor himself) for the information and guidance of the Juvenile Advisory Committee.

Report by
Dr. Chaikin
on the
medical work
in connection
with the
Juvenile
Advisory
Committee
of which he is
a member.

Boys and girls may come before a Juvenile Advisory Committee in different ways. It is usual for them to be referred by the school after-care organisation, or they may come direct to the Labour Exchange, after having already been in an employment of their own finding. In the first-named circumstances, the school-leaving form is frequently at the Exchange before the applicant appears.

The medical record side of employment, in so far as the Exchange is concerned, begins with the school-leaving form. Dr. Chaikin insists upon the importance of filling it in so that it should convey to everybody likely to read it the physical condition of the child. Technicalities are best omitted. Not only should it state defects, as for example, "heart disease," "very bad sight," but the child's physique should be summed up in such terms as "robust," "delicate," "tendency to chest trouble," "rheumatic," etc. Work on a rota committee demonstrates the utility of this.

Employment is selected by the rota members, working with the officers, who are experts conversant with all labour problems. Medical questions arising as to the suitability of a particular employment for a certain boy or girl, provide the work for the medical member, who, of course, also sees the applicant on the question of employment generally.

Certain of the rotas are set apart for seeing and talking to those already in employment, as well as for advising new applicants, and there is thus an opportunity for the medical member to advise individuals on the question of health maintenance in relation to work. His presence may often help to throw light on difficult medical questions, e.g., there may be a physical cause for continual change of employment—the "rolling stone" type of case. At the meetings of the Committee special medical questions may come up in the course of discussion. Medico-legal topics may also arise.

The experience gained at the labour exchange is of help, too, in other spheres of school medical work. As an example might be mentioned the interest taken by interim tuberculosis care committees in the work of consumptives who have returned from sanatoria.

Education (Provision of Meals) Act.

In connection with the regulations issued by the Board of Education in 1914 one of the questions upon which stress is laid is the extent to which the service is co-ordinated with the school medical service. In regard to this question among the points set out in the instructions of the Board for the guidance of their medical officers at the forthcoming inspections of the arrangements were supervision of dietary, medical inspection of individual children, and arrangements for ascertaining and recording the effect of the meals on the physical and mental condition of the children.

Supervision
of dietary.

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 of analysis are transmitted to the education officer with recommendations as to improvement of the dietary in cases where this appears to be inadequate. Similar provision exists for examining samples of milk supplied to the schools.

In connection with proposals for retrenchment a number of the menus in use have been submitted for revision, particularly in relation to the question of substitution of other forms of food for meat. It

was necessary, therefore, to establish a standard minimum of efficiency. The test adopted was that a dinner for eight children should supply 200 grammes of protein and that the heat giving capacity should be not less than 6,000 calories. Of 48 samples of the meals supplied, 45 gave satisfactory results on chemical examination, while three were deficient in nutritive materials and fat. Of the 200 samples of milk taken, 48 (nearly 22 per cent.) were found to be unsatisfactory, and the medical officer of health of the borough in which the milk had been purchased was supplied with information for the purpose of taking samples in accordance with the Sale of Foods and Drugs Act. In one case a fine of £10 was inflicted on each of two summonses under this Act.

When children during the routine inspections of the age groups are discovered to be under-nourished the school doctors make recommendations to the care committees with regard to feeding, and in the small proportion of cases in which the assessment 4 is placed opposite the nutrition record a very careful system of following up has been carried out, and the physical measurements of the children taken.

About 10 per cent. of children inspected in the age groups are found subnormal as regards nutrition, and from this it may fairly be inferred that 10 per cent. of all children are subnormal. Amongst children on the necessitous list, medical inspection has shown that about half are ill-nourished and half well-nourished. Of the ill-nourished children on the necessitous list a certain percentage were referred to the care committees by the school doctors. Again there are always some children on the feeding list about whom care committees are in doubt, and concerning whom they welcome a medical opinion.

In a letter from the Board of Education (9.8.15) relative to the visits of their inspectors to the Council's dining centres, the following statement was made:—

“ The association of the School Medical Service with the work of providing meals, especially as regards the supervision of dietary, analysis of meals, and investigations of malnutrition, seems to be close and thorough, and should have valuable results. The Council are no doubt aware that the Board attach great importance to this co-operation.”

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 beyond September last the card index of the cases. The number of new cases notified during the period from January to September was 4,239, but more than one return has been made in the case of many of the children. Altogether 8,713 returns have been made. In 1,878 cases medical certificates were supplied.

The rheumatic group of diseases forms the highest proportion—over 25 per cent. of the total—among the causes that produce protracted absences from school. Next comes tuberculosis in various forms with nearly 15 per cent.

The action taken in cases in which further following-up was considered advisable was as follows:—Total number of new cases, 4,239; referred for examination by school doctor, 591; sent to divisional medical officer for information, 51; referred to attendance officer for further enquiry, 45; examined for special school, 139 (M.D., 3; P.D., 112; open-air school, 24); referred to ophthalmologist, 15; placed on epileptic register, 78; referred to school care committees, 139.

The results of the examination by the Council's medical staff in 497 cases are as follows:—Fit to return to school, 308; unfit to return to school, 143; physically defective school, 43; further examination, 3. This section of the work of the School Medical Department has particularly suffered owing to the shortage of clerical assistance. The work, however, being of great importance, is continued on modified lines. 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 work of the Council in respect of the treatment of persons suffering from tuberculosis during 1915, has been confined mainly to the development of the organisation for giving effect to the commitments of the Council prior to the commencement of war. Beyond taking the requisite number of beds to cope with the demands arising from the working of borough dispensary schemes and from the need for treatment revealed by school medical inspection, the only matters which call for special attention in existing circumstances are (1) the approval by the Council on 15th June, 1915, of a model scheme for the institution, in connection with dispensaries, of care committees representing all the local organisations engaged in the relief of sufferers, and (2) the decision of the Council that when dealing with children, it would require all parents to make a small contribution roughly representing the cost of keeping the children at home.

The model tuberculosis care committee scheme will be dealt with in the General Section (Part I.) of next year's report. Here it is sufficient to mention that interim committees are being constituted, including officials of the London County Council and Borough Councils, and as many as possible of the personnel provided for in the model scheme. The assessment of the amounts to be paid by parents in part payment of the cost of the treatment of their children commenced in November, 1915.

The following table gives the actual number of children under treatment on December 31st, 1915, at the various institutions at which the Council has taken beds:—

	Boys.	Girls.	Total.		Boys.	Girls.	Total.
Nayland Sanatorium ...	28	34	62	Cromwell House, Highgate,			
Harpندن ..	4	6	10	Great Ormond-street	} 22	16	38
Carshalton ..	36	39	75	Hospital			
Fleet ..	3	6	9	Clandon Home	} 15	13	28
Victoria Home, Margate ...	2	3	5	Alexandra Hospital ...			
St. Vincent's Home, Pinner	1	—	1	Ide Hill Sanatorium ...	—	4	4
				Brompton Hospital ...	2	5	7
				Victoria Park Hospital ...	1	—	1
				Total	114	126	240

Kensal House
School.

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 96, and on 31st December, 104; the average for the year was 100. There was marked variation in the average attendance from month to month; the lowest being 66.3 in March and the highest 87 in November. During the year, 29 children left the school; of these, 7 went to sanatoria, 9 returned to ordinary elementary schools, 1 (hip disease) was taken into hospital, 2 obtained scholarships (L.C.C. Domestic Economy), 3 were excused further attendance after attaining the age of 14 years, 1 went to the country, 4 left to go to work, and 2 were excluded by the school medical officer on medical grounds. 35 children were referred for treatment: 16 for teeth, 9 for eyes, 1 throat, 1 ringworm, 1 other skin affection, 2 scarlet fever, 1 measles, 4 chicken pox.

Careful physical measurements were kept of all the children and showed very satisfactory results.

Open-air schools.

Medical supervision of the children in the Council's open-air schools at Birley House and Shooter's Hill has been continued, and individual records of health and progress have been maintained. The records show that the majority of the children have received very considerable benefit. It has been decided to close the schools during school holidays for the period of the war, but arrangements have been made for a special examination of the children by the school doctor immediately before each holiday period, in order that any special precautions necessary in individual cases, for safeguarding health and nutrition during the period of absence, may be provided for.

Playground classes.

The playground classes held in 1915 have in forty-two instances been reported upon by the school doctors. Some of the classes approached the open-air schools in value; others have not given such good results. The character of the surroundings of the classes varies greatly, and this is a question of considerable importance from the point of view of purity of the air, especially in relation to suspended dust. Some of the classes were held in parks or open places. Hilly Fields, Hampstead Heath, Hackney Marsh, South Park Fulham, and Maryon Park were amongst the spaces utilized; these sites were generally satisfactory. On the other hand, certain playgrounds in which classes were held, presented serious drawbacks. At the Latchmere school, for instance, the playground was stuffy, and sometimes very dusty. Roof playgrounds afford particularly useful sites, inasmuch as they are to be found chiefly in schools where children are drawn from congested areas, but they suffer somewhat in lacking space for activity. Previous reports have dealt with the increase in mental alertness, which a period of instruction in the open-air appears to promote. There is a tendency on this account, on the part of the teachers, to place the dull and backward children in the open-air class.

The quickening of metabolism, resulting from the increased exercise and the out-door conditions, is essentially the reason for the improvement shown by the children both physically and mentally. Some form of nourishment in the middle of the morning session, whether it be lunch brought from home, or milk supplied at school, contributes greatly to the success of an open-air class.

Mentally and nutritionally the children generally showed great improvement and there is no reason, provided sufficient attention is paid to the character of the nourishment available, why these benefits should not be marked in all directions, and be shared by the more debilitated children, who, in the past, and in some cases during the present year, have not shown physical improvement, and have even here and there lost weight under the extra stimulus to growth.

School journeys, 1915.

Excursions to the country are organised by the head teachers of many schools under Article 44 (g) of the Board of Education code.

Medical inspection is necessary in connection with these journeys for the purpose of (1) advising the teachers as to pupils whom on account of physical infirmity it is inadvisable to select or who require special attention; (2) guarding against the outbreak during the journey of infectious or contagious illnesses or the spread of verminous conditions.

No apportionment of medical staff has been made on account of such inspections, but the Education Committee directed that such medical examinations should be carried out so far as is possible with the staff available. Fifty-five applications were received during the year, and were acceded to so far as possible. Detailed reports were received from the school doctors in the case of 22 of the excursions.

It was noted in several of the reports that in many cases chronic minor ailments completely disappeared despite the fact that the excursions only lasted seven or fourteen days, and the observation was made that a short stay at the seaside was more valuable from the health point of view than a corresponding time spent in the country.

Remedial exercises.

A certain number of special remedial exercise classes held in ordinary elementary schools have been in operation since 1913. Medical reports have been furnished on 14. This type of class is arranged to take from 20 to 24 children selected on account of defective physique likely to be remedied by regular exercises. The cases which do best include children with round backs, flat chests, winged scapulae and various postural curvatures of the spine. At Camden-street, Dr. Norman noted that more than half of the girls (63 per cent.) had marked flat footedness, that they were long-footed and long-limbed, and that the chief cause of all these defects is muscular debility and slackness. At least two-thirds of the children have shown much improvement, whilst the remainder cannot be fully assessed until they have been longer in attendance. One to two years' attendance is necessary for full benefit. The wearing of unsuitable clothing has frequently been noted as a hindrance to success among the girls. Milk is frequently given after the exercises and is to be recommended in the case of some of the debilitated children admitted to the classes. An experimental class, observed by the head master at Winchester-street, with twenty minutes daily drill showed a considerable gain in physical measurements over a control class. All the reports agree that the classes are doing extremely useful work and that they should be continued.

Personal hygiene.

The duties of the school nurses, with regard to cleansing were steadily pursued throughout the year, although 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 schemes for dealing with those who are found to be (i.) verminous in head only; (ii.) verminous in body and clothing; (iii.) suffering from scabies.

The nurses visit the schools according to a rota so arranged as to ensure that every department is systematically examined. A complete record of the number of examinations and the conditions found was made, and the following figures show the amount of work done:—

Rota visits—
General
inspection.

Number of examinations, 2,444,885; number found clean, 1,755,457; number found verminous, 689,428; percentage found verminous, 20·8.

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. In all schools one of the two cleansing schemes (a) verminous heads only, (b) verminous persons and clothing, is applied; the slight cases, forming the great majority, are cleansed as a result of the rota inspections. Figures are given later showing the numbers of instances in which it was necessary to take further action under each of the two schemes.

The scheme for dealing with verminous heads alone is only applied in those schools which, owing to their outlying situation, are not contributory to a cleansing station. The following table shows the results of examinations in these schools during the year:—

Verminous
heads.

Department.	Number Examined.	Number Clean.	Number slightly dirty heads.	Number verminous.	Number Yellow Cards served.	Number White Cards served.	Number Red Cards served.	Number Proposed for Exclusion.	Number Excluded for Prosecution.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Boys	2	—	—	2	—	2	2	2	2
Girls	8,621	6,046	1,528	1,047	341	1,012	759	613	584
Mixed	2,809	2,345	280	184	85	180	147	131	104
Infants	3,449	2,796	406	247	137	241	175	132	123
Special	45	15	12	18	—	26	20	19	18
	14,926	11,202	2,226	1,498	563	1,461	1,103	897	831

The parents of 81 children were prosecuted and fines varying from 2s. to £1 with costs, were imposed. The percentage, in the schools where the head scheme has been applied, of children verminous amongst children examined, was 10·0 in 1915 as compared with 10·6 in 1914.

There are twenty-four stations for the cleansing of verminous children. The total number of examinations made by the nurses under the cleansing scheme proper was 1,006,546, and 28,063 children were found to be verminous to such an extent as to call for action under the scheme; of these 14,677 were cleansed by the parents; the remainder, 13,386 children, were dealt with at the cleansing stations;

Verminous
persons and
clothing.

15,424 cleansings were carried out at Council stations, and 28,460 at stations of the local sanitary authorities. This number is an increase of 1,327, or 3·1 per cent., when compared with the number for 1914. During the year, 393 parents were fined amounts varying from 2s. to 12s. with costs.

In the report for last year it was stated that arrangements were being made to utilise ambulances to convey children from outlying districts to the nearest cleansing station. Operations began in September, consequently the scheme was only in force for three months during the year. During this period 464 cases have been conveyed in the two ambulances; the employment of the ambulances, by rendering it practicable to apply the scheme to schools in which this was not previously possible, has produced an improvement in these schools which is not to be measured solely by the number of children thus conveyed.

Action taken
in the homes
by local
authorities.
Scabies.

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 in the home under the London County Council General Powers Act, 1904, Part 4.

The arrangements for the bathing of children suffering from scabies were continued. The total number bathed during the year was 1,059. The average number of baths required to effect a cure was six. These figures compared with those for the previous year show an increase of 460 in the number of children cleansed and 3,130 in the number of baths given. There appears to be no doubt that owing to war conditions scabies is on the increase, and the scheme of co-operation between the general hospitals and the cleansing stations described last year is proving of great value.

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—
Vermineous
heads.

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 5 per cent.

Examination of candidates and medical inspection in higher education institutions.

The total number of candidates medically examined was 5,750, a decrease of 265 when compared with figures for the previous year. In addition to the foregoing examinations, 1,289 references in regard to the health of employes in the Council's service were considered. This number shows an increase of 277, 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 pupils in attendance at non-maintained secondary schools was maintained and the results are given in the Appendix.

It has been decided that for the period of the war the children in secondary schools shall be medically inspected not more frequently than children in elementary schools, and consequently arrangements have been made, commencing January, 1916, for the children in the secondary schools to be examined biennially instead of annually.

Infectious diseases.

Scarlet fever.

The increased prevalence of scarlet fever in London during 1914 was followed by a marked falling off in the incidence of the disease during 1915. The maximum number of cases notified as occurring among all persons during any one week was 485 (week ended 9th October), whilst in 1914 the maximum reached was 878 cases (week ended 17th October) and in the preceding year (1913) 700 cases (week ended 1st November). Although there was no increased prevalence throughout the county, local epidemics in the north, east, and south-west of London were responsible for a number of school outbreaks which made considerable demands upon the time of the school doctors, 155 schools having been visited from time to time during the year for the purpose of examining children in infected classes, and ascertaining the sources of infection. In consequence of the persistence of scarlet fever (and diphtheria) in Swaffield-road school (Wandsworth) all departments were closed for three weeks in November and thoroughly disinfected. This action was taken after repeated visits made by the school doctors. The outbreak at this school was, however, part of a general prevalence throughout the borough of Wandsworth. The numbers of schools and departments under observation for scarlet fever during the year were 600 and 980 respectively.

Relation
between the
curves
showing the
seasonal
prevalence of
fleas and
scarlet fever.

The result of observations made in 1915 as to the prevalence of fleas in relation to the incidence of scarlet fever shows that an interval of two weeks occurred between the time of maximum flea prevalence and that of the maximum incidence of scarlet fever. In this and in the six previous years covered by the records, the maximum for fleas invariably antedated the maximum for scarlet fever, and the interval between the two maxima has varied between two and eleven weeks, the average being about six weeks. The results for the years 1909-14 are shown in diagram D, facing page 47 of last year's report, and the contours of the curves of flea and scarlet fever prevalence for 1915 are, generally speaking, similar to those shown in that diagram. Scarlet fever has shown during recent years a wave of prevalence with two crests, one in 1907 and one in 1914, with a well defined trough between them. The maximum of 1914 was followed by a slight decline in 1915. The wave of flea prevalence, on the other hand, showed a crest in 1910, and a second crest in 1913. It is deserving of note that during the three years 1913-15, the prevalence of fleas has been ascertained by one and the same method, *i.e.*, by the percentage of children showing evidence of more or less recent flea bites, when seen at school medical examinations; thus an accurate measure of the extent of activity of fleas throughout this period is fairly well given by the records. Limiting consideration to these three years, it may be remarked that, were the circumstances which favour flea reproduction and the multiplication of the causal agent concerned in producing scarlet fever identical,

it would follow that in years of scarlet fever prevalence there would also be observed abnormal flea prevalence. In the epidemic year 1914, the flea prevalence was, as a fact, slightly higher than in 1915. If it be assumed that scarlet fever is communicated by the flea, by inoculation, it might perhaps be anticipated that a series of years of high flea prevalence would be accompanied by high scarlet fever prevalence, and succeeded by years of low flea and scarlet fever prevalences.

It was noted by Dr. Longstaff many years ago that there is a close relationship between cycles of dry years and cycles of scarlet fever prevalence, and it is a matter of some interest to determine whether there is any relationship between these cycles and cycles of flea prevalence. The records of the latter relate as yet to only a few years, indeed only to the period covering the rise from the last low prevalence of scarlet fever to the maximum of 1914, and the slight fall in the following year. As was pointed out in last year's annual report (p. 57), "the conclusion may be formulated that broadly speaking the curves of scarlet fever and flea prevalence for the period of six years show a tendency to rise together from a low level at the beginning to a high level at the end of the period," and this correspondence of movement is maintained in the slight fall of both flea and scarlet fever prevalences observed in 1915.

The seasonal prevalence of scarlet fever in England and Wales during 1915 showed no marked difference from that of previous years. There was a maximum incidence in October and a maximum about this time of the year is customary in this country. Examination of the records of foreign towns shows, however, considerable variations in the time of year at which the maximum number of cases occurs. In Paris, New York and other North American cities, and in Vienna the maximum falls in the second quarter. In Berlin, Copenhagen, Christiania and Stockholm the period of maximum approximates to that of London. In Australia scarlet fever is not prevalent to anything like the extent obtaining in European countries, and complete records of notification for the whole Commonwealth are not at present available. In Western Australia in the period 1909-1913 a maximum is attained in the second quarter; and this seasonal maximum is more pronounced in years of higher incidence (1910 and 1912) than in years of low prevalence. Diphtheria is far more prevalent relatively than scarlet fever and the curves of diphtheria incidence in Western Australia show a pronounced maximum in the second quarter. Generally speaking, the scarlet fever and diphtheria maxima occur at the same time of year. Scarlet fever is practically non-existent in India. The relation, if any, of the period of maximum prevalence to the period of maximum flea prevalence in different foreign towns awaits elucidation. Some inquiry has been made in India in connection with plague, as to seasonal prevalence of fleas, particularly rat fleas (see Plague Commissions Reports). Some curious differences in the time of prevalence of plague are noted, e.g., Bombay and Poonah, though within a few miles of one another, have in certain years suffered from epidemic prevalence at different times of the year. As regards Australia the maximum of plague prevalence and the maximum of rat flea prevalence occurred in the early part of the year. The data requisite for carrying the matter further are lacking at present.

In London it appears that in the poorer, i.e., the more densely populated districts, the range of seasonal variation from autumnal maximum to spring minimum is considerably greater than in the better class, and less densely populated, boroughs. In no town or area in which the seasonal variation has been examined is so extreme a variation apparent as in the case of New York, and probably the great density of population is the main cause of this phenomenon.

With regard to the geographical distribution of the human flea comparatively little precise information is obtainable. Mr. H. Russell writes: "The nearest allies of the human flea, which are found on various animals, are all inhabitants of the Old World. The indigenous fleas of America are only distant relatives of *Pulex irritans*. Our knowledge of the present and former distribution of this species is deplorably meagre. The many books of travel published in the early part of the nineteenth century contain hardly any records of fleas. The human flea is now cosmopolitan. Specimens identical with those from Europe are found almost everywhere. But it may be doubted whether this was the case before the great era of travel and steam began in the last century."

Side by side with this passage may be read the following excerpt from Clement Dukes' article on scarlet fever. Under the heading "Geographical Range," he says: "The origin and native habitat of scarlet fever are unknown; nor do we possess any knowledge of the period when it first became prevalent on the continent of Europe, so intimately was it confused with measles. From Europe it has extended over most parts of the world, and more freely in later times, on account of the extension of commerce. It appeared in Ireland in 1827, but not until 1847 in Greenland. Its presence in Africa and especially in Egypt has been insignificant; and it is rarely found in Asia except on the coast of Asia Minor. In India and China occasional sporadic cases only occur, and in Japan the disease is unknown. It reached North America in 1735, but was absent from South America until 1829. Its final appearance in Australia and Polynesia occurred in 1848; in New Zealand in 1854."

There was no appreciable diminution in the incidence of diphtheria during the year, the somewhat marked prevalence of the disease during 1914 having been maintained throughout 1915. During the year 51 schools were visited by school doctors for the purpose of examining suspected cases; 1,040 children were bacteriologically examined, of whom 133 were found to be harbouring diphtheria bacilli, whilst in 53 further cases organisms not definitely distinguishable from the diphtheria bacillus were identified.

History of a persistent carrier of diphtheria bacilli.—During the period of nearly six years covered in the tabular statement (1910-1915) on page 35 the child A, to whom reference has been made in preceding reports, was an inmate of a particular residential school or of a fever hospital or other institution. She has now left school, and the opportunity is therefore taken of placing her history on record. In 1910 she suffered from scarlet fever and was duly removed to a Metropolitan Asylums Board hospital; shortly after her return to school, a number of other cases of scarlet fever occurred among her schoolmates, and

it was assumed that the association of her return with the subsequent outbreak was one of cause and effect; she was promptly returned to hospital where she was isolated until her return to school on May 11th; for a fortnight she remained in more or less strict quarantine at the school, and then later mixed freely with the other girls.

On July 27th, 1911, there was some sore throat illness at the school, and two of the children developed diphtheria. The child, A, who had returned to school on May 11th, and another child, B, who had returned from hospital on the same date, though neither of them showed signs of illness, were found to be carriers of diphtheria bacilli. Both children yielded positive results for some nine or ten weeks; and in the case of the first child the bacillus carrying propensity persisted; indeed, throughout the next three years Dr. Brincker continued to obtain positive results on bacteriological examination.

During this period note was made of any case which could by any possibility be associated with her, but only one case of diphtheria occurred in the person of a child living in the school; the occurrence of this single case cannot reasonably be regarded as being more than a mere casual coincidence. The whole period of six years may be divided into three sections. First the time, nearly two years, prior to the discovery that the child was a carrier. During this time two outbreaks of illness (septic conditions and scarlet fever) occurred in the school. (See tabular statement on page 35.) Then came the outbreak of diphtheria and sore throat of July, 1911 (see table) and the consequential institution of bacteriological investigation which elicited the fact that the child, A, was a carrier. On this discovery being made, a suspicion which had already arisen at the school that she might have been responsible for the outbreak of scarlet fever in July, 1911, was recalled to mind, and she was now also held responsible for the outbreak of septic conditions in 1910, and for the cases of diphtheria. Opinion as time went on, indeed, hardened so much in this regard, that during this second period (*i.e.*, the three years in which the child continued persistently to yield evidence of the presence of diphtheria bacilli in her throat) there was a disposition to assume that she must be held responsible for any form of illness which might affect the inmates of the various institutions in which she lived. This attitude of mind led to somewhat close restrictions being imposed upon the girl's freedom from time to time, particularly just subsequent to the outbreak of diphtheria of July, 1911, and again when the single case of diphtheria occurred in June, 1912.

The third period reviewed covers some eighteen months, and extends from the time when the conclusion was reached that further bacteriological examination was undesirable until the present date. Some months after the commencement of this period, *viz.*, in July, 1915, an outbreak of sore throat illness occurred in the school, and this was again attributed to the girl. My colleague, Dr. Thomas and I, in association with the medical officer of the school, examined the children and found the outbreak was certainly not one of either scarlet fever or diphtheria; the clinical features of the cases suggested to us that it was in all probability influenza, which was somewhat prevalent in London at the time.

The history of this child, A, is deserving of being specially recorded inasmuch as apart from the initial group of cases of diphtheria occurring when she was first bacteriologically examined, only one case of diphtheria was subsequently associated with her. Thus, during the entire period of more than three years, in which she was known to be a carrier, despite the fact that she came in contact with a considerable number of persons—freely for two months with children and adults in the school, with more or less restriction at other times there, and also with other persons in hospital and elsewhere—there was only the one case recorded as being possibly infected by her, and in this instance the contact was doubtful and remote.

It is deserving of note, moreover, that for the greater part of the period under review, in addition to this girl A, there was also in school the child B, who from time to time was found to be carrying diphtheria bacilli. The table on page 35 gives particulars relating both to the girl A, and to this second girl, B, whose history from the occurrence of scarlet fever in April, 1911, until after the occurrence of the single case of diphtheria in June, 1912, was practically identical with that of girl A. Girl B, however, was never regarded with the amount of suspicion which attached to girl A, presumably because of girl A's antecedent history.

It has during the last 10 or 12 years become widely recognised that bacteriological inquiry in connection with prevalences of typhoid fever, cerebro-spinal fever, and diphtheria, frequently brings to light the fact that some individual, who has been in contact with the sufferer or sufferers, is a carrier of the particular germ associated with the disease, and this individual has thereupon been commonly regarded as the probable source of all the mischief. It is a matter of vital importance that the history of a large number of such individuals should be minutely studied and that the inquiries should be extended over some length of time, with a view to discovering whether the suspicion which *a priori* attaches to the carrier, by reason of the existence of his carrying propensity, is warranted *a posteriori* by the occurrence of proof of the carrier's infectivity. Such study has, however, only been made in comparatively few instances: the amount of bacteriological labour entailed, and the difficulty experienced in keeping the case under observation, being two of the main obstacles which it is particularly difficult to surmount. The history of the child, A, must, therefore, be regarded as of value; it supplies an exact account, *first* of the bacteriological examinations made of a persistent carrier of the diphtheria bacillus; and *second* of the illnesses reported in children with whom this carrier came in contact. It may be observed that careful study of all the facts in this instance, as in many of the other notable histories of carriers, reveals no clear evidence demonstrating that the carrier conveyed to others the disease with which the particular germ in question is commonly associated; though it is interesting to note that outbreaks of other diseases were, of course without any justification, ascribed to contact with the carrier.

TABLE showing time relations of five outbreaks of illness in a Girls' Residential School with results of Clinical and Bacteriological examination of two of the inmates.

Outbreaks of Illness in Institution. School opened Jan. 1st, 1910.	Girl A. Admitted to school 1.1.10.	Girl B. Admitted to school 22.7.10.
I. A succession of cases of septic conditions of skin, ears, etc., and a case of whitlow occurred among the children during the period 15th January, 1910, to 30th April, 1911.	1910. 27th Dec.—Sore finger—whitlow. 29th Dec.—Scarlet fever. Removed to hospital.	
II. Outbreak of mild scarlet fever on 5th April, 1911. 21 cases and some 19 doubtful cases occurred.	1911. 27th March—Returned to school—in quarantine till 1.4.11. 12th April—Back to hospital. 11th May—Returned to school—in quarantine till 27.5.11.	16th April—Removed to hospital with scarlet fever. 11th May—Returned to school in quarantine till 3.6.11.
III. Outbreak of diphtheria and sore throat, commenced 27th July, 1911. 2 cases and some doubtful cases occurred.	Found to be a carrier of diphtheria bacilli—sent to hospital 16th Aug. 2nd Nov.—In school quarantine. 11th Nov.—Back to hospital.	Found to be a carrier of diphtheria bacilli—sent to hospital 16th Aug. 2nd Nov.—In school quarantine. 16th Nov.—Back to hospital. 22nd Dec.—In school quarantine.
IV. A single case of diphtheria and some sore throats occurred in school, June 3rd, 1912.	1912. 1st April.—Returned to school and remained in quarantine there until 3rd June.—Returned to hospital. There underwent various forms of treatment, including fresh air, special diet, nasal douche, gargle and swabbing with protargol, anti-septic applications, staphylo-	11th Jan.—Joined other children. 12th June.—Returned to hospital as a measure of precaution. 19th Oct.—Returned to school quarantine. 25th Oct.—Rejoined other children.
	1913. coccus spray, and finally complete enucleation of tonsils (23.9.14). Left hospital on 18th Dec. From 18th Dec., 1914,	
	1914. 26th April, 1915, under treatment as out-patient at Univ. Coll. Hospital. 26th April to Southend.	
V. Outbreak of sore throat. 24 children affected, commencing 11th July, 1915.	1915. 7th July returned to school, but slept in a room by herself. Oct.—Admitted to Univ. Coll. Hospital for further treatment. 3rd Nov.—Left the school.	13th July.—Sore throat. 20th Aug.—Well again.

Throughout the whole of this period bacilli indistinguishable from diphtheria bacilli were present in this girl's throat.

Throughout the whole of this period bacilli indistinguishable from diphtheria bacilli were present in this girl's throat.

Measles.

Measles was exceptionally prevalent during the first six months of 1915. The total number of cases reported from the schools during the year was 31,313. An epidemic commencing in the early part of February spread quickly throughout the whole of London and increased in intensity until June, when the incidence began rapidly to decline. During the period after the summer holidays until the end of the year the disease was quiescent. The numbers of schools and departments under observation during the year were 857 and 986 respectively.

Measles and German measles were made notifiable diseases by order of the Local Government Board on the 27th November, 1915. The regulations are cited as the Public Health (Measles and German Measles) Regulations, 1915, and provide that every parent or guardian, or other person, as soon as he becomes aware of, or has reasonable grounds for supposing that any person in his charge is suffering from measles or German measles shall, unless the case has already been notified by a medical practitioner, forthwith notify the case to the medical officer of health for the district, stating the name, age and address of the patient. Medical practitioners are required to notify the first case in the household, *i.e.*, if a case has not occurred within the preceding two months, unless a notification has already been sent under the regulations or the appropriate Notification Act in force in the district concerned, or unless the case is being treated in a hospital for infectious diseases. The Order applies to the whole of England and Wales and the prescribed date of commencement of operation of the regulations is 1st January, 1916.

Nursing of cases of measles in the homes.

Considerable attention has been devoted to the question of the nursing treatment of measles in the poorer class homes, and in this connection the district nursing association has been considering in conjunction with the Local Government Board, the London County Council and sanitary authorities, as to the most practicable means of securing the co-operation of the various district nursing associations and local sanitary authorities with the object of providing nursing attendance on persons suffering from measles and whooping cough, particularly young children, in homes where such services are required. Reports of these conferences have been circulated among the authorities concerned, and it is hoped that practical results will accrue in the future not only in the reduction of infant mortality, but in the prevention of complications due to secondary infections.

Measles experiment.

The measles experiment in the electoral areas of Southwark, W., Bermondsey and Walworth, which was commenced in January, 1913, has continued in operation during 1915. The scheme was devised for the purpose of securing earlier notification of cases of measles occurring among school children. Throughout the year 1915, 955 cases of measles were reported from the schools in the areas concerned, and information concerning 137 of these cases was received on the telephone from attendance officers, thereby enabling action to be taken at the school in a large number of cases more promptly than would have been the case under ordinary conditions.

In spite of the general epidemic affecting all districts of London, the areas in which the special arrangements were in operation were less seriously affected. The evidence points to the fact that the increased vigilance exercised in these districts both by attendance officers and teachers has produced beneficial results.

Whooping cough

Whooping cough was slightly more prevalent during 1915 as compared with the two preceding years.

Closure of, and exclusion from, school.

There was only one occasion on which school closing was resorted to, *i.e.*, Swaffield-road School, where an unusual prevalence of scarlet fever and diphtheria occurred (*vide* p. 32). For the purpose of preventing the spread of measles, unprotected children were excluded from 1,231 classrooms.

Ringworm.

There has been a substantial reduction in the number of cases of ringworm during the last two years, the number of cases reported in each of the last five years being as follows: 6,214, 5,311, 5,573, 4,449 and 3,747 respectively. The proportion of cases treated by X-rays has risen from 30 per cent. to nearly 50 per cent. of the cured cases, and there is no doubt that the attention paid by school nurses to ringworm is largely responsible for the notable reduction of cases.

Favus.

During 1915, 29 fresh cases of favus were discovered, chiefly in the East-end schools, as compared with 38 in 1914 and 49 in 1913. Of the 29 cases, 16 were treated by means of X-rays and the remainder by ointments and lotions at hospitals. At the end of the year there were 22 children known to be suffering from favus.

Defective children.

Defective children.

During the year four new schools have been opened, one for mentally defective, one for physically defective, one for myopic children, and one for partially deaf children; two schools for physically defective and two for mentally defective children have been closed.

The total number of examinations under the special Acts during the year was 5,777 as compared with 6,866 for 1914. Of these 1,393 were deemed suitable to attend elementary school, 739 were invalidated, 121 were deemed suitable to attend a blind school, 223 a school for myopes, 135 were sent to deaf and 62 to partially deaf schools, 52 were epileptic, 1,186 suitable for physically defective schools, 1,742 for mentally defective schools, 116 were deemed imbecile, and 8 idiot.

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 308 were transferred to elementary schools, 5 to blind schools and myope schools, 12 to schools for the deaf or partially deaf, 41 from P.D. to M.D. schools, 11 from M.D. to P.D. schools, 47 were excluded from M.D. schools as imbecile, 60 were invalidated, and 7 excluded as no longer certifiable. In addition, 442 special examinations were made in connection with applications for non-enforcement of attendance at special school.

The following return gives the numbers of exceptional children recorded at the last scheduling :—

	Blind and myopes.	Deaf and hard of hearing.	M.D., excluding imbeciles and idiots.	P.D.	Epileptic.
Attending public elementary schools	173	45	170	65	9
Attending certified special schools ...	621	729	7,808	4,048	65
Not at school	57	34	742	803	119
	851	808	8,720	4,916	193

In connection with the number of children not at school, there were exempt from further attendance 791, in the country 44, permanently disabled 82, temporarily unfit 336, of non-compulsory ages 104, under surveillance or not at school from miscellaneous causes 398.

In the age groups, out of 258,386 children (130,289 boys and 128,097 girls) examined, the following were found to be the mental conditions: dull or backward—age group 8-9 years—boys 7.3 per cent., girls 6.4 per cent.; leavers—boys 7.2, girls 8.0 per cent.; mentally defective—age group 8-9 years—boys and girls 0.2 per cent.; leavers—boys and girls 0.02 per cent.

The examination of children reported for serious defect of the eyes, the periodic examination of the children in the blind schools and myope classes, and also the examination 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); 569 children were examined, of whom 106 were passed for blind schools, 180 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, 1915, 283 children were thus examined.

The following analysis shows the percentage and distribution of the main types of physical defect as found in the special schools, together with the actual number of children presenting these defects in the year 1915 :—

Defect.	1907.	1908.	1912.	1914.	1915.	Actual Nos. 1915.
Tuberculous disease	45.6	40.3	33.4	31.5	32.4	1,232
Heart disease	11.4	12.5	18.3	19.4	19.2	729
Paralysis	17.8	18.6	21.6	23.3	24.4	928
Chronic disease (chorea, epilepsy, phthisis)	5.1	6.6	7.7	6.9	6.3	241
Various deformities (rickets, septic, congenital)	13.0	15.6	15.9	17.0	15.5	588
Other defects (eyes, ears, tracheotomy, etc.)...	1.6	1.0	1.0	0.7	0.5	19
Delicate, convalescent, and children kept under observation	5.3	5.3	2.4	0.8	1.6	58

During the year 899 cases were referred by the local education authority to the local authority under the Mental Deficiency Act, 1913, of which 75 were feeble-minded, 689 imbecile, 133 idiot, and 2 were moral imbeciles.

The teeth of children attending the Council's blind, myope, deaf, and hard of hearing day 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 1,523 examinations and treated 626 cases, but some of the children were treated more than once. Objections to inspection or treatment, or both, were received in 216 cases. In addition to this work the dentist also made 100 examinations in connection with children boarded out from industrial schools, and treated 47 cases.

635 children (472 boys, 163 girls) in the age groups have been noted as suffering from stammering. From time to time attention has been drawn to the need for special educational treatment of children suffering from stammering and schemes have been drawn up for the opening of experimental day classes, but up to the present none of the schemes has reached maturity. The Council has, however, added the subject of articulation for stammerers to the list of subjects which might be taught in the curriculum of evening institutes and two experimental classes were organised in the Christmas term taught by teachers of the deaf by oral methods.

The Council has also made provision for the students in the training colleges to be instructed in the theory and practice of speech. The authorities of St. Thomas's Hospital, moreover, have established a "speech clinic" for the treatment of school children suffering from defective speech, including stammering, post-adenoid conditions, respiratory defects, and general nervous conditions.

Epileptics.

During the year, 159 epileptic children were scheduled as suitable for admission to colonies. On the 31st March, 1915, 65 were attending certified schools for epileptics, and 9 were in attendance at elementary schools, while 119 epileptic children were invalided (out of school) either awaiting an institution or because their parents were unwilling for them to be sent from home. The above numbers show all the children who require special provision on account of epilepsy.

Re-residential institutions.

There were nine residential industrial schools (one of which, Stormont House, was closed in October) and six residential special schools (two for blind, three for deaf, and one for mentally defective children) with a total accommodation for 1,169 residential, and 135 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 146 visits to the schools, conducted 2,609 examinations, and treated 882 cases.

During the year 957 elder boys were admitted to Harrow-road Place of Detention, 1,526 younger boys to Pentonville-road, and 551 girls and infants to Ponton-road.

APPENDIX I,

Table showing result of 1st re-inspections carried out during 1915. Percentages in italic figures.

Ailment and No. of cases re-inspected.	Doctor.		Council scheme.		Other hospital.		Treatment no longer required.	Treatment still re-quired (Cases un-treated).
	Cured.	Not cured.	Cured.	Not cured.	Cured.	Not cured.		
Refraction (13,709)	140 <i>1.0</i>	64 <i>.5</i>	3,384 <i>24.7</i>	1,575 <i>11.4</i>	1,154 <i>8.4</i>	653 <i>4.8</i>	959 <i>7.0</i>	5,780 <i>42.2</i>
Nursing treatment cases (8,153)	597 <i>7.3</i>	135 <i>1.6</i>	1,530 <i>18.8</i>	561 <i>6.9</i>	1,215 <i>14.9</i>	439 <i>5.4</i>	2,054 <i>25.2</i>	1,622 <i>19.9</i>
Ear, nose and throat ... (12,750)	195 <i>1.5</i>	64 <i>.5</i>	2,438 <i>19.1</i>	263 <i>2.1</i>	1,449 <i>11.4</i>	248 <i>1.9</i>	2,476 <i>19.4</i>	5,617 <i>44.1</i>
Teeth (33,684)	1,482 <i>4.4</i>	746 <i>2.2</i>	7,675 <i>22.8</i>	653 <i>1.9</i>	2,124 <i>6.3</i>	598 <i>1.8</i>	2,610 <i>7.8</i>	17,796 <i>52.8</i>
Other ailments (10,012)	572 <i>5.7</i>	236 <i>2.3</i>	79 <i>.8</i>	163 <i>1.6</i>	1,520 <i>15.2</i>	1,240 <i>12.4</i>	4,102 <i>41.0</i>	2,100 <i>21.0</i>
Total (78,308)	2,986 <i>3.8</i>	1,245 <i>1.6</i>	15,106 <i>19.3</i>	3,215 <i>4.1</i>	7,462 <i>9.5</i>	3,178 <i>4.0</i>	12,201 <i>15.6</i>	32,915 <i>42.1</i>

Table showing results of 2nd re-inspections carried out in 1915.

	Doctor.		Council scheme.		Other hospitals.		Treatment no longer necessary	Treatment still re-quired. No treatment received.
	Cured.	Uncured.	Cured.	Uncured.	Cured.	Uncured.		
Refraction (8,049)	69 <i>.9</i>	32 <i>.4</i>	1,533 <i>19.1</i>	1,002 <i>12.4</i>	539 <i>6.7</i>	422 <i>5.2</i>	882 <i>11.0</i>	3,570 <i>44.3</i>
Nursing treatment cases (3,096)	134 <i>4.3</i>	51 <i>1.6</i>	417 <i>13.5</i>	274 <i>8.9</i>	379 <i>12.2</i>	237 <i>7.7</i>	838 <i>27.1</i>	766 <i>24.7</i>
Ear, nose and throat ... (6,165)	77 <i>1.2</i>	24 <i>.4</i>	775 <i>12.6</i>	100 <i>1.6</i>	593 <i>9.6</i>	133 <i>2.2</i>	1,489 <i>24.2</i>	2,974 <i>48.2</i>
Teeth (15,429)	683 <i>4.4</i>	346 <i>2.2</i>	2,072 <i>13.4</i>	266 <i>1.7</i>	957 <i>6.2</i>	311 <i>2.0</i>	1,583 <i>10.3</i>	9,211 <i>59.7</i>
Other ailments (4,924)	166 <i>3.4</i>	136 <i>2.8</i>	9 <i>.2</i>	38 <i>.8</i>	629 <i>12.8</i>	592 <i>12.0</i>	2,424 <i>49.2</i>	930 <i>18.9</i>
Total (37,663)	1,129 <i>3.0</i>	589 <i>1.6</i>	4,806 <i>12.8</i>	1,680 <i>4.5</i>	3,097 <i>8.2</i>	1,695 <i>4.5</i>	7,216 <i>19.1</i>	17,451 <i>46.3</i>

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

	Elementary schools.								Special schools.				
	Entrants.		Intermediate.		Leavers.		Total.	Urgent and special examinations.		Intermediate.		Leavers.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys and Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Number examined ...	42,102	41,317	25,965	26,139	62,222	60,641	258,386	22,676	25,130	331	217	1,222	997
...	%	%	%	%	%	%	%	%	%	%	%	%	%
Skin diseases ... (f)	954 2.3	831 2.0	467 1.8	429 1.6	810 1.3	820 1.4	4,311 1.7	970	966	9 2.7	8 3.7	26 2.1	20 2.0
" " " " (x)	458 1.1	366 .89	209 .81	197 .75	398 .64	284 .47	1,912 .74	725	696	5 1.5	1 .30	13 1.1	8 0.8
Tonsils enlarged ... (f)	5,962 14.2	5,597 13.5	2,969 11.4	3,222 12.3	5,586 9.0	6,453 10.6	29,789 11.5	458	653	20 9.1	26 12.0	80 6.5	128 12.8
Adenoids ... (f)	3,146 7.5	2,350 5.7	1,494 5.8	1,175 4.5	1,849 3.0	1,433 2.4	11,447 4.4	481	498	33 10.0	24 11.1	71 5.8	57 5.7
Tonsils or adenoids (x)	2,721 6.5	2,387 5.8	1,546 6.0	1,429 5.5	2,355 3.8	2,438 4.0	12,876 5.0	578	704	20 6.0	12 5.5	45 3.7	54 5.4
Other nose & throat defects (f)	1,416 3.4	1,043 2.5	857 3.3	599 2.3	1,978 3.2	1,254 2.1	7,147 2.7	313	360	36 10.9	16 7.4	88 7.2	75 7.5
" " " " (x)	189 .45	175 .42	144 .55	126 .48	377 .61	336 .55	1,347 .52	219	237	4 1.2	2 .92	13 1.1	12 1.2
Enlrgd. glands of neck (f)	4,141 9.8	3,662 8.9	2,105 8.1	2,185 8.4	4,010 6.4	3,456 5.7	19,559 7.6	191	228	40 12.1	29 13.4	105 8.6	87 8.7
" " " " (x)	196 .47	136 .33	74 .28	78 .30	126 .20	124 .20	734 .28	88	96	1 .30	4 1.8	3 .25	5 .50
External eye disease (f)	1,829 4.3	1,911 4.6	897 3.5	989 3.8	1,709 2.7	1,685 2.8	9,011 3.5	967	1,206	28 8.5	21 9.7	74 6.1	77 7.7
" " " " (x)	1,113 2.6	1,117 2.7	408 1.6	456 1.7	668 1.1	659 1.1	4,421 1.7	751	913	8 2.4	5 2.3	20 1.6	18 1.8
Vision (test) 6/6 R. and L. eye ...	—	—	11,322 44.3	10,465 41.0	35,357 57.4	30,998 51.3	—	—	—	69 29.6	46 39.1	397 34.7	267 29.2
" " " " 6/9 R. or L. ...	—	—	9,627 37.6	10,086 39.4	13,237 21.5	15,663 25.9	—	—	—	102 43.8	60 39.2	403 35.2	314 34.4
" " " " 6/12 or worse R. or L. ...	—	—	4,628 18.1	5,017 19.6	13,016 21.1	13,780 22.8	—	—	1,227	1,535	62 26.6	47 39.7	344 39.1
Vision ... (x)	—	—	2,959 11.4	3,324 12.7	8,839 14.2	8,911 14.7	24,033 9.3	1,070	1,263	24 7.3	16 7.4	199 16.3	183 18.4
Ear disease ... (f)	1,088 2.6	1,074 2.6	539 2.1	546 2.1	1,334 2.1	1,225 2.0	5,806 2.2	571	582	11 3.3	4 1.8	59 4.8	52 5.2
" " " " (x)	644 1.5	642 1.6	282 1.1	272 1.0	758 1.2	690 1.14	3,288 1.27	466	458	5 1.5	1 .46	28 2.3	29 2.9
Defective hearing ... (f)	278 .66	294 .71	428 1.6	340 1.3	1,044 1.7	945 1.56	3,329 1.29	204	173	10 3.0	8 3.7	58 4.7	50 5.0
" " " " (x)	78 .18	84 .20	140 .54	109 .42	314 .50	299 .49	1,024 .40	147	128	3 .91	3 1.4	14 1.1	8 .80
Stammering ... (f)	53 .13	23 .06	73 .28	35 .13	346 .56	105 .17	635 .25	16	11	4 1.2	—	—	—
" " " " (x)	2 .005	1 .002	1 .004	2 .007	13 .02	5 .008	24 .009	2	3	—	—	—	—
Other speech defects (f)	317 .75	208 .50	179 .69	112 .43	335 .54	246 .41	1,397 .54	25	16	17 5.1	6 2.8	43 3.5	22 2.2
" " " " (x)	4 .01	3 .007	4 .015	—	2 .003	5 .008	18 .007	4	—	1 .30	1 .46	—	—
Heart defects ... (f)	1,051 2.5	971 2.4	779 3.0	854 3.3	1,962 3.2	2,414 4.0	8,031 3.1	283	547	18 5.4	11 5.1	47 3.8	53 5.3
" " " " (x)	57 .13	46 .11	43 .17	41 .16	136 .22	185 .31	508 .20	43	116	—	—	8 .65	3 .30
Anaemia ... (f)	1,363 3.2	1,183 2.9	709 2.7	901 3.4	1,263 2.03	1,803 2.97	7,222 2.79	345	526	17 5.1	10 4.6	33 2.7	27 2.7
" " " " (x)	343 .81	290 .70	147 .57	270 1.03	289 .46	476 .79	1,815 .70	214	294	2 .60	4 1.8	7 .57	10 1.0
Lung complaints ... (f)	2,794 6.6	2,601 6.3	838 3.2	793 3.0	1,673 2.69	1,413 2.33	10,112 3.9	454	502	13 3.9	11 5.1	43 3.5	33 3.3
" " " " (x)	747 1.8	714 1.7	163 .63	174 .67	262 .42	203 .33	2,263 .88	144	142	4 1.2	3 1.4	6 .49	4 .40
Nervous diseases ... (f)	422 1.0	432 1.1	309 1.2	360 1.4	495 .80	754 1.24	2,772 1.07	403	681	21 6.3	7 3.2	38 3.1	31 3.1
" " " " (x)	42 .10	40 .10	40 .15	37 .14	62 .10	91 .15	312 .12	174	234	1 .30	1 .46	4 .33	10 1.0
Phthisis ... (f)	62 .15	66 .16	41 .16	57 .22	136 .22	136 .22	498 .19	229	284	2 .60	—	—	—
" " " " (x)	25 .06	20 .05	15 .06	24 .09	54 .09	55 .09	193 .07	99	108	—	—	2 .16	4 .40
Other tubercular disease (f)	114 .27	98 .24	88 .34	54 .21	154 .25	134 .22	642 .25	180	202	1 .30	—	14 .11	9 .90
" " " " (x)	29 .07	29 .07	17 .06	13 .05	38 .06	46 .08	172 .07	62	80	—	—	3 .25	4 .40
Rickets ... (f)	1,481 3.5	753 1.8	638 2.5	363 1.4	1,254 2.0	593 .98	5,082 1.97	69	72	28 8.5	9 4.1	71 5.8	20 2.0
" " " " (x)	82 .20	42 .10	16 .06	9 .03	15 .024	29 .05	193 .07	21	27	—	1 .46	1 .08	—
Deformities ... (f)	528 1.3	285 .69	478 1.8	476 1.8	1,450 2.3	2,103 3.5	5,320 2.06	178	207	11 3.3	15 6.9	57 4.7	75 7.5
" " " " (x)	111 .26	48 .12	70 .27	104 .40	191 .31	421 .69	945 .36	80	89	2 .60	2 .92	8 .65	6 .60
Infectious disease (f)	100 .24	105 .25	17 .06	13 .05	17 .027	35 .06	287 .11	94	102	—	—	2 .16	1 .10
" " " " (x)	49 .12	51 .12	5 .02	5 .02	5 .008	6 .01	121 .05	43	36	—	—	—	—
Malnutrition ... (f)	232 .55	220 .53	186 .72	175 .67	239 .38	266 .44	1,318 .51	87	167	3 .91	2 .92	18 1.5	10 1.0
" " " " (x)	129 .31	104 .25	98 .38	97 .37	98 .15	123 .20	649 .25	66	125	2 .60	1 .46	11 .90	4 .40
Glands other than throat (f)	20 .05	18 .05	8 .03	28 .11	43 .07	203 .33	320 .12	14	17	1 .39	1 .46	2 .16	5 .50
" " " " (x)	4 .01	3 .007	—	4 .015	2 .003	19 .03	32 .01	7	9	—	—	—	—
Other defects ... (f)	996 2.4	963 2.3	478 1.8	520 2.0	1,143 1.8	1,267 2.09	5,367 2.08	654	908	15 4.5	6 2.8	26 .21	26 2.6
" " " " (x)	447 1.1	449 1.09	213 .82	223 .85	401 .64	435 .72	2,168 .84	333	507	4 1.2	1 .46	14 .11	6 .60
No. noted for treatment	14,825 35.2	14,424 34.4	8,879 34.2	10,496 40.2	24,067 38.7	24,573 40.5	97,264 37.6	5,179	6,048	137 41.5	87 40.1	482 39.4	462 46.3
No. where parent present	31,694 75.3	31,952 77.4	14,574 56.1	16,450 62.9	22,363 36.0	29,272 48.3	146,305 56.6	—	—	147 44.5	105 48.4	353 28.9	366 36.7

* The percentages refer only to cases in which the vision was tested. In some instances, especially in the intermediate age group, the children do not know the letters and cannot be tested by the Snellen card.
 (f) = Defects found. (x) = Requiring treatment.

APPENDIX III.

Percentage of children classified in each group 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 ...	57.8	39.9	2.3	32.1	62.4	5.4	.04	90.0	9.7	.3	82.0	17.2	.8	47.6	38.2	14.2	—	—	—
Girls ...	58.0	40.5	1.5	32.3	62.5	5.1	.03	76.2	22.4	1.4	81.1	18.0	.9	47.1	39.1	13.8	—	—	—
8-9—Boys ...	51.4	44.6	4.0	21.1	69.8	9.0	.06	88.4	11.4	.2	76.6	22.0	1.4	45.9	43.2	10.9	92.5	7.3	.2
Girls ...	55.0	43.0	2.0	23.3	69.0	7.7	.05	69.2	29.4	1.4	77.6	21.4	1.0	46.6	42.8	10.6	93.4	6.4	.2
Leavers—Boys ...	52.5	43.4	4.1	29.0	63.8	7.2	.03	90.9	8.9	.2	77.9	20.9	1.2	53.1	39.7	7.2	92.8	7.18	.02
Girls ...	58.2	40.1	1.7	32.8	60.9	6.3	.04	72.6	26.2	1.2	80.7	18.5	.8	55.5	37.8	6.7	91.06	8.02	.02
	55.7	41.7	2.6	29.5	63.8	6.6	.04	81.6	17.6	.8	79.6	19.4	1.0	50.4	39.6	10.0	—	—	—

The classification 1, 2, 3 refers to good, fair, and poor in regard to clothing, cleanliness and condition of teeth; 4 in nutrition = malnutrition. In regard to mental condition 1 = good or fair, 2 = dull or backward, 3 = mentally defective.

APPENDIX IV

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

Scholars—Defects noted on medical examination.

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—																	
Males ...	18	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Females ...	881	88	158	8	9	1	2	2	—	36	73	17	18	1	61		
(b) Secondary schools—																	
Males ...	1,872	481	229	22	56	12	5	19	3	24	29	5	8	1	89		
Females ...	5,234	1,382	1,128	130	172	22	29	104	25	246	626	283	260	135	586		
(c) Trade Schools—																	
Males ...	411	81	48	1	8	2	2	5	1	3	12	4	1	2	10		
Females ...	504	136	105	17	14	4	2	6	—	27	75	31	26	6	43		

(ii.) SECONDARY AND TRADE SCHOOLS, AIDED BUT NOT MAINTAINED BY THE COUNCIL.

(a) Secondary schools—																	
Males ...	609	148	73	2	45	1	4	6	2	6	32	2	12	7	70		
Females ...	843	155	99	21	11	1	4	—	2	23	31	28	20	28	27		
(b) Trade schools—																	
Males ...	366	129	63	3	22	8	1	6	2	3	4	—	—	2	34		
Females ...	760	182	149	12	9	8	8	14	6	25	60	21	1	80	36		



