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ANNUAL REPORT OF THE COUNCIL,

1911.

1/4/13

VOL. III.

PUBLIC HEALTH

(INCLUDING THE REPORT OF THE MEDICAL OFFICER OF HEALTH OF THE COUNTY, THE REPORT OF THE MEDICAL OFFICER (EDUCATION), MAIN DRAINAGE, HOUSING OF THE WORKING CLASSES).

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London County Council.

TREATMENT OF TUBERCULOSIS.

Conference with representatives of the London Sanitary Authorities.

MEMORANDUM by the CHAIRMAN OF THE PUBLIC HEALTH COMMITTEE. 28/2/13

The Chairman of the Committee has considered it desirable to set out his personal views in this Memorandum, rather than to embody them in an address from the Chair.

During the past year, I have had under continual consideration the necessity for a scheme for the treatment of tuberculosis within the county of London. Now that my year of office as Chairman of the Public Health Committee is on the point of expiring, it appears to me desirable that I should place on record such general views as I hold with regard to the methods of dealing with tuberculosis. It is desirable to emphasise that, in so doing, I commit no one to the adoption of my views, but in the absence of any other suggestions, what I now propose may possibly form a basis for discussion with a view to evolving a scheme for London.

I may as well candidly confess that it appears to me that, however desirable it may be both from the public health and humane point of view to deal thoroughly with the whole population afflicted with tuberculosis, it is impracticable to do so except within certain defined limits. I would rather that money should be spent in preserving the rising generation than in attempting to cure the present, for cure is only attainable in certain selected cases. Treatment for adults must be undertaken to some extent, although the limit I suggest should be fixed mainly on preventative grounds.

It is accepted that some persons are much more resistant to infection from bovine or human sources than others, and that the same persons are unequally resistant at different times. Hence, hygienic measures tending to improve general health must always bear an important part in the prevention of tuberculosis.

However high the importance of such measures be placed, the prevention of infection from milk, or from human cases of open tuberculosis must always form an essential part of a campaign against tuberculosis. This can only be changed, if in the future it should be proved that small doses of infection in early life protect against tuberculosis in later life, and if it should become possible to vaccinate everyone with measured doses of a vaccinating material. It is doubtful what proportion of adults suffering from tuberculosis have been infected with the cause of their present illness in childhood, and what proportion within a few years of their illness. There is no doubt that some measure of infection—from which recovery has occurred, or which has not caused appreciable illness,—is very common in the first ten years of life. This, as before, is derived from bovine or human sources.

Whether this latent infection of childhood, resuscitated under the influence of such conditions as insanitary circumstances, alcoholism, debilitating illness (*e.g.*, influenza), or overwork, is the main source of adult tuberculosis or whether adult tuberculosis is caused mainly by the more recent infection which must very commonly be received, may be regarded as an open point.

Whichever view be adopted, the practical action required is the same.

Action is needed—

(*a*) to increase the powers of resistance.

(*b*) to diminish the dosage of infection received.

For both children and adults, the removal of the conditions favouring infection, including careful attention to convalescents from diseases other than tuberculosis, is very important. For both children and adults, apart from milk infection, a main item in the campaign must also be to prevent infection from cases of "open" human tuberculosis. This occurs chiefly from adult consumptives.

Any provisions made should include, apart from domiciliary treatment and the dispensaries now in process of organisation:

(*a*) hospital beds for advanced cases of open tuberculosis, from whom is received the most dangerous massive infection (*vide* later Rest Homes);

(*b*) beds for "short-term" treatment of cases of open tuberculosis, where such patients can be taught practically to adopt hygienic habits, and where other patients can be kept under observation, or special treatment commenced;

(*c*) beds for early cases of pulmonary tuberculosis, who may thus be prevented from becoming a source of infection, and who may themselves become cured.

It will be clear, therefore, that from the point of view of children's welfare, it is essential that adults with "open" tuberculosis should be properly treated. The existence of the two schools of thought as to the occurrence of infection in early or adult life, does not appear to me to be much more than an academic point. It is common ground that ample arrangements must be made for the adequate treatment of tuberculous children under the best conditions.

The situation which has arisen out of the National Insurance Act, offering moneys towards the treatment of insured persons suffering from this disease and its subsequent developments, is fully set forth in the report of the Public Health Committee, dated 30th January, 1913. That report was adopted by the Council, and a scheme is now to be formulated by the Public Health Committee. It is suggested in that report that the scheme should be divided into parts, any or all of which can be put

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into force, according as opportunity, which largely means money, affords. But in any case, the first part of the scheme must be that which relates actually to the machinery for dealing with the disease. I therefore propose to outline first my views with regard to the administrative machinery.

PART I.—*Dispensary and general administration.*—To begin with the dispensary. Dispensaries should be established for every borough, but there is no reason why several boroughs should not make use of the same dispensary whenever possible. It is extremely desirable that the dispensary should, when possible, be either a hospital or dispensary already in existence. The executive officer in charge of the dispensary will be charged with the clinical care of the patients, and will be closely associated with the medical officer of health, who, in addition to this close association with this officer will represent the administrative side. Whenever a hospital undertakes the duties of a tuberculosis dispensary, the public will get the advantage of all the highly-specialised resources, laboratories, apparatus, etc., and the advice of the whole consultant staff of the hospital, instead of the opinion of one man only.

Generally speaking, the duties of the clinical officer should be strictly confined to work in the institution, and the medical officer of health should deal with the home conditions of the patient, the general practitioner being encouraged in all suitable cases, to retain control of the patient in his own home.

The chief tuberculosis officer for London should be the County Medical Officer of Health. He should act as the chief administrative executive officer. I propose that, as his clinical experts, he should have a voluntary advisory committee drawn from tuberculosis experts within the medical profession. I feel sure that the staff of such specialist institutions as Brompton, Victoria Park and City Road Hospitals, etc., would gladly co-operate, as would also doubtless, the Royal Colleges of Physicians and Surgeons. By obtaining the voluntary co-operation of the medical profession, London will gain the valuable services of the leading medical experts having knowledge of this disease.

The efficient working of the scheme must largely depend on the medical staff of the various institutions concerned, and at the present moment there is an inadequate supply of highly specialised officers. I am of opinion that it is essential, in order to improve this supply that appointments to institutions dealing with tuberculosis, should only be given to those who can produce evidence of having received adequate training in the methods of dealing with this particular disease.

Where dispensaries, other than hospitals are established, the salaries of the dispensary medical officers should be standardised. Where the dispensary is a hospital, the hospital authorities will doubtless arrange the question of payment of its staff, in accordance with such standard. The question as to whether the payment of the salaries of the dispensary medical officers should be made through the Council, as are the salaries of the medical officers of health, at present, is one for future determination. I recommend it, so as to ensure that a proper standard of efficiency is attained by the medical officers, before joining the dispensary.

In this connection it is desirable to draw attention to the fact that the Local Government Board evidently intends that cases of tuberculosis should be transferred from the Insurance to the health authorities. The Insurance Committee, should, through their local committees, have brought to their notice, such cases of tuberculosis as are locally discovered, as a preliminary to such transfer. With a proper tuberculosis scheme, insurance will be relegated to its true function, namely one of pure finance.

I might here remark that it appears to me that a ticket system should be instituted for attendance at dispensaries. Tickets, which should be of two colours, one for insured and one for non-insured persons, should be readily obtained through medical officers of health and local insurance committees. They would entitle the holder to a visit and treatment at any dispensary, and would be a voucher for charges incurred, when presented to the authority responsible for payment.

Such ticket system would very largely obviate book-keeping, and it is desirable to reduce clerical labour to a minimum.

PART II.—*Hospital and sanatorium treatment of patients.*—This part of the scheme relates to adults other than poor law persons, and should be divided into two sections, namely (*a*) insured, and (*b*) uninsured persons.

(*a*) *Insured persons.*—The funds provided by the National Insurance Act ought to be adequate to meet the cost of treating insured persons, and it may be reasonably expected that, if they are not adequate to-day, they will be made so.

Provision has already been made at Downs Sanatorium (L.C.C.) for 300 male persons, and the provision is capable of some extension. It is probable, moreover, that in the near future accommodation for a further 200 patients will be provided. The amount of money available for the treatment of insured persons is 1s. 3d. a head, of which 6d. is earmarked for domiciliary treatment and about ½d. for administrative expenses. There is also provided, primarily for research purposes, the sum of 1d. a head, and I think that a portion of this sum should, if possible, incidentally, be utilised for the training of experts in the treatment of tuberculosis. As I have stated earlier in this memorandum, the supply of highly specialised officers is very inadequate. Moreover, I am of opinion that it would be of great advantage if the Insurance Committee, under the powers conferred upon them by section 60 (1) (*b*) of the National Insurance Act, would arrange for the education, by means of lectures, of nurses to be employed in institutions for the treatment of tuberculosis.

It is clearly of importance that at an early stage it should be defined to what extent the various forms of treatment (sanatorium, domiciliary or dispensary) can be provided as regards insured persons. Personally, I am of opinion, that sanatorium treatment should only be given in such cases as, being incipient, show good prospects of recovery, or where a case is so advanced and the conditions of the home are exceptionally unfavourable as to make the movement of the patient imperative. It must be

realised that the extension of notification to all forms of tuberculosis encourages the belief that all forms of tuberculosis will be treated in sanatoria, but obviously only certain carefully selected cases of pulmonary tuberculosis should be so treated. It will require the closest attention of medical officers working on clearly defined lines to ensure equality of treatment throughout London.

I commend attention to two difficult points, viz. (1) Rest Homes; (2) Care of the Teeth.

(1) Great difficulty is experienced in finding beds for hopeless cases, nor is it desirable that generally speaking, these cases should be mixed with the more hopeful cases. I deprecate the term "Homes for the dying," but it is probable that a certain number of beds will need to be provided locally, situated in "Rest Homes."

(2) Tubercular patients frequently have bad or neglected teeth. All persons intended for sanatorium treatment should have their teeth attended to, with a view to removing one of the main obstacles to improved nutrition.

(*b*) *Uninsured persons.*—This term includes dependents of insured persons, but I consider it advisable to distinguish children from adults in the scheme, in view of the fact that the Education Authority has statutory relations with regard to this class of dependents. In all treatment of uninsured persons carried out locally, the local rates should bear a percentage of the cost, and, if, as is proposed by the Government, half is borne by the State, this proportion should be not less than a quarter; the county rate finding the remainder.

With regard to adults, I see no reason why, if unable to pay for themselves, they should not be dealt with as at present, when suffering from certain other infectious diseases, that is to say, by admitting to suitable institutions such as are provided by the Metropolitan Asylums Board, or are found in the voluntary hospitals. It is worthy of consideration whether voluntary hospitals could in any cases by means of the proposed capital government grants under the National Insurance Act, extend their existing accommodation. Evidently the same reservations as to who should undergo institutional treatment, must be enforced as in the case of insured persons, but I consider that it is essential that local authorities should not find it more economical to give treatment in residential institutions rather than elsewhere. I therefore would propose that, as regards the Metropolitan Asylums Board, the Local Government Board be asked to make such rules as would enable a moietyof the expenses falling on the rates, to be met locally.

Part III.—*Children.*—The London County Council, as education authority, at present deals with the health of children, and has already provided and maintains a few institutions and open air classes for tuberculous children.

I should like to see sanatorium provision where education is also given, to accommodate some 500 children; I believe this to be essential. Of these, some 350 would be surgical cases and 150 other forms.

As prevention is better than cure, open air classes should be developed everywhere, and be brought into association with dispensaries. I contemplate classes of children who are tuberculous or come from homes where tuberculosis exists, being medically provided for, in association with the dispensary. Educationally, of course, the London County Council would be responsible.

The borough medical officer of health will thus have a much greater responsibility as well as a greater opportunity as regards children living in contact with tuberculous persons.

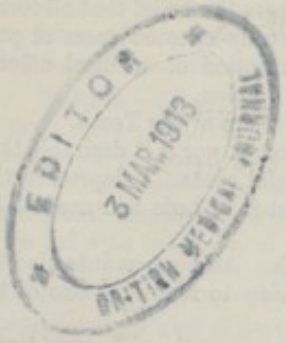
It is inadvisable to prolong this memorandum, although there are many details to which I have not referred, but those who read the letter of the Local Government Board, which was addressed on 11th December, 1912, to the County Council and published in the report of the County Council of the 17th December, 1912, and who have followed the various documents issued by the Local Government Board will be able to supply the gaps in this necessarily imperfect outline, which I desire to place on record, and I shall welcome criticisms and suggestions in the hope that a suitable solution shall be found of what is a very difficult problem.

Cecil B. Levita.

County Hall,

Spring Gardens,

22*nd February*, 1913.


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BRITISH MEDICAL JOURNAL

ANNUAL REPORT OF THE COUNCIL, 1911.

CHAPTER XXXII.

REPORT OF THE MEDICAL OFFICER OF HEALTH (DR. W. H. HAMER) FOR THE YEAR 1911.

A—*Vital Statistics.*

The mean temperature of the air during 1911 was 1·7 degrees above the average of the preceding 65 years. The greatest excess over the monthly average occurred in August, December, July and May; the temperature being below the average in April, March and January only. The rainfall during the year was very slightly below the average, the deficit being greatest in the months of July, August and September, and the excess greatest in November and December.

In the preparation of this report the results of the census of 1911 have been taken into account throughout, all the rates shown being based upon recalculated population-estimates for the intercensal years. It is to be noted, however, that as the age constitution of the 1911 population is not yet known, the death rates *at ages* have been calculated on the basis of the age constitution of the population recorded in 1901; consequently all such rates, and all rates to which *corrective factors* have been applied in the report, must be regarded to a certain extent as approximate.

The marriage rate (17·8) was slightly above the marriage rate of the preceding year (17·3). The birth-rate (24·8) was the lowest on record in London since the institution of civil registration.

The infantile mortality (129), and the "all ages" death-rate (15·0) were both considerably higher than in 1910. The deaths from cancer, measles and diarrhœa were above the annual average of the preceding 10 years, and the deaths from small-pox, whooping-cough, scarlet fever, diphtheria, enteric fever and phthisis were below the average.

Population.

The population of the Administrative County of London, estimated to the middle of the year 1911, was 4,521,301.

The census populations of London boroughs in 1901 and 1911 and the mid-year populations in 1911, as estimated by the Registrar-General, are shown in the following table:—

Metropolitan borough.	Census Population 1st April, 1901.	Census Population 3rd April, 1911.	Estimated Population (middle of year 1911).	Metropolitan borough.	Census Population 1st April, 1901.	Census Population 3rd April, 1911.	Estimated Population (middle of year 1911).
Paddington	143,976	142,551	142,513½	Shoreditch ..	118,637	111,390	111,199
Kensington	176,628	172,317	172,203	Bethnal Green	129,680	128,183	128,144
Hammersmith ..	112,239	121,521	121,766	Stepney ..	298,600	279,804	279,309
Fulham	137,289	153,284	153,705	Poplar ..	168,822	162,442	162,274
Chelsea	73,842	66,385	66,189	Southwark ..	206,180	191,907	191,531
Westminster, City of	183,011	160,261	159,662	Bermondsey	130,760	125,903	125,775
St. Marylebone ..	133,301	118,160	117,761	Lambeth ..	301,895	298,058	297,957
Hampstead	81,942	85,495	85,589	Battersea ..	168,907	167,743	167,712
St. Pancras	235,317	218,387	217,941	Wandsworth	231,922	311,360	313,453
Islington	334,991	327,403	327,203	Camberwell	259,339	261,328	261,380
Stoke Newington ..	51,247	50,659	50,644	Deptford ..	110,398	109,496	109,472
Hackney	219,110	222,533	222,623	Greenwich ..	95,770	95,968	95,973
Holborn	59,405	49,357	49,092	Lewisham ..	127,495	160,834	161,712
Finsbury	101,462	87,923	87,566	Woolwich ..	117,178	121,376	121,487
London, City of ..	26,923	19,657	19,466	**London** ..	**4,536,267**	**4,521,685**	**4,521,301**

The above table shows that the population of London has declined during the last intercensal period notwithstanding that, as a matter of fact, the number of births has exceeded the number of deaths annually. This diminution, of course, is due to the increment of population in Greater London. In making a comparison of the rates of natural increase in different localities, it should be pointed out that these rates are affected by differences in the age and sex-constitution of the populations compared, as well as by the relative amount of emigration and immigration, and this should be borne in mind in any general comparison of the crude natural increase rates. Natural increase of population.

The following table shows the mean annual rate of natural increase of the population per 1,000 living in certain periods from 1886 to 1911 :—

Period.	Annual birth-rates per 1,000 living.			Annual death-rates per 1,000 living.			Annual rate of natural increase per 1,000 living.		
	London.	Greater London. (*a*)	England and Wales.	London.	Greater London. (*a*)	England and Wales.	London.	Greater London. (*a*)	England and Wales.
1886–1890	32·10*b*	31·97	31·44	19·69*c*	18·68	18·89	12·41	13·29	12·55
1891–1895	30·76*b*	30·46	30·48	19·82*c*	18·49	18·71	10·94	11·97	11·77
1896–1900	29·66*b*	29·31	29·27	18·51*c*	17·23	17·69	11·15	12·08	11·58
1901–1905	28·55*b*	28·57	28·15	16·41*c*	15·14	16·03	12·14	13·43	12·12
1906–1910	26·52*b*	26·28	26·22	14·88*c*	13·72	14·68	11·64	12·56	11·54
1906	27·65*b*	27·52	27·17	15·75*c*	14·66	15·44	11·90	12·86	11·73
1907	26·89*b*	26·75	26·40	15·34*c*	14·18	15·07	11·55	12·57	11·33
1908	26·71*b*	26·53	26·70	14·64*c*	13·56	14·78	12·07	12·97	11·92
1909	25·83*b*	25·58	25·78	14·99*c*	13·76	14·60	10·84	11·82	11·18
1910	25·54*b*	25·02	25·04	13·69*c*	12·44	13·49	11·85	12·58	11·55
1911	24·78*b*	24·42	24·37	15·04*c*	13·83	14·60	9·74	10·59	9·77

Natural increase-rate in large English towns.

The following table enables comparison to be made of the rates of natural increase of the London population with those of the principal towns of England in the period 1906–10, and in the year 1911.

Town.	1906–10.	1911.	Town.	1906–10.	1911.
London	**11·6***bc*	**9·8***bc*	Bradford	4·7	4·1
Greater London ..	12·6	10·6	Hull	13·6	11·9
Liverpool	12·6	10·2	Newcastle-on-Tyne ..	14·0	10·5
Manchester	10·6	9·2	Nottingham	10·5	·4
Birmingham	12·9	11·3	Stoke-on-Trent	..	11·6
Sheffield	14·3	11·7	Portsmouth	12·7	10·9
Leeds	10·1	7·4	Salford	11·8	10·5
Bristol	11·0	6·7	Leicester	10·9	9·4
West Ham	15·9	14·2			

Natural increase-rate in foreign towns

The factors affecting the rates of natural increase in different localities to which reference has been made, probably tend more to vitiate accurate comparison when the populations concerned are of different nationalities, and this should be borne in mind in connection with the following table showing the rate of increase in London and certain foreign towns (*d*) :—

Town.	1906–10.	1911.	Town.	1906–10.	1911.
London	**11·6***bc*	**9·8***bc*	St. Petersburg	3·7	7·4
Paris	0·8	0·0	Berlin	8·0	5·2
Brussels	3·2	3·2	Vienna	6·6	3·6
Amsterdam	11·6	10·3	New York	10·4	11·9
Copenhagen	12·4	9·8			
Stockholm	9·2	9·3			

The natural increase during the period 1906–10 in New York is probably understated, owing to incomplete registration of births prior to 1908. It will be noticed that the excess of births over deaths in 1911 is below the average of the preceding five years in all the foreign towns except Brussels, Stockholm, St. Petersburg, and New York. These rates can only be regarded as approximate, and in making comparison of one town with another it should be borne in mind that full correction for births and deaths in institutions might considerably modify the rates of some of the towns.

(*a*) Greater London is the administrative area of the Metropolitan and City police.

(*b*) For the purposes of these rates the births in the principal lying-in institutions have been distributed to the district to which they belong.

(*c*) These death-rates are fully corrected for institutions, by the exclusion of deaths of persons not belonging to, but occurring in, institutions situated within London, and by the inclusion of deaths of persons belonging to London, but occurring in London institutions situated outside the Administrative County. For the year 1911, the rates are further corrected by the inclusion of non-institutional deaths of London residents occurring in the outer Ring of Greater London.

(*d*) All rates in this report relating to foreign towns are calculated upon figures published by the Registrar-General



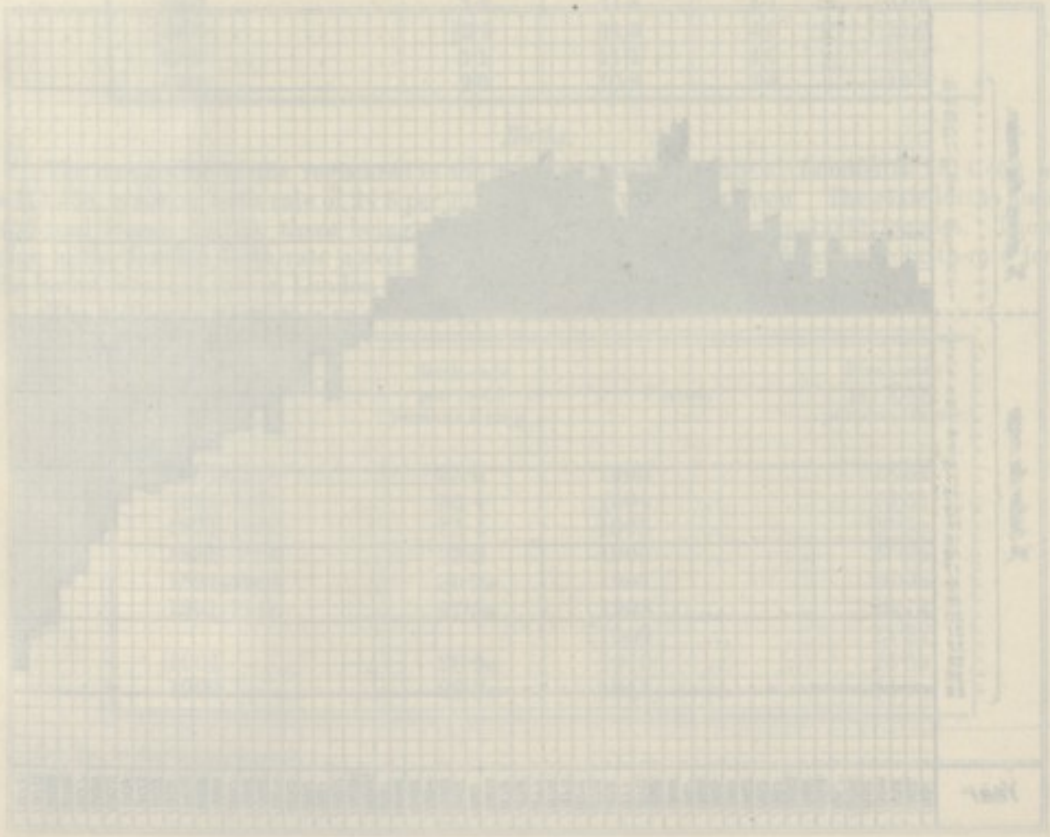


Diagram A.

Marriages.

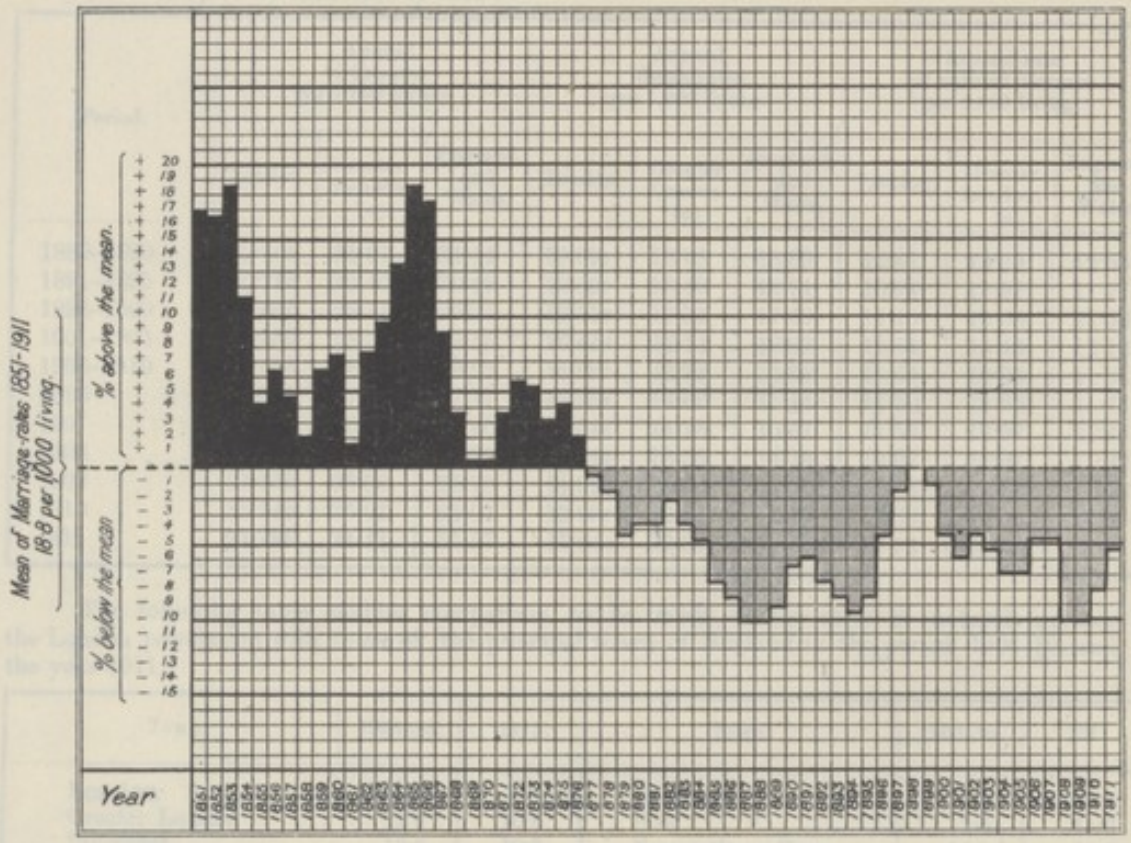
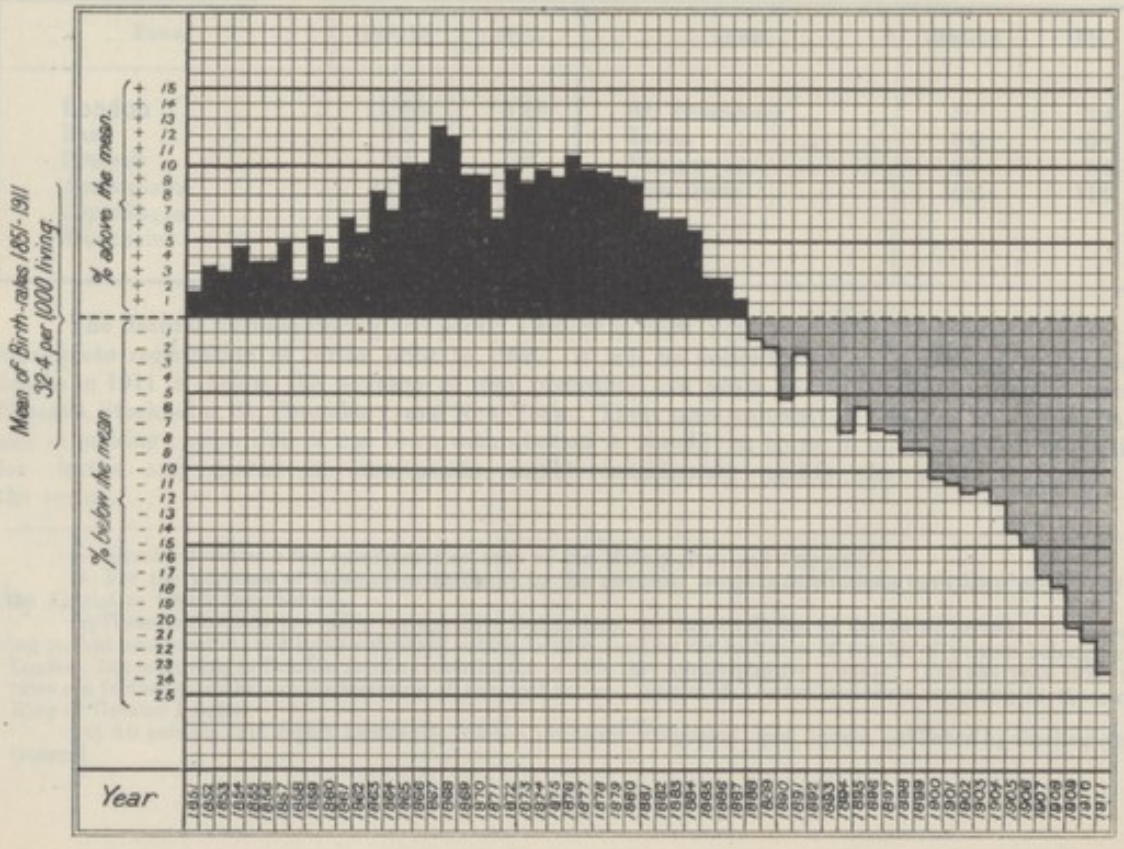


Diagram B.

Births.



Marriages.

The number of marriages in the Administrative County of London in 1911, was 40,201 (365 days), giving an annual rate of 17·8 persons married per 1,000 living.

The marriage-rate in successive periods has been as follows—

Marriage-rates—London.

Period.	Marriage-rate per 1,000 persons living.	Period.	Marriage-rate per 1,000 persons living.
1851-1860 ...	20·6	1903	17·8
1861-1870 ...	20·3	1904	17·5
1871-1880 ...	19·1	1905	17·5
1881-1890 ...	17·6	1906	17·9
1891-1900 ...	17·8	1907	17·9
1901-1910 ...	17·5	1908	16·9
		1909	16·9
1901	17·7	1910	17·3
1902	18·0	1911	17·8

The accompanying diagram (A) shows the marriage-rate in each year since 1850, in relation to the mean marriage-rate of the period 1851-1911.

Marriages of minors.

In the year 1911 among males 3·1 per cent. married were under 21 years of age, and among females 10·9 per cent.; the figures for previous years are shown in the following table, the proportions in England and Wales being also given for the purpose of comparison. It will be seen that both in London and in England and Wales the proportion of male and female minors in every 100 marriages has been diminishing for a number of years, but there is some indication of a pause in the decline :—

Period.	Marriages of minors per cent. of total marriages.			
	London.		England and Wales.	
	Males.	Females.	Males.	Females.
1851–1860	2·8	11·9	5·7	18·0
1861–1870	3·6	14·6	6·8	20·4
1871–1880	4·7	16·9	8·0	22·0
1881–1890	5·5	18·9	6·8	20·8
1891–1900	4·7	16·5	5·4	17·5
1901	4·4	15·0	5·0	16·0
1902	4·0	14·0	4·7	15·4
1903	3·8	13·7	4·6	15·2
1904	3·7	13·9	4·6	15·3
1905	3·6	13·0	4·4	14·7
1906	3·5	12·9	4·3	14·6
1907	3·2	11·8	4·1	14·2
1908	2·9	11·3	4·0	14·0
1909	3·1	11·1	4·0	13·7
1910	2·9	10·8	3·8	13·3

Births.

The number of births registered in the Administrative County of London in 1911 (52 weeks) was 111,738, giving a birth-rate of 24·8 per 1,000 persons living per annum. The male births numbered 56,939 and female 54,799, there being, therefore, 1,039 males born per 1,000 females. The steady decline in the London birth-rate noted in previous reports has continued, and the birth-rate for 1911 is the lowest recorded rate in London since the institution of civil registration.

The birth-rate in successive periods has been as follows :—

Birth-rates—London.

Period.	Birth-rate per 1,000 persons living.	Period.	Birth-rate per 1,000 persons living.
1851-1860 ...	33·6	1903	28·8*a*
1861-1870 ...	35·4	1904	28·5*a*
1871-1880 ...	35·4	1905	27·9*a*
1881-1890 ...	33·2	1906	27·6*a*
1891-1900 ...	30·2*a*	1907	26·9*a*
1901-1910 ...	27·5*a*	1908	26·7*a*
		1909	25·8*a*
1901	28·9*a*	1910	25·5*a*
1902	28·7*a*	1911	24·8*a*

(*a*) See footnote (*b*), page 2.

The corresponding figures for England and Wales, which show a similar decline to that noted in London, are as follows :—

Birth-rates England and Wales.

Period.	Birth-rate per 1,000 persons living. (a)	Period.	Birth-rate per 1,000 persons living. (a)
1851-1860 ...	34·1	1903	28·5
1861-1870 ...	35·2	1904	28·0
1871-1880 ...	35·4	1905	27·3
1881-1890 ..	32·4	1906	27·2
1891-1900 ...	29·9	1907	26·5
1901-1910 ...	27·2	1908	26·7
		1909	25·8
1901	28·5	1910	25·1
1902	28·5	1911	24·4

The following table enables comparison to be made of the birth-rate in London and Greater London with that of the chief towns of England ; it should be borne in mind, however, that the London figures alone are fully corrected by the exclusion of births within the County to mothers not usually resident in London. Were births in other towns similarly corrected considerable modification of these rates might result.

Birth-rates in large English towns.

Town.	1906–10.	1911.	Town.	1906–10.	1911.
London	**26·5***a*	**24·8***a*	Bradford	19·9	19·0
Greater London ..	26·3	24·4	Hull	29·7	28·6
Liverpool	32·1	30·2	Newcastle-on-Tyne ..	30·4	26·6
Manchester	28·6	26·2	Nottingham	26·6	24·5
Birmingham	29·5	28·1	Stoke-on-Trent	..	31·5
Leeds	26·0	23·8	Portsmouth	26·7	25·0
Sheffield	30·5	27·8	Salford	29·9	27·2
Bristol	24·8	21·8	Leicester	24·7	22·7
West Ham	31·4	30·0			

It will be seen from the following table that the decrease in birth-rate apparent in London is shared by all the chief foreign capitals; but that the London birth-rate compares not unfavourably with that of many of the largest of these capital towns. There is considerable difference in practice as to the registration and allocation of births occurring in these foreign towns, and the rates shown must, therefore, be regarded as affording material for only approximate comparison.

Birth-rates in foreign towns.

Town.	1906–10.	1911.	Town.	1906–10.	1911.
London	**26·5***a*	**24·8***a*	St. Petersburg	29·3	28·2
Paris	18·3	17·2	Berlin	23·5	20·8
Brussels	17·3	17·1	Vienna	23·7	20·0
Amsterdam	24·7	22·7	New York	27·5	27·0
Copenhagen	27·5	24·6			
Stockholm	24·3	22·0			

The diagram (B.) facing page 3 shows the London birth-rate in each year since 1850, in relation to the mean birth-rate of the period 1851–1911. In connection with this diagram it should be noted that the registration of births was not made compulsory until the beginning of 1875 ; before that year many births were probably unregistered. From the year 1885 onwards the number of births has been corrected as far as possible by the exclusion of those which occurred in the chief lying-in institutions in cases where the mother resided outside the County of London.

(a) See footnote (b) page 2.

The following table shows the birth-rate in the several sanitary districts per 1,000 persons living in the period 1906-10 and in the year 1911 :—

Birth-rates in London sanitary districts.

Metropolitan borough.	Births, 1911 (52 weeks). (*a*)	Birth-rate per 1,000 persons living. (*a*)	
		1906-10.	1911.
Paddington	3,038	22·6	21·4
Kensington	3,252	19·5	18·9
Hammersmith	2,927	25·8	24·1
Fulham	4,121	30·5	26·9
Chelsea	1,269	21·6	19·2
Westminster, City of	2,358	16·9	14·8
St. Marylebone	2,376	21·5	20·2
Hampstead	1,276	16·2	14·9
St. Pancras	5,559	26·0	25·6
Islington	8,108	25·9	24·8
Stoke Newington	1,045	20·6	20·7
Hackney	5,226	24·8	23·5
Holborn	945	20·5	19·3
Finsbury	2,674	31·4	30·6
London, City of	226	13·3	11·6
Shoreditch	3,533	32·9	31·9
Bethnal Green	4,029	33·0	31·5
Stepney	8,743	34·9	31·4
Poplar	5,015	32·1	31·0
Southwark	5,693	31·0	29·8
Bermondsey	3,908	32·0	31·2
Lambeth	7,292	26·0	24·5
Battersea	4,372	27·1	26·1
Wandsworth	6,747	24·6	21·6
Camberwell	6,399	25·9	24·5
Deptford	3,000	28·7	27·5
Greenwich	2,376	26·5	24·8
Lewisham	3,420	23·3	21·2
Woolwich	2,811	26·2	23·2
London	**111,738**	**26·4**	**24·8**

It will be seen from the above table that the birth-rates of the several sanitary districts vary greatly, ranging from 11·6 in the City of London, to 31·9 in Shoreditch, when the rates for the year 1911 are compared.

Notification of births.

Under the Notification of Births Act, 1907, the London County Council receives particulars of the births which have been notified to the medical officers of health of the several sanitary districts in London, and from the information thus received the following table has been prepared :—

Metropolitan borough.	Total births notified (corrected for institutions).	Still-births (corrected).	Births, *less* still-births (corrected).	Births registered (corrected).	Excess of registered over notified births (corrected).
Paddington	3,060	74	2,986	3,038	+ 52
Kensington	3,078	79	2,999	3,252	+ 253
Hammersmith	2,382	57	2,325	2,927	+ 602
Fulham	3,270	68	3,202	4,121	+ 919
Chelsea	1,009	30	979	1,269	+ 290
Westminster, City of	1,782	50	1,732	2,358	+ 626
St. Marylebone	2,625	46	2,579	2,376	— 203
Hampstead	1,173	20	1,153	1,276	+ 117
St. Pancras	5,150	152	4,998	5,559	+ 561
Islington	7,523	205	7,318	8,108	+ 790
Stoke Newington	936	8	928	1,045	+ 117
Hackney	5,399	161	5,238	5,226	— 12
Holborn	874	32	842	945	+ 103
Finsbury	2,740	57	2,683	2,674	— 9
London, City of	206	4	202	226	+ 24

Continued on next page.

(*a*) See footnote (*b*) page 2.

Metropolitan borough.	Total births notified (corrected for institutions).	Still-births (corrected).	Births, *less* still-births (corrected).	Births registered (corrected)	Excess of registered over notified births (corrected).
Shoreditch	3,386	113	3,273	3,533	+ 260
Bethnal Green	3,848	79	3,769	4,029	+ 260
Stepney	8,898	214	8,684	8,743	+ 59
Poplar	4,551	106	4,445	5,015	+ 570
Southwark	6,057	148	5,909	5,693	— 216
Bermondsey	3,637	43	3,594	3,908	+ 314
Lambeth	7,080	130	6,950	7,292	+ 342
Battersea	2,907	48	2,859	4,372	+ 1,513
Wandsworth	4,654	93	4,561	6,747	+ 2,186
Camberwell	5,469	137	5,332	6,399	+ 1,067
Deptford	2,984	85	2,899	3,000	+ 101
Greenwich	2,462	19	2,443	2,376	— 67
Lewisham	3,529	90	3,439	3,420	— 19
Woolwich	2,574	65	2,509	2,811	+ 302
London	**103,243**	**2,413**	**100,830**	**111,738**	**+10,902**

Still-births and multiple births, 1911.

The number and percentage of still-births and of multiple births notified in 1911 (uncorrected for institutions) is shown in the following table :—

Metropolitan borough.	Total births notified.	Still-births.	Per-centage still born.	Multiple births.							Total born.	Percentage of mothers delivered of more than one child at a birth.
				Twins.			Triplets.					
				Cases.	Stillborn.		Cases.	Stillborn.				
					One.	both.		One.	Two.	Three		
Paddington	2,834	73	2·6	36	4	—	—	—	—	—	72	1·3
Kensington	2,910	77	2·7	32	7	—	—	—	—	—	64	1·1
Hammersmith	2,276	57	2·5	11	2	1	—	—	—	—	22	0·5
Fulham	3,161	68	2·2	2	2	—	—	—	—	—	4	0·0
Chelsea	956	30	3·1	13	4	—	—	—	—	—	26	1·4
Westminster, City of ..	1,563	47	3·0	14	2	—	—	—	—	—	28	0·9
St. Marylebone ..	4,031	57	1·4	42	2	—	—	—	—	—	84	1·0
Hampstead	1,123	20	1·8	12	—	—	—	—	—	—	24	1·1
St. Pancras	4,665	141	3·0	50	6	—	—	—	—	—	100	1·1
Islington	7,208	197	2·7	97	9	—	1	—	—	—	197	1·2
Stoke Newington ..	907	8	0·9	9	—	—	—	—	—	—	18	1·0
Hackney	5,342	161	3·0	58	7	—	2	1	—	—	122	1·1
Holborn	1,217	42	3·4	16	—	1	1	—	—	—	35	1·4
Finsbury	3,467	73	2·1	62	5	3	—	—	—	—	124	1·8
London, City of ..	195	3	1·6	1	—	—	—	—	—	—	2	0·5
Shoreditch	3,218	108	3·4	44	4	1	—	—	—	—	88	1·4
Bethnal Green	3,818	78	2·0	43	4	—	1	—	—	—	89	1·1
Stepney	8,874	213	2·4	122	11	4	1 (Quadruplet)	—	—	—	248	1·4
Poplar	4,544	106	2·3	61	1	4	—	—	—	—	122	1·4
Southwark	6,036	148	2·4	57	6	2	1	—	—	—	117	0·9
Bermondsey	3,629	42	1·2	27	1	—	—	—	—	—	54	0·8
Lambeth	7,052	130	1·8	84	10	1	1	1	—	—	171	1·2
Battersea	2,884	48	1·7	29	3	1	—	—	—	—	58	1·0
Wandsworth	4,637	92	2·0	37	4	—	—	—	—	—	74	0·8
Camberwell	5,454	137	2·5	61	2	—	1	—	—	—	125	1·1
Deptford	2,980	85	2·9	32	4	—	—	—	—	—	64	1·1
Greenwich	2,461	19	0·8	14	1	—	—	—	—	—	28	0·6
Lewisham	3,524	90	2·6	39	3	—	—	—	—	—	78	1·1
Woolwich	2,572	65	2·5	2	—	—	—	—	—	—	4	0·1
London	**103,538**	**2,415**	**2·3**	**1,107**	**104**	**18**	**8** & (1 Quadruplet).	**2**	—	—	**2,242**	**1·1**

Deaths.

The number of deaths in the Administrative County of London in 1911 (52 weeks) was 67,826 giving an annual death rate of 15·0 per 1,000 of the estimated population.

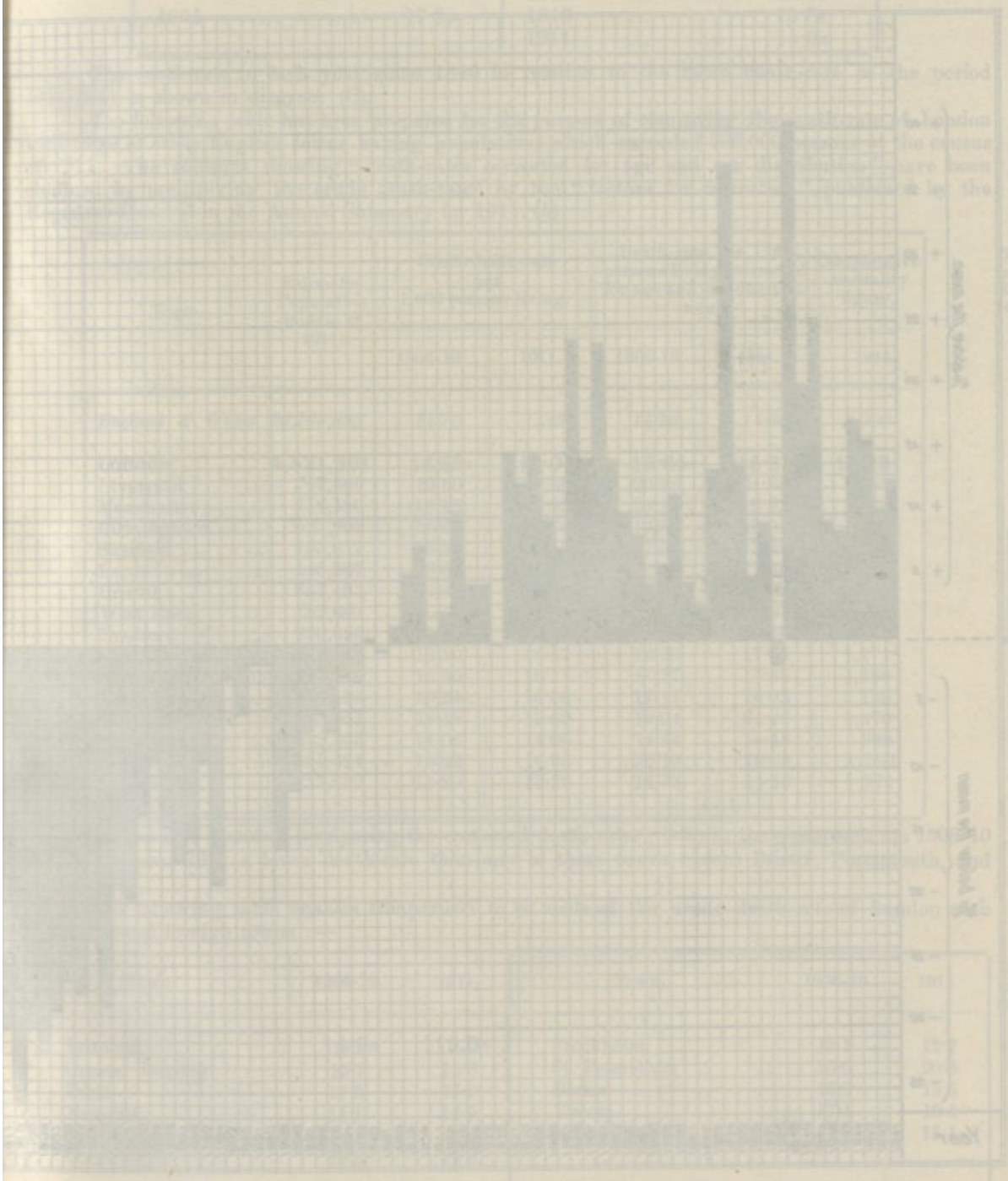
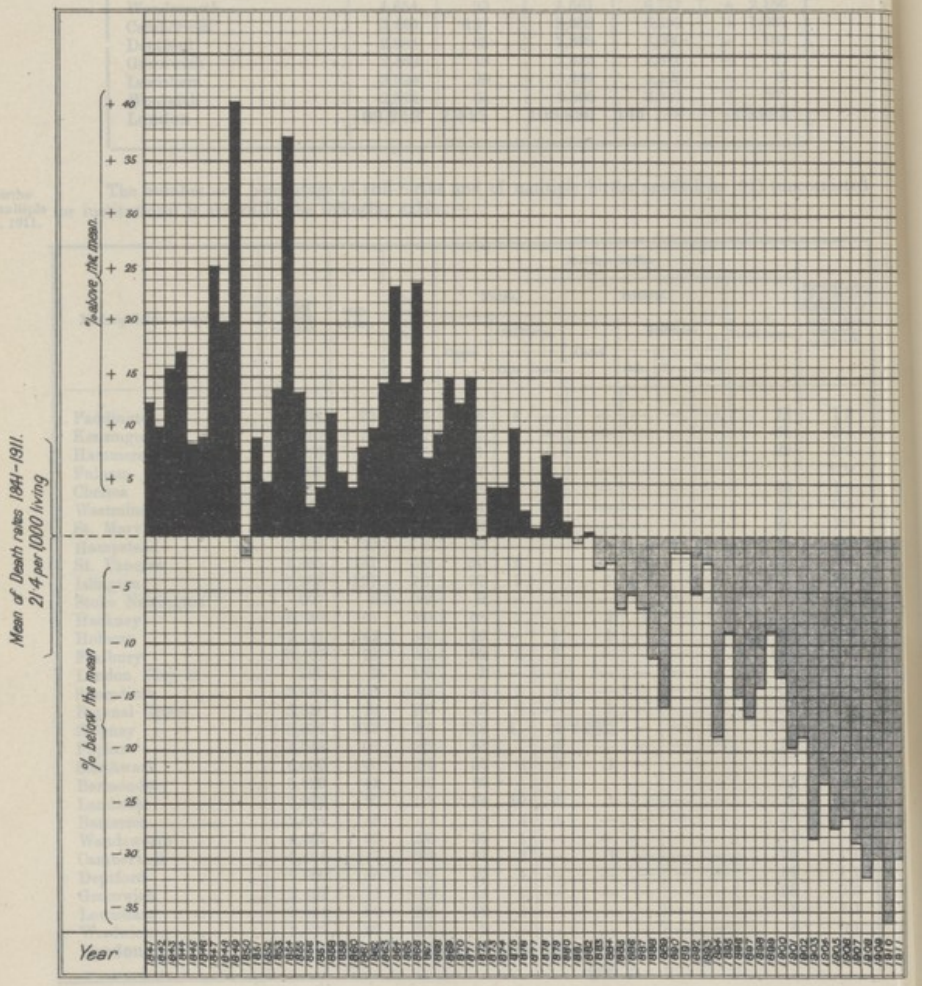


Diagram C.

—Deaths (all Causes.)—



The death-rate in successive periods has been as follows :—

Period.	Death-rate (All Causes) per 1,000 persons living.	Period.	Death-rate (All Causes) per 1,000 persons living.
1841-1850... ...	24·8	1902	17·4*a*
1851-1860... ...	23·7	1903	15·4*a*
1861-1870... ...	24·4	1904	16·5*a*
1871-1880... ...	22·5	1905	15·6*a*
1881-1890... ...	20·3	1906	15·8*a*
1891-1900... ..	19·2*a*	1907	15·3*a*
1901-1910	15·7*a*	1908	14·6*a*
		1909	15·0*a*
1901	17·2*a*	1910	13·7*a*
		1911	15·0*a*

The death-rate in each year since 1840 in relation to the mean death-rate of the period 1841-1911 is shown in diagram (C).

The following table has been prepared for the purpose of comparing the death-rate of London with those of other English towns having populations which exceeded 200,000 persons at the census of 1911. The columns showing "death-rates corrected for age and sex distribution" have been obtained by multiplying the crude death-rates by the "factors for correction" published by the Registrar-General in the Annual Summary for 1911. (*b*)

Death-rates in large English towns.

Town.	Estimated Population (middle of 1911).	Crude death-rate per 1,000 persons living.		Death-rate per 1,000 persons living (corrected for age and sex distribution).		Comparative mortality figure.
		1906-10.	1911.	1906-10.	1911.	1911.
England & Wales	*36,163,833*	*14·70*	*14·60*	*14·70*	*14·60*	*1,000*
London	**4,521,301**	**14·88***a*	**15·04***a*	**15·64***a*	**15·81***a*	**1,083**
Liverpool ...	747,566	19·60	19·96	20·98	21·36	1,463
Manchester ...	716,180	18·12	16·99	20·18	18·92	1,296
Birmingham ...	525,903	16·62	16·78	17·88	18·05	1,236
Sheffield	455,817	16·30	16·12	17·57	17·37	1,190
Leeds	445,967	16·00	16·37	17·45	17·86	1,223
Bristol	357,493	13·86	15·12	14·24	15·53	1,064
West Ham ..	289,601	15·54	15·77	16·62	16·87	1,155
Bradford	288,695	15·32	14·89	16·93	16·46	1,127
Hull	278,984	16·10	16·67	16·50	17·09	1,171
Newcastle-on-Tyne	267,116	16·50	16·11	17·77	17·35	1,188
Nottingham ...	260,425	16·24	16·06	17·11	16·92	1,159
Stoke-on-Trent *c*	235,051	18·48	19·89	19·94	21·46	1,470
Portsmouth ...	232,253	14·06	14·05	14·44	14·43	988
Salford	231,624	18·22	16·65	20·13	18·39	1,260
Leicester	227,632	13·80	13·29	14·73	14·18	971

London had therefore (comparing the corrected death-rates), both in the quinquennium 1906–10 and in the year 1911 a lower death-rate than any of these towns except Bristol, Portsmouth, and Leicester.

The following table enables comparison to be made of the crude death-rate of London with that of several foreign towns :—

Death-rates in foreign towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911
London	**14·9***a*	**15.0***a*	Stockholm	15·1	12·7
Greater London.. ..	13·7	13·8	St. Petersburg	25·6	20·8
Paris	17·5	17·2	Berlin	15·5	15·6
Brussels	14·1	13·9	Vienna	17·1	16·4
Amsterdam	13·1	12·4	New York	17·0	15·1
Copenhagen	15·1	14·8			

It will be seen from the foregoing table that in the quinquennium 1906-10 the London death-rate was exceeded by the death-rates of Paris, Copenhagen, Stockholm, St. Petersburg, Berlin, Vienna, and New York, and in 1911 was lower than that of any except Brussels, Amsterdam, Copenhagen and Stockholm.

(*a*) See footnote (*c*) page 2.

(*b*) The corrective factors shown in the table and elsewhere in this report where calculated upon the age-and sex-constitution of the population enumerated in 1901. Their application to the deaths in 1911 assumes that the constitution of the population has remained unchanged during eleven years; it is, however, certain that some change has occurred, and consequently the modified rates shown can only be regarded as approximately corrected by these factors.

(*c*) Rates, for years prior to 1911, are for an approximate area.

The following table shows the crude death-rates, and the death-rates corrected for differences in the age and sex constitution of the population (*a*) of the several sanitary districts (*b*) during the year 1911; the mean death-rates for the period 1906-10 are also shown for the purposes of comparison.

Death-rates in London boroughs.

Area.	Standard death-rate.	Factor for correction for age and sex distribution.	Crude death-rate per 1,000 persons living.		Corrected death-rate per 1,000 persons living.		Corrected comparative mortality figure (London, 1,000).	
			1906-10.	1911.	1906-10.	1911.	1906-10.	1911.
England and Wales ..	*18·19*	*1·0000*	*14·70*	*14·60*	*14·70*	*14·60*	*940*	*923*
London	**17·31**	**1·0511**	**14·88**	**15·04**	**15·64**	**15·81**	**1,000**	**1,000**
Paddington	17·04	1·0677	13·32	13·35	14·22	14·25	909	901
Kensington	16·88	1·0778	13·80	13·68	14·87	14·74	951	932
Hammersmith	17·47	1·0414	14·50	15·57	15·10	16·21	965	1,025
Fulham	17·39	1·0462	14·26	14·37	14·92	15·03	954	951
Chelsea	17·56	1·0361	15·80	15·45	16·37	16·01	1,047	1,013
Westminster, City of ..	16·22	1·1217	12·90	12·45	14·47	13·97	925	884
St. Marylebone	17·08	1·0652	14·82	15·09	15·79	16·07	1,010	1,016
Hampstead	16·13	1·1280	9·76	9·64	11·01	10·87	704	688
St. Pancras	17·40	1·0456	15·76	15·51	16·48	16·22	1,054	1,026
Islington	17·51	1·0391	14·72	14·87	15·30	15·45	978	977
Stoke Newington ..	17·43	1·0438	12·24	13·03	12·78	13·60	817	860
Hackney	17·46	1·0420	13·68	14·35	14·25	14·95	911	946
Holborn	16·90	1·0766	17·16	15·69	18·47	16·89	1,181	1,068
Finsbury	17·57	1·0355	19·86	19·79	20·57	20·49	1,315	1,296
London, City of	16·55	1·0993	15·50	15·09	17·04	16·59	1,090	1,049
Shoreditch	17·34	1·0493	18·94	20·07	19·87	21·06	1,270	1,332
Bethnal Green	18·01	1·0102	17·46	18·15	17·64	18·34	1,128	1,160
Stepney	17·41	1·0450	17·18	17·35	17·95	18·13	1,148	1,147
Poplar	17·64	1·0314	17·10	18·87	17·64	19·46	1,128	1,231
Southwark	17·41	1·0450	18·28	18·37	19·10	19·20	1,221	1,214
Bermondsey	17·76	1·0244	18·72	18·42	19·18	18·87	1,226	1,194
Lambeth	17·63	1·0320	14·94	14·91	15·42	15·39	986	973
Battersea	16·96	1·0728	13·78	14·30	14·78	15·34	945	970
Wandsworth	17·25	1·0547	11·76	11·97	12·40	12·62	793	798
Camberwell	17·54	1·0373	14·28	14·29	14·81	14·82	947	937
Deptford	17·31	1·0511	15·32	15·63	16·10	16·43	1,029	1,039
Greenwich	17·82	1·0210	14·20	14·72	14·50	15·03	927	951
Lewisham	17·46	1·0420	11·24	11·29	11·71	11·76	749	744
Woolwich	17·02	1·0690	12·96	12·83	13·85	13·72	886	868

It will be seen from the foregoing table (comparing the corrected death-rates) that in the quinquennium 1906–10, Finsbury (20·6) had the highest rate and Hampstead (11·0) the lowest; in the year 1911, Shoreditch (21·1) had the highest, and Hampstead (10·9) the lowest. The death-rates in each of the four quarters of the year 1911, were as follows: first quarter, 17·2; second quarter, 13·2; third quarter, 15·5; and fourth quarter, 14·3 per 1,000 persons living.

Infantile Mortality.

The deaths of children under one year of age in the Administrative County of London during 1911 (52 weeks) numbered 14,440, being in the proportion of 129 per 1,000 births.

The proportion in successive periods has been as follows:—

Period.	Deaths under one year of age per 1,000 births.	Period.	Deaths under one year of age per 1,000 births.
1841-1850	157*c*	1903	130*d*
1851-1860	155*c*	1904	145*d*
1861-1870	162*c*	1905	130*d*
1871-1880	158*c*	1906	131*d*
1881-1890	152	1907	116*d*
1891-1900	159*d*	1908	113*d*
1901-1910	126*d*	1909	108*d*
		1910	103*d*
1901	148*d*	1911	129*d*
1902	140*d*		

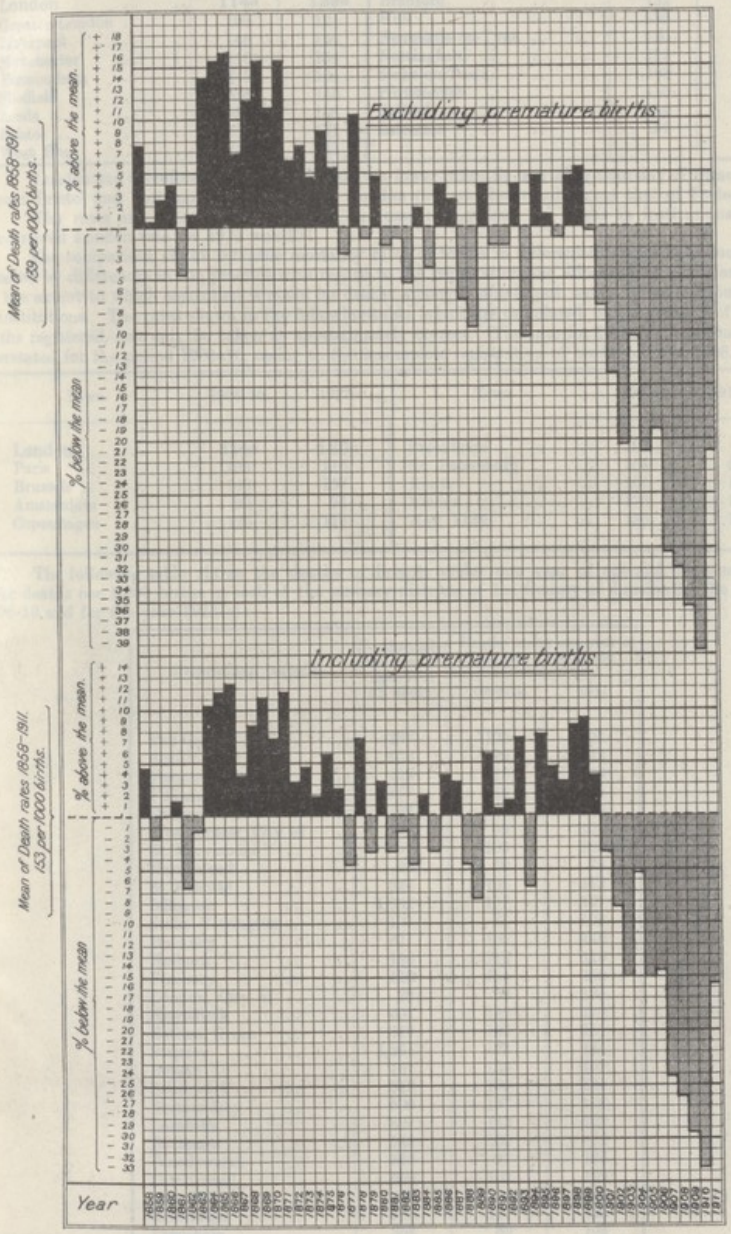
The accompanying diagram (D.) shows the infantile mortality in each year since 1857 in relation to the mean infantile mortality of the period 1858–1911, and also the infantile mortality in each year after exclusion of the deaths from premature birth, which cause of death would in all probability be

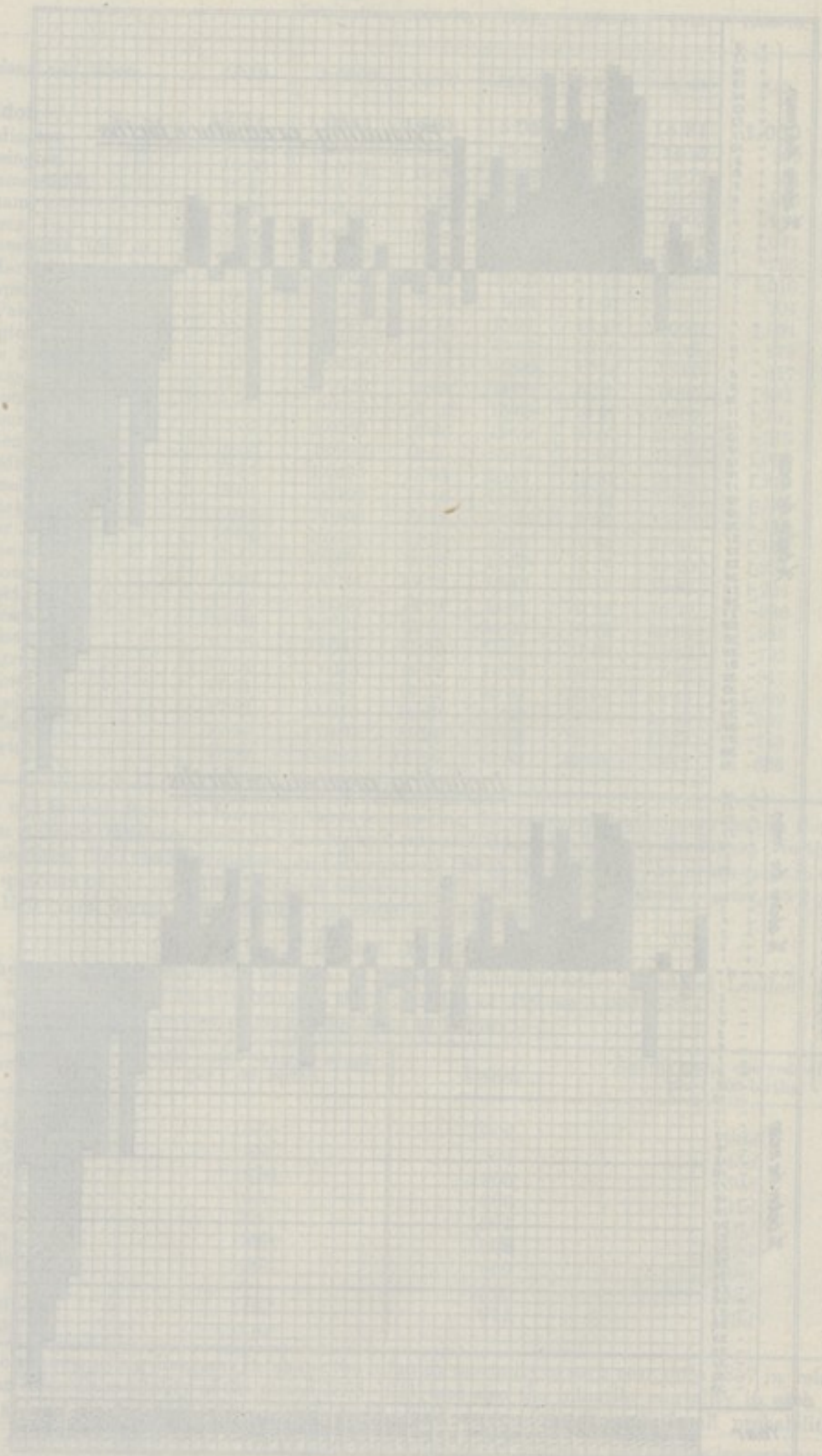
(*a*) See footnote (*b*), page 7. (*b*) All death-rates in this report relating to metropolitan boroughs are fully corrected for institutions (see foot-note (*c*), page 2.) (*c*) The registration of births was not made compulsory until the beginning of 1875; before that year many births were probably unregistered. (*d*) See footnotes (*b*) and (*c*), page 2.

Diagram D.

Infantile Mortality.

(Deaths under one year of age per 1000 births.)





affected in greater degree than the deaths under any other heading by the more complete registration of recent years.

The following table enables comparison to be made of the infantile mortality in London and other large English towns.

Infantile mortality in large English towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**114**[a]	**129**[a]	Bradford	132	138
Greater London	109	124	Hull	136	155
Liverpool	148	154	Newcastle-on-Tyne	130	136
Manchester	146	154	Nottingham	152	162
Birmingham	145	164	Stoke-on-Trent	165	202
Sheffield	138	140	Portsmouth	110	126
Leeds	134	158	Salford	134	149
Bristol	109	141	Leicester	137	132
West Ham	127	141			

London had therefore in the period 1906-10 a lower infantile mortality than any of these towns except Bristol and Portsmouth. In 1911 the London rate was below all except that of Portsmouth.

The rates are uncorrected (except in the case of London) for births in institutions. The uncorrected London rate for 1911 was 131.

The comparison of the infantile mortality rates of towns in different countries is undoubtedly affected by differences in the practice with regard to the registration and allocation of births and also by the extent to which correction is made for deaths amongst infants put out to nurse in suburbs, or in institutions. The rates shown in the following table, which are calculated on the number of living births registered, can only be taken as approximately correct. The rate for New York is somewhat overstated for the period 1906–10, owing to the incomplete registration of births prior to 1908.

Infantile mortality in foreign towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**114**[a]	**129**[a]	Stockholm	103	77
Paris	106	118	St. Petersburg	256	231
Brussels	145	137	Berlin	164	173
Amsterdam	90	91	Vienna	172	166
Copenhagen	129	113	New York	136	112

The following table shows the deaths of infants under one year of age and the number of these deaths per 1,000 births in each of the sanitary districts of the County of London for the period 1906-10 and for the year 1911(*a*) :—

Metropolitan borough.	Deaths under one year of age, 1911 (52 weeks).	Deaths under one year of age per 1,000 births.	
		1906-10.	1911.
Paddington	387	103	127
Kensington	432	120	133
Hammersmith	428	118	146
Fulham	517	118	125
Chelsea	138	114	109
Westminster, City of	244	99	103
St. Marylebone	257	105	108
Hampstead	99	70	78
St. Pancras	624	108	112
Islington	1,032	107	127
Stoke Newington	107	87	102
Hackney	621	109	119
Holborn	109	114	115
Finsbury	418	134	156
London, City of	28	93	124
Shoreditch	601	149	170
Bethnal Green	610	135	151
Stepney	1,261	123	144
Poplar	787	129	157
Southwark	818	130	144
Bermondsey	609	137	156
Lambeth	897	112	123
Battersea	540	109	124
Wandsworth	823	97	122
Camberwell	696	109	109
Deptford	425	119	142
Greenwich	305	110	128
Lewisham	354	89	104
Woolwich	273	96	97
London	**14,440**	**114**	**129**

(*a*) See footnotes (*b*) and (*c*), page 2.

It will be seen from the foregoing table that in the period 1906-10 and the year 1911 Shoreditch (149 and 170 respectively) had the highest infantile death-rates and Hampstead (70 and 78 respectively) had the lowest. The deaths under one year of age per 1,000 births, during each of the four quarters of the year, were as follows:—First quarter 108; second quarter 89; third quarter 203; fourth quarter 113.

The reports of Medical Officers of Health of the several sanitary districts of the Administrative County for the year 1911 contain tables prepared in accordance with the instructions of the Local Government Board giving the number of deaths, from all causes and certain specified causes, of infants at different age-periods in the first year of life. From the information thus supplied, the following table has been compiled, showing the figures for London as a whole for the 52 weeks of 1911. It will be seen that the total deaths here shown differ slightly from the total in the preceding table derived from the annual summary of the Registrar-General.

Cause of death.	Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Month.	0–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total Deaths under one year.
Common Infectious Diseases—										
Small-pox	—	—	—	—	—	1	—	—	—	1
Chicken-pox	—	—	—	—	—	2	—	2	1	5
Measles	—	3	3	3	9	13	31	168	319	531
Scarlet Fever	—	—	—	—	—	—	1	1	4	6
Diphtheria and Group	—	—	—	—	—	4	6	13	30	53
Whooping-cough	—	—	2	4	6	56	79	134	155	424
Diarrhœal Diseases—										
Diarrhœa, all forms	5	14	30	57	106	648	1,067	793	582	3,090
Enteritis (*not tuberculous*)	1	21	29	31	82	348	414	295	227	1,284
Gastritis, Gastro-intestinal Catarrh	3	5	2	7	17	41	19	7	2	69
Wasting Diseases—										
Premature Birth	1,374	179	144	102	1,799	1,944	23	2	1	1,970
Congenital Malformations	191	52	39	18	300	390	40	27	15	472
Atelectasis	123	18	12	2	155	168	4	1	2	175
Injury at Birth	114	4	1	—	119	121	2	—	—	123
Want of Breast-milk, Atrophy, Debility, Marasmus	286	134	115	119	654	1,140	375	143	80	1,738
Tuberculous Diseases—										
Tuberculous Meningitis	—	1	1	1	3	19	55	69	68	211
Tuberculous Peritonitis: Tabes Mesenterica	—	—	—	4	4	24	29	28	18	99
Other Tuberculous Diseases	—	—	—	—	—	14	45	38	51	148
Erysipelas	—	3	2	2	7	16	6	4	—	26
Syphilis	11	21	10	14	56	119	32	13	8	172
Rickets	—	2	—	—	2	4	7	9	18	38
Meningitis (*not Tuberculous*)	1	3	2	4	10	25	44	66	48	183
Convulsions	64	44	40	25	173	269	76	49	34	428
Bronchitis	11	26	40	31	108	335	210	150	152	847
Laryngitis	1	1	—	—	2	6	3	4	4	17
Pneumonia	12	23	33	31	99	357	258	327	392	1,334
Suffocation, overlaying	43	7	14	16	80	183	59	12	7	261
Other causes	134	56	52	35	277	422	150	130	102	804
Total (All Causes)	**2,374**	**617**	**571**	**506**	**4,068**	**6,669**	**3,035**	**2,485**	**2,320**	**14,509**

Comparison may be made between the number of deaths from the several causes in the above table with those of the six antecedent years by reference to the following table:—

Cause of death.	1905. 52 weeks.	1906. 52 weeks.	1907. 52 weeks.	1908. 53 weeks.	1909. 52 weeks.	1910. 52 weeks.	1911. 52 weeks.	Deaths in 1911 in excess or defect of the corrected average for 1905-10	
								Diminution in 1911	Excess in 1911
Small-pox	—	—	—	—	—	—	1	—	1
Chicken-pox	3	3	5	3	10	4	5	—	1
Measles	389	420	400	333	503	391	531	—	155
Scarlet Fever	34	18	35	24	20	10	6	15	—
Diphtheria and Croup	52	59	53	67	60	30	53	—	4
Whooping-cough	623	502	746	469	524	602	424	110	—

(*Continued on next page.*)

Cause of death.	1905. 52 weeks.	1906. 52 weeks.	1907. 52 weeks.	1908. 53 weeks.	1909. 52 weeks.	1910. 52 weeks.	1911. 52 weeks.	Deaths in 1911 in excess or defect of the corrected average for 1905-10. Diminution in 1911	Excess in 1911.
Diarrhœa .. .. Enteritis (not tuberculous) .. Gastritis, Gastro-intestinal Catarrh	3,423	4,468	1,790	2,709	1,849	1,536	4,443	—	2,042
Premature Birth	2,423	2,208	2,299	2,197	2,122	2,086	1,970	79	—
Congenital Malformation .. .. Atelectasis	547	613	645	705	667	657	472 175	—	56
Injury at Birth	99	113	117	110	113	108	123	—	21
Want of Breast-milk .. .. Atrophy, Debility, Marasmus ..	2,281	2,130	1,922	1,843	1,825	1,682	1,738	55	—
Tuberculous Meningitis	273	241	239	259	203	179	211	3	—
Tuberculous Peritonitis: Tabes Mesenterica	192	225	153	168	145	129	99	56	—
Other Tuberculous Diseases ..	284	246	264	255	188	142	148	63	—
Erysipelas	64	50	52	35	48	32	26	17	—
Syphilis	271	233	226	229	216	186	172	37	—
Rickets	79	67	58	51	45	54	38	16	—
Meningitis (not tuberculous) ..	300	302	210	246	170	174	183	31	—
Convulsions	803	660	603	520	495	475	428	116	—
Bronchitis	1,276	1,043	1,284	982	960	843	847	133	—
Laryngitis	25	23	15	18	15	13	17	—	—
Pneumonia	1,490	1,335	1,629	1,431	1,334	1,442	1,334	—	2
Suffocation, overlaying	462	417	421	417	322	321	261	101	—
Other causes	1,004	1,009	979	885	852	751	804	37	—
Total	16,397	16,385	14,145	13,956	12,686	11,847	14,509	Net excess 1,413	
Number of births (a)	*125,930*	*124,880*	*121,408*	*122,898*	*116,559*	*115,190*	*111,738*		

Deaths of infants at certain age periods.

The total deaths among children under one year of age from "all causes" at certain age periods in 1911 may be compared with similar figures included in the Annual Reports for the preceding six years as follows:—

Year.	Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Month.	0–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total Deaths under one year.
1905 ..	2,886	808	667	564	4,925	8,132	3,227	2,665	2,373	16,397
1906 ...	2,683	707	722	545	4,657	7,764	3,439	2,736	2,446	16,385
1907 ..	2,758	760	676	533	4,727	7,504	2,580	2,087	1,974	14,145
1908 ..	2,645	651	631	485	4,412	7,189	2,736	2,097	1,934	13,956
1909 ..	2,535	612	540	471	4,158	6,564	2,352	1,910	1,860	12,686
1910 ..	2,465	598	500	451	4,014	6,230	2,148	1,795	1,674	11,847
1911 ..	2,374	617	571	506	4,068	6,669	3,035	2,485	2,320	14,509

The following table has been prepared to show approximately the death-rates in age-periods per 1,000 living at the beginning of each period:—

Year.	Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Month.	0–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under one year. (b)
1905 ..	22·9	6·6	5·5	4·6	39·1	64·6	27·4	23·3	21·2	130·2
1906 ..	21·5	5·8	5·9	4·5	37·3	62·2	29·4	24·1	22·0	131·2
1907 ..	22·7	6·4	5·7	4·5	38·9	61·8	22·7	18·7	18·1	116·5
1908 ..	21·5	5·4	5·3	4·1	35.9	58·5	23·6	18·6	17·4	113·6
1909 ..	21·7	5·4	4·8	4·2	35.7	56·3	21·4	17·7	17·6	108·8
1910 ..	21·4	5·3	4·5	4·0	34·8	54·1	19·7	16·8	15·9	102·8
1911 ..	21·2	5·6	5·3	4·7	36·4	59·7	28·9	24·4	23·3	129·8

(*a*) Corrected for births in the principal maternity institutions only. (*b*) These rates are based upon the deaths as returned by the Medical Officers of Health of the metropolitan boroughs, and in some cases differ slightly from the similar rates based upon the Registrar-General's returns.

With a view to comparing the rates of mortality from the several groups of diseases in the years 1905–11 the following table has been prepared:—

Year.	All causes. (a)	Measles.	Whooping-cough.	Diarrhœal diseases.	Wasting diseases.	Tuberculous diseases.	Meningitis and convulsions.	Bronchitis.	Pneumonia.	Other causes.
1905	130·2	3·1	4·9	27·2	42·5	6·0	8·8	10·1	11·8	15·8
1906	131·2	3·4	4·0	35·8	40·5	5·7	7·7	8·4	10·7	15·0
1907	116·5	3·3	6·2	14·7	41·0	5·4	6·7	10·6	13·4	15·2
1908	113·6	2·7	3·8	22·0	39·5	5·6	6·2	8·0	11·7	14·1
1909	108·8	4·3	4·5	15·9	40·6	4·6	5·7	8·2	11·4	13·6
1910	102·8	3·4	5.2	13·3	39·4	3·9	5.6	7·3	12·5	12·2
1911	129·8	4·7	3·8	39·7	40·1	4·1	5·5	7·6	11·9	12·4

The following tables, which are based upon the figures in the table on page 10, show the number of survivors at the beginning of each of five periods in the first twelve months of life, and the probability of living through each period, per 100,000 born in the year 1911. For the purpose of comparison, the corresponding figures for the preceding six years are shown.

Age-period. x	Number living at the beginning of each of five periods in the first year of life. l_x						
	1911.	1910.	1909.	1908.	1907.	1906.	1905.
0—1 month	100,000	100,000	100,000	100,000	100,000	100,000	100,000
1—3 months	96,384	96,523	96,458	96,422	96,122	96,292	96,112
3—6 ,, ...	94,074	94,609	94,409	94,179	93,851	93,826	93,587
6—9 ,, ...	91,418	92,761	92,416	91,977	91,760	91,095	91,068
9—12 ,, ...	89,246	91,214	90,826	90,279	90,080	88,926	89,000
0—1 year	**87,249**	**89,779**	**89,286**	**88,718**	**88,500**	**86,993**	**87,163**

Age-period. x	Probability of living through each of five periods in the first year of life. p_x						
	1911.	1910.	1909.	1908.	1907.	1906.	1905.
0—1 month	·96384	·96523	·96458	·96422	·96122	·96292	·96112
1—3 months	·97603	·98017	·97876	·97674	·97637	·97439	·97373
3—6 ,, ...	·97177	·98047	·97889	·97662	·97772	·97089	·97308
6—9 ,, ...	·97624	·98332	·98280	·98154	·98169	·97619	·97729
9—12 ,, ...	·97762	·98427	·98304	·98271	·98246	·97826	·97936
0—1 year	**·87249**	**·89779**	**·89286**	**·88718**	**·88500**	**·86993**	**·87163**

Deaths of infants in London boroughs.

The following table shows the age-distribution of the deaths under one year of age in the several sanitary districts of London:—

Metropolitan borough.	Under 1 Week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Month.	0–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 Year
Paddington	58	17	17	11	103	177	81	63	66	387
Kensington	78	22	11	15	126	192	93	69	81	435
Hammersmith	85	11	15	16	127	207	105	61	61	434
Fulham	89	19	20	18	146	254	108	90	65	517
Chelsea	20	3	11	4	38	63	35	22	19	139
Westminster, City of	54	12	6	6	78	128	48	38	29	243
St. Marylebone	42	10	14	10	76	146	30	43	42	261
Hampstead	26	2	7	4	39	54	15	21	15	105
St. Pancras	106	29	33	27	195	329	114	101	79	623

(*Continued on next page.*)

(a) See footnote (*b*), page 11.

Metropolitan borough.	Under 1 week.	1–2 Weeks.	2–3 Weeks.	3–4 Weeks.	Total under 1 Month.	0–3 Months.	3–6 Months.	6–9 Months.	9–12 Months.	Total under 1 Year.
Islington	170	52	34	37	293	500	201	171	168	1,040
Stoke Newington	14	5	5	7	31	49	20	22	15	106
Hackney	106	35	25	21	187	298	99	131	105	633
Holborn	19	5	1	3	28	42	20	22	20	104
Finsbury	65	24	12	15	116	194	85	69	63	411
London, City of	7	—	—	—	7	10	3	2	4	19
Shoreditch	94	21	17	22	154	252	152	104	90	598
Bethnal Green	85	25	24	27	156	265	141	90	103	599
Stepney	194	44	42	34	314	546	261	225	229	1,261
Poplar	127	28	30	20	205	340	158	149	140	787
Southwark	128	38	35	36	237	386	172	144	121	823
Bermondsey...	84	22	26	11	143	253	141	104	113	611
Lambeth	135	44	38	36	253	422	200	155	128	905
Battersea	94	23	27	22	166	249	108	92	97	546
Wandsworth...	134	29	43	37	243	360	183	138	142	823
Camberwell	117	44	25	25	211	322	158	118	137	735
Deptford	71	14	21	16	122	193	98	68	69	428
Greenwich	48	9	13	8	78	132	72	57	45	306
Lewisham	67	20	12	5	104	171	81	65	40	357
Woolwich	62	10	7	13	92	135	53	51	34	273
London	**2,374**	**617**	**571**	**506**	**4,068**	**6,669**	**3,035**	**2,485**	**2,320**	**14,509**

With a view to the consideration of the effect of "social condition" (*a*) on the rates of infantile mortality at different periods during the first year of life, the following table has been prepared, in which the rates of infantile mortality obtaining for groups of districts can be compared :—

Infantile mortality and "social condition," 1911.

Infantile mortality in relation to "social condition"—1911.

Age-period.	Group of boroughs in order of "social condition."				
	I.	II.	III.	IV.	V.
Under 1 week	20·3	20·2	20·3	22·1	22·6
1–2 weeks	4·5	5·0	5·8	5·3	5·9
2–3 ,,	3·9	5·2	4·7	5·6	5·3
3–4 ,,	1·8	4·6	4·3	5·0	4·8
Under 1 month	30·5	35·0	35·1	38·0	38·6
0–3 months	47·7	54·7	58·0	61·7	66·0
3–6 ,,	20·1	27.0	24·4	26·5	34·1
6–9 ,,	17·9	21·3	20·5	22·7	25·9
9–12 ,,	12·0	21·2	19·2	19·8	26·1
0–12 months	**97·7**	**124·2**	**122·1**	**130·7**	**152·1**

The foregoing table shews that there is a marked difference in the mortality among children under one year of age when the extreme groups of districts are compared. This agrees with the figures in corresponding tables published in previous annual reports. If the figures for each of the trimesters are considered in this connection, it will be seen that the same behaviour of the mortality is observable. This will be better appreciated by reference to the following table, in which the mortality of the group of districts of relatively highest "social condition" is taken as 100 :—

Number of group of boroughs in order of "social condition."	Comparative mortality—Group I. taken as 100.									
	Children aged 0–3 months.		Children aged 3–6 months.		Children aged 6–9 months.		Children aged 9–12 months.		Children under 1 year.	
	1905-10.	1911.	1905-10.	1911.	1905-10.	1911.	1905-10.	1911.	1905-10.	1911.
I.	100	100	100	100	100	100	100	100	100	100
II.	114	115	128	134	149	119	162	177	126	127
III.	119	122	134	121	159	115	179	160	133	125
IV.	124	129	146	132	175	127	190	165	141	134
V.	129	138	175	169	207	145	238	218	159	156

(*a*) The standard adopted throughout this report for determining the "social condition" of a borough is the percentage of all children between the ages of 5 and 14 scheduled in the borough by the Council for education purposes in the years 1905-7. The scheduling of children for this purpose is conducted annually by the Council, and the question whether or not a child is to be scheduled depends upon various circumstances which, it is thought, taken together, form a general measure of "social condition."

The County has been divided into five groups of different grades of "social condition." Group I. contains all boroughs in which less than 82 per cent. of the children aged 5—14 were scheduled; Group II., 82 to 87 per cent.; Group III., 87 to 92 per cent.; Group IV., 92 to 97 per cent.; Group V., 97 per cent. and over.

The figures for the period 1905–10 show that in each successive trimester of the first year of life the difference in the mortality obtaining for the several groups of districts becomes generally more pronounced. The figures for 1911, although not so consistent, are in general agreement with those for the period 1905–10.

Principal Epidemic Diseases.

The number of deaths in the Administrative County of London from the principal epidemic diseases, viz., smallpox, measles, scarlet fever, diphtheria, whooping-cough, and enteric fever during 1911 (52 weeks) was 4,545, giving an annual death-rate of 1.01 per 1,000 persons living.

The death-rates in successive periods, including typhus and pyrexia, have been as follows :—

Period.	Death-rate per 1,000 persons living.	Period.	Death-rate per 1,000 persons living.
1841–1850	3·74	1902	1·69*a*
1851–1860	3·59	1903	1·14*a*
1861–1870	3·95	1904	1·14*a*
1871–1880	2·87	1905	1·00*a*
1881–1890	2·26	1906	1·02*a*
1891–1900	1·90*a*	1907	1·15*a*
1901–1910	1·14*a*	1908	0·87*a*
		1909	1·04*a*
1901	1·37*a*	1910	0·93*a*
		1911	1·01*ab*

It will be seen from the following table that in the quinquennium 1906–10, London had a lower death-rate from the above diseases than any of the undermentioned English towns, except Leeds, Bristol, Bradford, Nottingham, and Leicester, and in 1911 had a lower death-rate than any except Manchester, Leeds, Bradford, Nottingham, Salford, Portsmouth, and Leicester.

Epidemic diseases in large English towns.

Town.	1906–10.	1911. (*b*)	Town.	1906–10.	1911. (*b*)
London	**0·99***a*	**1·01***a*	Bradford	0.80	0·72
Greater London	0·92	0·93	Hull	1.04	1·08
Liverpool	1·52	1·11	Newcastle-on-Tyne	1.07	1·18
Manchester	1·38	0·92	Nottingham	0.91	0·78
Birmingham	1·26	1·06	Stoke-on-Trent	1.44	1.46
Sheffield	1·23	2·11	Portsmouth	1·02	0.80
Leeds	0·97	1·00	Salford	1·82	0.98
Bristol	0·71	1·05	Leicester	0·88	0.67
West Ham	1·46	1·30			

The following table shows that the London death-rate from six of these principal epidemic diseases viz., smallpox, measles, scarlet fever, diphtheria (including croup), whooping-cough and enteric fever was, in the quinquennium 1906–10, higher than the death-rate of all the under-mentioned foreign towns, except St. Petersburg and New York, and in 1911 was higher than that of all except St. Petersburg :—

Epidemic diseases in foreign towns.

Town.	1906–10.	1911.	Town.	1906–10.	1911.
London	**1·00***a*	**1·01***a*	St. Petersburg	3.07	1.81
Paris	0.54	0.63	Berlin	0.83	0.95
Brussels	0.52	0.36	Vienna	0.75	0.43
Amsterdam	0·72	0.66	New York	1.01	0.73
Copenhagen	0.65	0.74			
Stockholm	0.64	0.32			

(*a*) See footnote (*c*), page 2. (*b*) Excluding Typhus and Pyrexia.

Diagram E.

Smallpox.

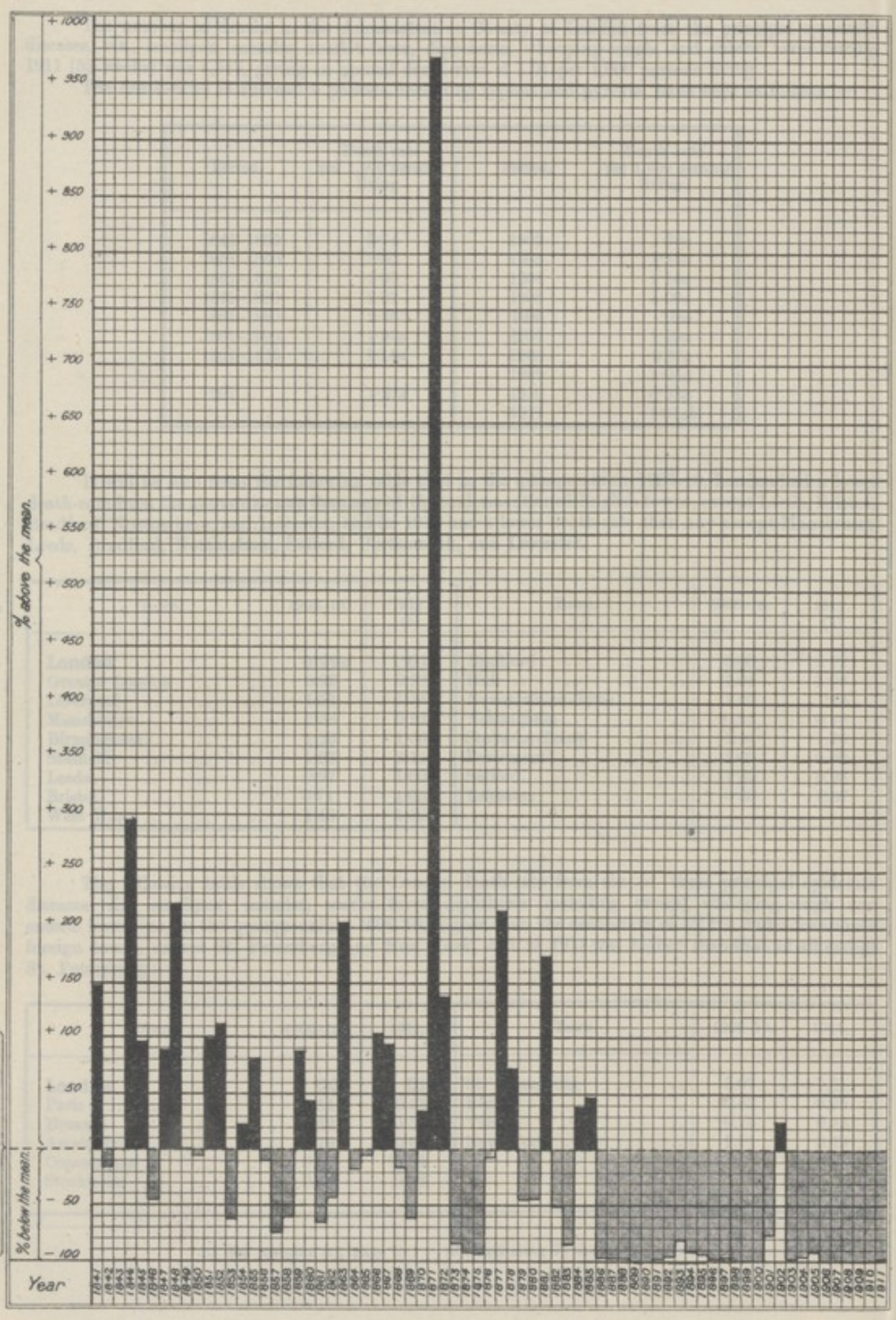
The following table shows the deaths from Smallpox and epidemic diseases, excluding pyrexia and diarrhœa and enteritis, and the death-rates per 1,000 persons living in each of the sanitary districts of the County in 1911, and the death-rates for the period 1906–10:—

Metropolitan borough.	Deaths, 1911 (52 weeks).	Death-rate per 1,000 persons living.	
		1906–10.	1911.

Deaths from epidemic diseases in London boroughs.

Diagram E.

Smallpox.



The following table shows the deaths from the principal epidemic diseases, excluding pyrexia and diarrhœa and enteritis, and the death-rates per 1,000 persons living in each of the sanitary districts of the County in 1911, and the death-rates for the period 1906–10 :—

Deaths from epidemic diseases in London boroughs.

Metropolitan borough.	Deaths, 1911 (52 weeks).	Death-rate per 1,000 persons living.	
		1906–10.	1911.
Paddington	111	0·70	0·79
Kensington	172	0·70	0·99
Hammersmith	111	1·01	0·92
Fulham	134	1·13	0·88
Chelsea	46	0·94	0·70
Westminster, City of ..	70	0·43	0·44
St. Marylebone	108	0· 1	0·92
Hampstead	36	0·40	0·42
St. Pancras	219	0·99	1·01
Islington	284	0·99	0·87
Stoke Newington	53	0·62	1·05
Hackney	245	0·81	1·11
Holborn	27	0·80	0·55
Finsbury	134	1·69	1·52
London, City of	4	0·50	0·20
Shoreditch	191	1·72	1·72
Bethnal Green	208	1·42	1·62
Stepney	404	1·43	1·46
Poplar	339	1·47	2·09
Southwark	225	1·33	1·19
Bermondsey	129	1·69	1·03
Lambeth	242	0·88	0·82
Battersea	175	1·01	1·05
Wandsworth	352	0·70	1·13
Camberwell	194	0·94	0·75
Deptford	130	1·20	1·19
Greenwich	77	1·08	0·81
Lewisham	77	0·62	0·47
Woolwich	48	0·81	0·39
London	**4,545**	**0·99**	**1·01**

It will be seen from the foregoing table that the death-rate from these diseases in the period 1906–10 was highest in Shoreditch (1.72) and lowest in Hampstead (0.40), and in 1911 was highest in Poplar (2.09) and lowest in the City of London (0.20). The death-rates from these diseases during each of the four quarters of the year were as follows : First quarter, 2·00 ; second quarter, 1·03 ; third quarter, 0·48 ; and fourth quarter, 0·46 per 1,000 persons living.

Smallpox and Vaccination.

Sixty-three cases of smallpox are known to have occurred in the Administrative County of London during the year 1911, of which 9 were fatal.

The death-rates from smallpox in successive periods have been as follows :—

Period.	Death-rate per 1,000 persons living.	Period.	Death-rate per 1,000 persons living.
1841–1850	0·402	1903	0·003*a*
1851–1860	0·280	1904	0·006*a*
1861–1870	0·276	1905	0·002*a*
1871–1880	0·457	1906	—
1881–1890	0·142	1907	—
1891–1900	0·009*a*	1908	—
1901–1910	0·035*a*	1909	0·000*a*
		1910	—
1901	0·051*a*	1911	0·002*a*
1902	0·285*a*		

The smallpox death-rate in each year since 1840 in relation to the mean death-rate during the period 1841–1911 is shown in diagram (E).

(*a*) See footnote (c), page 2.

During the complete years in which the notification of infectious diseases has been obligatory, the number of cases of smallpox (uncorrected for errors in diagnosis) notified to the medical officers of health in the various sanitary districts comprised in the Administrative County has been as follows :—

Year.	Cases of smallpox notified.	Case-rate per 1,000 persons living.
1890 ...	60	0·014
1891 ...	114	0·027
1892 ...	425	0·100
1893 ...	2,815	0·653
1894 ...	1,193	0·274
1895 ...	980	0·223
1896 ...	225	0·050
1897 ...	104	0·023
1898 ...	33	0·007
1899 ...	29	0·006
1900 ...	86	0·019
1901 ...	1,700	0·375
1902 ...	7,796	1·683
1903 ...	416	0·091
1904 ...	489	0·107
1905 ...	74	0·016
1906 ...	31	0·007
1907 ...	8	0·002
1908 ...	4	0·001
1909 ...	21	0·005
1910 ...	7	0·002
1911 ...	72	0·016

It will be seen from the following table that in the quinquennium 1906–10 only two of the under mentioned towns, namely, Bristol and Hull, had a rate of 0·01 per 1,000, and that in 1911, deaths occurred in London and Birmingham only.

Smallpox death-rates in large English towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**0·00** *a*	**0·00** *a*	Bradford	—	—
Greater London	0·00	0·00	Hull	0·01	—
Liverpool	0·00	—	Newcastle-on-Tyne ..	0·00	—
Manchester	—	—	Nottingham	0·00	—
Birmingham	—	0·00	Stoke-on-Trent	—	—
Sheffield	0·00	—	Portsmouth	—	—
Leeds	—	—	Salford	—	—
Bristol	0·01	—	Leicester	—	—
West Ham	—	—			

The following table shows that of the undermentioned towns, Paris, St. Petersburg and Vienna are the only towns which had an appreciable death-rate from smallpox during the last six years :—

Smallpox death-rates in foreign towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**0·00***a*	**0·00***a*	Stockholm	—	—
Paris	0·01	0·00	St. Petersburg	0·12	0·09
Brussels	0·00	—	Berlin	0·00	0·00
Amsterdam	—	—	Vienna	0·00	—
Copenhagen	—	—	New York	0·00	0·00

Smallpox in London.

Of the 72 cases of smallpox notified in London during 1911, 63 occurred during February and March. Forty of these cases occurred in Stepney, where the outbreak originated. In his annual report, Dr. Thomas mentions that the first case was that of an out-patient of the London Hospital, who was on February 5th removed to the Mile End Infirmary, suffering from an illness accompanied by a rash. She was accommodated in a general ward, where there were 60 women and children, but the true nature of the ailment was not discovered until February 20th, when two other patients in the ward presented symptoms of smallpox. The next day four other patients were removed to the smallpox hospital, two of them being from the same ward, and on each day until February 28th, fresh cases were removed from the Infirmary, most of them from the infected ward. Dr. Thomas states that his inquiries into the outbreak suggest, as the

(*a*) See footnote (*c*), page 2.

probable origin of the disease in Stepney, several cases of unrecognised illness, accompanied by a rash occurring among the members of a family which had been visited by the first patient, who, as above stated, afterwards attended the London Hospital.

On the 23rd February, a widow, a scrubber at the Mile End Infirmary, residing in Poplar, was removed to hospital suffering from smallpox. On March 7th, a child was removed from a house in Eglinton Road, Bow, followed by a group of connected cases, but there was no evidence of association with the infirmary case. Three cases attributed to infection from the Stepney outbreak occurred in Hackney, and two cases in Shoreditch were probably infected as the result of a visit to the home of one of the Hackney cases. A third case in Shoreditch could not be connected with any other case. A youth living in Westminster, but working in Stepney, was also attacked. He had, however, only been employed there for a week before he contracted the disease, and did not work in the same premises as any of the Stepney patients. Three sporadic cases occurred in Bethnal Green, and several others in boroughs so far removed as Paddington, Camberwell and Deptford.

The following table shows the proportion of children born in each year who were not finally accounted for in respect of vaccination.

Vaccination returns.

Year	Children not finally accounted for (including cases postponed) per cent. of total births.	Year.	Children not finally accounted for (including cases postponed) per cent. of total births.
1872	8·8	1892	18·4
1873	8·7	1893	18·2
1874	8·8	1894	20·6
1875	9·3	1895	24·9
1876	6·5	1896	26·4
1877	7·1	1897	29·1
1878	7·1	1898	33·0
1879	7·8	1899	27·7
1880	7·0	1900	25·8
1881	5·7	1901	24·1
1882	6·6	1902	21·3
1883	6·5	1903	20·7
1884	6·8	1904	19·1
1885	7·0	1905	18·9
1886	7·8	1906	21·2
1887	9·0	1907	22·7
1888	10·3	1908	21·5
1889	11·6	1909	20·6
1890	13·9	1910	20·5
1891	16·4		

The percentage of children born who were exempted by "conscientious objection" certificates since and including 1898 has been as follows:—1898, 1·4; 1899, 1·0; 1900, 1·0; 1901, 1·1; 1902, 0·8; 1903, 1·0; 1904, 1·1; 1905, 1·2; 1906, 1·5; 1907, 3·1; 1908, 7·3; 1909, 10·1; 1910, 13·6.

During these years, the proportion of children exempted by certificate of conscientious objection, together with the proportion of children not finally accounted for in the several Unions, has been as follows:—

Number of children unaccounted for as regards vaccination per cent. of total births.

Metropolitan Union.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Bermondsey ..	32·5	23·6	21·8	18·0	17·5	16·3	16·6	15·7	17·2	18·0	18·1	20·0	22·3
Bethnal Green ..	67·0	48·2	49·2	52·2	44·1	44·9	42·8	42·0	48·3	55·1	56·8	50·6	56·8
Camberwell ..	41·2	29·7	23·0	20·0	21·4	21·8	23·6	23·4	26·8	34·0	37·3	40·5	45·3
Chelsea	17·3	14·9	16·0	13·4	14·9	13·9	10·0	8·9	13·0	14·3	16·9	19·8	19·3
Fulham	15·4	12·6	13·7	12·0	11·8	12·7	11·5	10·8	14·6	18·1	19·3	21·8	23·5
George's, St., Hanover-square	11·1	9·0	7·1	5·8	7·5	5·1	4·9	4·4	4·3	7·2	8·4	10·3	11·8
George, St., in-the-East	34·6	35·0	33·5	30·6	29·7	27·7	15·7	17·3	16·8	17·7	15·6	18·3	19·6
Giles, St., and St. George	32·5	33·0	33·6	30·7	27·1	24·9	17·9	20·4	20·8	28·1	26·9	31·5	30·8
Greenwich ..	17·2	14·2	13·8	12·6	11·1	11·1	10·4	9·7	9·8	13·1	16·5	19·1	21·4
Hackney	49·0	38·6	40·4	38·5	26·1	25·5	26·9	28·2	36·8	33·2	34·4	39·0	43·8
Hammersmith ..	13·8	11·7	9·1	8·3	9·4	7·2	7·4	8·0	10·1	13·1	18·8	19·2	22·1
Hampstead ..	15·4	10·3	11·0	10·0	9·2	9·5	9·2	9·2	10·4	12·3	15·1	17·0	22·5
Holborn	43·8	31·8	28·5	27·6	23·2	20·7	20·4	20·6	24·5	26·7	29·3	31·8	34·2
Islington	31·1	29·2	26·2	21·6	17·7	17·0	15·9	17·5	18·2	21·2	25·2	27·1	30·8

(*Continued on next page.*)

Metropolitan Union.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Kensington ..	13·5	10·2	9·2	9·0	7·2	6·6	6·6	5·5	7·2	8·0	9·4	11·0	13·8
Lambeth	30·6	25·2	20·6	22·2	20·4	21·0	16·9	17·3	19·6	23·4	27·8	32·6	34·6
Lewisham.. ..	27·8	22·6	20·7	15·7	13·5	15·4	14·0	13·8	16·2	21·4	26·3	29·4	33·9
London, City of..	25·4	18·3	14·2	11·3	11·3	11·8	13·0	15·3	16·8	17·5	18·2	18·2	22·0
Marylebone, St. ..	18·0	20·9	17·7	14·6	12·5	10·8	10·4	10·8	12·1	12·7	12·9	14·5	15·7
Mile End Old Town	68·9	69·9	68·0	66·1	58·8	59·8	47·3	47·1	48·4	52·3	53·9	51·8	51·1
Paddington ..	14·7	14·6	13·5	11·0	10·1	11·7	12·7	13·3	13·3	15·5	16·2	15·7	20·1
Pancras, St. ..	36·7	36·1	32·9	32·8	26·2	25·3	23·1	22·1	26·0	31·1	31·1	36·8	41·9
Poplar	63·6	50·1	49·0	49·1	44·2	46·9	45·4	45·3	49·3	53·9	55·1	53·3	57·6
Shoreditch ..	68·8	52·4	53·0	44·7	36·4	36·6	34·8	36·7	33·3	33·3	39·2	42·4	47·0
Southwark ..	32·6	30·3	27·6	26·8	25·4	24·9	24·3	24·2	28·4	31·1	32·0	34·3	37·0
Stepney	48·6	46·9	44·4	44·3	37·2	35·8	32·9	32·9	32·9	38·1	50·6	51·3	56·6
Strand	25·2	19·7	19·2	16·1	19·0	18·6	15·0	11·8	11·7	14·2	24·9	21·4	26·3
Wandsworth ..	32·2	25·1	23·0	20·5	19·2	17·2	16·3	14·8	18·0	22·8	28·2	30·1	34·5
Westminster ..	17·4	14·8	12·2	13·3	13·4	12·1	11·0	8·2	9·4	10·1	12·5	13·4	17.2
Whitechapel ..	11·8	14·5	13·1	10·5	9·5	10·1	9·1	10·6	11·5	14·1	17·1	15·9	18·8
Woolwich.. ..	10·2	8·3	7·5	9·8	9·7	7·1	7·2	6·6	9·3	15·0	23·2	23·9	28·8
London	**34·4**	**28·7**	**26·8**	**25·2**	**22·1**	**21·7**	**20·2**	**20·1**	**22·7**	**25·8**	**28·8**	**30·7**	**34·1**

The above table shows increase since 1905 in the proportion of children born who are remaining unvaccinated.

Measles.

The deaths from measles in the Administrative County of London during 1911 (52 weeks) numbered 2,570, as compared with 1,980 in 1910 (52 weeks).

The death-rates from this disease per 1,000 persons living in 1911 and preceding periods have been as follows :—

Period.	Death-rate per 1,000 persons living.	Period.	Death-rate per 1,000 persons living.
1841–1850 ...	0·62	1903... ...	0·45*a*
1851–1860 ...	0·53	1904... ...	0·50*a*
1861–1870 ...	0·58	1905... ...	0·38*a*
1871–1880 ...	0·51	1906... ...	0·42*a*
1881–1890 ...	0·64	1907... ...	0·40*a*
1891-1900 ...	0·58*a*	1908... ...	0·33*a*
1901–1910 ...	0·44*a*	1909... ...	0·51*a*
1901... ...	0·43*a*	1910... ...	0·44*a*
1902... ...	0·51*a*	1911.. ..	0·57*a*

Inasmuch as the birth-rate has not been constant during these periods and the proportion of population in the early years of life has probably diminished in recent years, the death-rate of children under five years of age deserves to be stated. The following table shows the death-rate from measles of children at this age in successive periods :—

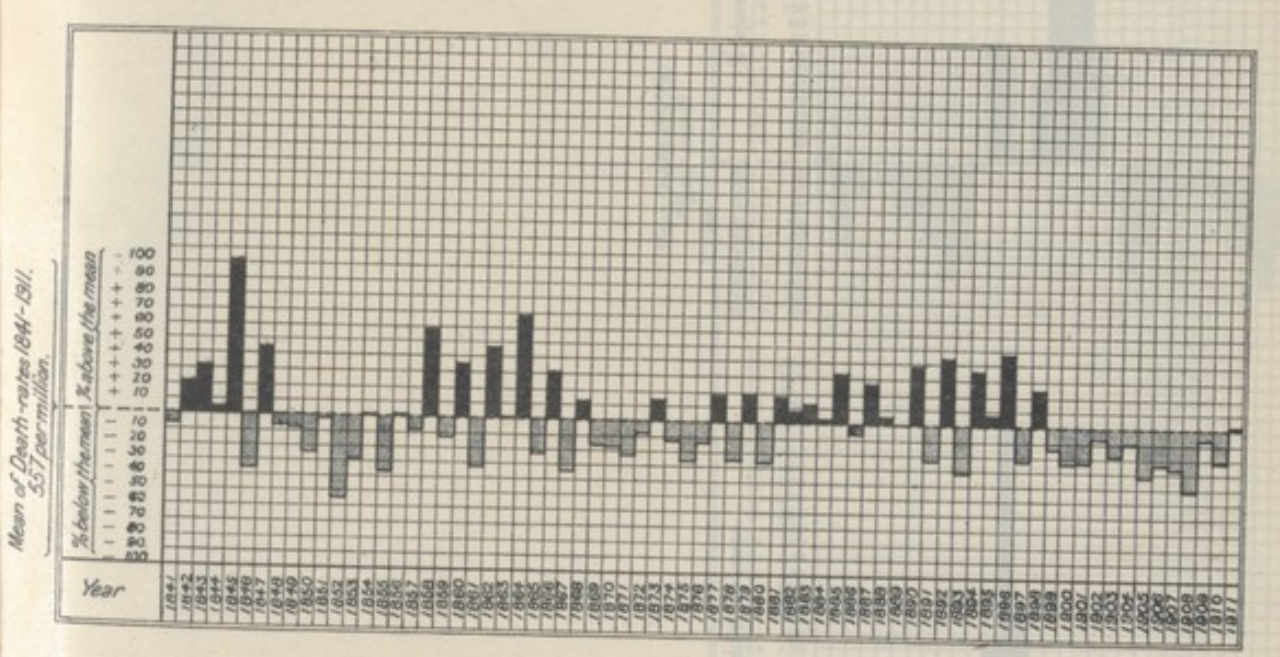
Mortality among children at ages 0—5.

Period.	Death-rate per 1,000 children living at ages 0—5.	Period.	Death-rate per 1,000 children living at ages 0—5.
1851–1860	3·89	1903 ...	4·02 *a*
1861–1870	4·18	1904 ...	4·49 *a*
1871–1880	3·65	1905 ...	3·38 *a*
1881–1890	4·74	1906 ...	3·83 *a*
1891–1900	4·82 *a*	1907 ...	3·58 *a*
1901–1910	3·92 *a*	1908 ...	3·00 *a*
		1909 ...	4·73 *a*
1901	3·71 *a*	1910 ...	4·00 *a*
1902	4·49 *a*	1911	5·18 *a*

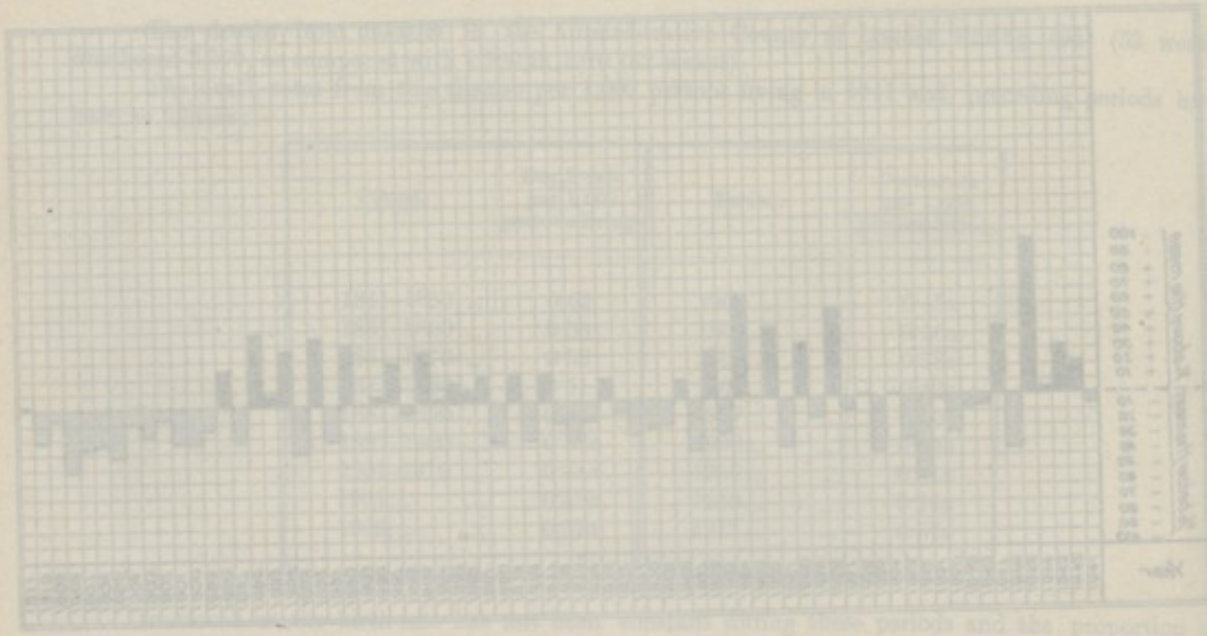
(*a*) See footnote (*c*), page 2.

Diagram F.

—Measles—



Metropolitan Boros.	1895.	1896.	1897.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.
Kensington ...	13·9	10·4	9·4	9·0	7·2	6·6	6·6	6·5	7·2	8·0	9·4	11·0	10
Lambeth ...	30·4	25·4	20·6	22·2	20·3	21·0	16·9	17·3	18·1	23·4	22·6	23·6	20
Lewisham ...	27·1	23·6	20·7	15·1	15·5	15·4	14·0	13·8	16·2	21·4	20·3	20·4	20
London, City of...	20·4	19·3	14·2	11·7	11·3	11·6	13·0	15·2	14·8	17·9	18·2	14·3	15
Marylebone, St. ...	19·0	20·9	17·7	11·9	12·3	10·8	10·3	10·8	12·1	13·7	12·9	11·5	10
Mile End Old Town	34·9	32·9	26·9	26·1	26·8	30·6	27·3	27·1	25·4	32·3	30·9	31·6	31
Paddington ...	13·7	11·6	13·5	11·0	10·1	11·7	12·1	12·5	14·7	16·1	16·3	15·7	16
Poplar, St. ...	30·7	30·1	32·3	32·8	28·3	29·6	32·1	32·1	30·6	31·1	31·4	30·8	31
Poplar	43·6	36·1	40·6	40·1	34·2	46·9	43·4	48·3	46·4	53·9	50·1	50·2	47
Shoreditch ...	37·8	33·4	32·9	34·7	36·4	36·0	34·8	35·7	33·3	35·2	39·2	42·4	41
Southwark ...	32·6	26·3	21·4	26·8	23·4	24·9	24·3	24·2	26·4	31·1	32·0	31·3	30
Stepney	40·6	46·9	44·4	46·3	37·3	39·6	39·6	39·9	39·1	39·6	51·5	36·7	36
Strand	20·2	19·7	19·3	16·7	19·0	19·6	16·0	11·9	14·7	14·2	24·9	21·4	20
Wandsworth ...	32·2	35·1	31·0	30·5	29·2	17·3	16·3	14·8	16·0	22·8	28·2	30·1	24
Westminster ...	17·4	14·8	12·3	15·3	13·4	12·1	11·0	9·3	9·4	10·1	12·3	13·4	12
Whitechapel ...	14·8	14·5	13·1	10·5	9·8	10·1	9·1	10·3	11·8	14·1	17·1	15·9	16
Westrich... ...	10·3	6·3	7·1	7·1	7·1	7·2	6·6	9·3	10·0	20·2	23·9	9·8	9
London ...	24·4	23·7	23·1	22·7	21·7	20·2	20·1	22·7	23·3	28·6	30·7	24·1	24



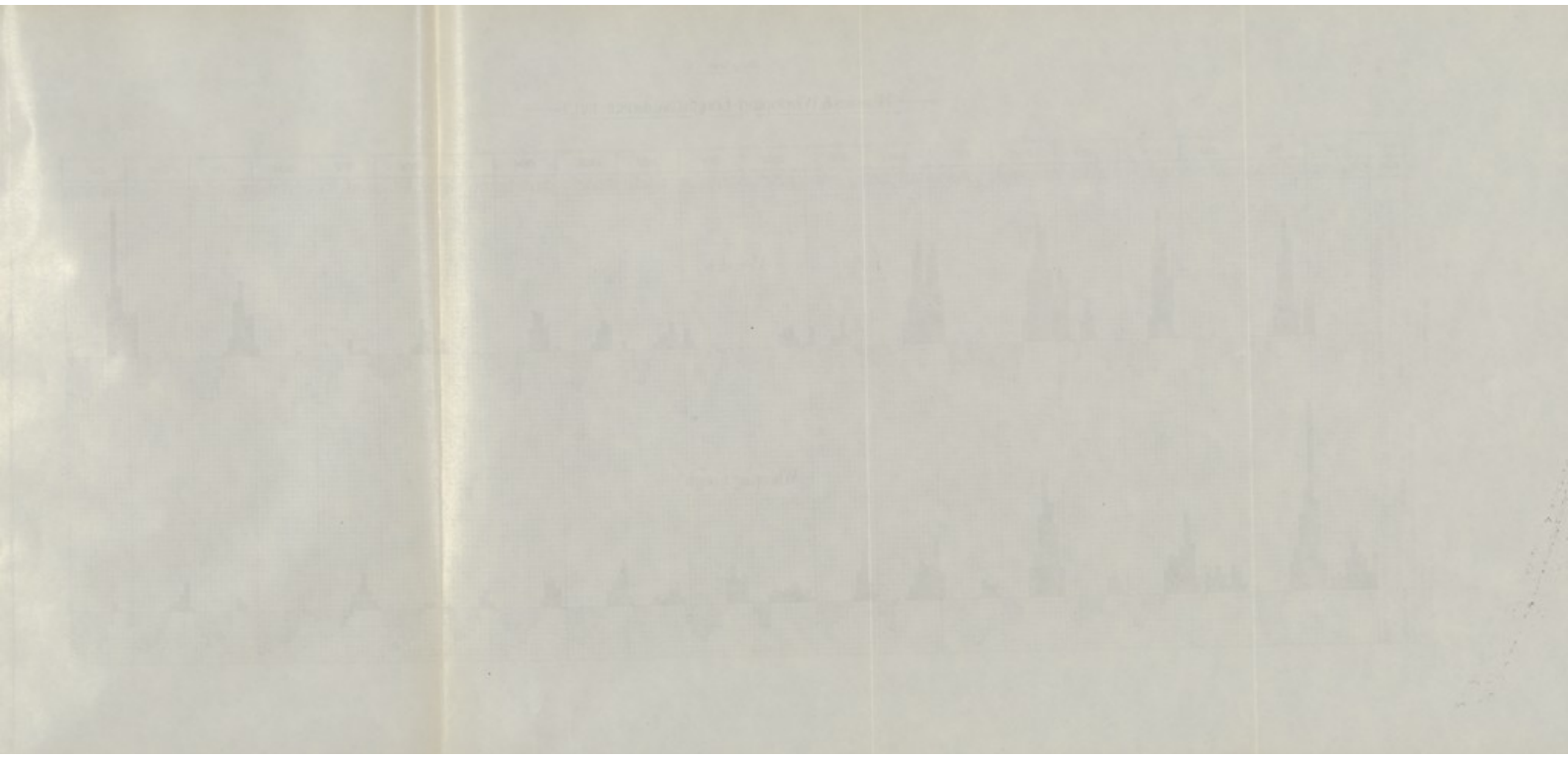
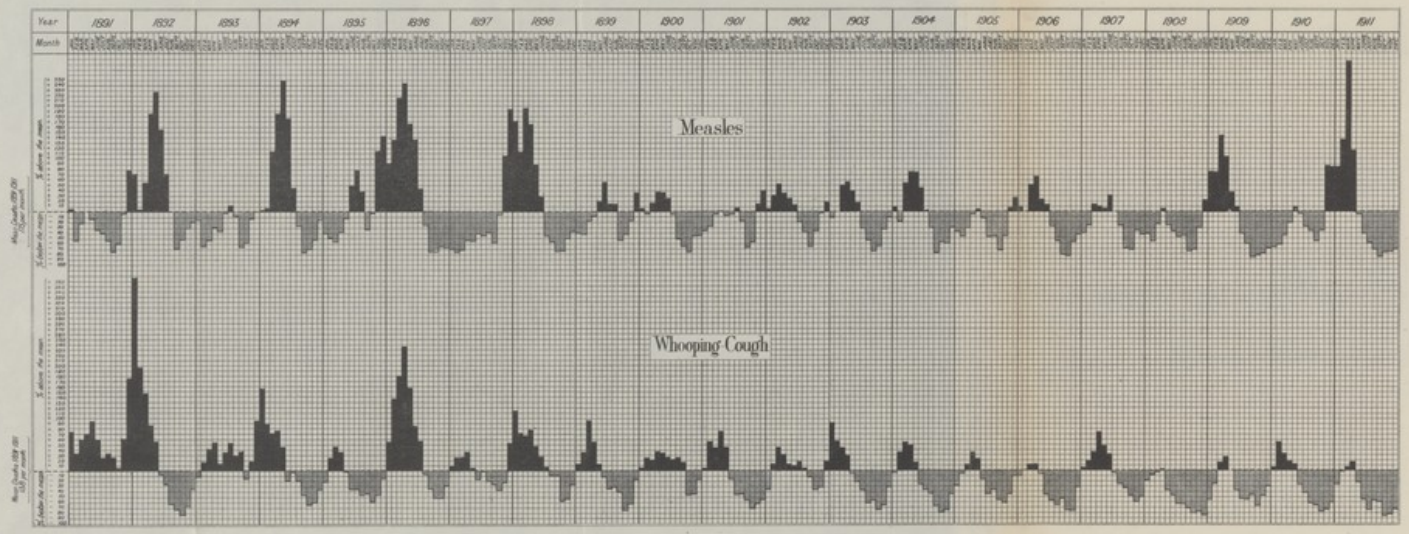


Diagram G.

——Measles & Whooping-Cough (Deaths 1891–1911.)——



The death-rate in each year since 1840 in relation to the mean death-rate of the period 1841–1911, calculated on the population at all ages, is shown in diagram (F). The monthly deaths from measles in relation to the mean of the period 1891-1911 is shown in diagram (G).

The following table shows the deaths and death-rates from measles in 1911 (52 weeks) in each of the sanitary districts of the County :—

Deaths from measles in London boroughs.

Metropolitan borough.	Deaths, 1911 (52 weeks).	Death-rate per 1,000 persons living.	
		1906-10.	1911.
Paddington	48	0·27	0·34
Kensington	94	0·30	0·55
Hammersmith	36	0·46	0·30
Fulham	64	0·45	0·42
Chelsea	30	0·45	0·45
Westminster, City of ..	23	0·13	0·14
St. Marylebone	66	0·25	0·56
Hampstead	14	0·13	0·16
St. Pancras	108	0·43	0·50
Islington	130	0·47	0·40
Stoke Newington	28	0·19	0·55
Hackney	148	0·29	0·67
Holborn	15	0·29	0·31
Finsbury	79	0·80	0·90
London, City of	1	0·12	0·05
Shoreditch	128	0·81	1·15
Bethnal Green	130	0·58	1·02
Stepney	303	0·65	1·09
Poplar	225	0·59	1·39
Southwark	120	0·65	0·63
Bermondsey	55	0·94	0·44
Lambeth	112	0·34	0·38
Battersea	112	0·38	0·67
Wandsworth	230	0·23	0·74
Camberwell	112	0·40	0·43
Deptford	69	0·51	0·63
Greenwich	41	0·40	0·43
Lewisham	21	0·14	0·13
Woolwich	28	0·31	0·23
London	**2,570**	**0·42**	**0·57**

In the distribution of measles mortality throughout the year 1911, the highest death-rates obtained in Poplar (1·39) and the lowest in the City of London (0·05). For the period of 1906–10, Bermondsey (0·94) had the highest measles death-rate, and the City of London (0·12) the lowest. The death-rates from this disease in London in each of the four quarters of the year 1911 were as follows: first quarter, 1·40; second quarter, 0·61; third quarter, 0·14; and fourth quarter, 0·12 per 1,000 persons living.

The following table shows the measles death-rate (*a*) at ages 0–5 obtaining in the several sanitary districts of the County of London during the year 1911.

Measles death rates in London boroughs. Ages 0—5.

Metropolitan borough.	Death-rate per 1,000 children living aged 0–5, 1911.	Metropolitan borough.	Death-rate per 1,000 children living aged 0–5, 1911.	Metropolitan borough.	Death-rate per 1,000 children living aged 0–5, 1911.
Paddington ..	3·91	Stoke Newington ..	5·17	Bermondsey	3·18
Kensington	6·72	Hackney	5·87	Lambeth	3·53
Hammersmith ..	2·62	Holborn	3·99	Battersea	5·58
Fulham	3·52	Finsbury	7·97	Wandsworth ..	6·27
Chelsea	5·31	London, City of ..	1·04	Camberwell	3·50
Westminster, City of	2·16	Shoreditch	8·79	Deptford	4·96
St. Marylebone ..	6·99	Bethnal Green ..	7·60	Greenwich	3·43
Hampstead	1·90	Stepney	7·83	Lewisham	1·11
St. Pancras ..	4·79	Poplar	10·23	Woolwich	2·10
Islington	3·62	Southwark	5·10	**London .. ..**	5·09

(*a*) See footnote (*b*) page 11.

The following table shows the measles mortality under five years of age in five groups of districts, arranged in order of "social condition."(*a*) The figures show that there is marked parallelism between measles mortality and "social condition":—

Measles mortality in relation to "social condition" 1901-10 and 1911.

Number of group of boroughs in "order of social condition." (*a*)	Measles death-rate at ages 0–5 per 1,000 living	
	1901–10. (*b*)	1911 (*c*)
I.	1·61	1·31
II.	3·13	5·39
III.	3·56	4·00
IV.	4·28	5·41
V.	5·14	7·15

If the London measles death-rate be compared with the death-rates of the following large English towns, it will be seen that in the quinquennium 1906–10, the London death-rate was exceeded by the death-rates of Liverpool, Manchester, Birmingham, Sheffield, West Ham, Stoke on-Trent, and Salford and in the year 1911 exceeded that of all except Birmingham, Sheffield and West Ham.

Measles death-rates in large English towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**0·42***b*	**0·57***b*	Bradford	0·29	0·04
Greater London	0·36	0·51	Hull	0·37	0·36
Liverpool	0·55	0·42	Newcastle-on-Tyne	0·40	0·47
Manchester	0·54	0·47	Nottingham	0·34	0·37
Birmingham	0·44	0·57	Stoke-on-Trent	0·51	0·40
Sheffield	0·50	1·74	Portsmouth	0·33	0·12
Leeds	0·36	0·18	Salford	0·64	0·42
Bristol	0·22	0·46	Leicester	0·39	0·31
West Ham	0·58	0·79			

The following table shows that the London measles death-rate, in the quinquennium 1906–10, and in the year 1911 was higher than that of any of the undermentioned foreign towns except St. Petersburg.

Measles death-rates in foreign towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**0·42***b*	**0·57***b*	Stockholm	0·13	0·01
Paris	0·20	0·28	St. Petersburg	0·94	0·64
Brussels	0·16	0·11	Berlin	0·18	0·09
Amsterdam	0·32	0·29	Vienna	0·33	0·16
Copenhagen	0·15	0·09	New York	0·21	0·13

Medical officers of health derive their information as to the occurrence of cases of measles mainly from the teachers of elementary schools. The majority of the annual reports show the number of cases of this disease concerning which the medical officers of health received intimation.

The age distribution of the cases made known to the medical officer of health is shown in the reports relating to Paddington and Stepney. In the latter district, however, the analysis does not cover all the reported cases, but only those coming to the knowledge of the medical officer of health during the period of compulsory notification in this borough from May 6th to the 2nd December, 1911.

Metropolitan borough.	0—	1—	2—	3—	4—	5—	13—	15—
Paddington	82	141	146	139	176	529	16	52
Stepney	207	384	290	330	281	180	147	

(*a*) See footnote (*a*) page 13. (*b*) See footnote (*c*) page 2. (*c*) See footnote (*b*) page 11.

The medical officer of health of Paddington shows the number of houses in which there occurred during the year more than one case of measles and the medical officer of health of Stepney gives similar information for a limited period.

Metropolitan Borough.	Number of houses in which one or more cases occurred.								
	One case.	Two cases.	Three cases.	Four cases.	Five cases.	Six cases.	Seven cases.	Eight cases	Nine cases.
Paddington ..	377	196	97	36	13	2	—	—	—
*Stepney	323	47	17	4	—	—	—	—	—

One of the main difficulties in the way of reducing the mortality from measles is the fact that parents so frequently fail to realise the serious nature of the disease. The measures referred to in the reports which have been adopted for the prevention of the spread of measles have, for the most part been limited to the exclusion of affected children and contacts from school, though uniformity of procedure in this respect is far from being established. In recent years, however, the services of women sanitary inspectors, health visitors, and voluntary workers, have rendered possible the observance of precautionary measures, both at home and at school, in a way not hitherto attainable, and it may be anticipated that in the course of time, the educative effect of the visits of these officers will be more widely felt.

At the time of the exceptional prevalence of measles in the early part of 1911, and with a view to devising improved methods of dealing with the disease a conference of London medical officers was held on the 13th March at the offices of the Local Government Board. As a result of this conference, the Board, on the 10th April, issued the following advice in the form of a circular letter.

"I am directed by the Local Government Board to state that they have had under consideration the present outbreak of measles in London, and that on the suggestion of the President their medical officer has conferred with the medical officers of the London County Council and of the various borough councils as to the measures which may be taken for dealing with it.

At the conference the view was generally expressed that Sanitary Authorities have been hampered in their efforts to check the spread of the disease by the absence of early information of cases, and the question was considered whether this difficulty would be removed if measles were made a notifiable disease.

On this question widely divergent views as to the value of notification were shown to exist. A very large number of cases are not attended by a doctor, and it was pointed out that in such cases the adoption of the Notification Act would be a dead letter.

It may also be observed that the notification of measles has been tried in a large number of towns and then abandoned.

Without, therefore, expressing any view on the question whether the notification of measles would be justified, it is clear that such other means of obtaining information as are available should be fully utilised.

The Board find that the School Attendance Department of the London Education Authority have supplied much valuable information as regards measles in the past, and in view of the proceedings at the conference, it appeared to the Board that it might be practicable to arrange that this source of information should be made more readily available.

On this question the Board have consulted the Board of Education, and it has now been arranged that so long as the present emergency lasts, the school attendance officers will give speedy information to the medical officers of Health of all cases of illness coming under their notice. It is hoped that, by this means, early information of the majority of cases of measles will reach the medical officers of health.

The information thus obtained will necessarily require to be followed up. Probably many cases will be reported which are not measles, and arrangements should be made for obtaining a proper diagnosis, for securing that the cases are properly isolated, and for urging on the parents the need of obtaining medical aid where such aid is required.

No doubt the Council's official who visits the home will be able to do much in the way of giving advice as to the care and nursing of the patients.

Removal to Hospital.—The Board have been in correspondence with the Metropolitan Asylums Board, and it is understood that that Board will agree to receive cases of measles on the recommendation of the medical officer of health. The accommodation of the Metropolitan Asylums Board for this purpose is necessarily limited, and arrangements will be made by which preference will be given to those cases most needing hospital treatment. The Board may also remind the borough council that they have power to provide temporary hospitals, and if at a subsequent date the amount of accommodation for measles which is available in the hospitals of the Metropolitan Asylums Board should come to be exhausted, this power might have to be utilised.

Staff required for dealing with outbreak.—For dealing with this outbreak and properly following up the information which will be obtained, it is essential that each medical officer of health should be provided with an adequate staff, and the Board trust that the Council will at once appoint any additional temporary assistants (medical and other) that may be required."

* Genuine cases notified between March 22nd and May 12th from 391 houses.

With this letter a copy of a Memorandum which the Board's medical officer had prepared on the subject of measles was enclosed.

This memorandum was followed by the Metropolitan Asylums (Measles) Order of the 30th May, 1911, which provided that non-pauper cases of measles might be received into the hospitals of the Metropolitan Asylums Board, on the recommendation of the medical officer of health of the district concerned. Admission, however, is confined to children of the poorest class and to urgent cases recommended by medical officers of health. 3,144 patients suffering from measles were admitted during the year, and there were 438 deaths, giving a fatality rate of 13.9 per cent. The fact that the cases admitted to the Board's hospitals are specially selected, as has been noted above, of course explains the exceptionally high fatality rate.

In Stepney where measles was a notifiable disease from the week ended May 13th to the week ended December 2nd, 1,819 cases were notified, whilst in the same period there were 92 deaths, giving roughly a case mortality rate of 5 per cent. The medical officer of health of Stepney discusses the whole question fully in his annual report and deals particularly with incidence, mortality, and the effect of isolation and school closure.

Scarlet Fever.

The cases of scarlet fever notified in the Administrative County of London during 1911 (52 weeks) numbered 10,483, compared with 10,509 in 1910 (52 weeks). The number of deaths registered from this cause was 172 in the year 1911 (52 weeks), compared with 214 in 1910 (52 weeks).

The scarlet fever case-rates, death-rates and case-mortality for 1911 and preceding periods are shown in the following table :—

Scarlet fever death-rates.

Period.	Death-rate per 1,000 persons living.	Case-rate per 1,000 persons living.	Case-mortality per cent.
1861-1870	1·13	— *a*	— *a*
1871-1880	0·60	— *a*	— *a*
1881-1890	0·33	— *a*	— *a*
1891-1900	0·19*b*	4·8	3·8
1901-1910	0·10*b*	3·9	2·7
1901	0·13*b*	4·1	3·2
1902	0·12*b*	4·0	3·1
1903	0·08*b*	2·8	2·9
1904	0·08*b*	3·0	2·7
1905	0·12*b*	4·3	2·8
1906	0·12*b*	4·5	2·6
1907	0·14*b*	5·7	2·5
1908	0·12*b*	4·8	2·5
1909	0·08*b*	3·8	2·2
1910	0·05*b*	2·3	2·0
1911	0·04*b*	2·3	1·6

The death-rate in each year since 1858 in relation to the mean death-rate of the period 1859-1911 will be seen on reference to diagram (H). It will be observed that the death-rate of 1911 was the lowest recorded in London.

The monthly case-rate and case-mortality in each of the years 1891–1911 in relation to the mean of the whole period is shown in diagram (L).

It will be seen from the following table that in the period 1906–10 the London scarlet fever death-rate was exceeded by that of Liverpool, Manchester, Birmingham, Sheffield, West Ham, Stoke-on-Trent, Salford and Leicester. In 1911 it was exceeded by all except Bristol, West Ham, Bradford, Nottingham and Leicester.

Scarlet fever death-rates in large English towns.

Town.	1906–10.	1911.	Town.	1906–10.	1911.
London	**0·10***b*	**0·04***b*	Bradford	0·07	0·03
Greater London	0·10	0·03	Hull	0·04	0·05
Liverpool	0·25	0·17	Newcastle-on-Tyne	0·07	0·05
Manchester	0·18	0·06	Nottingham	0·05	0·03
Birmingham	0·15	0·12	Stoke-on-Trent	0·18	0·26
Sheffield	0·20	0·06	Portsmouth	0·06	0·09
Leeds	0·07	0·10	Salford	0·25	0·09
Bristol ..	0·05	0·04	Leicester	0·14	0·04
West Ham	0·16	0·02			

(*a*) The Infectious Disease (Notification) Act came into force in 1889. (*b*) see footnote (*c*) page 2.

Diagram H.

Scarlet Fever.

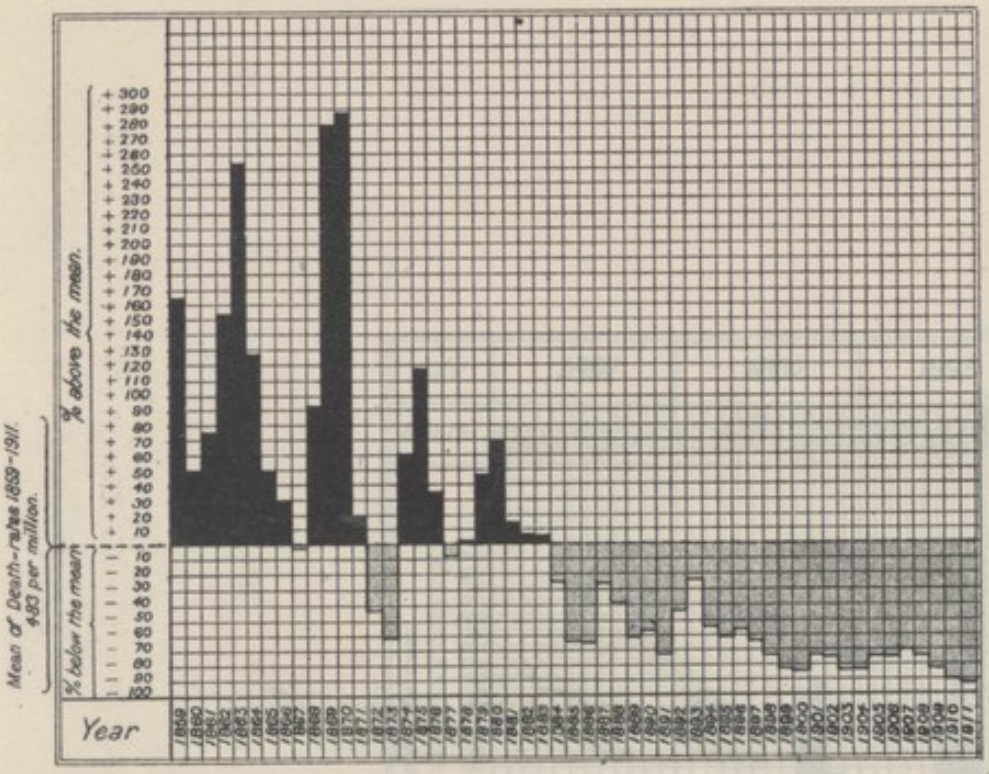
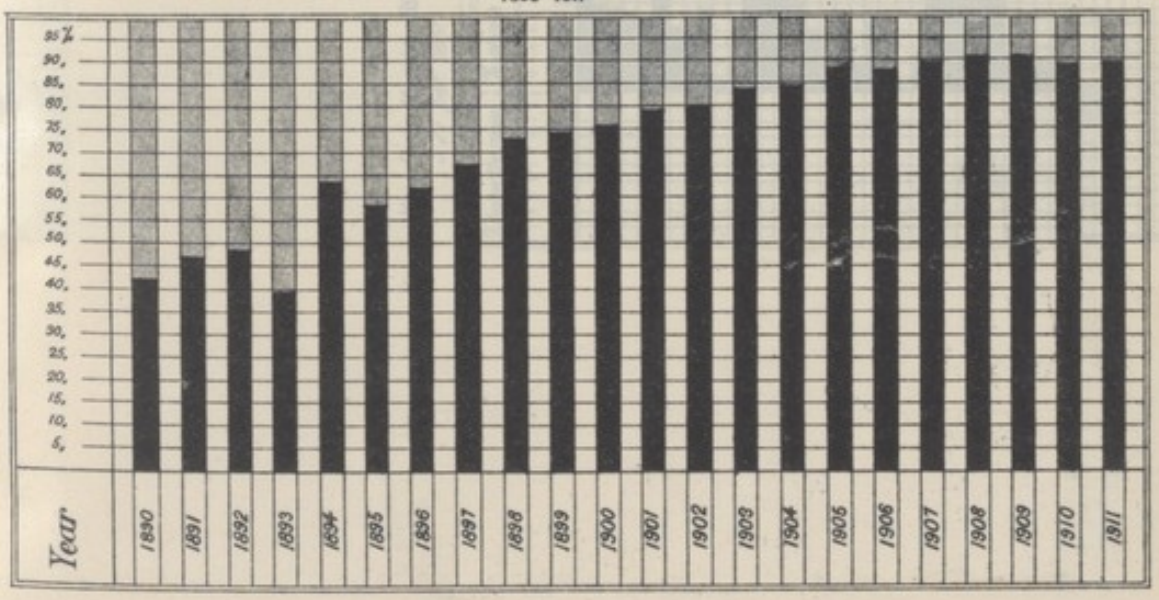


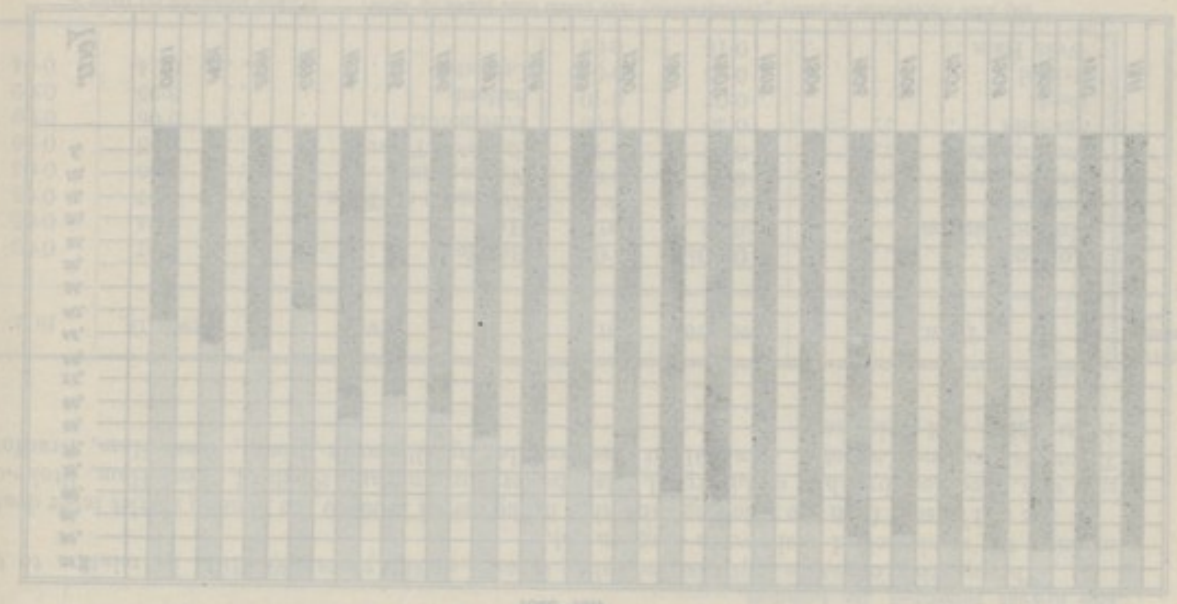
Diagram K.

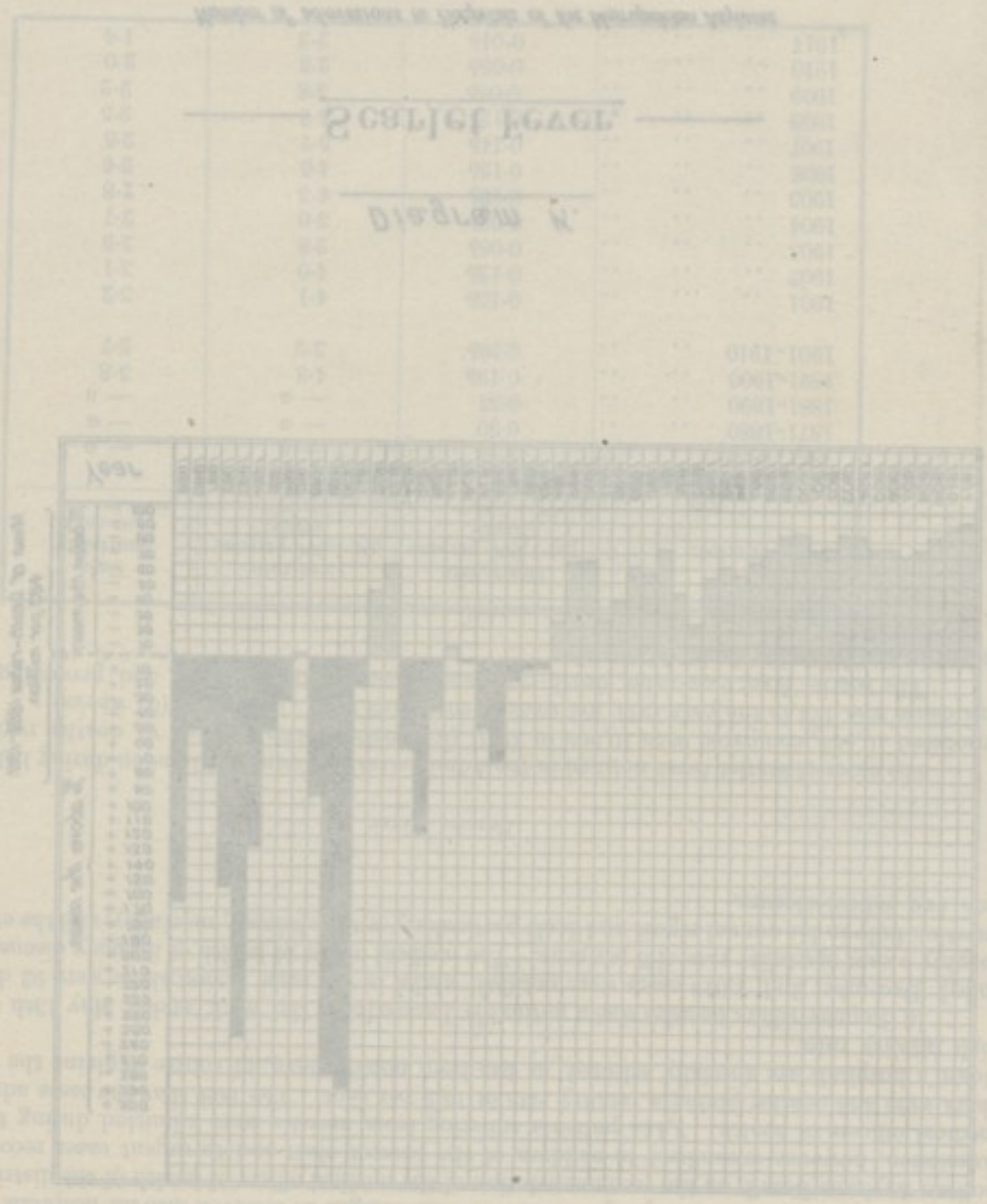
Scarlet Fever.

Number of admissions to Hospitals of the Metropolitan Asylums Board per cent of total cases notified in London.

1890–1911







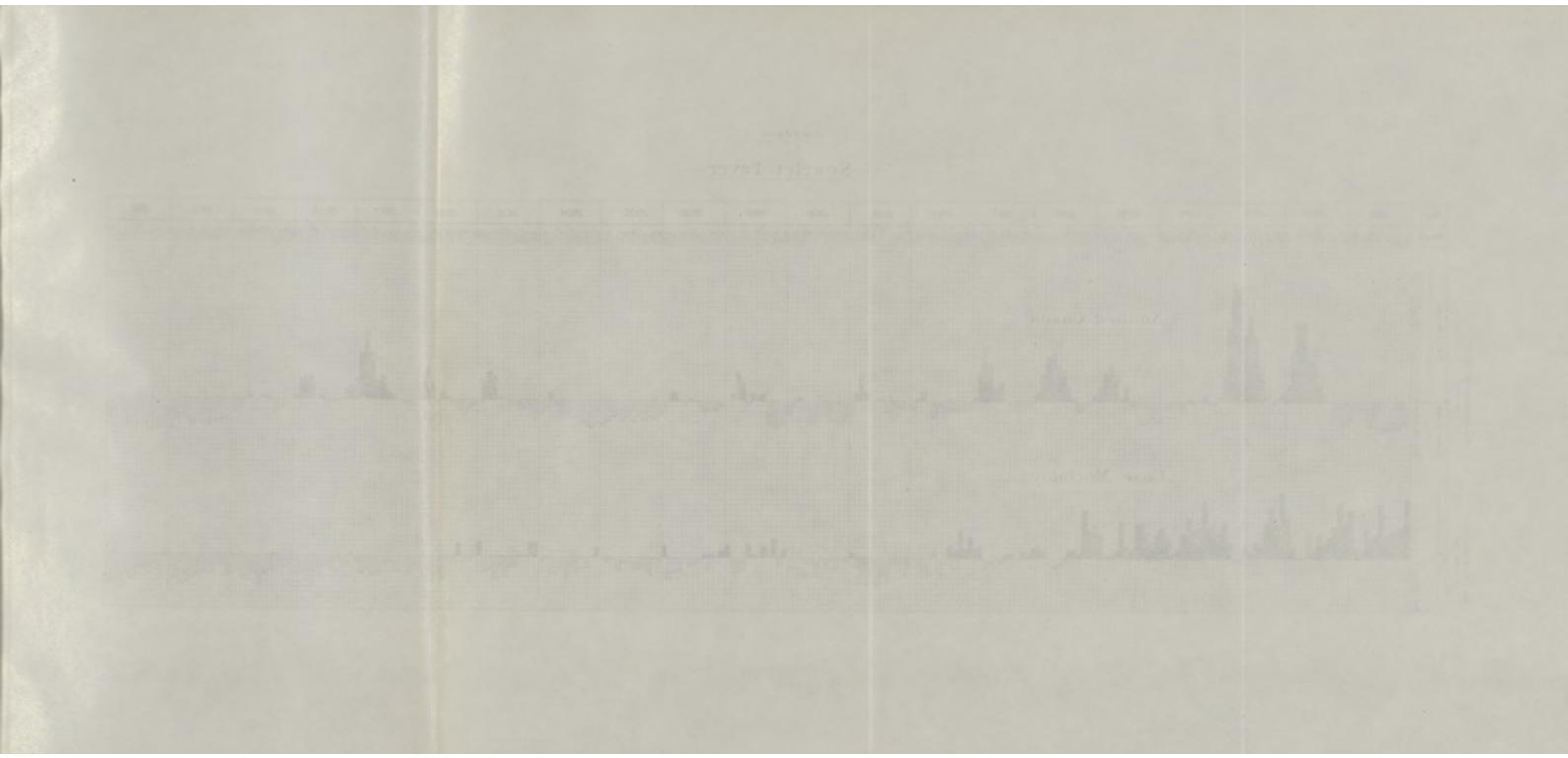
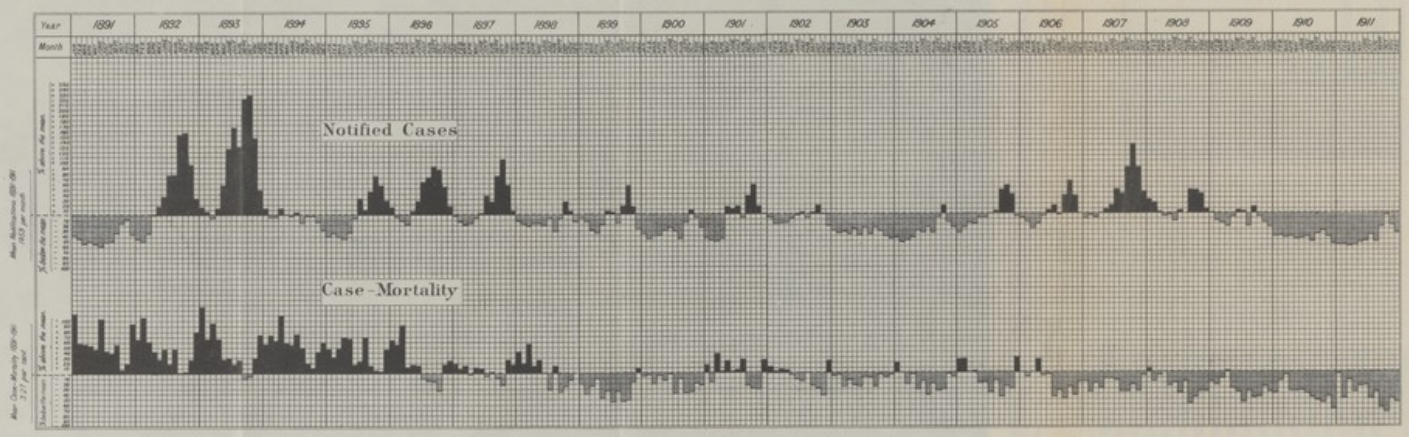


Diagram L.

Scarlet Fever



The following table shows that in the year 1911 the London scarlet fever death-rate was exceeded by the death-rate of all the undermentioned towns, except Paris and Amsterdam, and in the quinquennium 1906–10 was exceeded by the death-rates of all except Paris, Brussels, Amsterdam, and Copenhagen.

Scarlet fever death rates in foreign towns.

Town.	1906-10.	1911.	Town.	1906–10.	1911.
London	0·10 *a*	0·04 *a*	Stockholm	0·16	0·08
Paris	0·06	0·04	St. Petersburg	0·55	0·31
Brussels	0·07	0·05	Berlin	0·17	0·20
Amsterdam	0·04	0·01	Vienna	0·13	0·08
Copenhagen	0·10	0·15	New York	0·20	0·15

The following table shows the scarlet fever cases, deaths, case-rates, and death-rates for the year 1911 and the case-rates and death-rates for the period 1906–10 in the several sanitary districts.

Scarlet fever cases, deaths and death-rates in London boroughs.

Metropolitan borough.	Notified cases, 1911 (52 weeks).	Case-rate per 1,000 persons living.		Deaths, 1911 (52 weeks).	Death-rate per 1,000 persons living.	
		1906-10.	1911.		1906-10.	1911.
Paddington	227	3·99	1·60	3	0·09	0·02
Kensington	232	2·45	1·35	2	0·04	0·01
Hammersmith	238	3·58	1·96	5	0·09	0·04
Fulham	382	3·75	2·49	7	0·09	0·05
Chelsea	143	3·17	2·17	1	0·07	0·02
Westminster, City of ..	252	2·89	1·58	3	0·06	0·02
St. Marylebone	329	3·10	2·80	7	0·10	0·06
Hampstead	129	3·27	1·51	—	0·05	—
St. Pancras	443	3·61	2·04	12	0·10	0·06
Islington	805	3·64	2·47	21	0·08	0·06
Stoke Newington	99	3·03	1·96	3	0·08	0·06
Hackney	611	4·78	2·75	11	0·10	0·05
Holborn	120	2·50	2·45	3	0·06	0·06
Finsbury	179	3·84	2·05	6	0·13	0·07
London, City of	23	2·96	1·18	1	0·08	0·05
Shoreditch	240	4·66	2·16	6	0·16	0·05
Bethnal Green	243	5·80	1·90	5	0·22	0·04
Stepney	467	5·79	1·68	7	0·15	0·03
Poplar	376	5·26	2·32	10	0·16	0·06
Southwark	480	4·60	2·51	6	0·13	0·03
Bermondsey	302	5·43	2·41	6	0·19	0·05
Lambeth	763	4·17	2·57	8	0·10	0·03
Battersea	354	5·21	2·12	4	0·10	0·02
Wandsworth	866	3·66	2·77	10	0·06	0·03
Camberwell	633	4·06	2·43	7	0·09	0·03
Deptford	375	5·11	3·43	7	0·09	0·06
Greenwich	307	4·60	3·21	3	0·09	0·03
Lewisham	349	4·30	2·16	5	0·09	0·03
Woolwich	514	6·13	4·24	3	0·10	0·02
Port of London	2					
London	10,483	4·22	2·32	172	0·10	0·04

It will be seen that the scarlet fever death-rate was, in the period 1906–10, highest in Bethnal Green (0.22), and lowest in Kensington (0.04); in the year 1911, Finsbury (0.07) had the highest death-rate, and Kensington (0·01) the lowest, exclusive of Hampstead, where no death occurred. The scarlet fever death-rates obtaining in London in the four quarters of the year 1911 were as follows: first quarter, 0·04; second quarter, 0·04; third quarter, 0·04; and fourth quarter, 0.04 per 1,000 persons living.

Scarlet fever —Age and sex incidence.

The following table shows the notified cases, deaths, case-rates, death-rates, and fatality of scarlet fever at the several ages and for each sex in London during the year 1911. It will be seen that at "all ages" the case-rate was higher among females, while the death-rate and fatality were higher among males. In the age-groups adopted for the purposes of this table, the greatest incidence of

(*a*) See footnote (*c*), page 2.

attack was upon males and females aged 4–5. The greatest incidence of death was upon males 2–3 and females 1–2. The fatality was highest among males aged 2–3 and females aged 1–2.

Age-period.	Males.					Females.				
	Notified cases. (*a*)	Deaths. (*a*)	Case-mortality per cent.	Rates per 100,000 living.		Notified cases. (*a*)	Deaths. (*a*)	Case-mortality per cent.	Rates per 100,000 living.	
				Cases.	Deaths.				Cases.	Deaths.
All Ages	**4,829**	**95**	**2·0**	**228**	**4**	**5,654**	**79**	**1·4**	**237**	**3**
0—	59	4	6·8	120	8	63	2	3·2	131	4
1—	198	9	4·5	441	20	171	15	8·8	385	34
2—	316	22	7·0	665	46	320	10	3·1	681	21
3—	446	13	2·9	955	28	427	10	2·3	908	21
4—	471	9	1·9	1,030	20	579	10	1·7	1,270	22
5—	2,078	27	1·3	965	13	2,422	19	0·8	1,116	9
10—	746	7	0·9	376	4	977	9	0·9	483	4
15—	256	1	0·4	133	1	227	—	—	107	—
20—	115	1	0·9	60	1	187	—	—	79	—
25—	111	2	1·8	31	1	230	2	0·9	53	0
35—	27	—	—	9	—	37	2	5·4	11	1
45—	6	—	—	3	—	10	—	—	4	—
55 & upwards	—	—	—	—	—	4	—	—	1	—

Scarlet fever —Incidence in relation to school attendance.

In connection with the reduction in the number of notified cases during the summer holiday of the schools it may be stated that the summer holiday of the London County Council schools began in 1911 on Thursday, the 27th July, *i.e.*, the latter part of the 30th week, and the schools re-opened on Monday, the 28th August, *i.e.*, at the beginning of the 35th week. If the number of cases notified in the four weeks which would be most subject to holiday influence be compared with the number of cases notified in the four preceding and four succeeding weeks, the results shown in the following table are obtained :—

Period.	Notified cases—Age-periods.			Increase (+) or decrease (−) per cent.		
	0–3	3–13	13 and upwards.	0–3	3–13	13 and upwards.
Four weeks preceding weeks of holiday influence (28*th* to 31*st*)	110	650	98	—	—	—
Four weeks of holiday influence (32*nd* to 35*th*)	80	460	111	−27·3	−29·2	+13·3
Four weeks following weeks of holiday influence (36*th* to 39*th*)	91	836	154	+13·7	+81·7	+38·7

As in 1910 the mild character of the disease is referred to in many of the reports, and caused difficulty in tracing the origin of local prevalence, which is due, in many instances, to infection from unrecognised cases. In some reports, record is made of the attempts to trace the origin of outbreaks. For instance, in Paddington, of 194 cases, 28 were ascribed to infection from outside the borough ; 9 to return cases from patients discharged from hospital; 7 cases in hospital supervened on diphtheria. In Kensington, 84 cases, out of 227 showed a definite history of contact infection ; 7 cases were attributed to infection in school ; 17 were " return cases " ; 16 were infected from outside the borough ; 3 were contacts of missed cases. Of the 329 cases notified in St. Marylebone, in 38 instances a previous case in the same family was suspected ; 9 cases were supposed to be infected by a previous case in the same house and 16 by previous cases in the same neighbourhood. In Hampstead, of 125 cases, 31 were the result of infection by a previous case. Stoke Newington had 97 cases, of which 6 were ascribed to school attendance ; 9 to previous illness in the house ; there was also 1 return case. Of the 171 cases in Finsbury, the supposed source was in 10 cases, schoolfellows ; in 4 cases, visits to the houses of friends ; 1 the out-patients' department of a hospital ; 16 were ascribed to visits in the vicinity ; 2 to places of entertainment , and 3 were the result of cross infection in hospital. In Bermondsey with 305 cases, there was a history of previous infection in 25 cases; 5 of them were due to school infection; and 6 were return cases. The Woolwich report shows that of 496 cases notified, 46 were infected by other inmates of the house; 28 cases were due to school attendance , 12 cases were the result of visits to friends and neighbours ; 2 cases were attributed to the fever hospital and 2 to school excursions ; there were 29 " return cases."

(*a*) The cases are those notified during the year, but the deaths, which are fully corrected, relate to a period commencing somewhat later, in order that they may correspond more closely with the cases upon which the case-mortality is calculated.

Diagram M.

Diphtheria.

Diagram N.

Diphtheria.

Diagram M.

Diphtheria.

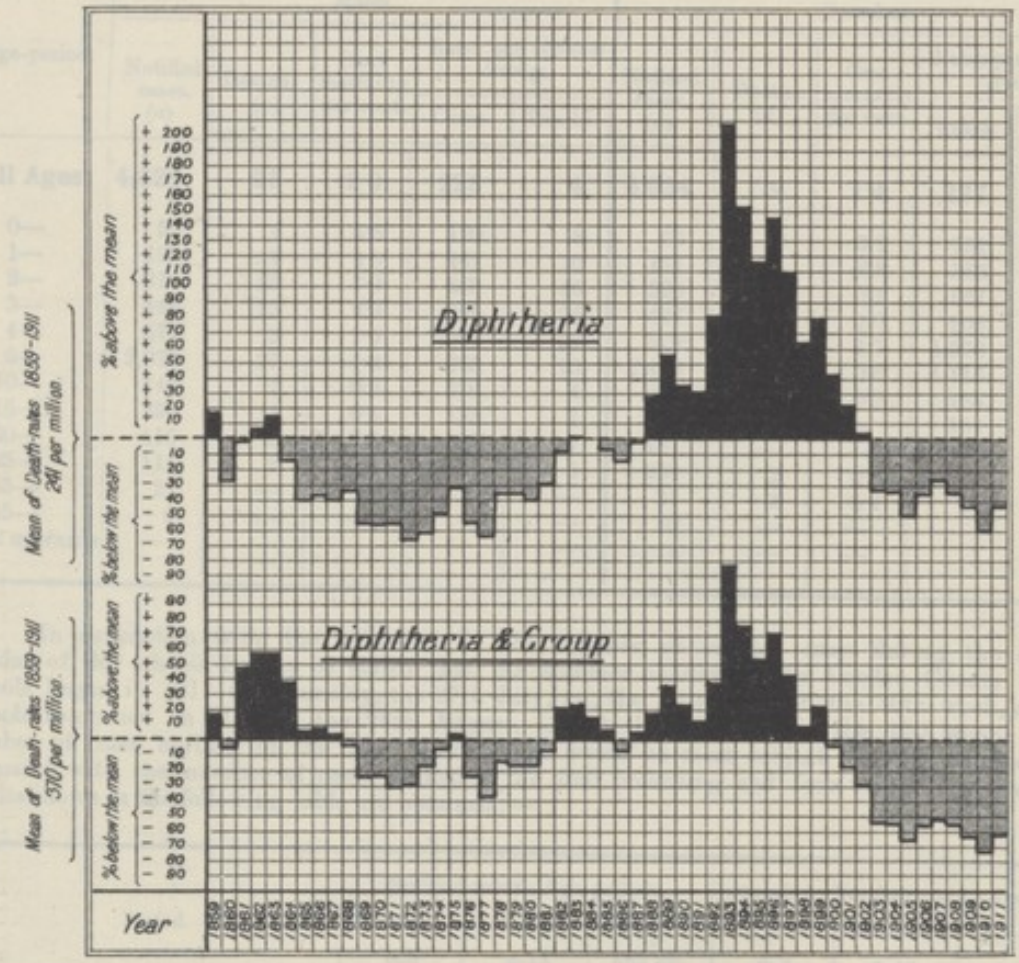
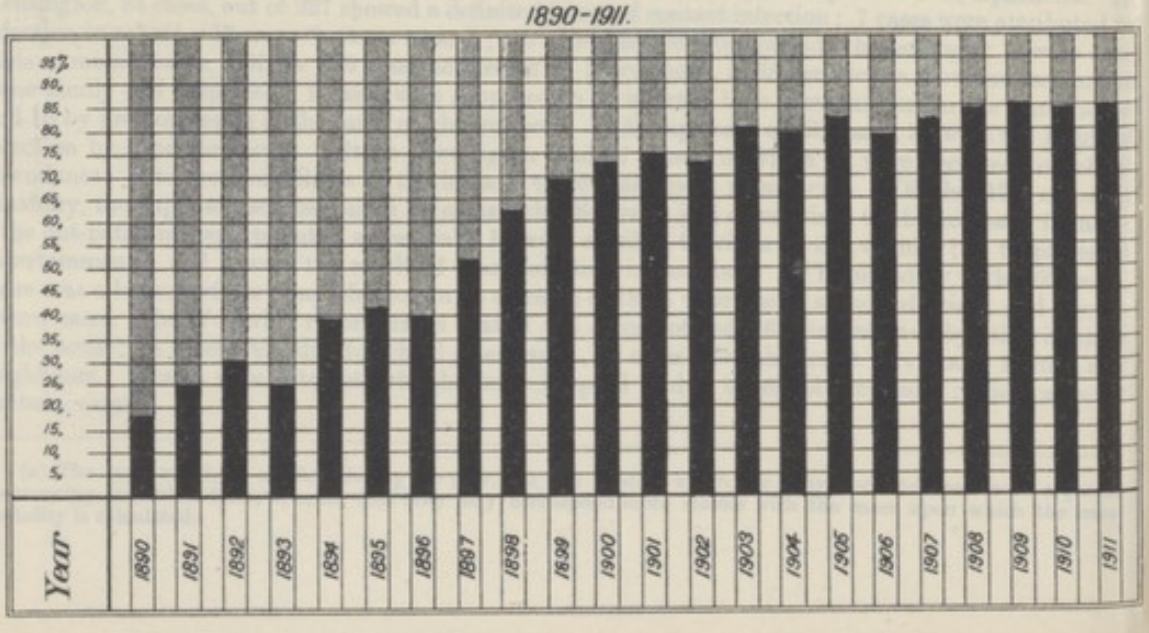


Diagram N.

Diphtheria.

Number of admissions to Hospitals of the Metropolitan Asylums Board per cent of total cases notified in London.

1890-1911.



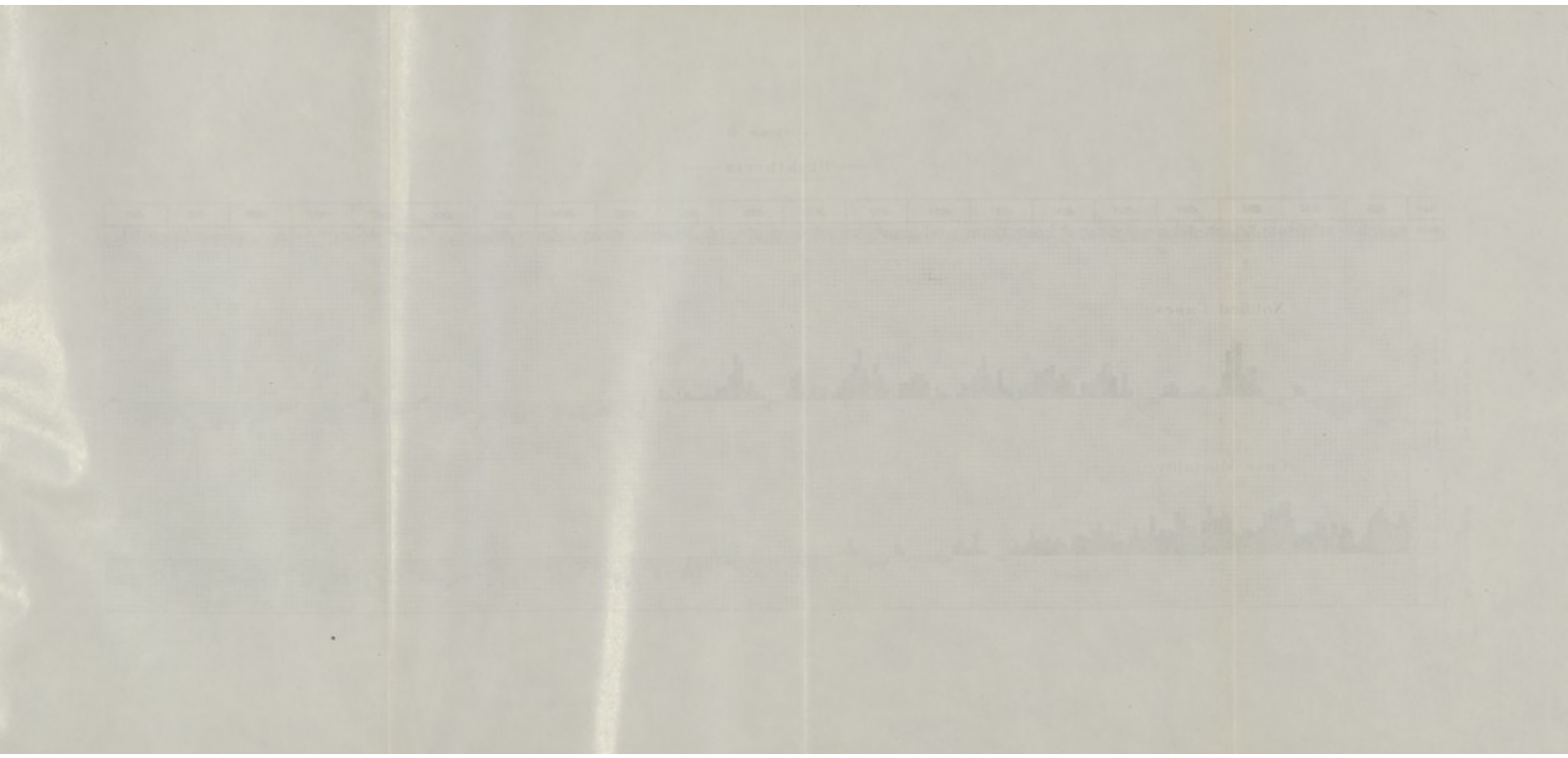
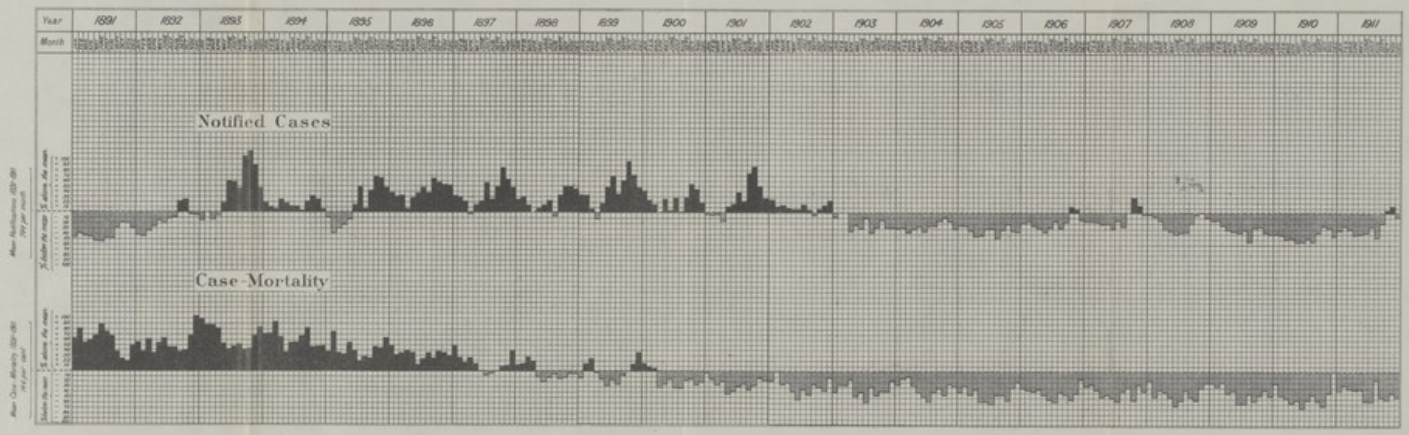


Diagram O.

Diphtheria



The number of dwellings in which multiple cases occurred is shown in some of the reports, as follows :— Scarlet fever Multiple cases.

Metropolitan borough.	One case.	Two cases.	Three cases.	Four cases.	Five cases.	More than five cases.
Paddington ..	133	16	3	2	1	1 (7 cases).
Fulham	282	34	10	1	—	—
Westminster ..	179	19	6	2	—	—
Hampstead	84	12	1	—	—	1 (6 cases).
Islington	546	80	19	3	1	1 (8 cases).
Holborn	83	4	4	2	—	—

Thus of 1,530 houses invaded, multiple cases occurred in 223 or 14·6 per cent. In 1910, the number of houses in which multiple cases occurred was 13·4 per cent. of the houses invaded in the districts concerning which the facts were stated in the annual reports.

It will be seen from diagram (K) that the proportion of cases of scarlet fever admitted to the hospitals of the Metropolitan Asylums Board was about the same as in the preceding year. Proportion of cases admitted to hospital.

Cases certified to be those of scarlet fever and admitted into the hospitals of the Metropolitan Asylums Board in which the diagnosis was not subsequently confirmed, constituted in successive years the following percentage of the total cases admitted :— Errors of diagnosis.

Year.	Percentage.	Year.	Percentage.
1901	5·6	1907	6·8
1902	4·7	1908	5·8
1903	6·4	1909	6·9
1904	6·7	1910	9·5
1905	5·4	1911	8·7
1906	4·9		

Diphtheria.

The cases of diphtheria (including membranous croup) notified in the Administrative County of London in 1911 (52 weeks) numbered 7,385, compared with 5,494 in 1910 (52 weeks). The number of deaths was 612 in 1911 (52 weeks), compared with 434 in 1910 (52 weeks).

It should be borne in mind that the case-rate and case-mortality may be affected by variations in the extent of use of bacteriological methods of diagnosis, the effect of which is to increase the notified number of clinically mild cases of the disease.

The diphtheria case-rates, death-rates, and case-mortality in 1910, and preceding periods, are shown in the following table :—

Diptheria death rates in London.

Period.	Death-rate per 1,000 persons living.	Case-rate per 1,000 persons living.	Case-mortality per cent.
1861–1870	0·18	—*a*	—*a*
1871–1880	0·12	—*a*	—*a*
1881–1890	0·26	—*a*	—*a*
1891–1900	0·49*b*	2·6	18·8
1901–1910	0·17*b*	1·8	9·3
1901	0·29*b*	2·7	10·9
1902	0·25*b*	2·3	10·8
1903	0·16*b*	1·7	9·6
1904	0·16*b*	1·6	10·0
1905	0·12*b*	1·4	8·4
1906	0·15*b*	1·8	8·6
1907	0·17*b*	1·9	8·9
1908	0·16*b*	1·7	9·0
1909	0·13*b*	1·5	9·1
1910	0·10*b*	1·2	7·9
1911	0·14*b*	1·6	8·3

The death-rate in each year since 1858 in relation to the mean death-rate of the period 1859–1911 is shown for diphtheria and also for diphtheria and croup combined in diagram (M).

The monthly case-rate and case-mortality in each of the years 1891–1911 in relation to the mean of the period is shown in diagram (O).

If the London diphtheria death-rate be compared with the death-rates of the following large English towns it will be seen that in the quinquennium 1906–10 the London rate was exceeded by that

(*a*) The Infectious Disease (Notification) Act came into force in 1889. (*b*) See footnote (*c*), page 2.

of all except that of Sheffield, Nottingham and Leicester, and in 1911 was exceeded by the rates of all except Manchester, Birmingham, Sheffield, Bristol, Hull, Newcastle-on-Tyne, Nottingham and Leicester.

Diphtheria death rates in large English towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**0·14***a*	**0·14***a*	Bradford	0·16	0·17
Greater London	0·15	0·14	Hull	0·27	0·08
Liverpool	0·16	0·16	Newcastle-on-Tyne	0·19	0·14
Manchester	0·17	0·12	Nottingham	0·13	0·12
Birmingham	0·18	0·12	Stoke-on-Trent	0·29	0·38
Sheffield	0·11	0·10	Portsmouth	0·27	0·31
Leeds	0·15	0·34	Salford	0·39	0·23
Bristol	0·17	0·11	Leicester	0·07	0·09
West Ham	0·21	0·17			

The following table shows that in the quinquennium 1906–10 the London death-rate from diphtheria and croup exceeded that of any of the undermentioned foreign towns except Stockholm, St. Petersburg, Berlin, Vienna, and New York; in 1911 the London rate was exceeded by that of St. Petersburg, Berlin and New York.

Diptheria death rates in foreign towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**0·15***a*	**0·14***a*	Stockholm	0·16	0·13
Paris	0·08	0·09	St. Petersburg	0·55	0·23
Brussels	0·09	0·09	Berlin	0·27	0·42
Amsterdam	0·08	0·07	Vienna	0·17	0·11
Copenhagen	0·08	0·10	New York	0·39	0·26

The following table shows the diphtheria cases, deaths, case-rates, and death-rates for the year 1911, and the case-rates and death-rates for the period 1906–10, in the several sanitary districts:—

Diphtheria cases, deaths and death-rates in London boroughs.

Metropolitan borough.	Notified Cases, 1911 (52 weeks).	Case-rate per 1,000 persons living.		Deaths, 1911 (52 weeks).	Death-rate per 1,000 persons living.	
		1906-10.	1911.		1906-10.	1911.
Paddington	169	1·12	1·19	11	0·10	0·08
Kensington	219	1·14	1·28	18	0·12	0·10
Hammersmith	196	1·76	1·61	28	0 17	0·23
Fulham	313	2·66	2·04	27	0·21	0·18
Chelsea	83	1·87	1·26	5	0·15	0·08
Westminster, City of	145	1·09	0·91	14	0·09	0·09
St. Marylebone	135	1·02	1·15	5	0·10	0·04
Hampstead	151	0·88	1·77	17	0·07	0·20
St. Pancras	422	1·35	1·94	37	0·11	0·17
Islington	594	1·42	1·82	51	0·11	0·16
Stoke Newington	79	1·22	1·56	3	0·06	0·06
Hackney	314	1·59	1·41	20	0·13	0·09
Holborn	85	1·04	1·74	3	0·11	0·06
Finsbury	177	1·82	2·03	17	0·20	0·19
London, City of	23	1·05	1·18	1	0·08	0·05
Shoreditch	175	1·57	1·58	24	0·15	0·22
Bethnal Green	201	1·83	1·57	21	0·16	0·16
Stepney	517	2·09	1·86	32	0·21	0·11
Poplar	284	1·59	1·74	44	0·18	0·27
Southwark	293	1·66	1·53	30	0·17	0·16
Bermondsey	254	2·05	2·03	13	0·17	0·10
Lambeth	404	1·20	1·36	43	0·15	0·14
Battersea	223	1·79	1·33	20	0·13	0·12
Wandsworth	513	1·68	1·64	33	0·12	0·11
Camberwell	352	1·38	1·35	25	0·14	0·10
Deptford	165	2·10	1·51	15	0·15	0·14
Greenwich	318	2·53	3·32	16	0·17	0·17
Lewisham	343	2·16	2·13	28	0·16	0·17
Woolwich	237	2·44	1·96	11	0·15	0·09
Port of London	1					
London	**7,385**	**1·63**	**1·64**	**612**	**0·14**	**0·14**

(*a*) See footnote (*c*), page 2.

It will be seen from the foregoing table that in the period 1906-10 the diphtheria death-rate was highest in Fulham and Stepney (0.21) and lowest in Stoke Newington (0.06); in the year 1911, Poplar (0.27) had the highest death-rate, and St. Marylebone (0.04) the lowest. The diphtheria death-rates in London in each of the four quarters of the year 1911 were as follows: first quarter, 0.15; second quarter, 0.11; third quarter, 0.11; and fourth quarter, 0.17.

To enable the variations in diphtheria prevalence in the several sanitary districts to be more clearly appreciated, the following table has been prepared. This table shows the comparative case-rates of each district in each of the years 1891–1911 inclusive, *i.e.*, the case-rates of each district are shown in relation to the London case-rate of the same year, the London rate being taken as 100. The figures for the years 1901–9 differ from those given in previous reports owing to the revision of the population estimates on the basis of the results of the 1911 census.

Diphtheria case-rates, London boroughs, 1891–1911.

Metropolitan borough.	Diphtheria.—Comparative case-rate (London case-rate taken as 100).																				
	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911
Paddington ..	104	77	73	117	74	66	91	98	68	44	88	65	61	63	47	72	61	59	87	69	73
Kensington ..	78	60	68	63	86	70	67	49	51	74	53	45	60	67	52	57	74	78	69	74	78
Hammersmith ..	195	164	87	72	77	67	49	58	58	85	75	68	85	111	146	134	94	97	108	112	99
Fulham	61	58	78	126	139	99	109	145	135	178	175	130	122	132	139	156	212	152	145	139	125
Chelsea	138	110	83	107	143	184	107	79	61	74	54	77	80	54	51	130	118	117	98	102	77
Westminster, City of	58	91	57	53	61	53	59	67	50	59	52	67	61	52	48	69	44	64	93	76	56
St. Marylebone ..	70	81	88	78	64	66	53	64	47	59	73	76	103	58	72	63	53	55	63	88	70
Hampstead ..	105	96	73	53	61	84	47	65	48	74	70	50	61	43	55	67	69	43	38	49	108
St. Pancras ..	89	95	103	83	90	64	76	78	79	93	149	152	132	95	88	69	80	78	98	99	119
Islington ..	152	119	86	103	70	106	73	60	68	70	102	112	81	66	74	75	75	91	89	119	111
Stoke Newington	83	113	97	77	70	70	52	59	34	111	105	82	46	75	110	52	120	72	37	86	95
Hackney ..	131	147	135	108	93	89	122	152	106	107	167	139	145	163	122	99	127	99	81	70	86
Holborn	52	89	79	61	66	61	104	102	46	70	105	86	53	51	58	69	62	54	62	74	106
Finsbury ..	118	82	130	81	86	112	170	163	93	74	110	101	77	94	103	118	86	105	125	139	124
London, City of	59	130	60	49	51	74	71	60	68	89	95	158	63	102	47	44	65	76	62	82	72
Shoreditch ..	124	89	131	95	80	97	103	80	103	111	103	84	77	101	110	71	101	105	112	96	96
Bethnal Green ..	154	230	181	168	143	114	144	100	89	115	133	105	110	206	165	110	116	122	97	117	95
Stepney	106	132	112	123	157	150	128	93	89	107	106	111	108	176	154	118	135	131	139	118	113
Poplar	191	148	214	159	179	133	141	105	83	141	137	118	149	252	207	85	113	109	88	88	107
Southwark ..	71	72	116	113	86	106	102	151	207	141	101	111	102	88	106	114	110	78	89	121	94
Bermondsey ..	68	60	84	126	80	99	97	90	177	133	94	92	79	94	91	147	129	112	105	137	124
Lambeth ..	88	97	91	83	88	74	83	103	121	104	65	68	67	68	105	79	56	65	86	90	83
Battersea ..	144	123	132	122	97	81	125	178	116	70	59	74	109	85	80	92	110	123	116	111	81
Wandsworth ..	74	83	84	79	60	51	100	114	99	74	76	132	125	98	92	114	117	115	84	77	100
Camberwell ..	69	65	67	112	140	180	154	102	156	130	125	113	82	65	66	77	80	86	97	86	82
Deptford ..	72	68	86	153	225	113	141	132	121	111	144	103	243	111	94	156	150	107	121	98	92
Greenwich ..	60	43	84	85	137	189	82	105	122	89	73	81	127	100	107	240	138	132	115	144	203
Lewisham ..	48	74	82	70	57	122	85	127	170	126	87	129	121	59	77	101	105	176	170	117	130
Woolwich ..	32	68	66	66	81	96	91	86	100	115	69	91	91	85	161	182	120	173	150	117	119
London	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

The following table shows the notified cases, deaths, case-rates, death-rates and fatality of diphtheria at the several ages and for each sex in London during the year 1911. At "all ages" the fatality was higher among females, while the incidence of attack and of death were approximately the same in both sexes. In the age-groups adopted for the purposes of this table the greatest incidence of attack was upon males and females aged 4–5; the greatest incidence of death was upon males and females aged 1–2. The fatality was greatest among males and females aged 0–1.

Diphtheria—Age and sex incidence.

Age-period.	Males.					Females.				
	Notified Cases. (a)	Deaths. (a)	Case mortality per cent.	Rates per 100,000 living.		Notified Cases. (a)	Deaths. (a)	Case mortality per cent.	Rates per 100,000 living.	
				Cases.	Deaths.				Cases.	Deaths.
All Ages	**3,460**	**288**	**8·3**	**163**	**14**	**3,925**	**338**	**8·6**	**164**	**14**
0—	96	24	25·0	196	49	81	27	33·3	168	56
1—	280	68	24·3	623	151	207	50	24·2	466	112
2—	332	42	12·7	699	88	267	39	14·6	569	83
3—	395	33	8·4	846	71	366	49	13·4	778	104
4—	409	32	7·8	895	70	398	38	9·5	873	83
5—	1,250	75	6·0	581	35	1,428	113	7·9	658	52
10—	351	6	1·7	177	3	502	11	2·2	248	5
15—	131	3	2·3	68	2	202	3	1·5	95	1
20—	78	—	—	41	—	174	2	1·1	73	1
25—	85	2	2·4	23	1	192	2	1·0	45	0
35—	34	2	5·9	12	1	83	2	2·4	25	1
45—	13	1	7·7	6	0	20	—	—	8	—
55 & upwards	6	—	—	3	—	5	2	40·0	2	1

(a) See footnote (a), page 24.

Diphtheria—Incidence in relation to school attendance.

In connection with the question of the reduction in the prevalence of the disease among persons of school age during the summer holiday when the schools are closed it has been thought well to include, as in previous reports, the following table. The summer holiday of the schools of the London County Council began on Thursday, the 27th July, *i.e.*, the latter part of the 30th week, and the schools re-opened on Monday, the 28th August, *i.e.*, at the beginning of the 35th week. If the number of cases in the four weeks preceding, and the four weeks subsequent to, the weeks most subject to holiday influence be compared, the following results are obtained for the age periods of 0—3, 3—13, and 13 years and upwards.

Period.	Notified cases—Age periods.			Increase (+) or decrease (−) per cent.		
	0—3.	3—13.	13 and upwards.	0—3.	3—13.	13 and upwards.
Four weeks preceding weeks of holiday influence (28th to 31st)	79	372	95	—	—	—
Four weeks of holiday influence (32nd to 35th)	70	244	68	−11·4	−34·4	−28·4
Four weeks following weeks of holiday influence (36th to 39th)	79	418	108	+12·9	+71·3	+58·8

From the annual reports of medical officers of health, it appears that there was no considerable outbreak of the disease during the year; although the Hampstead report refers to an unusual prevalence of high infectivity. In several of the reports reference is made to a special incidence upon school children, amounting in Wandsworth to 46 per cent. of the total number of cases. The medical officer of health of Greenwich comments upon the insidious nature of the complaint and mentions the exclusion from school of children actively infectious, but having symptoms only of cold in the head, with slight nasal discharge. In the Kensington report details are given of particular cases illustrative of the difficulty of diagnosis, and the length of the infective period, whilst the medical officer of health of Chelsea gives an account of a school outbreak where 6 cases are ascribed to contact with a "chronic carrier" whose father died of membranous croup.

The result of inquiry into the source of infection is shown in some of the reports as follows:—Paddington, of 152 cases, 7 were contracted in hospital after scarlet fever; there were 29 secondary cases, and 3 return cases; Finsbury, of 159 cases, 10 were due to infection by members of the same family; 8 were infected by previous cases in the same house or near by; 8 were infected in hospital, and 2 while visiting relatives, 6 were return cases; Bermondsey, of 260 cases 13 were due to previous cases in house or family; in Woolwich, of 204 cases, there were 29 infected by other inmates of the house; 16 were attributed to school infection, 3 to infection by neighbours and friends, 4 to ordinary hospitals, and 11 to fever hospitals, 1 was a return case.

Some of the reports give the number of houses where more than one case of the disease occurred. Thus in Paddington, multiple cases occurred in 14 houses, including 1 house with 4 cases. In Fulham, there were 27 houses with multiple cases amongst the 274 houses invaded. One of these had 5 cases. In Westminster 1 house had 4 cases, 1 house had 3, and 4 houses had 2 cases each. Hampstead had 2 families with 4 cases each, whilst in Holborn, there were 61 single cases, 3 houses with 3 cases each, and 4 houses with 2 cases each.

In the report for 1910 reference was made to the Order of the Local Government Board, sanctioning the supply of anti-toxin by local authorities. This subject is dealt with in some of the reports of medical officers of health, two making mention of the fact that no applications were received, whilst 13 record the supply of anti-toxin for curative and prophylactic purposes.

Bacteriological diagnosis.

Information concerning the number of specimens examined for diphtheria bacilli at the expense of the sanitary authorities is contained in the reports relating to the following districts:—

Metropolitan borough.	Number of specimens examined.	Number found positive.	Metropolitan borough.	Number of specimens examined.	Number found positive.
Paddington	210	60	Shoreditch	36	8
Fulham	198	70	Bethnal Green	47	7
Chelsea	107	31	Stepney	122	42
Westminster, City of ..	143	18	Poplar	157	52
St. Marylebone	143	32	Southwark	179	38
Hampstead	157	53	Bermondsey	176	33
St. Pancras	152	53	Lambeth	667	78
Islington	484	157	Battersea	394	96
Stoke Newington	145	57	Wandsworth	597	202
Hackney	248	91	Deptford	189	41
Holborn	71	29	Greenwich	1,926	288
Finsbury	221	50	Lewisham	510	125
London, City of	1	—	Woolwich	705	92

It will be seen from diagram (N) that the proportion of cases of diphtheria removed to the Hospitals of the Metropolitan Asylums Board was about the same as in the preceding year.

Cases notified to be those of diphtheria and admitted into the hospitals of the Metropolitan Asylums Board, but in which the diagnosis was not subsequently confirmed, constituted the following percentage of total cases admitted in successive years :—

Year.	Percentage.	Year.	Percentage.
1901	12·0	1907	17·0
1902	12·5	1908	18·1
1903	14·7	1909	16·6
1904	14·1	1910	14·2
1905	13·0	1911	13·6
1906	15·8		

Whooping-Cough.

The deaths from whooping-cough in the Administrative County of London during the year 1911 (52 weeks) numbered 1,056, as compared with 1,263 in 1910 (52 weeks).

The death-rates from this disease in 1911 and preceding periods have been as follows :—

	Rate per 1,000 persons living.		Rate per 1,000 persons living.
	ages 0–5.		ages 0–5.
1881–1890	0·66	1905	0·55
1891–1900	0·83	1906	0·51
1901–1910	0·61	1907	0·64
1901	0·45	1908	0·59
1902	0·64	1909	0·56
1903	0·55	1910	0·59
1904	0·56	1911	0·42

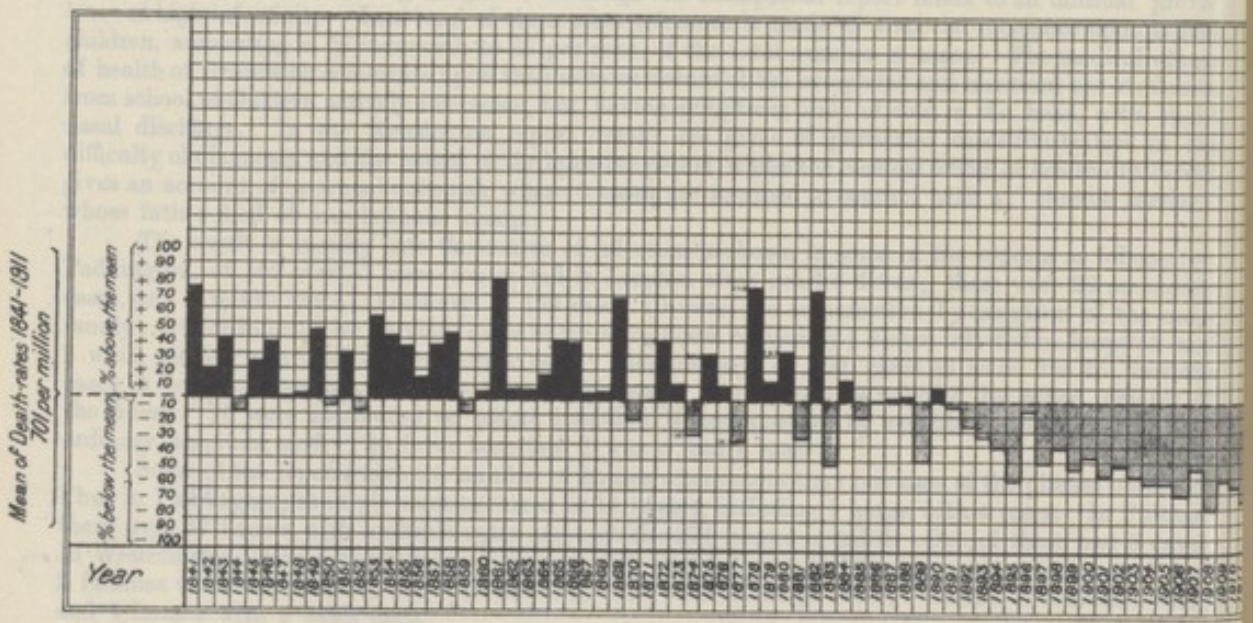
The death-rate in each year since 1840 in relation to the mean of the period 1841–1911 is shown in Diagram (P.), while the deaths in each month since 1850 in relation to the mean monthly deaths of the period 1891–1911 are shown in diagram (Q.), facing page 13.

It will be seen from the following table that in the quinquennium 1907–11 the London whooping-cough death-rate was exceeded by that of all the undermentioned towns except Bristol, Bradford, Hull,

(1) See footnote (1), page 8. (2) Including deaths of Londoners in the Metropolitan Workhouse Hospitals and Infirmary outside the County, but excluding those of non-Londoners in the London Fever Hospital, the Poor Law Fever Workhouse at Hadley, the Metropolitan Asylums Hospitals and the Hutchinson Orphan Asylum, within the County of London. (3) See footnote (3), page 11.

Diagram P.

Whooping-Cough



Proportion of cases admitted to hospital. Errors of diagnosis.

It will be seen from diagram (N) that the proportion of cases of diphtheria removed to the hospitals of the Metropolitan Asylums Board was about the same as in the preceding year.

Cases certified to be those of diphtheria and admitted into the hospitals of the Metropolitan Asylums Board, but in which the diagnosis was not subsequently confirmed, constituted the following percentage of total cases admitted in successive years :—

Year.	Percentage.	Year.	Percentage.
1901	12·8	1907	17·0
1902	13·5	1908	18·1
1903	14·7	1909	16·8
1904	16·1	1910	14·2
1905	18·0	1911	13·5
1906	15·5		

Whooping-cough.

The deaths from whooping-cough in the Administrative County of London during the year 1911 (52 weeks) numbered 1,038, as compared with 1,363 in 1910 (52 weeks).

The death-rates from this disease in 1911 and preceding periods have been as follows :—

Period.	Death-rate per 1,000 persons living.	Period.	Death-rate per 1,000 persons living.
1841–1850	0·87	1903	0·36*a*
1851–1860	0·88	1904	0·33*a*
1861–1870	0·88	1905	0·33*a*
1871–1880	0·81	1906	0·27*a*
1881–1890	0·69	1907	0·40*a*
1891–1900	0·50*a*	1908	0·21*a*
1901–1910	0·32*a*	1909	0·28*a*
1901	0·35*a*	1910	0·30*a*
1902	0·41*a*	1911	0·23*a*

The following are the death-rates of children under five years of age.

Period.	Death-rate per 1,000 children living at ages 0–5.	Period.	Death-rate per 1,000 children living at ages 0–5.
1851–1860	6·56	1903	3·23*b*
1861–1870	6·53	1904	3·01*b*
1871–1880	6·02	1905	3·01*b*
1881–1890	5·34	1906	2·47*b*
1891–1900	4·21*b*	1907	3·64*b*
1901–1910	2·95*b*	1908	2·00*b*
		1909	2·56*b*
1901	3·14*b*	1910	2·83*b*
1902	3·64*b*	1911	2·15*c*

The death-rate in each year since 1840 in relation to the mean of the period 1841–1911 is shown in diagram (P.), while the deaths in each month since 1890 in relation to the mean monthly deaths of the period 1891–1911 are shown in diagram (G.), facing page 19.

It will be seen from the following table that in the quinquennium 1906–10 the London whooping-cough death-rate was exceeded by that of all the undermentioned towns except Bristol, Bradford, Hull,

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(*a*) See footnote (*c*), page 2. (*b*) Including deaths of Londoners in the Metropolitan Workhouses, Hospitals, and Lunatic Asylums outside the County, but excluding those of non-Londoners in the London Fever Hospital, the West Ham Union Workhouse at Hackney, the Metropolitan Asylums Hospitals and the Middlesex County Asylum, within the County of London. (*c*) See footnote (*b*), page 11.

Nottingham, Portsmouth and Leicester; while in the year 1911 it exceeded that of all except Liverpool, Leeds, Bristol, West Ham, Bradford, Newcastle, Hull and Stoke-on-Trent.

Whooping-cough death rates in large English towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**0·29***a*	**0·23***a*	Bradford	0·18	0·33
Greater London	0·27	0·21	Hull	0·26	0·36
Liverpool	0·46	0·32	Newcastle-on-Tyne	0·36	0·48
Manchester	0·38	0·20	Nottingham	0·28	0·15
Birmingham	0·42	0·19	Stoke-on-Trent	0·31	0·31
Sheffield	0·34	0·14	Portsmouth	0·23	0·17
Leeds	0·31	0·33	Salford	0·39	0·16
Bristol	0·22	0·40	Leicester	0·24	0·19
West Ham	0·42	0·23			

The following table shows that the London whooping-cough death-rate was, in the quinquennium 1906–10, higher than that of any of the undermentioned foreign towns, and in the year 1911 higher than that of all except Amsterdam and Copenhagen.

Whooping-cough death-rates in foreign towns.

Town.	1906-10.	1911.	Town.	1906-10.	1911.
London	**0·29***a*	**0·23***a*	Stockholm	0·16	0·08
Paris	0·10	0·09	St. Petersburg	0·24	0·19
Brussels	0·08	0·03	Berlin	0·17	0·21
Amsterdam	0·19	0·24	Vienna	0·08	0·06
Copenhagen	0·28	0·38	New York	0·07	0·08

Whooping-cough deaths and death-rates in London boroughs.

The following table shows the whooping-cough deaths and death-rates for the year 1911 and the death-rates for the period 1906-10 in the several sanitary districts:—

Metropolitan borough.	Deaths, 1911 (52 weeks).	Death-rate per 1,000 persons living.	
		1906-10.	1911.
Paddington	44	0·20	0·31
Kensington	54	0·21	0·31
Hammersmith	35	0·24	0·29
Fulham	28	0·33	0·18
Chelsea	10	0·24	0·15
Westminster, City of	26	0·11	0·16
St. Marylebone	28	0·23	0·24
Hampstead	3	0·11	0·04
St. Pancras	55	0·31	0·25
Islington	70	0·28	0·21
Stoke Newington	18	0·25	0·36
Hackney	58	0·24	0·26
Holborn	3	0·29	0·06
Finsbury	24	0·48	0·27
London, City of	1	0·16	0·05
Shoreditch	32	0·54	0·29
Bethnal Green	49	0·37	0·38
Stepney	49	0·36	0·18
Poplar	44	0·46	0·27
Southwark	64	0·33	0·34
Bermondsey	50	0·35	0·40
Lambeth	67	0·25	0·23
Battersea	36	0·36	0·22
Wandsworth	70	0·26	0·22
Camberwell	45	0·28	0·17
Deptford	37	0·40	0·34
Greenwich	14	0·37	0·15
Lewisham	18	0·21	0·11
Woolwich	26	0·22	0·05
London	**1038**	**0·29**	**0·23**

It will be seen from the foregoing table that in the period 1906–10 the highest whooping-cough death-rate obtained in Shoreditch (0.54), and the lowest in Westminster and Hampstead (0.11); in the year 1911, Bermondsey (0.40) had the highest death-rate and Hampstead (0.04) the lowest. The

(*a*) See footnote (*c*), page 2.

whooping-cough death-rates in London in each of the four quarters of the year 1911 were as follows: first quarter, 0.38; second quarter, 0.32; third quarter, 0.15; and the fourth quarter, 0.08.

The following table shows that when the London sanitary districts are grouped according to the social condition of the population, the incidence of whooping-cough mortality progressively increases from the highest to the lowest social group. (*a*)

Whooping cough mortality in relation to "social condition," 1901-10 and 1911.

Number of group of boroughs in order of "social condition."	Whooping-cough death-rate at ages 0-5 per 1,000 living,	
	1901–10. (*b*)	1911. (*c*)
I.	2·09	0·87
II.	2·76	2·57
III.	2·77	2·15
IV.	3·19	1·95
V.	3·29	2·07

Information which medical officers of health obtain concerning the occurrence of attacks of whooping-cough is derived, in the main, from school teachers. The number of cases reported, so far as stated in the annual reports, was as follows:—

Metropolitan borough.	Number of cases.	Metropolitan borough.	Number of cases.
Paddington	632	Finsbury	119
Kensington	255	Shoreditch	165
Hammersmith	250	Southwark	361
Chelsea	63	Bermondsey	317
Westminster, City of	279	Lambeth	639
St. Marylebone	177	Battersea	51
St. Pancras	377	Wandsworth	565
Islington	533	Lewisham	208
Hackney	374	Woolwich	41

In most of the reports of medical officers of health there is little reference to whooping-cough. In the report relating to Paddington mention is made of undue prevalence during the past three years. 344 houses were invaded in 1911, and of these, 177 houses had more than one case each. In the Kensington report it is stated that of 255 cases into which inquiry was made only 65 had received medical treatment. There were outbreaks at two schools, one with 35 cases, the other with 28 cases. The medical officers of health of Westminster and Paddington both comment upon the higher fatality as compared with previous years, although in London as a whole there is a decline in the mortality from whooping-cough. In Wandsworth, 97 per cent. of the deaths occurred amongst children under 5 years of age. It is stated in the Greenwich report that application has been made to the Local Government Board asking the Board to make whooping-cough a notifiable disease. From the latter end of 1910 cases of whooping-cough, as well as of measles, were received into the hospitals of the Metropolitan Asylums Board with apparently satisfactory results.

Typhus.

There were no deaths from typhus registered in the Administrative County of London during the year 1911. The death-rates from this disease in successive periods have been as follows:—

Period.	Death-rate per 1,000 persons living.
1871–1880	·055
1881–1890	·008
1891–1900	·001*b*
1901–1910	·000*b*
1901	·001*b*
1902	—
1903	·001*b*
1904	—
1905	—
1906	—
1907	—
1908	—
1909	—
1910	—
1911	—

(*a*) See footnote (*a*) page 13. (*b*) See footnote (*c*) page 2 (*c*) See footnote (*b*) page 11.

The death-rate in each year since 1868 in relation to the mean death-rate of the period 1869-1911 is shown in diagram (Q).

No case of typhus fever occurred in 1911. A case notified as typhus was removed to hospital. The patient resided in Hammersmith, and the case was subsequently diagnosed as one of miliary tuberculosis.

Enteric Fever.

The number of cases of enteric fever notified in the Administrative County of London during 1911 (52 weeks) was 1,022, compared with 1,284 in the year 1910 (52 weeks). The deaths from this disease numbered 144 in 1911 (52 weeks), compared with 196 in 1910 (52 weeks).

The case-rates and death-rates per 1,000 persons living and the case-mortality per cent. in 1910 and preceding periods were as follows :—

Enteric fever death-rates, London

Period.	Death-rate per 1,000 persons living.	Case-rate per 1,000 persons living.	Case-mortality per cent.
1871–1880	0·24	—*a*	—*a*
1881–1890	0·19	—*a*	—*a*
1891–1900 .. .	0·14*b*	0·8	17·4
1901–1910	0·06*b*	0·4	15·3
1901	0·11*b*	0·7	15·6
1902	0·12*b*	0·7	15·8
1903	0·06*b*	0·5	15·7
1904	0·06*b*	0·4	15·1
1905	0·05*b*	0·3	15·1
1906	0·06*b*	0·4	16·3
1907	0·04*b*	0·3	13·9
1908	0·05*b*	0·3	16·6
1909	0·03*b*	0·2	14·0
1910	0·04*b*	0·3	15·3
1911	0·03*b*	0·2	14·1

The death-rate in each year since 1868 in relation to the mean death-rate of the period 1869–1911 is shown in diagram (R).

The notified cases in each week of 1911 may be compared with the average weekly notifications of the period 1890–1911 on reference to diagram (S).

The monthly case-rate and case-mortality in each of the years 1891–1911 in relation to the mean of the whole period is shown in diagram (T).

The following table shows the enteric fever cases, deaths, case-rates and death-rates for the year 1911, and the case-rates and death-rates for the period 1906-10 in the several sanitary districts—

Enteric fever cases, deaths and death-rates in London boroughs.

Metropolitan borough.	Notified cases, 1911 (52 weeks).	Case-rate per 1,000 persons living.		Deaths, 1911 (52 weeks).	Death-rate per 1,000 persons living.	
		1906-10.	1911.		1906-10.	1911.
Paddington	37	0·23	0·26	5	0·04	0·04
Kensington	23	0·24	0·13	4	0·03	0·02
Hammersmith	27	0·25	0·22	7	0·05	0·06
Fulham	38	0·27	0·25	8	0·05	0·05
Chelsea	7	0·24	0·11	—	0·03	—
Westminster, City of ..	30	0·25	0·19	4	0·04	0·03
St. Marylebone	18	0·25	0·15	2	0·03	0·02
Hampstead	14	0·24	0·16	2	0·04	0·02
St. Pancras	69	0·29	0·32	7	0·04	0·03
Islington	73	0·31	0·22	12	0·05	0·04
Stoke Newington	6	0·22	0·12	1	0·04	0·02
Hackney	46	0·35	0·21	8	0·05	0·04
Holborn	10	0·36	0·20	3	0·05	0·06
Finsbury	80	0·35	0·92	8	0·08	0·09
London, City of	8	0·31	0·41	—	0·06	—

Continued on next page.

(*a*) The Infectious Disease (Notification) Act came into force in 1889. (*b*) See footnote (*c*), page 2.

Diagram Q.

Typhus.

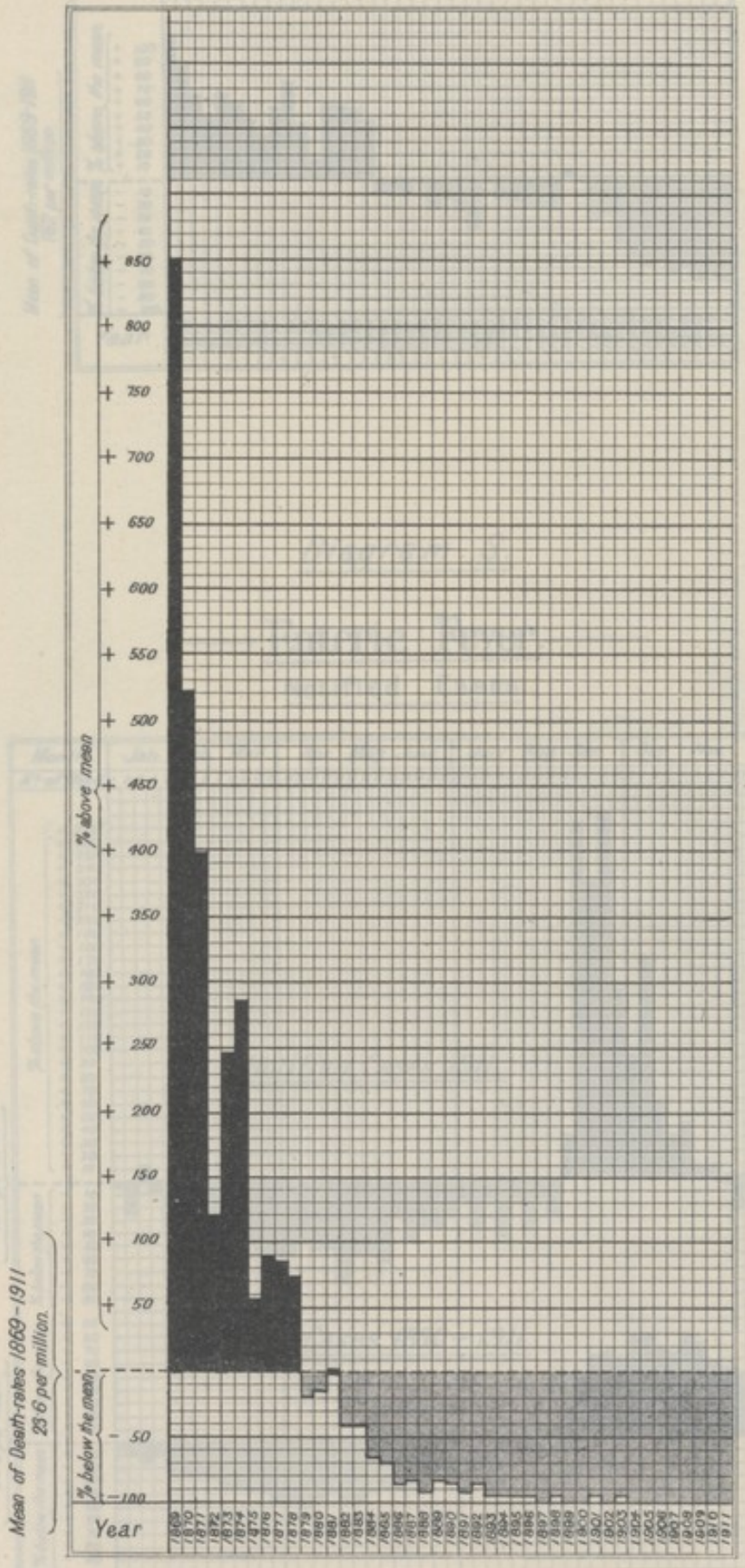




Diagram R.

Enteric Fever.

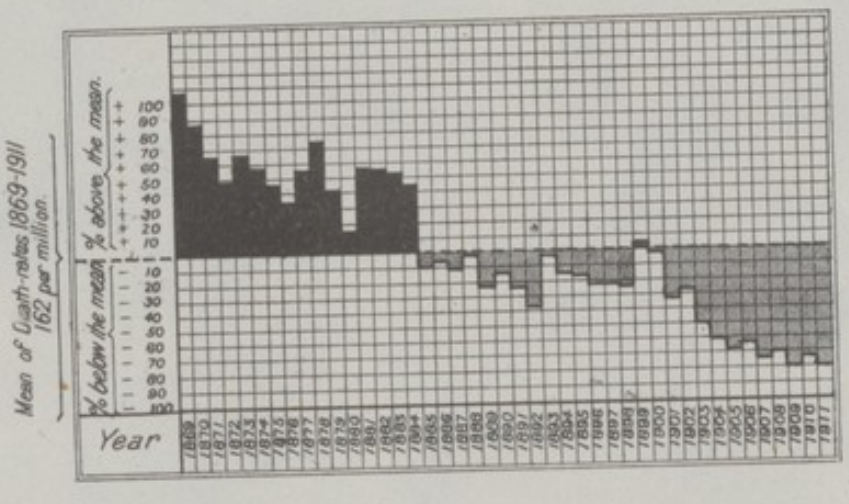


Diagram S.

Enteric Fever.

Notified Cases.

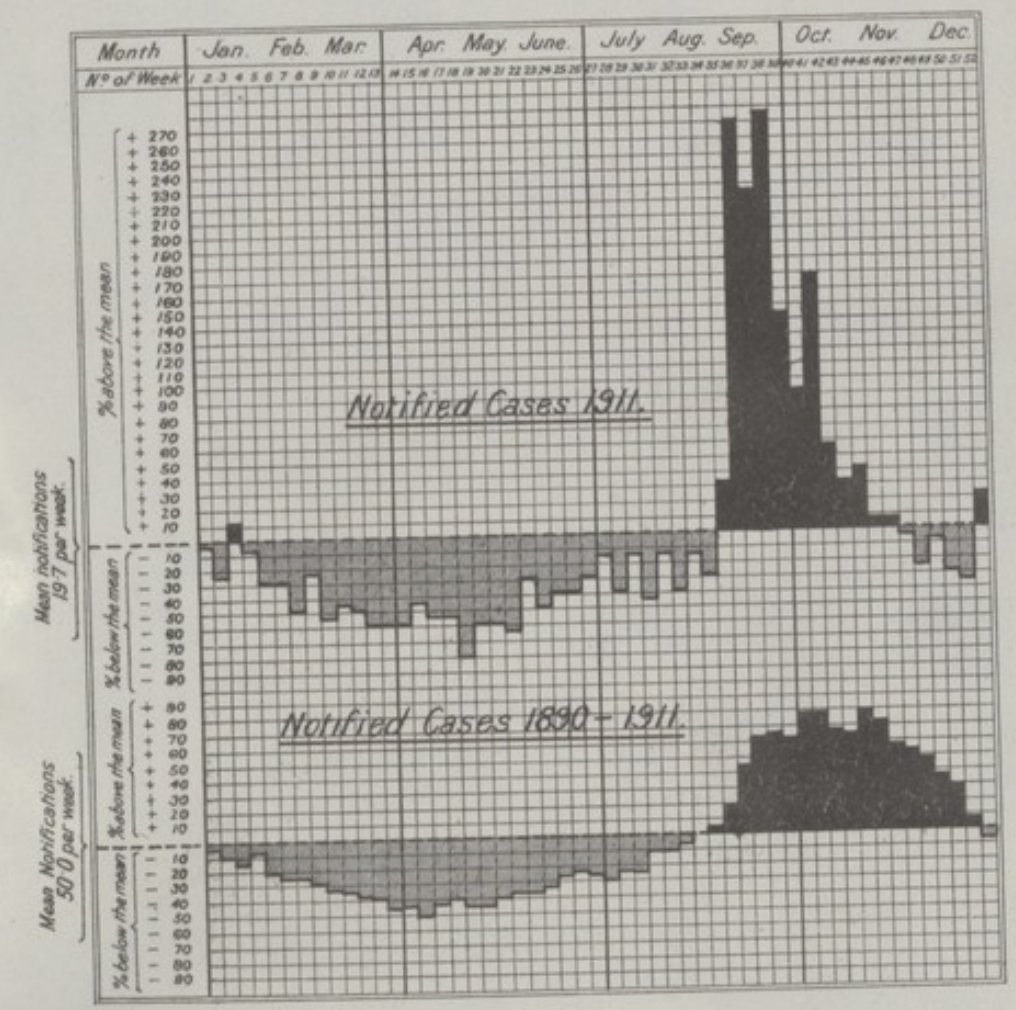


Diagram R

Enteric Fever.

Diagram S

Enteric Fever.

Notified Cases

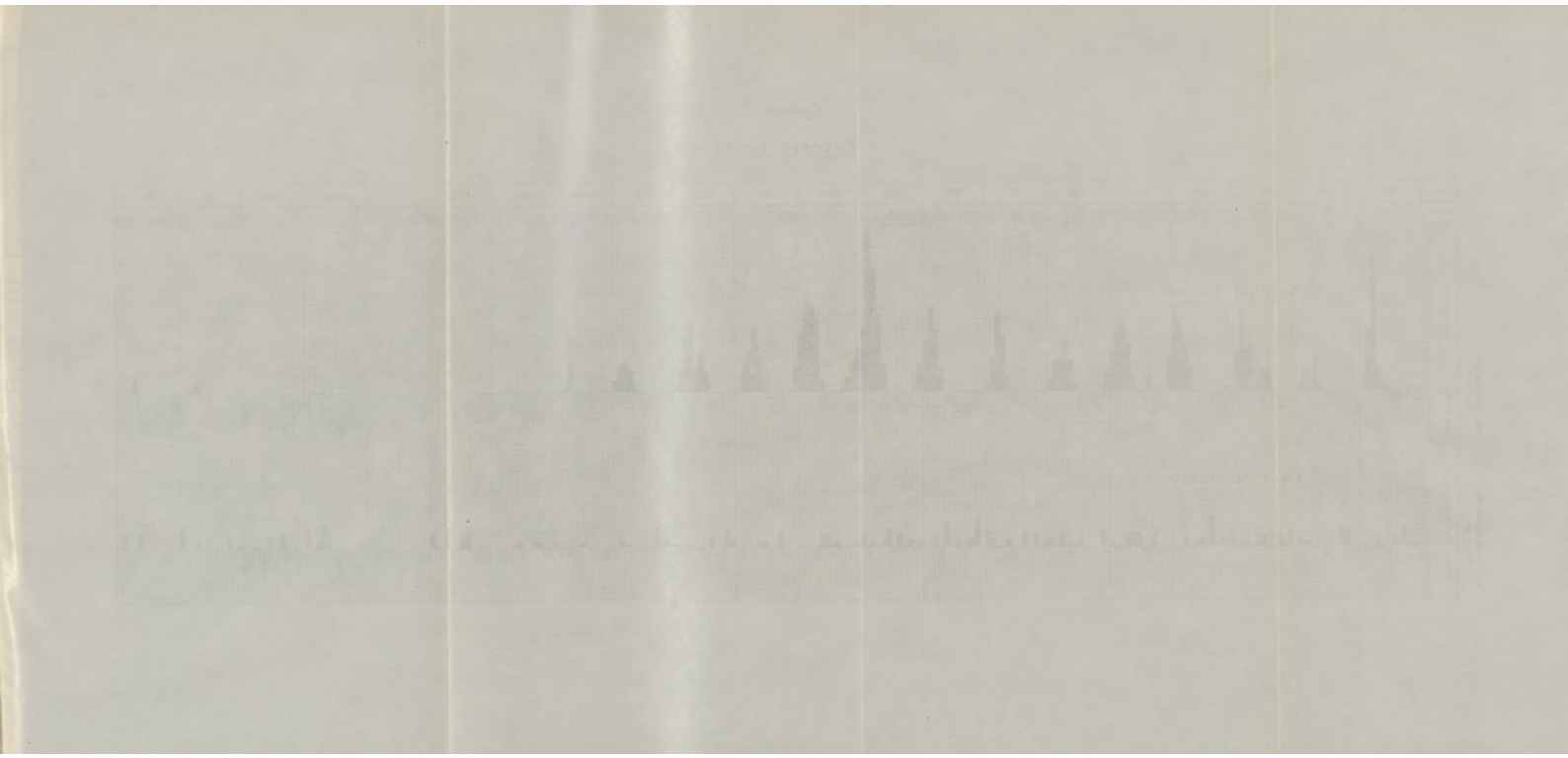
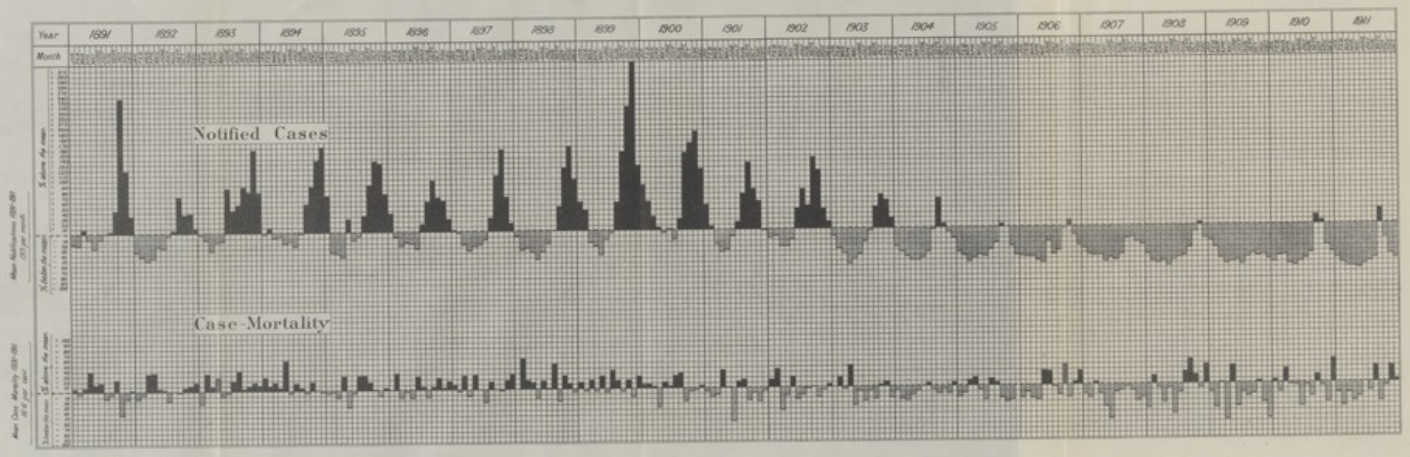


Diagram T

Enteric Fever



Metropolitan borough.	Notified cases, 1911 (52 weeks).	Case rate per 1,000 persons living.		Deaths, 1911 (52 weeks).	Death-rate per 1,000 persons living.	
		1906-10.	1911.		1906-10.	1911.
Shoreditch	22	0·49	0·20	1	0·06	0·01
Bethnal Green	31	0·52	0·24	3	0·09	0·02
Stepney	80	0·37	0·29	6	0·06	0·02
Poplar	63	0·42	0·39	14	0·08	0·09
Southwark	45	0·33	0·24	5	0·05	0·03
Bermondsey	26	0·33	0·21	5	0·04	0·04
Lambeth	61	0·22	0·21	12	0·04	0·04
Battersea	32	0·27	0·19	3	0·04	0·02
Wandsworth	58	0·24	0·19	9	0·03	0·03
Camberwell	33	0·23	0·13	5	0·03	0·02
Deptford	13	0·29	0·12	2	0·05	0·02
Greenwich	10	0·30	0·10	3	0·05	0·03
Lewisham	36	0·18	0·22	5	0·02	0·03
Woolwich	18	0·18	0·15	—	0·03	—
Port of London	8					
London	**1,022**	**0·29**	**0·23**	**144**	**0·04**	**0·03**

It will be seen that among the several sanitary districts in the period 1906–10 the enteric fever death-rate was highest in Bethnal Green (0·09), and lowest in Lewisham (0·02); in the year 1911, Poplar and Finsbury (0.09) had the highest enteric fever death-rate; while Shoreditch (0.01) had the lowest, exclusive of Chelsea, City of London and Woolwich, where no deaths occurred. The death-rates from enteric fever in London in each of the four quarters of the year 1911 were as follows: first quarter, 0·02; second quarter, 0·01; third quarter, 0·04; and fourth quarter, 0·05.

The following table shows the notified cases, deaths, case-rates, death-rates and fatality of enteric fever at the several ages and for each sex in London during the year 1911. The case-rate, death-rate and fatality were, at "all ages," higher among males than among females. In the age groups adopted for the purposes of this table the greatest incidence of attack was upon males aged 15–25 and females aged 10–15, and the greatest incidence of death was upon males aged 25–35 and females aged 20–25. The fatality was greatest among males aged 45–55 and females over 45 years of age:—

Enteric fever—age and sex—incidence.

Age-period.	Males.					Females.				
	Notified Cases. (a)	Deaths. (a)	Case-mortality per cent.	Rates per 100,000 living.		Notified Cases. (a)	Deaths. (a)	Case-mortality per cent.	Rates per 100,000 living.	
				Cases.	Deaths.				Cases.	Deaths.
All Ages—	**541**	**77**	**14·2**	**26**	**4**	**481**	**68**	**14·1**	**20**	**3**
0—	—	—				—	—			
1—	—	—				4	—			
2—	3	1	5·9	7	0	4	1	15·0	9	1
3—	7	—				7	1			
4—	7	—				5	1			
5—	68	2	2·9	32	1	63	7	11·1	29	3
10—	66	6	9·1	32	3	73	6	8·2	36	3
15—	84	6	7·1	44	3	55	7	12·7	26	3
20—	82	12	14·6	43	6	66	11	16·7	28	5
25—	107	24	22·4	30	7	97	12	12·4	22	3
35—	64	12	18·7	22	4	64	11	17·2	19	3
45—	39	11	28·2	18	5	29	6	20·7	12	2
55 & upwards	14	3	21·4	6	1	14	5	35·7	5	2

The annual reports of medical officers show that considerable effort is made to trace the source of infection where enteric fever cases have occurred. As was noted last year a large number of cases are stated to be imported cases, most of them giving a history of seaside or foreign infection. Thus, of 471 cases occurring in 18 boroughs it is stated that 91, or 19.3 per cent., were infected outside the borough. This is a somewhat higher percentage than that observed last year when it was found that 15.7 per cent. of 735 cases were so infected. In 57 cases among the 471 in respect of which attempt was made to trace the source of infection there was a history of eating shellfish. In 7 cases the illness was attributed to cockles, in 3 cases to winkles, in 2 cases to mussels, and in 1 case to oysters. In a few instances the consumption of fried fish is mentioned as a probable cause. Suspicion has also fallen upon watercress and ice cream in some cases.

In some of the reports mention is made of the difficulty of diagnosis and the length of time which elapses before the true nature of the disease is discovered. Dr. Allan, of Westminster, directs atten-

(a) See footnote (a) page 24.

tion to a case recognised only after death. In Deptford the mortality rate is said to be the lowest on record. Dr. Davies makes mention of 4 cases occurring in Woolwich amongst persons supplied with milk from a particular dairy where a girl was employed who had had enteric fever a year-and-a-half previously.

In each of the annual reports of Dr. Thomas, the medical officer of health of Finsbury, for 1910 and 1911, special reference is made to localised prevalences of typhoid fever and to possible sources of infection. For instance, the suggestion is made that hawkers suffering from incipient typhoid fever, while selling watercress or fruit, may be a means of spreading the disease. A further possibility considered is the existence of undiscovered "carriers"; and in the case of an outbreak including upwards of 50 cases in September, 1911, infection by means of missed and early cases of patients, some of whom "fed and ate in the neighbouring ice cream shops and fried fish and other restaurants and possibly infected the feeding utensils."

In connection with the outbreak last referred to, question arose as to whether cases occurring in other parts of London were due to one and the same cause as the Finsbury cases, and all the circumstances were, therefore, studied in detail by me, and I received every assistance from Dr. Thomas and his staff. My report was submitted by Sir Shirley Murphy to the County Council, and is set out in extenso in Chapter XXXIII. As Sir Shirley pointed out, "*prima facie* there were some grounds for suspecting that the outbreak might possibly have been due to ice cream," but an analysis of all the evidence "failed to show any other explanation than the consumption of fried fish as the cause of the prevalence." Dr. Thomas in his report for 1911 criticises the fried fish and ice cream hypotheses and states that all the cases cannot be satisfactorily explained on the basis of infection by one or the other of these two food substances. Dealing with the theory of fried fish infection, he raises doubt as to the reliability of the statements made by the sufferers under examination; he also refers to the temperature difficulty and points out that the evidence in favour of the fish theory is based upon statistical grounds, and that it is thus a "statistical probability" that is raised.

At the commencement of the Finsbury outbreak there was some ground for suspecting ice-cream, inasmuch as more than one-third of the sufferers had obtained this article of food from one particular source; but 35 of the 56 sufferers had not partaken of ice cream. On the other hand, no fewer than 52 of the 56 persons in whom the diagnosis of typhoid fever was confirmed had partaken of the suspected fish, and having regard to the extent of the area involved in Finsbury and the degree of prevalence of typhoid fever in London at the time, 3 or 4 individuals may be regarded as representing sporadically occurring cases of the disease unconnected with the special prevalence. Moreover, careful study of the age incidence and topographical distribution both of the persons attacked and the purchasers of fried fish at the particular shop, yielded strong evidence in support of the hypothesis of fish infection, evidence which is further strengthened by the fact that there were numerous instances among families where a single person bought suspected fish and was alone attacked, whilst among families sharing fish multiple cases occurred.

Dr. Thomas points out that during a period of three weeks 18,000 dinners and suppers were served from the fish shop and that only 74 cases of typhoid fever developed. The presumption that all the fish supplied during the three weeks' period fell under suspicion has not, of course, at any time been raised. My report dealt fully with the question of the particular consignment or consignments of fish, if any, at fault, and analysis of the available evidence makes it clear that it was only the "cheaper portions of fried fish sold to the early evening customers on a particular evening in August" which could be held to fall under suspicion (see Chapter XXXIII.).

Incidentally, evidence was obtained which raised some presumption that the infected fish was distributed not only in Finsbury but also in two other boroughs. The dates of onset of illness pointed to the delivery in London of the infected consignment of fish on Thursday, 17th August, or Friday, 18th August. It is a matter of interest to note that the deliveries of fish in London on these dates were in some instances from unusual sources owing to dislocation of traffic caused by a strike. Thus the *Times* of 22nd August, in commenting upon the unusual sight presented by thirteen North Sea steam trawlers at Billingsgate on the preceding day, notes that, "owing to the strike, trawler owners on the coast found it impossible to dispose of their boat catches at the end of the preceding week."

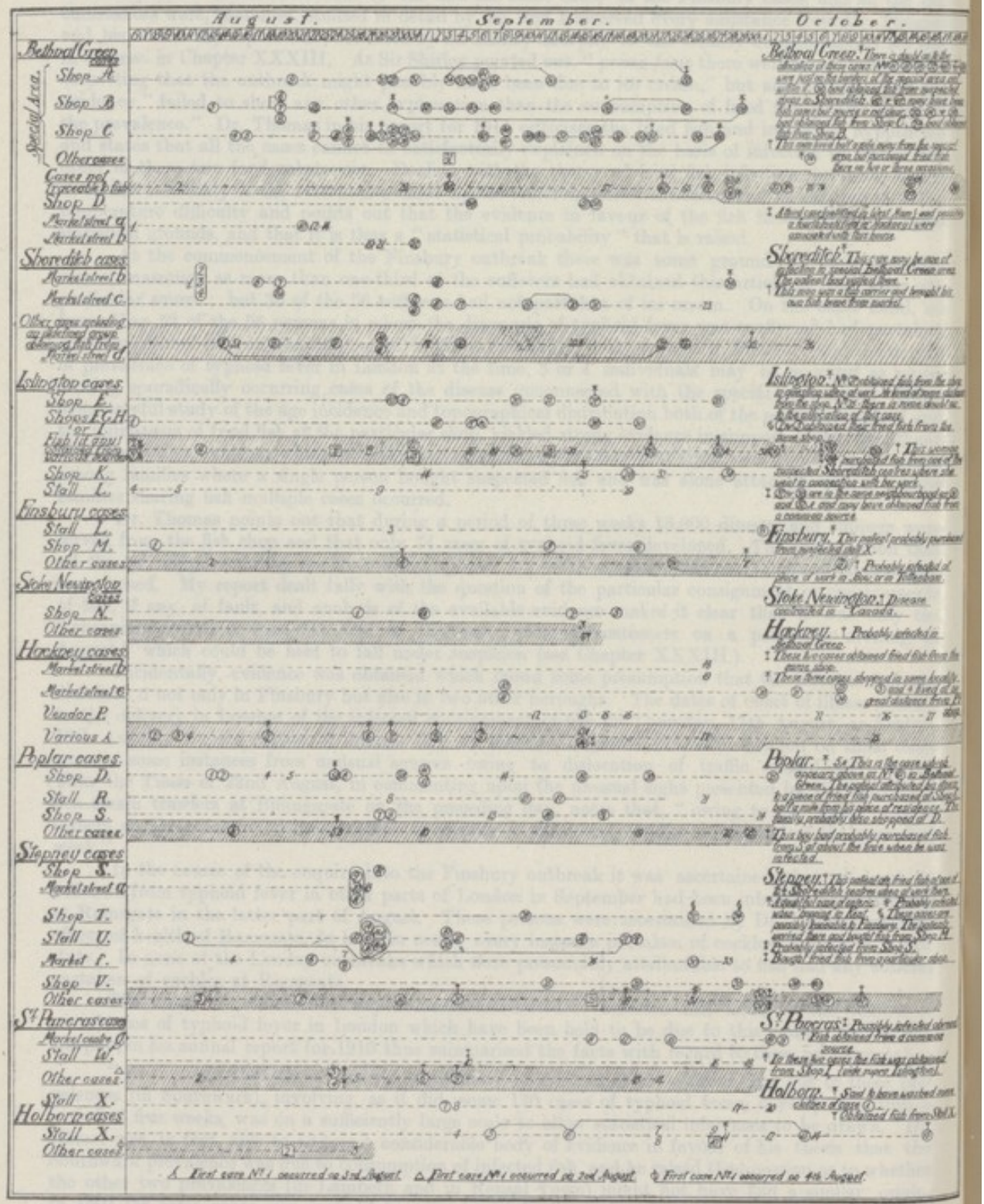
In the course of the enquiry into the Finsbury outbreak it was ascertained that at least 20 sufferers from typhoid fever in other parts of London in September had been infected whilst staying at Ramsgate in the latter part of August. These persons were ascertained by Dr. Dundas, medical officer of health of Ramsgate, to have in nearly every instance partaken of cockles, usually in a raw state. In none of the London outbreaks which were presumably attributable to fish had any sufferer partaken of cockles at Ramsgate.

The occurrence of the Finsbury outbreak attributed to infected fish adds to the number of prevalences of typhoid fever in London which have been held to be due to this cause. Sir Shirley Murphy, in his annual report for 1910 thus summarised the facts with regard to these prevalences:—

"In the year 1900 three localised prevalences of typhoid fever occurred, and one of these prevalences (in Southwark), involving, as it did, some 120 cases of typhoid fever, developing within a period of five weeks, was on a sufficiently large scale to allow statistical inferences to be drawn. Dr. Hamer was, in fact, able to adduce a considerable body of evidence in favour of his thesis that the Southwark prevalence was due to consumption of infected fish, and he raised the question as to whether the other two prevalences (in Lambeth and in Kensal Town) might not have had a similar origin. In 1903 the same cause was assigned by him, as result of enquiry, for small prevalences of typhoid fever in Holborn and in Southwark, and in 1906 there was some evidence pointing in a similar direction. In 1908 fish again fell under suspicion in Bethnal Green and Shoreditch.

Diagram shewing cases of Typhoid Fever notified in ten London Boroughs distributed so as to indicate the probable source of infection in each instance.

Dates of onset of symptoms (August 6th to October 10th) are indicated by the position of the serial numbers particularising each case in the several boroughs. The groups of cases are arranged in horizontal sections in such a way as to allocate each case to one of thirty-one sources of fish supply. These sources are indicated on the left hand side of the diagram by letters A to X referring to individual vendors, and letters Q to Z referring to market streets. Cases placed in the hatched section belonging to each borough may be regarded as the ordinary cases of typhoid fever occurring apart from the special cause.



0 This figure described about a group of numbers signifies that the cases belong to one house the dates of onset being practically simultaneous.

□ This sign signifies "notified in error" (Case not really enteric fever).

○ Circles are described about those numbers which correspond to cases in which there is a history of eating fried fish.

"The prevalence of 1910 affected an area in Bethnal Green almost identical in extent with that involved two years before. The outbreak was, moreover, of sufficient dimensions to enable the question of shellfish, which had complicated the problem in 1908, to be eliminated, and an examination of the sources of supply of fried fish, to the 49 sufferers from typhoid fever in the affected locality, showed that they had in all probability obtained their fish from one or other of three shops, two of which had a common source of fish supply. Analysis of the facts, indeed, showed that while there were 27 fried fish shops within the affected area, 24 had supplied none, or only one, or at most two, sufferers; but in the case of the remaining three shops, 25, 12 and 12 sufferers respectively had been supplied. Thus all 49 sufferers obtained fried fish from one or other of these three shops."

"Meantime it had become apparent that coincidentally with the outbreak in the specially affected area in Bethnal Green, a number of other localised prevalences of typhoid fever had been developed in other parts of Bethnal Green, in other parts of London generally, and in Tottenham and Edmonton. Examination of the facts concerning these localised prevalences (33 in all) failed to show in each instance that any ordinarily accepted cause of typhoid fever had been operative, but it was found that all sufferers contributing to the excessive prevalences had partaken of fish (usually fried fish), and that in all the instances in which information on this head could be obtained, small plaice belonging to the category described by fried fish vendors as 'late steamer fish,' was in question. The chances against such a combination of circumstances being the result of mere coincidence were, of course, very great."

"Dr. Hamer draws attention to the interesting fact, established by the enquiries and reports of officers of the Board of Trade, that much of the small plaice sold at Billingsgate comes from an area in which are situated certain 'nursery grounds,' not far from the mouth of the Elbe, and he suggests as a possibility that estuary fish may be in question."

A full examination of the facts elicited with regard to the outbreak of 1910 was published in Chapter XXXII. of last year's Annual Report. The accompanying diagram (v), which shows the allocation of typhoid fever cases to the suspected shops, stalls, etc., in ten London boroughs, was not then included, and is here reproduced for purposes of reference. The report of 1910 is summarised and commented upon by Dr. Collingridge in his report for 1911. He says, "At the time that this matter was under the consideration of your Committee and the Court of Common Council it was resolved that your medical officer of health should arrange for the supervision of Billingsgate Market to be carried out by the existing staff. It was at that time hoped that such arrangement could be carried out, but it has, however, since been found that in consequence of the very large increase of work thrown upon your meat inspectors, it is not possible to spare an officer for this purpose. It is important that the supervision should be constant, and it is further necessary that such officer should have expert knowledge of fish inspection, and the appointment of a special officer to act in regard to fish is now under the consideration of the Sanitary Committee."

The number of cases in which blood was examined by the Widal test at the expense of the sanitary authority is shown in the reports relating to the following districts :—

Bacteriological diagnosis.

Metropolitan borough.	No. of specimens examined.	No. found positive.	Metropolitan borough.	No. of specimens examined.	No. found positive.
Paddington	15	14	Shoreditch	6	2
Fulham	21	10	Bethnal Green	34	9
Chelsea	—	—	Stepney	47	20
Westminster, City of ..	16	5	Poplar	36	18
St. Marylebone	12	1	Southwark	15	1
Hampstead	8	5	Bermondsey	14	2
St Pancras	40	14	Lambeth	55	22
Islington	52	19	Battersea	26	3
Stoke Newington	13	3	Wandsworth	27	11
Hackney	21	7	Deptford	11	—
Holborn	3	—	Greenwich	9	3
Finsbury	19	10	Lewisham	25	11
London, City of	5	2	Woolwich	20	8

Cases certified to be those of enteric fever admitted into the hospitals of the Metropolitan Asylums Board, but in which the diagnosis was not subsequently confirmed, constituted the following percentage of total cases admitted in successive years :—

Enteric fever. Errors of diagnosis.

Year.	Percentage.	Year.	Percentage.
1900	18·3	1906	25·2
1901	25·4	1907	29·1
1902	21·2	1908	28·1
1903	24·2	1909	37·9
1904	26·3	1910	24·8
1905	29·7	1911	34·2

Diarrhœa and Enteritis.

The deaths at all ages from diarrhœa and enteritis in the administrative County of London during 1911 (52 weeks) numbered 6,162. Of these 4,408 occurred during the first year of life, and 905 in the second year. In each quarter the deaths numbered 298, 316, 4,826 and 722 respectively.

In diagram V the death-rate from diarrhœa and enteritis among infants under two years of age in each year since 1861 is shown in relation to the mean death-rate for the period 1862–1911.

The following table shows that the London death-rate in 1911 from diarrhœa and enteritis among infants under two years of age (calculated upon the population at all ages) was lower than the death-rate of any of the undermentioned large English towns, except Sheffield, Bristol, Bradford, Newcastle-on-Tyne, and Leicester.

Diarrhœa deaths in large English towns.

Town.	Deaths.	Death-rate.	Town.	Deaths.	Death-rate.
London	**5 313***a*	**1·18***a*	Bradford	195	0·68
Greater London ..	8,267	1·14	Hull	550	1·98
Liverpool	1,458	1·96	Newcastle-on-Tyne ..	225	0·84
Manchester	1,090	1·53	Nottingham	410	1·58
Birmingham	881	1·62	Stoke-on-Trent ..	614	2·62
Sheffield	534	1·17	Portsmouth	276	1·19
Leeds	568	1·28	Salford	348	1·51
Bristol	344	0·96	Leicester	202	0·89
West Ham	513	1·78			

The deaths and death-rates from diarrhœa and enteritis among infants under two years of age for the year 1911 in each of the sanitary districts of London, are shown in the following table :—

Diarrhœa deaths in London boroughs.

Metropolitan borough	Deaths, 1911 (52 weeks).	Death-rate 1911.	
		Per 1,000 living, all ages.	Per 100 born.
Paddington	134	0·94	4·41
Kensington	146	0·85	4·49
Hammersmith	178	1·47	6·08
Fulham	213	1·39	5·17
Chelsea	55	0·83	4·33
Westminster, City of	63	0·40	2·67
St. Marylebone	83	0·71	3·49
Hampstead	22	0·26	1·72
St. Pancras	201	0·92	3·62
Islington	365	1·12	4·50
Stoke Newington	28	0·55	2·68
Hackney	195	0·88	3·73
Holborn	34	0·69	3·60
Finsbury	142	1·63	5·31
London, City of	10	0·52	4·42
Shoreditch	222	2·00	6·28
Bethnal Green	248	1·94	6·16
Stepney	468	1·68	5·35
Poplar	316	1·95	6·30
Southwark	298	1·56	5·23
Bermondsey	212	1·69	5·42
Lambeth	336	1·13	4·61
Battersea	222	1·33	5·08
Wandsworth	293	0·94	4·34
Camberwell	276	1·06	4·31
Deptford	171	1·57	5·70
Greenwich	152	1·59	6·40
Lewisham	128	0·79	3·74
Woolwich	102	0·84	3·63
London	**5,313**	**1·18**	**4·75**

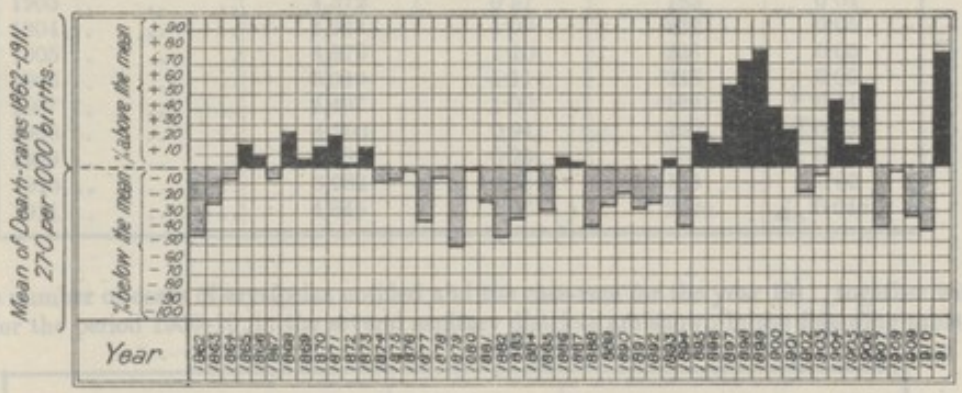
It will be seen from the foregoing table that the death-rate from diarrhœa and enteritis per 1,000 living of all ages, in 1911, was highest in Shoreditch (2.00) and Poplar (1.95) and lowest in Hampstead (0.26). The death-rates in London in each of the four quarters of the year 1911 were as follows: first quarter, 0.19; second quarter, 0.19; third quarter, 3.82; and fourth quarter, 0.52.

(*a*) See footnote (*c*) page 2.

Diagram V.

Diarrhœa & Enteritis

(Deaths under two years of age per 1000 births.)



Diarrhœa and Enteritis.

The deaths at all ages from diarrhœa and enteritis in the administrative County of London during 1911 (52 weeks) numbered 6,163. Of these 5,408 occurred during the first year of life, and 905 in the second year. In each quarter the deaths numbered 208, 310, 4,808 and 737 respectively.

In diagram V the death-rate from diarrhœa and enteritis among infants under two years of age in each year since 1861 is shown in relation to the mean death-rate for the period 1861–1911.

The following table shows that the London death-rate in 1911 from diarrhœa and enteritis among infants under two years of age (calculated upon the population-at-all-ages) was lower than the death-rate of any of the undermentioned large English towns, except Sheffield, Bristol, Bradford, Newcastle-on-Tyne, and Leicester.

Diarrhœa deaths in large English towns.

Town.	Deaths.	Death-rate.	Town.	Deaths.	Death-rate.
London	5,813a	1·16a	Bradford	105	0·98
Greater London	6,267	1·14	Hull	800	1·98
Liverpool	1,498	1·96	Newcastle-on-Tyne	222	0·84
Manchester	1,000	1·93	Nottingham	410	1·68
Birmingham	881	1·62	Salford	614	2·62
Sheffield	276	1·17	Portsmouth	276	1·10
Leeds	543	1·97	Plymouth	248	1·81
Bristol	244	0·92	Leicester	202	0·69
West Ham	313	1·73			

Diagram V.

Diarrhœa & Enteritis

(Deaths under two years of age per 1000 births)

The deaths and death-rates from diarrhœa and enteritis among infants under two years of age for the year 1911 in each of the sanitary districts of London, are shown in the following table :—

Diarrhœa deaths in London boroughs.

Metropolitan borough.	Deaths, 1911.	Death-rate 1911.	
Holborn	34	0·69	3·90
Finsbury	142	1·63	6·31
London, City of	10	0·62	4·12
Shoreditch	323	2·00	8·23
Bethnal Green	243	1·94	6·14
Stepney	468	1·83	6·45
Poplar	316	1·90	6·90
South'wark	288	1·36	5·23
Bermondsey	312	1·69	6·42
Lambeth	336	1·13	4·61
Battersea	222	1·43	5·08
Wandsworth	230	0·94	4·31
Camberwell	316	1·06	4·31
Deptford	171	1·27	5·70
Greenwich	136	1·35	6·40
Lewisham	128	0·79	4·74
Woolwich	102	0·64	3·63
London	5,313	1·18	4·75

It will be seen from the foregoing table that the death-rate from diarrhœa and enteritis per 1,000 living of all ages, in 1911, was highest in Shoreditch (2·00) and Poplar (1·90) and lowest in Hampstead (0·50). The death-rates in London in each of the four quarters of the year 1911 were as follows:—first quarter, 0·19; second quarter, 0·10; third quarter, 3·63; and fourth quarter, 0·32.

(a) See footnote to page 2.

Erysipelas.

The deaths(*a*) from erysipelas in the Administrative County of London during 1911 (52 weeks) numbered 202, as compared with 130 in 1910 (52 weeks).

The age-distribution of these deaths was as follows :—

Under 1 Year.	1—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75+	All ages.
26	4	—	—	5	5	9	24	33	29	39	28	202

The number of cases notified and the number of deaths registered from this disease since 1890 have been as follows :—

Year.	Notified Cases.	Case-rate per 1,000 persons living.	Deaths. (*b*)	Death-rate per 1,000 persons living.
1891	4,764	1·13	214	0·05
1892	6,934	1·63	292	0·07
1893	9,700	2·26	424	0·10
1894	6,080	1·40	221	0·05
1895	5,660	1·30	179	0·04
1896	6,436	1·43	207	0·05
1897	5,794	1·31	184	0·04
1898	5,169	1·16	165	0·04
1899	5,606	1·25	213	0·05
1900	4,762	1·06	182	0·04
1901	4,604	1·02	171	0·04
1902	5,536	1·20	183	0·04
1903	4,372	0·97	183	0·04
1904	4,943	1·09	232	0·05
1905	4,972	1·10	226	0·05
1906	5,019	1·11	245	0·05
1907	4,497	1·00	189	0·04
1908	4,203	0·91	160	0·03
1909	4,192	0·93	180	0·04
1910	3,982	0·88	133	0·03
1911	4,845	1·07	202*a*	0·04*a*

The number of cases of erysipelas notified and the case-rate for the year 1911, together with the case-rate for the period 1906–10, in the several sanitary districts are shown in the following table :—

Metropolitan borough.	Notified Cases, 1911 (52 weeks).	Case-rate per 1,000 persons living.	
		1906-10.	1911.
Paddington	117	0·80	0·82
Kensington	125	0·78	0·73
Hammersmith	100	0·69	0·82
Fulham	118	0·83	0·77
Chelsea	52	0·63	0·79
Westminster, City of	82	0·57	0·51
St. Marylebone	109	1·07	0·93
Hampstead	50	0·48	0·59
St. Pancras	199	0·82	0·92
Islington	276	0·72	0·85
Stoke Newington	42	0·63	0·83
Hackney	361	1·23	1·63
Holborn	37	0·86	0·76
Finsbury	223	1·40	2·55

Continued on next page.

(*a*) See footnote (*c*) page 2. (*b*) See footnote (*b*) page 29.

Metropolitan borough.	Notified Cases, 1911 (52 weeks).	Case-rate per 1,000 persons living.	
		1906-10.	1911.
London, City of	14	0·62	0·72
Shoreditch	160	1·21	1·44
Bethnal Green	248	1·66	1·94
Stepney	488	1·52	1·75
Poplar	205	1·18	1·27
Southwark	316	1·31	1·65
Bermondsey	152	1·22	1·21
Lambeth	246	0·74	0·83
Battersea	162	0·96	0·97
Wandsworth	204	0·73	0·65
Camberwell	254	0·96	0·97
Deptford	180	1·45	1·65
Greenwich	133	1·00	1·40
Lewisham	105	0·58	0·65
Woolwich	81	0·81	0·67
Port of London	6		
London	**4,845**	**0·96**	**1·07**

The following table shows the age and sex distribution of the notified cases of erysipelas in 1911—

Sex.	Under 1 year.	1–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75 and upwards.	All Ages.
Males	72	114	82	96	106	85	283	380	383	279	174	58	2,112
Females.. ..	68	98	79	117	158	159	364	532	490	354	218	96	2,733
Persons ..	**140**	**212**	**161**	**213**	**264**	**244**	**647**	**912**	**873**	**633**	**392**	**154**	**4,845**

The table shows, so far as the figures relating to notified cases of this disease can be trusted in this connection, that the number of females attacked exceeds the number of males attacked, and this is true, even when allowance is made for the excess of females in the total population.

Puerperal Fever.

The deaths(*a*) in the Administrative County of London during the year 1911 (52 weeks) attributed to puerperal fever(*b*) numbered 142, as compared with 161 in 1910 (52 weeks) and 180 in 1909 (52 weeks).

The number of cases notified and the number of deaths registered from this cause since the year 1890 have been as follows—

Year.	Notified cases.	Deaths.(*a*)
1891..	221	222
1892..	337	313
1893..	397	352
1894..	253	210
1895..	236	208
1896..	277	225
1897..	264	215
1898..	247	184
1899..	326	209
1900..	237	169
1901..	253	184
1902..	311	201
1903..	233	170
1904..	273	198
1905..	292	183
1906..	298	187
1907..	254	152
1908..	228	137
1909..	287	180
1910..	292	161
1911..	302	142*c*

(*a*) See footnote (*b*) page 29. (*b*) Including deaths from puerperal septicæmia and puerperal pyæmia.
(*c*) See footnote (*c*) page 2

If these cases and deaths are considered in relation to the total population and total births the following rates are obtained—

Year.	Case-rate per 1,000 living.	Case-rate per 1,000 births.	Death-rate (*a*) per 1,000 living.	Death-rate (*a*) per 1,000 births.
1891–1895	0·07	2·17	0·06	1·97
1896–1900	0·06	2·03	0·05	1·50
1901–1905	0·06	2·10	0·04	1·44
1906–1910	0·06	2·27	0·04	1·36
1891	0·05	1·64	0·05	1·65
1892	0·08	2·55	0·07	2·37
1893	0·09	2·98	0·08	2·65
1894	0·06	1·92	0·05	1·60
1895	0·05	1·76	0·05	1·56
1896	0·06	2·04	0·05	1·66
1897	0·06	1·98	0·05	1·61
1898	0·05	1·86	0·04	1·39
1899	0·07	2·45	0·05	1·57
1900	0·05	1·81	0·04	1·29
1901	0·06	1·94	0·04	1·41
1902	0·07	2·35	0·04	1·52
1903	0·05	1·79	0·04	1·30
1904	0·06	2·12	0·04	1·54
1905	0·06	2·32	0·04	1·45
1906	0·07	2·39	0·04	1·50
1907	0·06	2·09	0·03	1·25
1908	0·05	1·86	0·03	1·11
1909	0·06	2·46	0·04	1·54
1910	0·06	2·53	0·04	1·40
1911	0·07	2·70	0·03*b*	1·27*b*

An account of cases of puerperal fever occurring in the practice of midwives will be found on page 77.

Influenza, Bronchitis and Pneumonia.

The deaths(*b*) attributed to influenza, which in 1910 numbered 715 (52 weeks), fell to 496 in 1911 (52 weeks). The deaths from bronchitis numbered 5,203 in 1911, as compared with 4,996 in 1910. In 1911 there were 5,618 deaths attributed to pneumonia, as compared with 6,547 in 1910. The deaths and death-rates from these diseases since 1889 have been as follows :—

Year.	Influenza (*a*).		Bronchitis (*a*).		Pneumonia (*a*).	
	Deaths.	Death-rate.	Deaths.	Death-rate.	Deaths.	Death-rate.
1890..	652	0·15	12,448	2·93	6,224	1·46
1891..	2,336	0·55	13,136	3·12	6,915	1·64
1892..	2,264	0·53	11,183	2·63	6,164	1·45
1893..	1,526	0·35	10,413	2·42	7,198	1·67
1894..	750	0·17	7,816	1·80	5,321	1·23
1895..	2,156	0·49	10,633	2·43	5,989	1·37
1896..	496	0·11	7,558	1·68	5,537	1·23
1897..	671	0·15	7,408	1·67	5,053	1·14
1898..	1,283	0·29	7,779	1·74	5,440	1·22
1899..	1,817	0·41	9,195	2·05	6,666	1·49
1900..	1,950	0·43	8,699	1·93	7,189	1·60
1901..	664	0·15	7,317	1·62	6,121	1·35
1902..	1,073	0·23	7,901	1·71	6,801	1·47
1903..	644	0·14	5,240	1·15	5,826	1·28
1904..	709	0·16	6,373	1·40	6.609	1·45
1905..	689	0·15	6,049	1·33	6,965	1·53
1906..	895	0·20	5,373	1·18	6,586	1·45
1907..	967	0·21	6,010	1·32	7,538	1·66
1908..	1,350	0·29	5,342	1·15	6,751	1·46
1909..	1,216	0·27	6,128	1·35	7,591	1·68
1910..	723	0·16	5,043	1·12	6,729	1·49
1911..	496*b*	0·11*b*	5,203*b*	1·15*b*	5,618*b*	1·25*b*

(*a*) See footnote (*b*) page 29. (*b*) See footnote (*c*) page 2.

The distribution of deaths (*a*) from influenza throughout the year (*b*) for each of the years 1890 to 1911 is shown in the following table :—

No. of weeks.	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911 (*c*)
1— 4	303	9	1,308	52	272	59	37	40	244	66	1,016	57	77	141	67	94	56	291	87	61	112	61
5— 8	167	7	637	96	96	164	58	55	368	259	298	75	224	103	62	119	44	186	276	90	151	77
9—12	75	8	119	162	69	1,343	61	94	193	430	130	134	298	89	74	119	98	104	424	430	98	57
13—16	39	29	42	180	56	257	50	121	140	302	172	102	89	54	62	75	129	81	209	257	64	51
17—20	13	770	33	125	32	106	50	96	61	121	105	81	58	46	40	56	105	48	94	85	41	39
21—24	5	1,044	22	72	27	35	33	54	51	82	57	30	35	37	21	38	40	41	36	46	16	15
25—28	6	242	15	49	19	28	17	26	25	42	16	21	20	25	17	16	21	25	28	34	11	11
29—32	6	51	7	23	17	14	15	18	27	27	12	18	7	18	5	4	20	14	15	15	9	10
33—36	3	32	9	23	20	17	10	13	10	11	11	11	16	6	9	11	15	18	12	10	17	6
37—40	6	13	6	18	14	15	12	19	17	19	15	12	13	17	24	22	18	19	21	15	29	17
41—44	5	15	20	28	29	22	27	29	46	55	17	23	35	13	92	39	35	42	30	31	25	40
45—48	13	35	18	152	41	47	56	35	49	61	55	44	65	44	98	44	86	39	45	56	75	46
49—52	6	81	28	546	58	49	56	71	52	342	46	56	99	51	138	52	228	59	57	86	75	66

Phthisis.

The deaths from phthisis, fully corrected for institutions, in the Administrative County of London during 1911 (52 weeks) numbered 6,084, including acute miliary tuberculosis.

The death-rates from this disease in successive periods have been as follows :—

Period.	Death-rate per 1,000 persons living.	Period.	Death-rate per 1,000 persons living.
1851–1860	2·86	1903	1·57*c*
1861–1870	2·84	1904	1·67*c*
1871–1880	2·51	1905	1·45*c*
1881–1890	2·08	1906	1·50*c*
1891–1900	1·79*c*	1907	1·46*c*
1901–1910	1·49*c*	1908	1·39*c*
		1909	1·40*c*
1901	1·65*c*	1910	1·25*c*
1902	1·61*c*	1911	1·35*cd*

The phthisis death-rate since 1850 (corrected (*e*) for differences in the age constitution of the population) in relation to the mean death-rate of the period 1851-1911 (males and females) is shown in diagram (W).

This diagram shows the marked decline of phthisis mortality in both sexes, the greater incidence of such mortality on males than on females, and the fact that until recent years the decline has been more manifest in females than in males. The figures for 1911 (*d*) are more fully corrected (*c*) than those for previous years, and the increased incidence of phthisis in this year may be partly or wholly accounted for by this fact.

The following table shows the crude phthisis death-rate ; and the rate corrected for differences in the age and sex constitution of the population of the various sanitary districts. (*e*) The factors for correction, also shown in the table, have been calculated by applying the 1901 census population at each age and for each sex of each of the London sanitary districts to the death-rates at each age and for each sex obtaining for London in the five years 1897–1901 :—

Phthisis death-rates in London boroughs.

Metropolitan borough.	Standard death-rate.(*f*)	Factor for correction for age and sex distribution.	Crude death-rate.		Corrected death-rate.		Comparative mortality figure. (London 1,000.)	
			1906-10.	1911.	1906-10.	1911.	1906-10.	1911.
London	1·74	1·00000	1·40	1·35	1·40	1·35	1,000	1,000
Paddington	1·80	0·96659	1·09	1·22	1·05	1·18	750	874
Kensington	1·78	0·97419	1·05	0·93	1·02	0·91	729	674
Hammersmith	1·74	0·99600	1·22	1·26	1·22	1·25	872	926
Fulham	1·69	1·02786	1·28	1·46	1·32	1·50	943	1,111
Chelsea	1·83	0·95018	1·52	1·45	1·44	1·38	1,029	1,022
Westminster, City of ..	1·95	0·89205	1·32	1·21	1·18	1·08	843	800
St. Marylebone	1·85	0·93836	1·38	1·46	1·29	1·37	922	1,015
Hampstead	1·75	0·98862	0·73	0·61	0·72	0·60	514	444
St. Pancras	1·80	0·96551	1·67	1·57	1·61	1·52	1,150	1,126

(*Continued on next page.*)

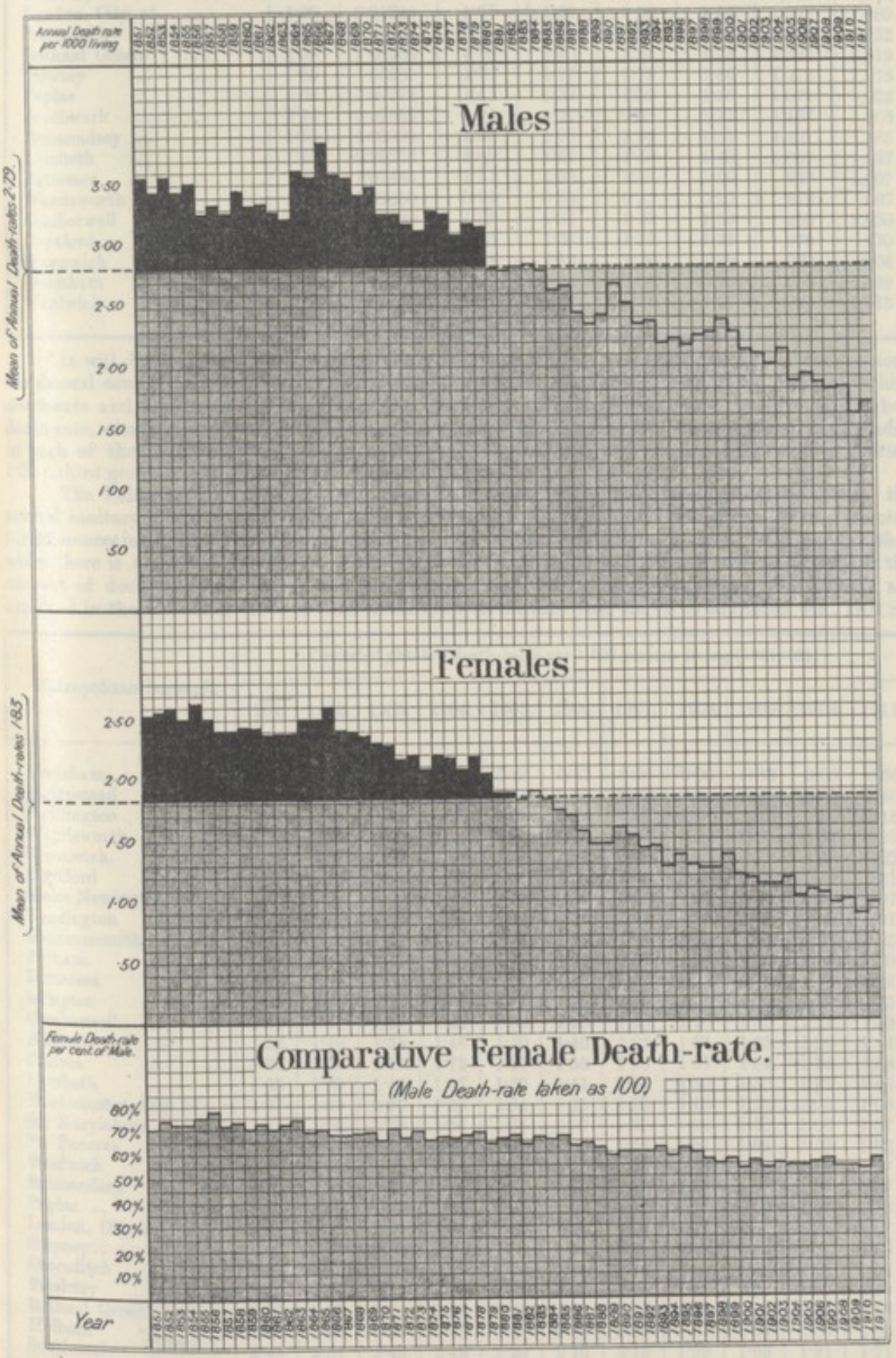
(*a*) See footnote (*b*) page 29. (*b*) The deaths occurring in the 53rd week of the years 1890, 1896, 1902 and 1908, which are not shown, numbered 1, 14, 37 and 16 respectively. (*c*) See footnote (*c*) page 2.
(*d*) Including miliary tuberculosis, which would probably be 2 per cent. of the total cases.
(*e*) See footnote (*b*) page 7. (*f*) The standard death-rate used in the calculation of the "factor for correction" has been calculated to more than the two places of decimals shown in the table.

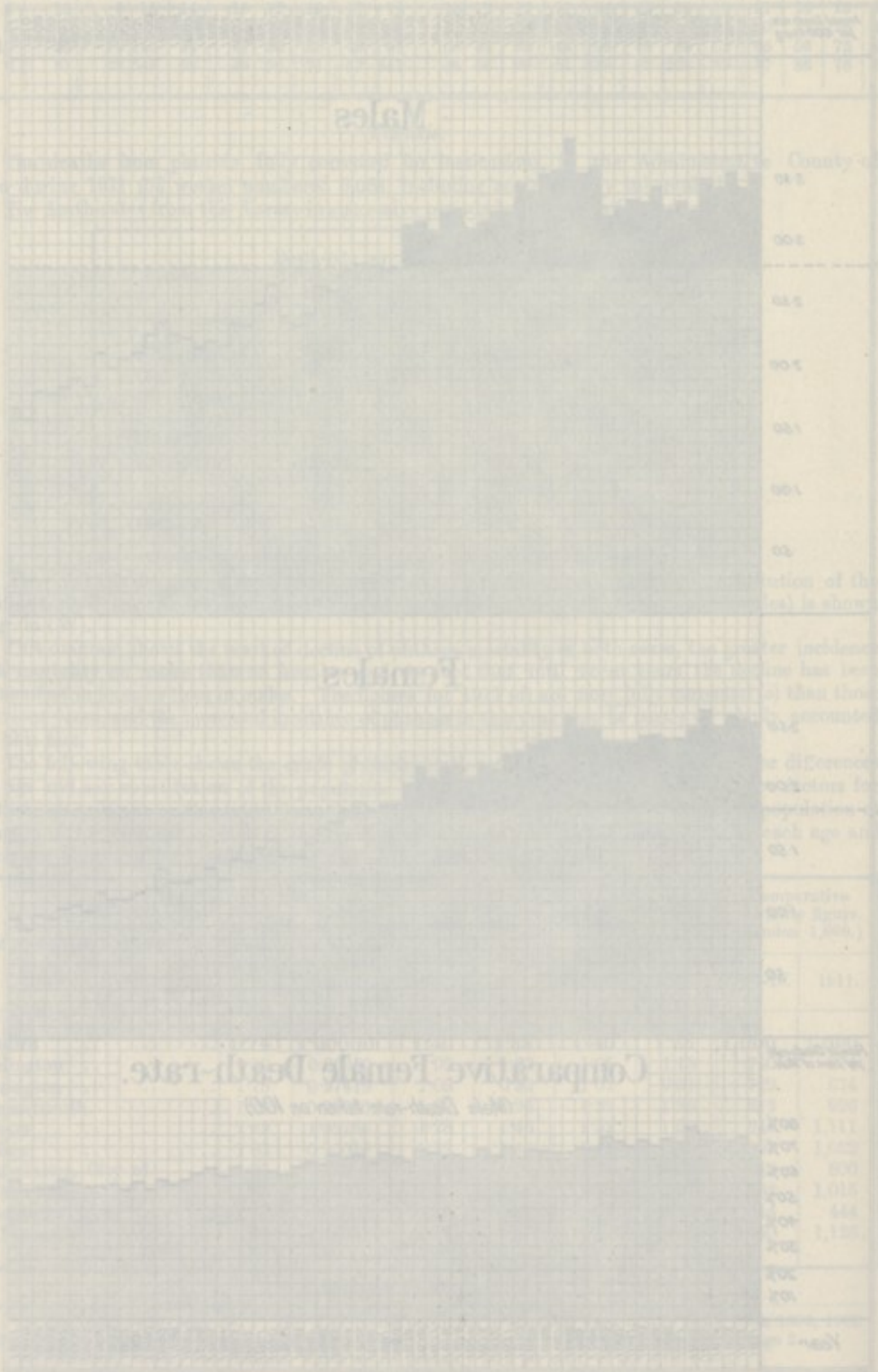
Diagram W.

Phthisis Mortality in London.
1851–1911.

Annual Death-rate among males and females per 1,000 living.

(Corrected for differences in age-constitution of the population)





Metropolitan borough.	Standard death-rate.	Factor for correction for age and sex distribution.	Crude death-rate.		Corrected death-rate.		Comparative mortality figure. (London 1,000.)	
			1906-10.	1911.	1906-10.	1911.	1906-10.	1911.
Islington	1·75	0·99145	1·30	1·24	1·29	1·23	922	911
Stoke Newington	1·77	0·97914	1·02	1·09	1·00	1·07	714	793
Hackney	1·68	1·02969	1·27	1·40	1·31	1·44	936	1,067
Holborn	1·97	0·87894	2·31	2·08	2·03	1·83	1,450	1,356
Finsbury	1·72	1·01050	2·21	1·87	2·23	1·89	1,593	1,400
London, City of	1·89	0·91946	1·66	1·60	1·53	1·47	1,093	1,089
Shoreditch	1·66	1·04206	1·90	1·84	1·98	1·92	1,414	1,422
Bethnal Green	1·59	1·08984	1·78	1·63	1·94	1·78	1,386	1,319
Stepney	1·65	1·05281	1·70	1·77	1·79	1·86	1,279	1,378
Poplar	1·66	1·04772	1·43	1·32	1·50	1·38	1,071	1,022
Southwark	1·74	0·99829	2·04	1·71	2·04	1·71	1,457	1,266
Bermondsey	1·65	1·05026	1·88	1·78	1·97	1·87	1,407	1,385
Lambeth	1·75	0·99258	1·49	1·41	1·48	1·40	1,057	1,037
Battersea	1·69	1·02483	1·31	1·33	1·34	1·36	957	1,007
Wandsworth	1·72	1·01050	0·94	0·89	0·95	0·90	679	667
Camberwell	1·68	1·03522	1·28	1·34	1·33	1·39	950	1,030
Deptford	1·69	1·02969	1·33	1·27	1·37	1·31	979	970
Greenwich	1·67	1·04143	1·21	1·17	1·26	1·22	900	904
Lewisham	1·69	1·02543	0·82	0·64	0·84	0·66	600	489
Woolwich	1·70	1·01881	1·31	1·34	1·33	1·37	950	1,015

It will be seen from the foregoing table (comparing the corrected death-rates) that among the several sanitary districts in the quinquennium 1906–10, Finsbury (2.23) had the highest phthisis death-rate and Hampstead (0·72) the lowest; in the year 1911, Shoreditch (1·92) had the highest death-rate, the lowest obtaining in Hampstead (0·60). The death-rates from phthisis in London in each of the four quarters of the year 1911 were as follows: first quarter, 1·52; second quarter, 1·27; third quarter, 1·20; and fourth quarter, 1·40.

The following table enables comparison to be made between the phthisis death-rates in the several sanitary districts for each of the years 1901–1911, inclusive. These death-rates are corrected for differences in the age and sex constitution of the various populations,(*a*) and it will be seen that while there is a general tendency to decline in the death-rates, there is a considerable difference in the amount of decline in the rates of the different districts. To facilitate comparison the districts are arranged in the ascending order of their death-rates in the first year shown in the table, viz., 1901:—

Metropolitan borough.	Corrected phthisis death-rates per 1,000 persons living (1901–1911).										
	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Lewisham	0·92	1·10	0·85	0·93	0·88	0·87	0·96	0·90	0·83	0·58	0·66
Hampstead	0·93	0·90	0·72	0·86	0·86	0·69	0·72	0·81	0·67	0·65	0·60
Paddington	1·07	1·04	1·02	1·19	0·94	1·14	1·05	1·01	1·13	0·87	1·18
Wandsworth	1·16	0·95	0·93	1·11	1·01	1·00	0·97	0·96	0·95	0·87	0·90
Greenwich	1·22	1·28	1·22	1·48	1·38	1·37	1·20	1·32	1·19	1·16	1·22
Deptford	1·23	1·11	1·44	1·52	1·28	1·37	1·50	1·25	1·40	1·34	1·31
Stoke Newington ..	1·32	1·22	1·26	1·69	1·32	0·99	0·90	1·07	0·90	0·97	1·07
Kensington	1·34	1·20	1·22	1.39	1·14	1·30	1·10	1·04	0·96	0·80	0·91
Hammersmith ..	1·40	1·43	1·47	1·37	1·17	1·27	1·24	1·26	1·13	1·09	1·25
Fulham	1·42	1·47	1·49	1·55	1·35	1·28	1·37	1·34	1·39	1·15	1·50
Battersea	1·51	1·34	1·38	1·51	1·46	1·38	1·35	1·32	1·37	1·19	1·36
Islington	1·51	1·48	1·42	1·57	1·27	1·25	1·36	1·30	1·30	1·20	1·23
Camberwell	1·51	1·61	1·28	1·42	1·30	1·35	1·40	1·20	1·35	1·22	1·39
Hackney	1·52	1·49	1·34	1·46	1·20	1·40	1·23	1·34	1·33	1·20	1·44
Chelsea	1·60	1·39	1·45	1·72	1·47	1·58	1·55	1·31	1·54	1·24	1·38
Lambeth	1·65	1·70	1·40	1·47	1·39	1·41	1·60	1·50	1·50	1·27	1·40
Westminster, City of ..	1·67	1·59	1·49	1·33	1·34	1·25	1·22	1·13	1·23	1·03	1·08
St. Marylebone ..	1·71	1·76	1·78	1·56	1·34	1·50	1·39	1·06	1·30	1·08	1·37
St. Pancras	1·78	1·86	1·78	1·86	1·47	1·82	1·63	1·57	1·65	1·33	1·52
Woolwich	1·79	1·54	1·51	1·76	1·61	1·45	1·33	1·34	1·32	1.14	1·37
Bermondsey	1·85	1·90	1·80	2·23	1·86	2·08	1·98	1·97	1·87	1·86	1·87
Poplar	1·89	1·83	1·82	1·84	1·63	1·67	1·45	1·51	1·40	1·51	1·38
London, City of ..	1·92	1·41	1·45	1·33	1·15	1·54	1·75	1·47	1·53	1·32	1·47
Stepney	2·22	2·00	2·30	2·31	1·88	1·91	1·72	1·79	1·93	1·54	1·86
Shoreditch	2·24	1·89	2·40	2·30	2·02	2·14	2·16	2·10	1·84	1·58	1·92
Finsbury	2·26	2·31	2·27	2·52	2·07	2·22	2·44	2·27	2·38	1·82	1·89
Bethnal Green	2·35	2·17	2·31	2·36	2·22	2·45	2·12	1·74	1·71	1·60	1·78
Holborn	2·43	2·65	2·59	2·45	2·49	2·16	2·17	1·81	1·94	1·85	1·83
Southwark	2·48	2·61	2·42	2·46	2·20	2·16	2·15	1·99	1·93	1·91	1·71

The following table shows the mortality from phthisis during the year 1911 in groups of London sanitary districts, arranged in order of "social condition." (*a*)

Phthisis death-rates in relation to "social condition," 1911.

Number of group of boroughs in order of "social condition."	Crude phthisis death-rate per 1,000 persons living.	Corrected death-rate per 1,000 persons living. (*b*)	Corrected death-rate (London, 1,000).
I.	0·70	0·70	519
II.	1·07	1·05	778
III.	1·33	1·32	980
IV.	1·45	1·46	1,088
V.	1·76	1·85	1,378
London ...	**1·35**	**1·35**	**1,000**

Tables similar to the above have been published in previous annual reports, and the close relationship existing between "social condition" and phthisis mortality is conspicuous. It will be seen that in the lowest social group the death rate from phthisis is approximately twice that in the highest group.

With a view to learning whether this relationship is more specially marked at particular ages, tables are appended showing phthisis death rates per 100,000 living among males and females in several age groups. The measure of "social condition" is that used throughout this report and is based on the percentage of all children between the ages of 5 and 14 scheduled in the borough by the Council for education purposes in the years 1905-7. The figures on which the rates for the age periods 0-15 years are calculated are too small for definite conclusions to be drawn, but it is evident upon consideration of the rates at higher ages, especially from 45 to 65 years, that "social condition" has marked influence upon phthisis mortality. This influence is also to be observed in connection with the mortality from all tubercular diseases, including phthisis, tabes mesenterica, tubercular meningitis, and other tubercular diseases, and for the purpose of comparison tables have been prepared showing the mortality from all tubercular diseases in the same form as the phthisis mortality tables to which reference has just been made.

Pulmonary Tuberculosis.(*a*)

Males.

Group.	Age-period.															
	0–	1—	2—	3—	4—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75+	All ages.
I.	25	18	27	23	14	4	5	72	117	145	227	230	201	177	93	120
II.	49	63	25	16	11	12	15	70	150	188	284	335	319	227	109	161
III.	72	83	44	30	21	13	14	69	139	219	339	416	371	287	134	187
IV.	63	85	48	29	23	16	18	86	178	237	386	472	410	292	137	203
V.	97	116	47	32	24	18	17	91	179	311	518	628	597	406	179	250
London	69	84	42	28	20	15	15	78	156	230	365	441	397	288	133	195

Females.

Group.	Age-period.															
	0—	1—	2—	3—	4—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75+	All ages.
I.	31	27	13	9	23	11	24	59	71	80	111	88	89	67	49	68
II.	41	58	33	13	15	16	29	64	70	103	139	150	110	99	47	87
III.	70	67	32	27	23	18	27	70	89	123	172	165	137	109	72	101
IV.	64	70	36	26	29	22	33	94	118	162	228	214	186	116	62	124
V.	70	101	49	40	25	21	32	89	120	189	297	280	209	150	88	139
London	62	71	36	26	24	19	30	77	95	134	192	185	150	111	65	108

(*a*) See footnote (*a*) to page 13 and (*c*) to page 2. (*b*) See footnote (*b*) page 7.

All Tubercular Diseases.

Males.

Group.	Age-period.															
	0—	1—	2—	3—	4—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75 +	All ages.
I.	441	351	223	113	112	47	27	90	132	157	246	250	221	193	93	162
II.	634	465	222	149	106	63	33	87	168	203	300	352	335	239	122	210
III.	820	561	243	167	119	70	38	87	156	235	354	438	395	310	152	244
IV.	713	518	272	169	123	78	46	106	195	253	401	492	432	314	163	262
V.	1,034	733	343	222	155	80	44	113	196	332	537	650	613	433	183	330
London	788	558	267	173	125	72	40	97	173	247	382	461	418	309	149	254

Females.

Group.	Age-period.															
	0—	1—	2—	3—	4—	5—	10—	15—	20—	25—	35—	45—	55—	65—	75 +	All ages.
I.	438	324	164	113	92	56	49	71	83	92	120	96	100	89	61	98
II.	519	394	212	129	112	67	54	80	80	112	148	161	121	117	68	121
III.	642	461	242	162	117	69	53	89	102	134	184	178	150	123	95	144
IV.	590	467	222	171	134	82	60	111	132	174	241	223	200	131	78	173
V.	831	688	343	214	167	89	58	106	129	203	308	297	217	173	117	209
London	639	491	249	168	130	76	56	94	107	145	204	197	162	128	86	154

Cancer.

The deaths from cancer, fully corrected for institutions, in the Administrative County of London during 1911 (52 weeks), numbered 4,746, as compared with 4,563 for the 52 weeks of 1910.

The death-rates from this disease in successive periods have been as follows:—

Cancer death-rates.

Period.	Death-rate per 1,000 persons living.	Period.	Death-rate per 1,000 persons living.
1851–1860	0·42	1903	0·98*a*
1861–1870	0·48	1904	0·94*a*
1871–1880	0·55	1905	0·96*a*
1881–1890	0·68	1906	1·01*a*
1891–1900	0·85*a*	1907	0·99*a*
1901–1910	0·98*a*	1908	1·02*a*
		1909	1·04*a*
1901	0·88*a*	1910	1·03*a*
1902	0·93*a*	1911	1·05*a*

For the purpose of enabling the incidence of cancer on the several populations of the sanitary districts to be more precisely stated, factors have been calculated for correcting the death-rates, as far as possible, for differences in the age and sex constitution of the several populations concerned. These factors are shown in the following table, together with the death-rates for each sanitary district, corrected by their application.(*b*)

Cancer death-rates in London boroughs.

Metropolitan borough.	Standard death-rate. (*c*)	Factor for correction for age and sex distribution.	Crude death-rate per 1,000 persons living.		Corrected death-rate per 1,000 persons living.		Comparative mortality figure (London 1,000).	
			1906-10 (*a*)	1911. (*d*)	1906-10. (*a*)	1911. (*d*)	1906-10. (*a*)	1911. (*d*)
London	**0·87**	**1·00000**	**1·01**	**1·05**	**1·01**	**1·05**	**1,000**	**1,000**
Paddington	0·98	0·89478	1·19	1·17	1·06	1·05	1,045	1,004
Kensington	1·02	0·85622	1·12	1·14	0·96	0·98	947	937
Hammersmith	0·90	0·96811	1·08	1·02	1·05	1·00	1,036	956
Fulham	0·77	1·13828	0·95	1·11	1·08	1·26	1,065	1,205
Chelsea	1·03	0·84874	1·20	1·41	1·02	1·20	1,006	1,147
Westminster, City of ..	0·96	0·91348	1·11	1·29	1·01	1·18	996	1,128
St. Marylebone	0·99	0·88571	1·27	1·37	1·12	1·21	1,105	1,157

Continued on next page.

(*a*) See footnote (*c*), page 2. (*b*) See footnote (*b*), page 7. (*c*) See footnote (*f*), page 40.
(*d*) See footnote (*b*), page 11.

Cancer death-rates in London boroughs.

Metropolitan borough.	Standard death-rate.	Factor for correction for age and sex distribution.	Crude death-rate per 1,000 persons living.		Corrected death-rate per 1,000 persons living.		Comparative mortality figure (London 1,000).	
			1906-10.	1911.	1906-10.	1911.	1906-10.	1911.
Hampstead	0·92	0·94816	1·02	1·00	0·97	0·95	957	908
St. Pancras	0·92	0·95229	1·14	1·26	1·09	1·20	1,075	1,147
Islington	0·90	0·96704	1·10	1·01	1·06	0·98	1,045	937
Stoke Newington	0·98	0·89387	1·20	1·11	1·07	0·99	1,055	946
Hackney	0·88	0·99341	0·95	0·97	0·94	0·96	927	918
Holborn	0·95	0·91924	1·08	1·10	0·99	1·01	976	966
Finsbury	0·84	1·04071	0·92	0·93	0·96	0·97	947	927
London, City of	1·06	0·82316	1·24	0·72	1·02	0·59	1,006	564
Shoreditch	0·79	1·10518	0·84	0·81	0·93	0·90	917	860
Bethnal Green	0·78	1·12077	0·93	0·94	1·04	1·05	1,026	904
Stepney	0·74	1·17976	0·83	0·84	0·98	0·99	966	946
Poplar	0·81	1·08327	0·86	0·92	0·93	1·00	917	956
Southwark	0·82	1·06350	0·96	1·10	1·02	1·17	1,006	1,119
Bermondsey	0·81	1·08462	1·02	0·92	1·11	1·00	1,095	956
Lambeth	0·92	0·95333	1·13	1·12	1·08	1·07	1,065	1,023
Battersea	0·79	1·10798	0·96	0·97	1·06	1·07	1,045	1,023
Wandsworth	0·88	0·99116	0·96	1·02	0·95	1·12	937	1,071
Camberwell	0·87	1·00483	0·97	1·00	0·97	1·00	957	956
Deptford	0·81	1·07396	0·92	1·11	0·99	1·19	976	1,138
Greenwich	0·87	1·01064	0·90	0·84	0·91	0·85	897	813
Lewisham	0·92	0·95333	0·99	1·06	0·94	1·01	927	966
Woolwich	0·78	1·11933	0·91	1·02	1·02	1·14	1,006	1,090

It will be seen from the foregoing table (comparing the corrected death-rates) that in the quinquennium 1906-10 among the several sanitary districts, St. Marylebone (1.12) had the highest cancer death-rate, and Greenwich (0.91) the lowest; in the year 1911 Fulham (1.26) had the highest, the lowest obtaining in the City of London (0·59).

The following table shows the corrected death-rate from cancer in each of the sanitary districts of London, annually for the last eleven years:—

Cancer corrected death-rates 1901-11.

Metropolitan borough.	Corrected Cancer death-rates.										
	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911. (*a*)
Paddington	0·93	0·86	1·02	0·99	0·94	1·04	1·12	1·17	0·96	1·05	1·05
Kensington	0·96	0·77	0·93	0·88	0·84	0·87	1·05	0·93	1·06	0·87	0·98
Hammersmith ..	0·82	0·83	0·84	0·98	1·00	1·17	1·12	0·98	0·92	1·05	1·00
Fulham	1·01	0·88	0·95	1·02	1·07	1·09	1·21	0·89	1·08	1·13	1·26
Chelsea	0·77	0·90	1·09	1·07	0·91	1·05	0·87	0·91	1·07	1·20	1·20
Westminster, City of ..	0·76	0·98	0·94	0·93	0·97	0·92	0·90	1·10	1·11	1·03	1·18
St. Marylebone ..	0·92	0·98	1·19	0·98	1·19	0·95	1·09	1·20	1·20	1·19	1·21
Hampstead	0·91	1·07	1·23	0·97	0·70	1·10	0·81	1·00	0·96	0·98	0·95
St. Pancras	0·84	0·99	1·04	0·94	0·97	1·05	0·90	1·24	1·05	1·20	1·20
Islington	0·88	0·96	1·06	0·94	0·98	1·09	1·02	1·08	1·04	1·10	0·98
Stoke Newington ..	0·82	0·77	0·99	0·94	0·96	0·96	1·13	1·19	1·09	1·00	0·99
Hackney	0·80	0·88	0·90	0·85	0·91	0·83	0·91	1·00	0·97	1·01	0·96
Holborn	0·92	0·99	0·93	0·88	0·86	1·08	0·77	0·89	1·18	1·06	1·01
Finsbury	0·81	0·84	0·96	0·87	0·74	0·92	0·96	0·98	1·04	0·88	0·97
London, City of ..	1·05	1·26	0·81	1·10	1·10	1·03	0·99	1·02	1·06	1·02	0·59
Shoreditch	0·90	1·15	0·94	0·86	0·98	0·81	1·05	0·89	0·94	0·94	0·90
Bethnal Green ..	0·96	0·92	0·97	0·97	0·91	1·09	0·97	0·99	1·04	1·10	1·05
Stepney	0·87	0·79	0·94	0·93	0·90	1·16	0·91	0·95	0·86	0·98	0·99
Poplar	0·79	0·92	0·91	0·77	0·91	0·84	0·86	0·96	0·99	0·98	1·00
Southwark	0·92	0·90	1·06	0·93	1·16	0·98	1·03	0·99	1·02	1·06	1·17
Bermondsey	0·73	1·03	0·93	0·78	0·91	1·05	1·09	0·94	1·22	1·25	1·00
Lambeth	0·95	0·97	0·99	1·01	1·04	1·01	1·08	1·08	1·22	1·02	1·07
Battersea	0·90	0·97	0·97	1·08	1·15	1·12	1·05	1·01	1·20	0·95	1·07
Wandsworth	0·88	0·91	1·02	0·97	0·84	0·97	0·98	0·94	0·91	0·98	1·12
Camberwell	0·98	0·96	0·88	0·90	0·89	1·03	0·92	1·01	1·01	0·91	1·00
Deptford	0·88	1·04	1·00	1·03	1·00	1·08	0·78	0·95	1·02	1·10	1·19
Greenwich	0·71	0·88	0·80	0·91	1·03	0·83	0·87	1·00	0·91	0·91	0·85
Lewisham	0·91	0·94	0·83	0·82	0·88	0·92	0·94	0·93	0·96	0·96	1·01
Woolwich	0·79	0·98	0·90	0·95	0·78	1·11	1·04	0·88	1·11	0·97	1·14
London	0·88	0·93	0·97	0·94	0·95	1·01	0·98	1·01	1·04	1·03	1·05

(*a*) See footnote (*b*) page 11.

In the report for the year 1909 a table was included showing the cancer death-rates in the period 1901–9 in areas presenting different degrees of overcrowding, the object being to compare the death-rates of populations differently circumstanced in respect of "social condition."

The following table shows the death-rates for the year 1911 according to "social condition" as defined in footnote (*a*) page 13.

Cancer death-rates in relation to "social condition," 1911.

Number of group of boroughs in order of "social condition."	Crude cancer death-rate per 1,000 persons living. (*a*)	Corrected death-rate per 1,000 persons living. (*b*)	Corrected death-rate (London, 1,000).
I.	1·02	0·96	918
II.	1·06	0·99	949
III.	1·10	1·05	1,000
IV.	1·08	1·15	1,097
V.	0·88	0·99	943
London	**1·05**	**1·05**	**1,000**

These figures and those contained in previous reports appear to indicate that there is no relation between cancer mortality and social condition, whether measured by the degree of overcrowding or by the percentage of children scheduled for compulsory education, and in this respect the behaviour of cancer differs altogether from that of phthisis (*see* page 42).

Cerebro-spinal Fever.

During 1911, 101 persons were certified to be suffering from cerebro-spinal fever and 9 deaths were attributed to this disease.

The number of deaths in each year since 1901 has been as follows :—

	Deaths.(*c*)		Deaths.(*c*)
1902	4	1907	25
1903	6	1908	12
1904	6	1909	15
1905	5	1910	10
1906	4	1911	9

As stated in the last annual report, the larger number of deaths attributed to this cause in 1907 was probably an indirect effect of the Council making an Order requiring cases of this disease to be notified. The requirement of notification did not become operative until the 12th of March, 1907, and during the remainder of that year 135 cases were notified, or 50 more than in the whole of the year 1908. In 1909 there were 111 notified cases, and 115 in 1910. In March, 1911, the Council extended the Order for another period of twelve months.

The age distribution of the 101 cases notified in 1911 was as follows :—

Sex.	Cerebro-spinal fever—Age distribution of notified cases, 1911.													
	0–	1–	2–	3–	4–	5–	6–	7–	8–	9–	10–	13–	15+	All ages.
Males	23	11	3	5	1	—	5	1	2	—	1	1	12	65
Females	16	4	5	1	1	—	—	—	2	1	1	2	3	36
Persons	**39**	**15**	**8**	**6**	**2**	—	**5**	**1**	**4**	**1**	**2**	**3**	**15**	**101**

Three of the deaths were those of infants under one year of age, four of infants aged between one and five years, and the remaining two those of persons over five years of age. No cases were notified in Chelsea, Hampstead, Stoke Newington, Holborn, City of London and Deptford.

Inquiry was made into the notified cases by Dr. Wanklyn, who found no evidence that any one verified case was connected with another. Of the 101 cases notified, in 57 the final diagnosis confirmed the original diagnosis, in 18 this diagnosis was reversed, and in the remaining 26 the evidence was doubtful. Of the 57 cases verified on final diagnosis a post-mortem examination was made in 15 and bacteriological evidence was obtained in 25; the nature of this evidence was usually not stated, and as the examinations were made by different bacteriologists, there would in all probability be varying definitions of what might be considered as bacteriological evidence of the disease.

Anthrax.

On the 6th April, 1909, the Council made an Order requiring the notification of cases of glanders, anthrax, and hydrophobia in man; the Order came into force on the 26th April of that year.

(*a*) See footnote (*b*), page 11. (*b*) See footnote (*b*), page 7. (*c*) See footnote (*c*), page 2.

During 1911 three notifications were received of cases residing in London and two of cases residing outside but working inside the County boundary. An unnotified case is referred to in the Stepney report. All the known cases recovered.

The available information is as follows:—

Bermondsey.—H. L., residing at Edmonton, was employed as a flock sorter. Illness attributed to foreign hides. D. P., aged 58 years, residing in Bermondsey, was a leather dresser at a manufacturer's premises where no raw hides were received. The origin of illness could not be traced. A. A., aged 29 years, also resided in Bermondsey, and had been employed as a general labourer by dealers in foreign hides. J. B., also was employed by dealers in foreign hides. He resided in Islington.

Southwark.—W. M., aged 25 years, had been working with grey hair received in a dressed condition from certain firms. The patient was operated on and recovered. All the hair supplied had been submitted to steam at a temperature over 212 deg. F. as required by the Home Office Regulations. The practice with dark hair is to submit it to a temperature of 260 deg. F., but grey hair would be seriously injured by this treatment. Dr. Millson, however, had all the grey hair unbound and exposed to formalin vapour for several hours.

Stepney.—A man employed at Morocco Wharf unloading foreign skins contracted the disease.

Dr. Thomas refers to the removal from a licensed cowshed in the borough of a cow suffering from anthrax. The cow had been in the shed two months, and Dr. Thomas suggests as a likely source the oil cakes used for feeding. He states that these cakes, which are about 18 inches long and from 6 to 7 inches wide, are imported from India without sacks or covering, and suggests that skins or hides may have been placed on them in the course of transit and thus infected the cakes.

Glanders.

No case of human glanders was reported during the year 1911.

Meteorology.

The tables published in the Annual Summary of the Registrar-General, deduced from observations at Greenwich under the superintendence of the Astronomer Royal, show that the mean temperature of the air in 1911 was 51·8 deg. Fahrenheit, which is 1·7 degrees above the average of the preceding 65 years. The rainfall during the year amounted to 23.67 inches, being 0.45 inches below the average of the preceding 65 years. The temperature and rainfall in each month of the year 1911 are shown in the following table:—

Month.	Temperature of the air.			Departure of mean monthly temperature from average of preceding 65 years.	Rain and other forms of precipitation.		Departure of mean monthly rainfall from average of preceding 65 years.
	Absolute maximum.	Absolute minimum.	Mean for the month.		Number of days it fell.	Amount collected.	
	deg. F.	deg. F.	deg. F.	deg. F.		Inches.	Inches.
January ..	52	24	38·1	—0·3	12	1·23	—0·65
February ..	55	22	40·7	+0·9	16	1·38	—0·10
March ..	62	29	42·1	—0·4	15	1·66	+0·14
April ..	67	27	46·9	—1·2	12	1·73	+0·16
May ..	82	35	57·2	+3·4	8	1·88	—0·04
June ..	84	41	60·6	+0·3	12	2·10	+0·06
July ..	96	46	68·0	+4·3	4	0·27	—2·13
August ..	100	48	69·0	+6·1	8	1·34	—1·60
September ..	94	38	60·0	+1·8	10	1·34	—0·81
October ..	68	28	50·7	+0·3	17	3·30	+0·52
November ..	59	28	43·8	+0·4	21	3·42	+1·20
December ..	54	29	44·1	+4·5	23	4·02	+2·19

B—*Administration.*

Dairies, Cowsheds and Milkshops.

Cowshed premises.

The County Council received during the year 194 applications for cowhouse licences, of which 187 were granted. The number of applications for licences received during the last seventeen years and the number granted are shown in the following table. It will be seen that the number of these premises in London is continually decreasing.

Year.	No. of applications received.	No. of premises for which licences were granted.
1894	456	446
1895	427	416
1896	405	393
1897	379	374
1898	357	354
1899	338	330
1900	323	321
1901	306	295
1902	294	291
1903	282	277
1904	266	259
1905	257	255
1906	244	240
1907	234	233
1908	229	225
1909	216	214
1910	203	199
1911	194	187

Inspection of cowshed premises.

In 1903 effort was made, in conjunction with the medical officers of health of metropolitan boroughs, to secure uniform statistical statement of the proceedings of the local authorities in London. Tables showing these proceedings included in this report have therefore, in the main, been compiled from tabular statements in the annual reports of medical officers of health, but in some cases it has been necessary to use figures otherwise contained in their reports. The following table relating to cowsheds has been thus prepared:—

Metropolitan borough.	Number of cowshed premises.				Number of inspections by the sanitary authority, 1911.	Number of prosecutions by sanitary authority, 1911.
	On register at end of 1910.	Added in 1911.	Removed in 1911.	On register at end of 1911.		
Battersea	3	—	1	2		—
Bermondsey	4	—	1	3	20	—
Bethnal Green	15	—	2	13	63	—
Camberwell	11	—	1	10	97	—
Chelsea	1	—	—	1	11	—
Deptford	2	—	—	2	27	—
Finsbury	3	—	—	3	12	—
Fulham	2	—	1	1	24	—
Greenwich	4	—	—	4	28	—
Hackney	19	—	3	16	255	—
Islington	5	—	—	5	56	—
Kensington	1	—	—	1	45	—
Lambeth	13	—	—	13	38	—
Lewisham	13	—	—	13	145	—
Paddington	1	—	—	1	4	—
Poplar	14	—	—	14	48	—
St. Marylebone	5	—	—	5	40	—
St. Pancras	7	—	—	7	126	—
Shoreditch	7	—	—	7	16	—
Southwark	4	—	1	3	47	—
Stepney	33	—	1	32	61	—
Stoke Newington	2	—	1	1		—
Wandsworth	12	—	—	12	67	—
Westminster, City of	1	—	—	1	25	—
Woolwich	17	—	—	17	64	—
Totals for 25 districts ..	199	—	12	187	1319	—

Milkshops.

In 1908 the London County Council obtained the sanction of Parliament to a provision contained in the General Powers Act of that year, authorising any sanitary authority to remove from the register of milk vendors, or to refuse to register the name of any person carrying on or proposing to carry on the business of a dairyman or purveyor of milk upon premises which, in the opinion of the sanitary authority, are unsuitable for the sale of milk. The Act provides an appeal to a Court of summary jurisdiction. These powers have been largely used in London. In Greenwich there were 9 refusals of applications for registration; in Hampstead 3. In Hackney the proprietors of 21 milk premises ceased to sell milk rather than make the necessary alterations required by the Public Health Committee, to render the premises suitable under the General Powers Act. In the City registration was withheld in 2 instances until the proprietors had complied with the Act. Dr. Collingridge states that the Act has had a most beneficial effect in enabling authorities to deal with the sale of milk in small chandler and grocers' shops. In Kensington 2 applications were refused; and in Lambeth 37 applications were refused on the ground that they were unsuitable. Dr. Porter states that in St. Marylebone 33 names were removed from the Register on account of the unsuitability of the premises for the sale of milk, and on the same grounds 3 applications were refused. In Stepney 49 premises were removed from the register and 29 applications were refused; in Westminster the Council refused to register in 2 instances. No reference is made by medical officers to any case where the proprietor has exercised his right of appeal against the refusal to register the premises.

In Battersea proceedings were instituted against a firm of dairymen for a serious breach of Regulation 32 made under the Dairies, Cowsheds and Milkshops Order, which provides that adequate precautions shall be taken for preserving the purity of the milk and for protecting it against infection or contamination. The milk in question was exposed in a passage way leading from a public street, and evidence was given by the inspectors of the Borough Council that it was in a dirty condition. For the defence it was contended that the regulation was *ultra vires* inasmuch as it did not prescribe the precautions to be taken, and that to make the regulation effective this should have been done. The magistrate stated that he reluctantly came to the conclusion that the summons must be dismissed, and explained that he was compelled to decide the case according to his view of the law as it stands. He offered to state a case, but the Battersea Borough Council did not think it advisable to appeal to the High Court. It was decided, however, to ask the County Council to take steps to have the Regulations amended in the direction indicated.

Dr. Thomas refers in his report to action taken against the proprietors of restaurants in Finsbury in respect of the sale of milk. In 4 instances restaurant keepers were prosecuted for selling milk without being registered for this purpose, and convictions followed in each case; but an appeal has been entered in one case. Dr. Thomas states that there are 49 such premises in the borough where milk is sold; 34 of these were registered in the usual way, and as the result of notices served on the remaining 15, registration was effected or the sale of milk given up. With regard to the 127 other restaurants where milk is sold in small quantities in connection with the sale of "tea and milk," "pot of tea," "bread and milk," or "porridge and milk," action was deferred pending a judicial decision in the case raised for appeal. This case was the appeal of a firm of restaurant keepers against a conviction for selling milk without being registered, and has since been decided, the Lord Chief Justice giving judgment on the 21st October, 1912. His Lordship took the view that there was nothing in the various regulations to show that the sale of a glass of milk incidental to the ordinary trade of restaurant keeper involved that the restaurant keeper should be registered as a purveyor of milk. He did not decide what would, under other circumstances, constitute the purveying of milk, but in his opinion there was no evidence that the appellants were carrying on the trade of purveyors of milk. Mr. Justice Channell and Mr. Justice Avory concurred, the latter adding that to be a purveyor of milk the selling of milk must be a substantial part of the business carried on. The appeal, therefore, was allowed.

Inspection of milkshop premises.

The following table shows the number of milkshop premises at the end of 1910 and 1911 in the metropolitan boroughs of London, the number of inspections and the proceedings taken. The table has mainly been compiled from information contained in the annual reports:—

Metropolitan borough.	Number of premises. (*a*)				Number of inspections, 1911.	Number of notices, 1911.	Number of prosecutions, 1911.
	On register at end of 1910.	Added in 1911.	Removed in 1911.	On register at end of 1911.			
City of London ..	638	33	32	639	—	1	—
Battersea	185	25	34	176	620	18	1
Bermondsey ...	286	35	27	294	1,118	10	—
Bethnal Green ...	243	20	7	256	806	33	1
Camberwell ...	610	29	25	614	1,331	22	—
Chelsea	115	10	11	114	152	7	—
Deptford	206	57	57	206	559	22	1
Finsbury	*263*	*31*	*34*	*260*	242	38	4
Fulham	175	41	5	211	620	15	—
Greenwich	182	9	18	173	205	—	—
Hackney	351	14	54	311	1,490	14	—
Hammersmith ...	355	67	75	347	703	38	1
Hampstead	107	4	8	103	549	35	—

(*a*) Figures in italics refer to *persons registered*.

Metropolitan borough.	Number of premises. (*)				Number of inspections, 1911.	Number of notices, 1911.	Number of prosecutions 1911.
	On register at end of 1910.	Added in 1911.	Removed in 1911.	On register at end of 1911.			
Holborn	172	14	9	177	658	3	—
Islington	565	28	25	568	1,661	242	—
Kensington ...	196	13	12	197	1,339	12	—
†Lambeth	627	111	629	109	1,071	111	—
Lewisham	199	18	59	158	514	5	—
Paddington... ...	*114*	*7*	*1*	*120*	210	—	—
Poplar	329	14	18	325	1,110	3	—
St. Marylebone ...	208	25	33	200	506	10	—
St. Pancras... ...	413	—	—	413	966	—	—
Shoreditch	292	15	15	292	2,868	17	—
Southwark	*428*	*107*	*79*	*456*	1,346	10	—
Stepney	1,102	39	49	1,092	2,375	406	9
Stoke Newington ...	*51*	—	—	*53*	99	1	—
Wandsworth ...	336	57	38	355	912	41	7
Westminster ...	*372*	*38*	*28*	*382*	899	49	—
Woolwich	137	14	22	129	193	30	—
Totals	8,029 / *1,228*	—	—	7,459 / *1,271*	—	—	—

Tuberculosis of the udder in London cows. London County Council (General Powers) Act, 1904 (Part V.)

The Dairies, Cowsheds and Milkshops Order, 1899, provides that the milk from cows certified by a veterinary surgeon to be affected with tubercular disease of the udder shall not be

(*a*) mixed with other milk, or

(*b*) sold or used for human food, or

(*c*) sold or used for the food of swine without having first been boiled.

In 1904 this power was supplemented in London by additional powers, incorporated in the London County Council (General Powers) Act of that year, to remove any cow from any dairy, farm or cowshed in the County (elsewhere than in the City), if such cow is suspected to be suffering from tuberculosis of the udder, and if, upon slaughter, these suspicions are verified, a sum equal to three-quarters of the agreed value of the animal (not exceeding £22 10s.) is payable by the Council. If, however, the cow is proved to be free from tuberculosis of the udder, the full agreed value (not exceeding £30), together with a further sum of £1, is payable by the Council.

The cows in the London cowsheds have, since the date of the Dairies Order of 1899, been periodically inspected by the County Council's veterinary inspector, with a view to the detection of cows suffering from tubercular disease of the udder. During the year 1911 there were six inspections of all the cows in the London cowsheds, and the results of the veterinary inspector's examination are shown in the following table:—

Details of Examination.	1st period, 11th Dec., 1910, to 21st Feb., 1911.	2nd period, 22nd Feb. to 10th April, 1911.	3rd period, 11th April to 9th June, 1911.	4th period, 10th June, to 1st August, 1911.	5th period, 2nd August to 19th Oct., 1911.	6th period, 20th Oct., 1911, to 12th Jan, 1912.
Total number of cows examined ..	3,015	3,051	3,065	2,934	3,091	2,998
Affected with disease or defects of the udder	116	114	109	81	87	83
Affected with tubercular disease of the udder	1	3	4	4	2	4
Subjects of acute mastitis	32	13	29	9	14	26
Affected with chronic induration of the udder	31	38	27	22	26	20
Atrophy of one or more quarters ..	51	59	43	45	42	31
Injuries, abscesses, simple eruptions, strictures and obliterations of milk ducts	1	1	6	1	3	2

The 18 cows suffering from tubercular disease of the udder were slaughtered, and the carcases destroyed, compensation being paid by the Council to the owners in accordance with the provisions of the London County Council (General Powers) Act of 1904. One other cow was seized and slaughtered on suspicion of being affected with tuberculosis of the udder. On post-mortem examination, however, the animal presented no definite pathological evidence of being so affected.

Tuberculous milk; London County Council (General Powers) Act, 1907. Part IV.

Part IV. of the London County Council (General Powers) Act of 1907 empowers the County Medical Officer of Health or other duly authorised person to take, within and without the County, samples of milk produced or sold or intended for sale within the County; and, having obtained a justice's order, in company with a veterinary surgeon, to enter any dairy from which milk is being sold or suffered to be sold or used within the County, and to inspect the cows kept therein, and if the Medical Officer or such authorised person has reason to suspect that any cow is suffering from tuber-

(*) Figures in italics refer to *persons registered.*

† The milkshop premises are being re-registered under new regulations.

culosis of the udder he may take samples of the milk of such cow. If it appears to the Council that tuberculosis is caused, or is likely to be caused, to persons residing in the County from the consumption of milk from any dairy, or from any cow kept therein, the Council may make an order prohibiting the supply of such milk in the County until the order has been withdrawn, and any person contravening the order is liable to a penalty not exceeding £5, and for a continuing offence to a daily penalty not exceeding 40s. Appeal may be made against the Council's order.

On 11th February, 1908, the Council delegated to the Public Health Committee the authority conferred by Part IV. of this Act, dealing with tuberculous milk, and fixed the 1st July, 1908, as the date upon which the Act should become operative. The method of procedure adopted is as follows: Samples are taken by the Council's inspectors from churns of milk consigned from the country to the various London railway termini, and these are submitted to the Lister Institute for bacteriological examination. In the case of those samples in respect of which the examination proves that there is evidence of the presence of tubercle bacilli, a clinical examination of the cows at the dairy farm from which the milk is consigned is made by a veterinary inspector appointed for the purpose under the Act, and cows found to have tuberculous udders are certified for the purposes of the Dairies and Cowsheds Orders and copies of the certificates forwarded to the local sanitary authorities concerned.

During the year 1911, 3,038 samples of milk were taken. The milk had been sent to London from the following counties: Bedfordshire, Berkshire, Buckinghamshire, Cambridgeshire, Cheshire, Cornwall, Derbyshire, Devonshire, Dorsetshire, Essex, Gloucestershire, Hampshire, Herefordshire, Hertfordshire, Huntingdonshire, Kent, Leicestershire, Lincolnshire, Middlesex, Norfolk, Northamptonshire, Northumberland, Nottinghamshire, Oxfordshire, Rutlandshire, Shropshire, Somersetshire, Staffordshire, Suffolk, Surrey, Sussex, Warwickshire, Wiltshire, Worcestershire and Yorkshire; the samples were taken principally from churns at stations of the Great Western, the Great Eastern, the Great Northern, the Great Central, the Midland, the Metropolitan, the London, Brighton and South Coast, the London and North-Western, the London and South-Western, the North London, and the South-Eastern, Chatham and Dover Railway Companies.

The following table shows the number of samples taken during the year under review, the counties from which they were derived, and the results of bacteriological examination at the Lister Institute.

County.	No. of samples taken from churns for examination.	No. of samples found to be tuberculous.	No. of samples found not to be tuberculous.	No. of samples the examination of which was not completed owing to accident and other causes.
Bedfordshire	60	2	54	4
Berkshire	155	7	142	6
Buckinghamshire	138	4	121	13
Cambridgeshire	14	4	9	1
Cheshire	16	7	9	—
Cornwall	3	—	3	—
Derbyshire	320	59	252	9
Devonshire	1	—	1	—
Dorsetshire	46	2	39	5
Essex	121	11	105	5
Gloucestershire	127	6	116	5
Hampshire	76	7	66	3
Herefordshire	1	—	1	—
Hertfordshire	62	9	47	6
Huntingdonshire	8	3	5	—
Kent	15	5	9	1
Leicestershire	306	31	265	10
Lincolnshire	21	—	19	2
Middlesex	9	3	6	—
Norfolk	5	—	5	—
Northamptonshire	154	9	138	7
Northumberland	1	—	1	—
Nottinghamshire	33	2	29	2
Oxfordshire	125	8	112	5
Rutlandshire	1	—	1	—
Shropshire	15	3	9	3
Somersetshire	247	16	198	33
Staffordshire	201	38	151	12
Suffolk	15	—	12	3
Surrey	21	1	19	1
Sussex	60	7	53	—
Warwickshire	79	6	70	3
Wiltshire	562	48	492	22
Worcestershire	10	—	10	—
Yorkshire	10	—	10	—
Total	3,038	298	2,579	161

This table shows that out of 2,877 completed examinations of samples taken from churns consigned to London, 298 proved to be tuberculous, *i.e.*, 10·4 per cent. Some of the samples were derived from churns containing milk from more than one farm.

The last annual report gave a similar account of 2,497 samples of milk examined during the year 1910, of which 268, or 10·7 per cent., were found to be tuberculous.

The following table shows the number of farms visited, the number of cows inspected and the number of cows certified to have tuberculosis of the udder during the year :—

Farms inspected in English counties.

County.	No. of farms inspected.	No. of cows inspected.	No. of cows with tuberculous udders.
Bedfordshire	1	43	—
Berkshire	11	345	5
Buckinghamshire	4	181	1
Cambridgeshire	1	54	1
Cheshire	3	144	1
Derbyshire	71	1,582	17
Dorsetshire	9	170	2
Essex	16	730	6
Gloucestershire	5	227	—
Hampshire	26	999	7
Hertfordshire	10	306	8
Huntingdonshire	2	100	1
Kent	9	344	4
Leicestershire	21	771	6
Middlesex	2	102	1
Norfolk	2	44	1
Northamptonshire	9	351	1
Nottinghamshire	2	47	—
Oxfordshire	4	148	1
Shropshire	1	32	—
Somersetshire	19	651	3
Staffordshire	127	2,985	6
Suffolk	4	166	1
Surrey	3	162	3
Sussex (East)	6	216	—
Sussex (West)	3	103	3
Warwickshire	6	175	1
Wiltshire	126	4,332	11
Total	503	15,510	91

This table shows that 0·6 per cent. of the cows examined were certified by the Council's veterinary inspector to have clinical symptoms of tubercular disease of the udder. The supply of milk for human consumption from the cows thus affected was immediately stopped.

Offensive Businesses.

Slaughter-houses.

In the year 1911 the County Council received 247 applications for licences for slaughter-houses, and granted 243. The following table shows the number of applications received and the number of slaughter-houses licensed in recent years. It will be seen that the number of these premises is continually decreasing :—

Year.	No. of applications received.	No. of premises for which licences were granted.	Year.	No. of applications received.	No. of premises for which licences were granted.
1892	543	537	1902	371	362
1893	538	529	1903	350	346
1894	518	506	1904	338	333
1895	497	485	1905	322	318
1896	478	470	1906	310	308
1897	460	460	1907	301	294
1898	442	429	1908	281	273
1899	419	411	1909	265	264
1900	405	393	1910	257	255
1901	384	381	1911	247	243

Inspection of slaughter-houses.

The number of slaughter-houses in each metropolitan borough (other than those under the jurisdiction of the City Corporation) and the frequency with which these slaughter-houses, in most of the boroughs, were inspected, is shown in the following table :—

Metropolitan borough.	Number of slaughter-houses (*a*).			No. of inspections, 1911.	No. of notices, 1911.
	Licensed at end of 1910.	Licence lapsed or refused in 1911.	Remaining at end of 1911.		
Battersea	5	1	4	328	—
Bermondsey	1	—	1	23	—
Bethnal Green	5	1	4	34	—
Camberwell	13	—	13	96	—
Chelsea	6	—	6	66	—
Deptford	3	—	3	46	—
Finsbury	3	—	3	95	—
Fulham	4	1	3	50	—
Greenwich	4	—	4	24	—
Hackney	21	—	21	319	3
Hammersmith	9	—	9	112	15
Hampstead	4	—	4	81	1
Holborn	1	—	1	12	—
Islington	32	2	30	1,759	—
Kensington	10	—	10	228	—
Lambeth	20	1	19	40	4
Lewisham	15	1	14	131	—
Paddington	7	—	7	479	—
Poplar	16	2	14	92	—
St. Marylebone	7	—	7	130	1
St. Pancras	18	1	17	616	—
Shoreditch	6	—	6	12	—
Southwark	6	—	6	22	—
Stepney	6	—	6	16	2
Stoke Newington ..	4	—	4	19	—
Wandsworth	17	2	15	320	3
Woolwich	12	—	12	48	4
Totals, 27 districts ..	255	12	243	5,198	33

During the year the following authorised offensive businesses, other than that of a slaughterer of cattle, were discontinued: the business of a knacker in Southwark; the business of a tallow-melter and soap-boiler in Lambeth; the business of a fat-melter and a tripe-boiler in Poplar. Hence the number of scheduled offensive businesses declined from 79 to 74.

The number of such authorised offensive businesses, except those in the markets under the jurisdiction of the City Corporation, was at the end of the year as follows :—

Fat melters	15	Manure manufacturers	2
Tripe boilers	21	Soap boilers	11
Glue and size manufacturers ..	5	Tallow melters	5
Knackers	4	Gut manufacturers	3
Fellmongers	6		—
Bone boilers	2		74

In several instances more than one offensive business is carried on at the same premises, hence the number of premises used for the purpose of these businesses is smaller than the number of such businesses.

Inspection of offensive trade premises.

The boroughs in which these premises are situated, the number of premises, and for most boroughs, the number of inspections, are shown in the following table :—

Metropolitan borough.	No. on Register at end of 1911.	No. of inspections, 1911.	Metropolitan borough.	No. on Register at end of 1911.	No. of inspections, 1911.
Battersea	2	19	Lambeth	3	24
Bermondsey	12		Poplar	6	39
Bethnal Green	1.	4	St. Marylebone	2	28
Camberwell	4		St. Pancras	2	43
Deptford	3	35	Shoreditch	1	10
Finsbury	1	6	Southwark	5	66
Greenwich	3		Stepney	7	28
Hackney	1	13	Wandsworth	4	99
Islington	6	89		—	
			Total	63	

(*a*) The seven slaughter-houses under the jurisdiction of the City of London Corporation are not licensed by the London County Council.

Nuisances.

There are few references in any of the reports to nuisance arising from accumulations of stable manure. This fact was also observed in 1910. There is little doubt that the more rigid enforcement of the bylaws and the obvious reduction in the number of horse-drawn vehicles have together combined materially to reduce nuisance from this cause. It must not be overlooked, however, as was pointed out last year that the removal of small accumulations of manure will probably become a matter of increasing difficulty, inasmuch as contractors will not find its collection sufficiently remunerative. The question is deserving of the consideration of local authorities who have power to act under section 36 of the Public Health (London) Act, 1891. Nuisance from stable manure.

In several of the reports mention is made of proceedings for the removal of offensive refuse during prohibited hours. In a few instances, too, proceedings were taken for keeping animals so as to be a nuisance. Dr. Sandilands states that 190 fixed ashpits were abolished under section 23 of the London County Council (General Powers) Act, 1904. During 1911 the system of making a bi-weekly collection of house refuse where recommended by the medical officer of health was continued in Paddington. In other boroughs there is little variation from the methods adopted in 1910, or previously, in the matter of dust collection. Dr. Harris, in the report relating to Islington, states that it is certain that the time will come when all household dust shall be removed at least twice a week. Other nuisances.

The annual reports of medical officers of health show that considerable effort is made in London to deal with smoke nuisance, and in several the statement is made that smoke nuisance is of less frequent occurrence than formerly. The premises dealt with under the smoke provisions of the Public Health Act include various manufacturing premises, electricity supply works, laundries, bakehouses, fried fish shops, hotels, restaurants, etc. Smoke nuisance.

Dr. Allan states that in Westminster much of the smoke nuisance complained of is, as in previous years, the result of careless stoking of the furnaces. Dr. Collingridge again refers to nuisance experienced by occupiers of offices from smoke issuing from neighbouring chimneys at an inconveniently low level. Dr. Annis refers in his report to a prosecution in Greenwich which was dismissed on the ground that although the magistrate was satisfied that there was a recrudescence of the nuisance from the same chimney within 6 months of the service of the statutory notice requiring not only the abatement of such nuisance, but also to do whatever might be necessary to prevent the recurrence of the nuisance, yet that this said recrudescence was not in fact a recurrence because the circumstances connected with the emission of the smoke on the respective dates were entirely different. On an appeal to the High Court the magistrate's decision was upheld.

The following table, which is compiled mainly from information contained in the annual reports, shows the action taken by sanitary authorities in respect of smoke nuisance during the year, so far as this is stated in those reports.

Metropolitan borough.	Observations and inspections.	Nuisances and complaints.	Intimations.	Statutory Notices.	Summonses.
City of London ..	334	13	—	13	—
Battersea		62	62	2	—
Bermondsey	220 (chimneys)			36	—
Bethnal Green ..	555	—	34	9	4
Camberwell	—	—	75	—	—
Chelsea	—	very few	—	—	—
Deptford	31	14	—	14	—
Finsbury	67	11	—	25	1
Fulham	—	—	7	3	—
Greenwich	250	—	—	5	1
Hackney	777	—	49	—	—
Hammersmith ..	26 (premises)	—	9	4	—
Hampstead	—	10	—	—	—
Holborn	117	—	8	1	—
Islington	161	19	—	19	—
Kensington	268	—	—	2	1
Lambeth	—	23	10	—	—
Lewisham	317	—	11	1	—
Paddington	29 (premises)	11	—	—	—
Poplar	—	63	33	25	2
St. Marylebone ..	1,292	11	—	1	—
St. Pancras	653	—	15	—	—
Shoreditch	—	28	14	1	1
Southwark	280	48	16	5	—
Stepney	—	70	—	70	—
Stoke Newington ..	—	6	6	—	—
Wandsworth	189	42	—	31	—
Westminster, City of	2,620	63(*a*)	99	7	—
Woolwich	48	11	—	4	—

(*a*) Complaints only.

Housing of the Working Classes.

Proceedings under Part I. of the Housing of the Working Classes Act, 1890.

In last year's report reference was made to the Council's proposal to treat as an improvement scheme two areas in Southwark known as the Tabard-street and Grotto-place areas, and an area in Bermondsey known as the Crosby-row area, which had been represented to the Council by the respective medical officers of health of those boroughs. In November, 1911, after correspondence with the Local Government Board on the subject the Council agreed to modify the scheme in the following particulars:—

(1) To provide as many cottages as could be conveniently erected on the detached portion of the Tabard-street area between Law-street and Little Hunter-street.

(2) To provide sheds on the area for the convenience of street traders, and accommodation for barrows as may be required for the use of such street traders as may be displaced by the scheme.

(3) To retain and use part of the land as an open space accessory to the scheme for rehousing.

A copy of the resolutions on these proposals was forwarded to the Local Government Board.

Proceedings of the Council under Part III. of the Act.

In October, the Council accepted a tender of £3,241 for the erection of 15 cottages on Section C of the Norbury estate.

Housing, Town Planning Act, Section 17

Article V. of the regulations made by the Local Government Board in September, 1910, under this Act, requires that the "medical officer of health shall include in his annual report information and particulars in tabular form in regard to the number of dwelling houses inspected under and for the purposes of section 17 of the Act of 1909, the number of dwelling houses which on inspection were considered to be in a state so dangerous or injurious to health as to be unfit for human habitation, the number of representations made to the local authority with a view to the making of closing orders, the number of closing orders made, the number of dwelling houses the defects in which were remedied without the making of closing orders, the number of dwelling houses which, after the making of closing orders, were put into a fit state for human habitation, and the general character of the defects found to exist. He shall also include any other information and particulars which he may consider desirable in regard to the work of inspection under the said section."

Information of these proceedings is not given in tabular form in several of the reports, and the following table has been mainly compiled from the information otherwise contained in them:

Metropolitan borough.	No. of houses inspected.	No. of houses dealt with under Section 15.	No. of representations, 1911.	No. of closing orders, 1911.	No. of houses, defects remedied without closing orders.	No. of houses, defects remedied after closing orders	No. of houses demolished.	Remarks.
Battersea	78		some					
Bermondsey	2,075	6		43	6	27	2	
Bethnal Green ..	382	90			177		9	A large amount of repairs effected.
Camberwell	30				14			
Chelsea	108				69	1	3	4 closed and 3 demolished voluntarily.
Deptford	2,154	50	44	44				2 closed voluntarily.
Finsbury			19					Represented in 1910 and subsequently closed.
Fulham	157		43	38	91	10	19	
Greenwich	478		—	—	323		17	45 closed and 17 demolished voluntarily.
Hackney	260							
Hammersmith ..	766		—	—	362			
Hampstead	171		1	1	80			1 appeal dismissed.
Holborn	129	1	31	1	23	1	21	28 closed voluntarily.
Islington			17	17	9	17		
Kensington	46		4	4	21	1	1	6 houses converted to other uses.
Lambeth	60	27	27	27			43	27 demolished voluntarily without closing orders.
Lewisham	781		5	2				
Paddington	154		5	5		4		2 closed voluntarily.
Poplar	130		7	7	118	6*b*		
St. Marylebone ..	588 †106		5	5	504	1	2	Informalities in procedure caused delay.
St. Pancras								No information.
Shoreditch	13		11	11	22		11	
Southwark		33	109	76		31*c*		
Stepney			38	38		38*a*		Informalities in procedure caused delay.
Stoke Newington ..	*				4	—	1	
Wandsworth	2,486	—	—	—	—	—	—	
Westminster, City of	21		8	—	6	—	2	
Woolwich	340		18	14	4	7	8	Representations included 3 underground rooms.
Totals	11,513	207	392	334	1,833	144	139	

(*a*) 24 of these relate to houses closed in 1910. (*b*) 2 of these relate to houses closed in 1910.
(*c*) 30 of these were determined early in 1912. * Inspections made but number not stated. † Tenements.

All the 171 inspections in Hampstead were concerned with basement houses and 93 underground rooms were found to be illegally occupied. In 80 cases structural works were carried out; in 12 cases the use of the room was discontinued, and in 1 case a Closing Order was made in 1912. In Battersea the 78 inspections were of underground rooms. 35 of these were illegally occupied. In 14 cases the use of the room was at once discontinued. Notices requiring alterations were served with respect to the others. Eight underground rooms were represented in Westminster. Four Closing Orders were made, and the remaining 4 rooms were dealt with under the Public Health Act. In Woolwich, 3 underground rooms were represented, and dealt with under the Housing, Town Planning, Act.

Underground Rooms.

The number of underground rooms dealt with in 1911 in the several metropolitan boroughs is shown in the following table :—

Metropolitan borough.	No. of rooms illegally occupied.	No. of rooms closed or illegal occupation discontinued.	Metropolitan borough.	No. of rooms illegally occupied.	No. of rooms closed or illegal occupation discontinued.
Battersea	35	14	Kensington	9	9
Bermondsey	—	—	Lambeth	21	21
Bethnal Green	—	3	Paddington	10	16
Camberwell	2	2	St. Marylebone	245	245
Chelsea	5	5	St. Pancras	427	*
Deptford	3	3	Shoreditch	8	8
Finsbury	17	17	Southwark	—	—
Fulham	—	—	Stepney	62	62
Greenwich	5	5	Stoke Newington	10	10
Hackney	2	2	Westminster, City of ..	49	49
Hampstead	93	93	Woolwich	14	14
Holborn	24	24			
Islington	22	22	Total	1,163	

Under Section 17 (7) of the Housing and Town Planning Act, a room habitually used as a sleeping place, the surface of the floor of which is more than three feet below the surface of the part of the street adjoining or nearest to the room, is deemed to be unfit for human habitation, if it is not on an average at least seven feet in height from floor to ceiling, or does not comply with regulations which the local authority with the consent of the Local Government Board may prescribe. So far as is shown in the annual reports of medical officers of health, regulations made by eight authorities have been approved by the Local Government Board, these authorities being the metropolitan borough councils of Battersea, Hampstead, Lambeth, Poplar, St. Marylebone, Stoke Newington, Wandsworth and Woolwich. In five other cases draft regulations were, at the end of the year, awaiting the approval of the Board. In the report relating to Holborn, Dr. Bond, the medical officer of health, states that he prepared regulations in accordance with the provisions of the Act, and after careful consideration by the Committee, the matter was adjourned for the present.

Overcrowding.

The following table, showing the number of dwelling rooms found overcrowded in each metropolitan borough, is compiled from information supplied by the medical officers of health, in their annual reports :—

Metropolitan borough.	No. of dwelling-rooms overcrowded.	No. remedied.	No. of prosecutions.
City of London	7	7	—
Battersea	84	84	—
Bermondsey	169	169	—
Bethnal Green	246	231	—
Camberwell	102	102	—
Chelsea	7	7	4
Deptford	33	33	—
Finsbury	121	121	—
Fulham	32	32	—
Greenwich	29	29	—

Continued on next page.

* Time allowed to tenants to find room elsewhere.

Metropolitan borough.	No. of dwelling-rooms over-crowded.	No. remedied.	No. of prosecutions.
Hackney	118	116	—
Hammersmith	—	—	—
Hampstead	16	16	—
Holborn	64	64	—
Islington	112	112	—
Kensington	83	83	2
Lambeth	39	39	—
Lewisham	27	27	—
Paddington	207	173*a*	—
Poplar	183	183	—
St. Marylebone	85	85	—
St. Pancras	159	159	—
Shoreditch	148	148	—
Southwark	104	104	—
Stepney	548	547	1
Stoke Newington	10	10	—
Wandsworth	91	91	—
Westminster, City of	107	107	—
Woolwich	97	97	—
Totals	3,028	2,976	7

(*a*) No action taken in 34 cases, the deficiency of air space being very slight.

Houses let in lodgings.

Registration and inspection of houses let in lodgings.

The following table has been compiled from the annual reports of medical officers of health, and shows the number of houses let in lodgings on the register and the number of inspections, notices issued and proceedings taken during the year 1911.

Metropolitan borough.	Number of places.				No. of Inspections, 1911.	No. of Notices, 1911.	No. of Prosecutions, 1911.
	On register at end of 1901.	Added in 1911.	Removed in 1911.	On register at end of 1911.			
City of London ..	248	—	—	247	—	305	—
Battersea	123	—	—	123	330	127	—
Bermondsey	227	4	—	231	924	179	—
Bethnal Green	517	30	11	536	2,006	590	—
Camberwell	254	—	—	254	490	429	—
Chelsea	583	—	14	569	453	194	—
Deptford	273	—	—	273	273	9	—
Finsbury	1,209	—	—	1,209	8,824	221	—
Fulham	114	—	—	114	—	—	—
Greenwich	95	120	—	215	682	69	—
Hackney	463	38	—	501	393	213	—
Hammersmith	4,623	186	1,314	3,495	—	678	—
Hampstead	364	61	—	425	748	86	8
Holborn	641	4	12	633	1,002	188	—
Islington	(*a*)			(*a*)	8,217	908	1
Kensington	2,091	—	—	2,091	7,625	1,032	11

Continued on next page.

(*a*) No register is now kept, under the Borough of Islington's new by-laws, but during the year there were 1,072 houses on the lists for inspection.

Metropolitan borough.	Number of places.				No. of Inspections, 1911.	No. of Notices, 1911.	No of Prosecutions, 1911.
	On register at end of 1910.	Added in 1911.	Removed in 1911.	On register at end of 1911.			
Lambeth	372	—	—	372	744	—	—
Lewisham	15	1	5	11	70	11	—
Paddington	1,326	32	10	1,348	6,945	4,188	8
Poplar	1,095	21	—	1,124	2,747	590	3
St. Marylebone	758	294	—	1 052	7,539	1,465	—
St. Pancras	2,282	71	—	2,353	9,064	1,197	—
Shoreditch	263	3	—	266	426	67	—
Southwark	1,270	24	34	1,260	11,692	2,935	—
Stepney	2,881	36	6	2,911	4,842	2,521	9
Stoke Newington ..	263	—	—	217	—	—	—
Wandsworth	292	—	—	292	721	637	4
Westminster	1,447	—	55	1,392	7,559	1,297	—
Woolwich	409	30	10	429	539	257	—
Totals including Islington	25,507			24,965			

Reference was made in the annual report for 1910 to a provision in the Housing, Town Planning, etc., Act, 1909 (section 16) which extends the power of making by-laws as to lodging-houses for the working classes so as to impose duties upon the owner of the premises in addition to or in substitution for any other person. In Paddington, Poplar and St. Marylebone amended by-laws were adopted during the year and were awaiting confirmation by the Local Government Board. In Islington, Dr. Harris reports that amended by-laws have been approved. In Wandsworth Dr. Caldwell Smith states that the borough council, on the advice of their solicitor, did not consider it necessary to make any alteration in the existing by-laws. In the Battersea and Lambeth reports it is stated that new by-laws are under consideration.

Death Rates in Council's Dwellings.

The following death-rates obtaining among tenants of the Council's buildings relate to dwellings within the county which were occupied during the whole of the year 1911. The population thus dealt with comprised 27,704 persons, and the death-rate at "all ages," after correction for age and sex distribution, was 9.5 per 1,000 living, compared with 15·0 for London :—

Cause of death.	Death-rate per 1,000 living, 1911.	
	Council's dwellings.	London.
All Causes—All Ages	9·5	15·0
,, ,, age 0—5	27·7	47·7
,, ,, ,, 5—20	1·9	2·7
,, ,, ,, 20 and upwards ..	8·6	15·0
Diarrhœa	0·8	1·4
Principal epidemic diseases (excluding Diarrhœa)	0·7	1·0
Phthisis	0·8	1·3
Tubercular diseases other than Phthisis	0·3	0·4
Bronchitis	0·8	1·2
Pneumonia	1·1	1·2

Common Lodging-Houses.

The administration of the Common Lodging Houses Acts devolved upon the Council in 1894 By the passing of the London County Council (General Powers) Act, 1902, the Council obtained power to license common lodging-houses annually. New by-laws for the regulation of common lodging-houses came into force on the 1st October, 1903.

Accommodation in common lodging houses and details of inspection.

In the following table will be seen the number of houses, the authorised number of lodgers, the number of convictions, with the penalties inflicted, and other particulars during each year since 1894 :—

Year.	No. of houses on register.	Authorised number of lodgers.	No. of day visits by inspectors.	No. of night visits.	No. of prosecutions.	No. of convictions.	Penalties and costs. £ s. d.	No. of cases of infectious disease.
1895 ..	626	29,574	—	—	16	12	37 6 0	99
1896 ..	596	29,140	28,331	—	31	30	112 16 0	71
1897 ..	581	28,718	26,121	—	31	30	92 11 0	48
1898 ..	560	28,332	27,658	—	29	29	167 3 0	44
1899 ..	544	28,448	28,229	1,162	25	22	183 9 0	54
1900 ..	528	28,311	28,428	668	16	13	102 15 0	40
1901 ..	514	28,037	35,225	2,133	16	15	96 3 0	166
1902 ..	491	28,970	40,512	1,449	22	21	98 4 0	684
1903 ..	470	28,893	33,402	4,790	6	6	26 11 0	53
1904 ..	451	28,896	27,501	2,970	15	14	62 6 0	66
1905 ..	413	27,571	28,158	1,565	21	16	77 3 0	14
1906 ..	402	28,063	30,028	2,349	4	4	11 1 0	22
1907 ..	395	28,651	33,630	2,307	3	3	12 9 0	27
1908 ..	387	28,379	32,297	2,429	1	1	2 2 0	13
1909 ..	383	28,302	29,324	1,286	3	3	22 0 0	19
1910 ..	368	27,914	26,733	1,589	2	2	7 4 0	13
1911 ..	364	28,000	25,243	2,066	2	2	5 8 0	16

It will be observed that since 1894 the number of common lodging-houses has steadily diminished. It should be noted, however, that previously to 1903 every house was separately counted, whereas now adjoining houses in the same occupation are counted as one house and included under one licence. It will be seen, moreover, that although the number of houses has been reduced the authorised number of beds varies but little, thus showing that there is a tendency for the smaller houses to be replaced by a smaller number of larger houses.

The number of cases of notifiable infectious disease reported in common lodging-houses was as follows :—Erysipelas, 5 ; scarlet fever, 4 ; diphtheria, 2 ; enteric fever, 5—Total 16.

Licensed common lodging houses and accommodation provided.

The following table shows the total number of common lodging houses, and the authorised accommodation for the different classes of lodgers in the several sanitary areas of London, other than that of the City, on 31st December, 1911 :—

Sanitary District.	Number of Houses.	Authorised Accommodation.			
		Men.	Women.	Couples.	Total.
Battersea	9	157	144	23	347
Bermondsey	5	1,297	—	—	1,297
Bethnal Green	13	674	—	—	674
Camberwell	5	549	—	—	549
Chelsea	5	212	—	—	212
Deptford	8	1,155	80	—	1,235
Finsbury	8	535	—	—	535
Fulham	2	43	51	—	94
Greenwich	3	121	—	—	121
Hackney	7	495	—	—	495
Hammersmith	9	466	—	4	474
Hampstead	—	—	—	—	—
Holborn	25	1,512	162	—	1,674
Islington	42	1,171	275	18	1,482
Kensington	22	398	272	—	670
Lambeth	7	693	—	—	693
Lewisham	1	30	—	—	30
Paddington	7	195	40	—	235
Poplar	9	1,143	—	—	1,143
St. Marylebone	15	1,249	109	—	1,358
St. Pancras	8	706	36	—	742
Shoreditch	12	764	—	—	764
Southwark	42	3,173	449	—	3,622
Stepney	53	5,367	694	180	6,421
Stoke Newington	1	37	—	—	37
Wandsworth	10	185	5½	20	230½
Westminster, City of	13	2,248	62	—	2,310
Woolwich	23	480	76	—	556
London—excluding the City of London ..	364	25,055	2,455½	245	*28,000½

* ½=1 child.

Deaths among inmates of common lodging houses.

The following table shows the proportion of deaths from several causes per 1,000 deaths among males in common lodging-houses, the corresponding figures for London being shown for comparative purposes. The deaths of persons removed from common lodging-houses to infirmaries and other like public institutions have been included. The total number of deaths among lodgers (males and females) in common lodging-houses during the year was 754; the large majority of these deaths occurred in public institutions.

Table showing the number of deaths of males at five age periods from certain causes per 1,000 deaths from all causes in London (1910) and licensed common lodging-houses (1910 and 1911).

Cause of death.	Age 25 to 35.			Age 35 to 45.			Age 45 to 55.			Age 55 to 65.			Age 65 and upwards.		
	London, 1910.	C.L.H. 1910.	C.L.H. 1911.	London, 1910.	C.L.H. 1910.	C.L.H. 1911.	London, 1910.	C.L.H. 1910.	C.L.H. 1911.	London, 1910.	C.L.H. 1910.	C.L.H. 1911.	London, 1910.	C.L.H. 1910.	C.L.H. 1911
Phthisis	399	415	451	314	460	500	187	325	286	101	205	256	25	83	64
Other tubercular diseases	37	24	32	16	—	—	11	6	6	4	12	12	3	—	5
Alcoholism (including cirrhosis of the liver)	14	47	32	27	19	--	35	32	26	25	24	12	8	—	13
Urinary diseases..	37	47	96	51	46	11	73	57	80	86	69	68	83	73	60
Violence, suicide	95	70	64	81	27	11	66	19	20	46	19	18	24	14	30
Cancer	35	24	—	60	10	35	131	69	68	174	106	86	112	79	84
Circulatory diseases	90	24	197	135	82	90	179	76	96	235	87	132	245	51	112
Nervous diseases	30	24	—	40	55	57	36	76	28	32	81	30	32	47	40
Bronchitis ...	12	24	32	27	73	35	49	107	102	87	154	152	152	216	166
Pneumonia ...	99	93	64	106	109	139	103	107	169	88	94	132	71	106	66
Other causes ...	152	208	32	143	119	122	130	126	119	122	149	102	245	331	360
Total (all causes)	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

Phthisis in Common Lodging Houses.

Enquiry has been made with regard to 238 persons notified under the orders and giving addresses at common lodging houses licensed by the Council, viz., 221 males and 17 females. The age distribution of 237 of these cases was as follows :—

15—	20—	25—	35—	45—	55—	65—
4	5	33	65	81	44	5

As the result of enquiry, information was obtained in respect of 221 of the patients as to whether their illness began before or after they had resorted to this mode of living.

Of the total (221) the onset of illness was stated in 89 cases to date from a time prior to that when resort was made to common lodging-houses, while in 16 other cases it was practically coincident with entry.

As regards cases developing after commencement of this mode of life in 31 cases the illness was first manifested before the expiration of three years; in 14 cases in from three to five years, in 35 cases in from five to ten years, in 24 cases between ten and twenty years and in 12 cases the illness developed after more than twenty years of common lodging house life.

Seamen's Lodging-houses.

Under the provisions of section 214 of the Merchant Shipping Act, 1894, the Council made by-laws for the regulation of houses accommodating seamen. These by-laws came into force on the 1st October, 1901.

As the result of correspondence with the Board of Trade on the subject of the licensing of seamen's lodging-houses, it was thought desirable that the by-laws should be amended in certain particulars. This was accordingly done, the new by-laws were sealed by the Council on 16th December, 1909, and came into force on 1st January, 1910. An Order of His Majesty in Council making it an offence to keep a seamen's lodging-house within the County of London unless such house is licensed by the County Council, came into force on 19th February, 1910.

Seamen's lodging-houses are now annually licensed by the Council. The annual licensing meeting is held in November and the licences then granted date from 1st January and expire on 31st December. The number of seamen's lodging houses under supervision at the end of 1911 was 36, situated in the following metropolitan boroughs :—

Metropolitan borough.	Houses.	Lodgers.
Poplar	11	323
Stepney	25	850
Total	36	1,173

In the following table will be seen the number of houses, the authorised number of lodgers, the number of convictions, with the penalties inflicted, and other particulars, during each year since the supervision of seamen's lodging-houses was undertaken by the Council :—

Year.	No. of houses on register.	Authorised number of lodgers.	No. of day visits by inspectors.	No. of night visits.	No. of prosecutions.	No. of convictions.	Penalties and costs. £ s. d.	No. of cases of infectious disease.
1902 ..	97	1,665	2,842	—	—	—	—	—
1903 ..	102	1,748	1,956	4	2	1	1 16 0	7
1904 ..	90	1,585	1,298	10	3	3	11 7 0	10
1905 ..	77	1,509	1,509	15	5	5	9 13 6	1
1906 ..	84	1,551	1,431	38	9	8	43 7 0	2
1907 ..	82	1,550	2,169	70	8	7	38 19 0	5
1908 ..	85	1,571	2,081	78	3	3	24 0 0	6
1909 ..	80	1,524	1,983	84	7	6	15 0 0	—
1910 ..	37	1,157	2,404	197	15	14	90 9 0	—
1911 ..	36	1,173	1,465	204	7	6	52 13 0	—

In the year 1911 proceedings before the magistrate were instituted in seven instances, resulting in six convictions, the penalties amounting to £46 and £6 13s. costs. Five of the six convictions were in respect of keeping unlicensed houses, the sixth was for breaches of the by-laws.

Cleansing of Persons Act, 1897, *etc.*

Cleansing of Persons Act, 1897.

The Cleansing of Persons Act provides "that any local authority shall have the power when in their discretion they shall see fit, to permit any person who shall apply to the said authority on the ground that he is infested with vermin to have the use, free of charge, of the apparatus (if any) which the authority possesses for cleansing the person and his clothing from vermin."

It is also provided that the use of such apparatus shall not be considered to be parochial relief or charitable allowance, and local authorities may expend any reasonable sum on buildings, appliances, etc., required for carrying out the Act. The Act, however, is a permissive one only.

In recent years considerable attention has been paid to this subject and most of the local authorities in London have in greater or less degree made provision for the cleansing of verminous persons and their clothing. Some information on this subject is given in the annual reports and the following table has been compiled from the material thus made available :—

Number of persons cleansed during the year 1911.

Metropolitan borough.	Adults.	Children.	Metropolitan borough.	Adults.	Children.
City of London	—	24	Poplar	432	24
Battersea	1,459	191	St. Marylebone ..	9,085	967
Bermondsey	73	391	St. Pancras	1,764	2,369c
Bethnal Green	14	—	Southwark	137	18
Camberwell		2,338*d*	Stepney	2,015	96
Finsbury	7*b*	—	Stoke Newington ..	2	254
Hackney	177	544	Wandsworth	5	14
Holborn	133*b*	—	Westminster, City of ..	19	—
Islington	23	—	Woolwich	123	386
Kensington	34*b*	—			

General Powers Act, 1904, sects. 19, 20, 21, 24.

In dealing with verminous persons and more particularly with children, it was recognised that the cleansing of the individual could be of little service unless accompanied by the cleansing of his home (furniture and clothing), and the County Council in its General Powers Bill of 1904 included clauses to effect this end. These clauses became law and the powers thus obtained have been largely used by local authorities, as many as 10,000 rooms being cleansed in 1910 and a somewhat larger number in 1911. Most of the reports contain reference to the action taken under section 20 of the

(*b*) Dealt with by the Board of Guardians at the expense of the Borough Council.
(*c*) In addition to the number of children disinfected shown in the table, 397 children, bed-fellows of such children, were also cleansed.
(*d*) Adults and children.

London County Council (General Powers) Act of 1904, to which reference has just been made and the information given on this subject relative to the year 1911 has been summarised in the following table :—

Cleansing of verminous rooms or premises.

Metropolitan borough.	Number of rooms or premises cleansed.	Metropolitan borough.	Number of rooms or premises cleansed.
City of London	—	Lambeth	535 rooms.
Battersea	—	Lewisham	—
Bermondsey	—	Paddington	202 premises.
Bethnal Green	552 rooms.	Poplar	136 rooms.
Camberwell	87 premises.	St. Marylebone	325 rooms.
Chelsea	240 rooms.	St. Pancras	302 premises.
Deptford	75 rooms.	Shoreditch	275 premises.
Finsbury	135 premises.	Southwark	*3,196 rooms.
Fulham	32 rooms.	Stepney	1,953 rooms.
Greenwich	44 premises.	Stoke Newington	76 rooms.
Hackney	448 premises.	Wandsworth	240 premises.
Hammersmith	—	Westminster	244 rooms.
Hampstead	96 rooms.	Woolwich	248 rooms.
Holborn	57 premises.		
Islington	313 premises.	Total ..	8,016 rooms.
Kensington	308 rooms.		2,103 premises.

* 1,900 of these cleansed by owners.

General Powers Act, 1907, sects. 36-40.

In 1907, yet further powers were obtained in the Council's General Powers Act of that year. These powers were much in advance of anything in any previous Act and provided for the cleansing of school children and of the inmates of common lodging-houses found to be verminous. In the latter case power was given to detain and convey to suitable premises for the purpose of cleansing, any inmate of a common lodging-house being verminous and failing to comply with a twenty-four hour notice requiring him to be cleansed. Section 38 of the Act empowered the Council to enter into arrangements and agreements with local authorities for the cleansing of children and inmates of common lodging-houses, and agreements under this section have since been made as mentioned below. The Children Act of 1908 made further provision for the cleansing of school children and section 122 of this Act, giving somewhat greater facility of action than section 36 of the General Powers Act, 1907, has mainly been used in London.

Cleansing of children.

Under the provisions of section 38 of the General Powers Act, 1907, the County Council has entered into agreements where possible with the various sanitary authorities for the cleansing of verminous school children. The conditions of agreement are as follows :—

1. "That the place of treatment of children shall be entirely distinct from any establishment used for the isolation of suspected cases of infectious disease contacts."

2. "That the exclusive use of the baths for the cleansing of children shall be allowed on certain days."

3. "That the cleansing station shall be in a convenient position and that the children shall be efficiently supervised with female attendants for the treatment of girls."

4. "That a payment at the rate of 2s. per child shall be made to the local authority in respect of the cleansing of children infested with vermin, the payment to cover any number of attendances by such child at the cleansing station within a period of one calendar month from the date upon which the child is first cleansed there and to be irrespective of the number of baths required within that period before the child can reasonably be regarded as cleansed."

The work of cleansing children was undertaken at the stations of the City, Stoke Newington, Hackney, Poplar, Bermondsey, Camberwell, St. Marylebone, Hampstead and Woolwich Sanitary Authorities. The City Corporation cleansed children without making a charge to the Council. In addition, the Council established stations at the Finch-street, Chaucer, Bath-street, Fountain-road and Sedlescombe-road schools. During the year the school nurses examined 251,592 children, of whom 14,893 were found to be verminous and a warning card was sent to the parents of each child. Of the children found verminous, 4,976 returned to school cleansed, statutory notices under section 122 of the Children Act, 1908, were served in 9,917 cases, 3,682 children were cleansed at the L.C.C. stations and 1,517 at the sanitary authority stations. In the case of 285 children who relapsed into a verminous condition the parents were prosecuted.

Cleansing of homes.

When a school child is found verminous, opportunity is taken at once to inform the local medical officer so that he, if necessary, may arrange for the cleansing of the home under the provisions of the General Powers Act, 1904. Local authorities generally have willingly co-operated with the Council in this matter, though as the result of experience gained, it has been found desirable recently to modify in some degree the mode of procedure. A considerable amount of work has been done, however, and it is hoped that the new arrangement will result in increased activity in this direction.

Cleansing of adults.

As mentioned in the annual report for 1910, the principle adopted by the Council with regard to the cleansing of adults from common lodging-houses was that the sanitary authorities should cleanse, free of charge, any persons sent for that purpose to the cleansing station by the County Council from

common lodging-houses within their respective districts, and that a fee should be paid for cleansing all persons sent from common lodging-houses not within the district where the cleansing was performed. In the latter half of 1911 agreements to this effect were made with the borough councils of Bermondsey, Camberwell, Hackney, Poplar, St. Marylebone, St. Pancras and Woolwich. In Finsbury, Holborn, and Kensington lodgers were cleansed by arrangement with the Guardians, the borough council paying a capitation fee for each person cleansed. As has already been mentioned, persons were cleansed in other boroughs, but there was no agreement with the County Council for the special treatment of common lodging-house inmates.

From the information supplied by the Council's inspectors it appears that during the year 1911 some 345 men and 5 women were sent to have their persons and clothing cleansed by reason of their beds being found to be verminous. Of these numbers, 141 men and 1 woman returned to the common lodging-house in a clean condition, 2 men returned still verminous, and 181 men and 4 women went away and were not again traced. 21 men were expelled by the keepers for declining to go to the cleansing station.

During the same period the Salvation Army cleansed some 15,000 men, the numbers at the Westminster shelter alone averaging from 200 to 250 a week. Since the week ending 15th September, 1911, distinction has been made in the figures obtained and they now show whether the lodger was voluntarily or compulsorily cleansed. The details for each of the four months are shown in the following table :—

Lodgers cleansed.	Salvation Army Shelter, St. Ann's Westminster.				Salvation Army Shelter, Charles-street, Holborn.			
	Sept.	Oct.	Nov.	Dec.	Sept.	Oct.	Nov.	Dec.
Voluntarily	260	305	379	265	148	56	67	67
Compulsorily	487	516	633	431	15	34	18	38
Refused to be cleansed ..	42	33	45	14	—	—	—	—
Total cleansed from 15th. Sept. to 31st Dec., 1911.	747	821	1,012	696	163	90	85	105

It is difficult to account for the different results at the St. Ann's, Westminster, and Charles-street, Holborn, shelters. Compulsion appears to be much more necessary in one place than the other, but possibly there is less selection of lodgers at the former place.

The fact that the Salvation Army cleanses such a large number of men during the year shows the need for this work and suggests that the 345 men sent from other common lodging-houses form a very small proportion of the men needing treatment, though, of course, here again the question of class needs to be taken into consideration. It is evident, however, from the material available that the objection to cleansing is being slowly overcome, and there are many instances of men who on the first occasion have been cleansed only as the result of a 24 hours' notice, have afterwards when necessary gone to the station voluntarily.

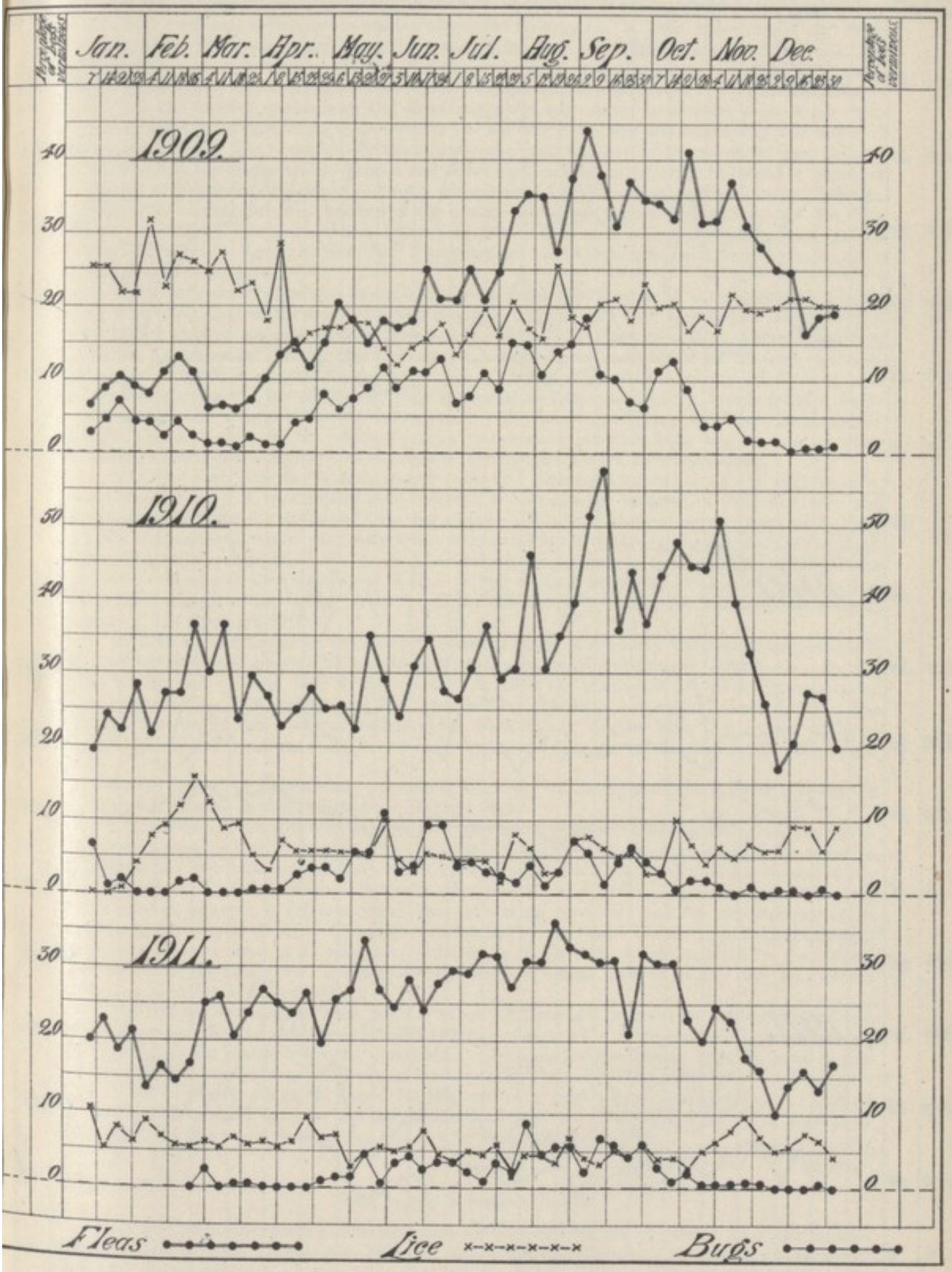
Vermin Inquiry.

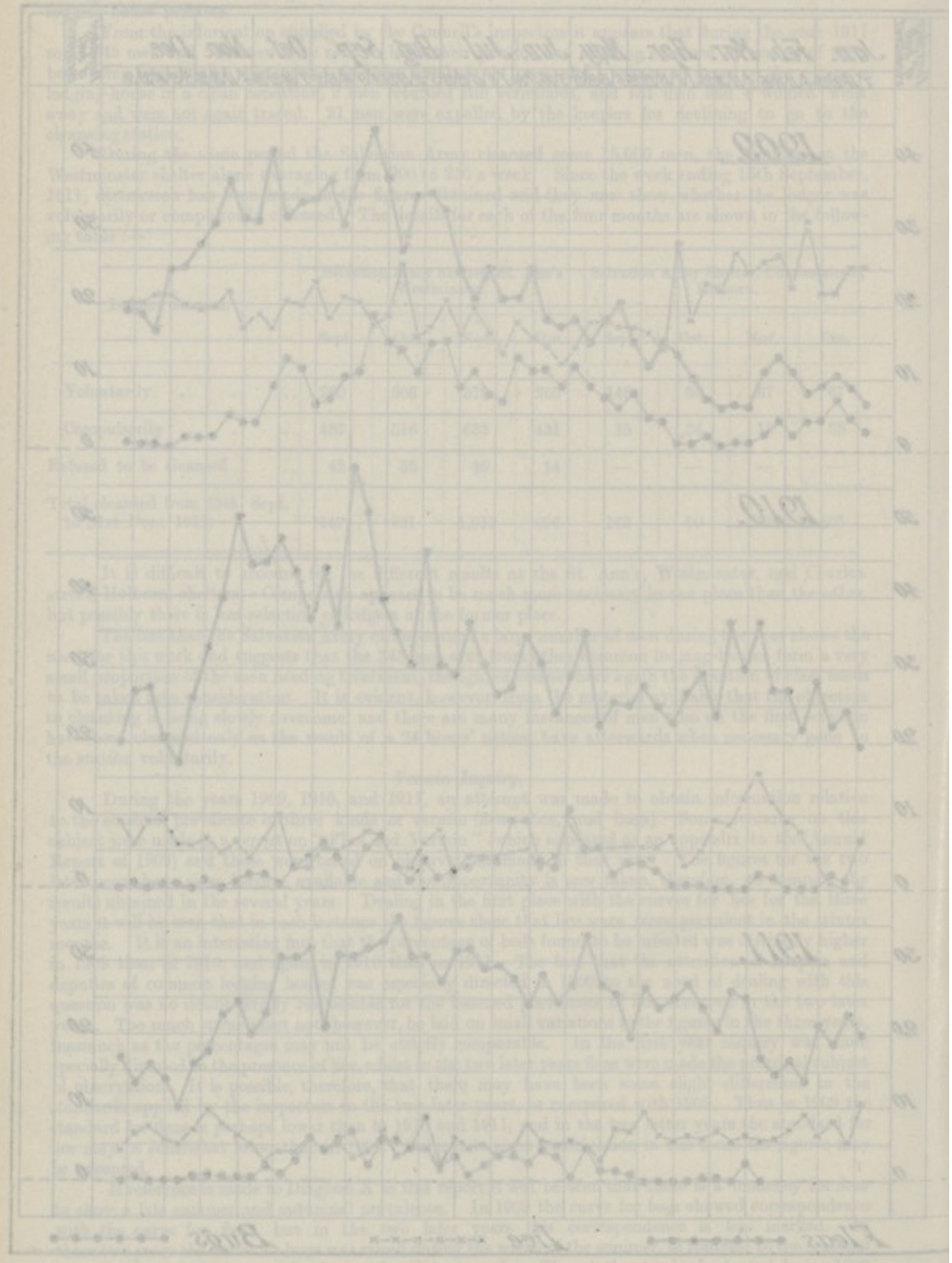
During the years 1909, 1910, and 1911, an attempt was made to obtain information relative to the seasonal prevalence of three kinds of vermin (fleas, lice, and bugs). Some remarks on this subject were made in a report on " Flies and Vermin " (which appeared as an appendix to the Annual Report of 1909) and these were based on observations made in that year. The figures for the two later years have since become available and the opportunity is now taken, therefore, to compare the results obtained in the several years. Dealing in the first place with the curves for lice for the three years it will be seen that in each instance the figures show that lice were more prevalent in the winter months. It is an interesting fact that the percentage of beds found to be infested was distinctly higher in 1909 than in 1910, and again in 1910 than in 1911. The fact that the attention of keepers and deputies of common lodging houses was especially directed in 1909 to the need of dealing with this question was no doubt largely responsible for the lessened prevalence of lice observed in the two later years. Too much stress must not, however, be laid on small variations in the figures in the three years, inasmuch as the percentages may not be strictly comparable. In the first year inquiry was more specially directed to the presence of lice, whilst in the two later years fleas were made the principal subject of observation. It is possible, therefore, that there may have been some slight differences in the standards applied by the inspectors in the two later years, as compared with 1909. Thus in 1909 the standard for fleas is perhaps lower than in 1910 and 1911, and in the two latter years the standard for lice may be somewhat lower than in 1909. Subject to some qualification in this sense the figures may be accepted.

If reference is made to Diagram X in this report it will be seen that there is a tendency for *fleas* to show a late summer and autumnal prevalence. In 1909 the curve for *bugs* showed correspondence with the curve for fleas, but in the two later years this correspondence is less marked. In these two years the curve for bugs was raised during the whole of the summer, in contrast to the seasonal curve for lice which shows a rise during the winter months. Though the standard adopted during 1909 in determining the prevalence of the three kinds of vermin was not, as already stated, quite the same

Diagram X.

Diagram shewing the seasonal prevalence of three kinds of vermin in the years 1909, 1910, and 1911.





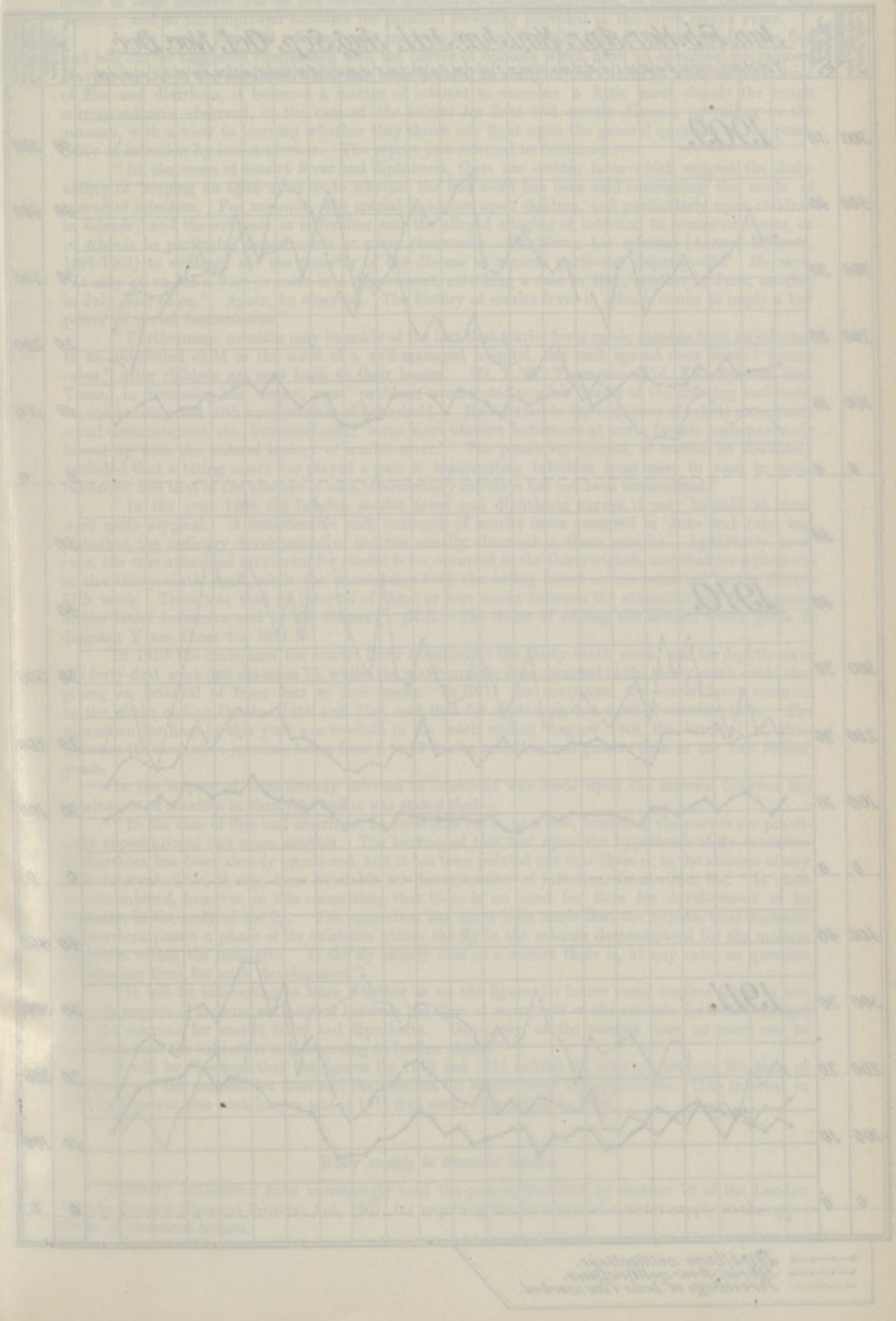
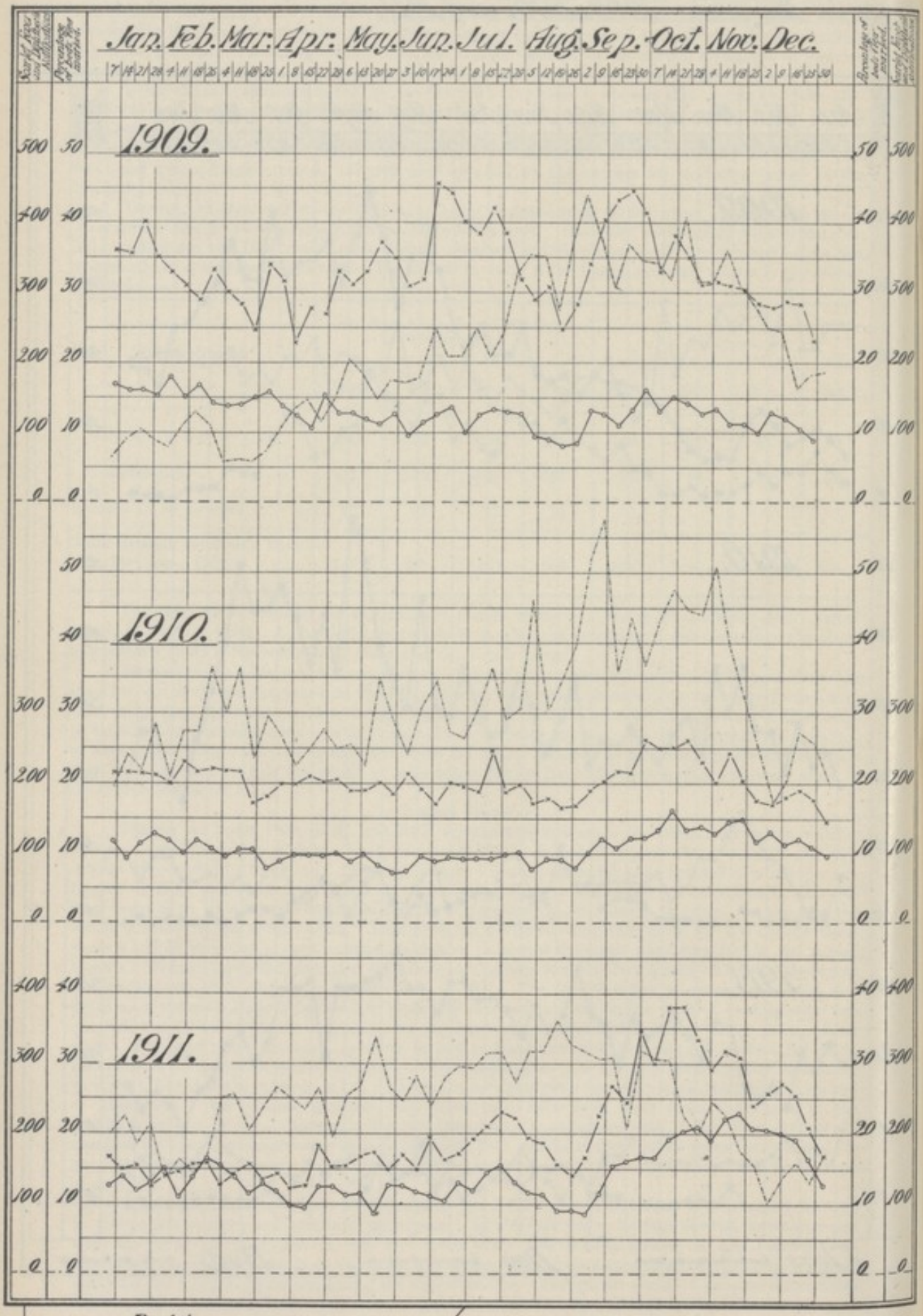


Diagram shewing the seasonal prevalence of Fe
compared with the notified cases of Scarlet Fever an
Diphtheria each week in London in the years 1909



as that made use of in the years 1910 and 1911 there is clear evidence that there was in the two later years a marked diminution in the proportion of infested beds. The lessened prevalence of vermin though affected in noteworthy degree by climatic changes, heat and cold, sunshine and rain, is without doubt in large measure due to the increased amount of attention devoted to infested clothing and bedding, and to the improved facilities for personal cleansing provided in the more recent years.

In the report for 1909 reference was made to the fact that the high autumnal level in the flea and bug curves suggested comparison with the curves of diseases which have an autumnal prevalence. Having regard to the attention which has been devoted to study of the curves of seasonal prevalence of flies and diarrhœa, it becomes a matter of interest to examine a little more closely the rough correspondences observed, in the case of the curves for fleas and certain diseases prevailing in the autumn, with a view to learning whether they throw any light upon the general question of the possibility of infection by insect carriers. The report just referred to continues :—

"In the cases of scarlet fever and diphtheria, there are certain facts which suggest the desirability of keeping an open mind as to whether the last word has been said concerning the mode of spread of infection. For example—the special incidence upon children, and particularly upon children in schools; and the evidence as to fomites and the alleged clinging of infection to houses or rooms, or in schools to particular departments or even classrooms.—Dr. Niven has referred (Annual Reports, 1897-1901) to evidence of 'the tenacity of the disease as regards particular departments.' He says, 'It may go on for a year or more in a department, attacking a case in May, another in June, another in July, and so on.' Again, he observes, 'The history of scarlet fever in schools seems to imply a low power of aerial transmission.'

"Furthermore, mention may be made of the fact that scarlet fever rarely spreads from an infected to an uninfected child in the ward of a well-managed hospital, but such spread does occur ('return cases') after children are sent back to their homes. Mr. T. W. Thompson (Vol. XV. Epidem. Soc. Trans.), in discussing the 'return case' problem, enumerated possible causes of the differing incidence, on one as compared with another class of household. He referred to the influence of school attendance social circumstances, etc., but concluded, 'some more obscure factors are at work, factors perhaps closely bound up with the natural history of scarlet fever.' The possibility cannot, of course, be absolutely excluded that a biting insect has played a part in transmitting infection from case to case in some instances, and that in the absence of such intermediary infection has not been transmitted."

"In the year 1909 the London scarlet fever and diphtheria curves, it may be said at once, were quite atypical. A considerable milk outbreak of scarlet fever occurred in June and July, and disturbed the ordinary development of the rise usually observed in those months. Apparently, however, the true autumnal maximum for scarlet fever occurred in the thirty-eighth, and that for diphtheria in the thirty-ninth week, while the maximafor both the biting insect curves occurred in the thirty-fifth week. There was thus an interval of three or four weeks between the attainment of the maxima in the latter instances and in the former." (N.B.—The dates of ending the several weeks given in diagram Y are those for 1911.)

In 1910 the maximum for scarlet fever occurred in the thirty-ninth week, and for diphtheria in the forty-first week (see diagram Y), whilst the maximum for fleas occurred in the thirty-sixth week, thus giving an interval of from four to five weeks. In 1911 the maximum for scarlet fever occurred in the weeks ending October 14th and 21st, and that for diphtheria not until November 18th. The maximum for fleas in this year was reached in the week ending August 19th, the interval of time between the respective maxima being from 8 to 13 weeks, and thus was greater than in the two former years.

In the Report of 1909 already referred to comment was made upon the interval between the attainment of maxima in that year and it was stated that—

"In the case of flies and diarrhœa, no such interval is, as a rule, observed, the curves are practically superimposed one upon another. The bearing of this fact upon the hypothesis of fly causation of diarrhœa has been already considered, and it has been pointed out that there is, in the absence of any such interval, little, if any, time available for dissemination of infection, incubation, etc. It must be remembered, however, in this connection, that there is no need for time for development of an organism in the body of the fly. The suggestion has never been made that the hypothetical organism of diarrhœa passes a phase of its existence within the fly in the manner demonstrated for the malaria organism within the mosquito. If the fly merely acts as a carrier there is, at any rate, no question of allowing time for such development."

"It will be interesting to learn whether or no the figures for future years confirm those of last year, in respect of showing an interval between the time of occurrence of the maxima for fleas (or bugs) and the maxima for scarlet fever and diphtheria. Obviously, at the present time, no more can be said than that the subject is one deserving of further study."

It will be observed that the figures for 1910 and 1911 exhibit an interval between the time of occurrence of the maxima for fleas and the maxima for scarlet fever and diphtheria. The interval in 1910 is, however, one week longer, and in 1911 five weeks longer than in 1909.

Water supply to tenement houses.

Sanitary authorities have increasingly used the powers provided by section 78 of the London County Council (General Powers) Act, 1907, for requiring the provision of a water supply to the upper floors of tenement houses.

So far as can be gathered from the information contained in the reports of medical officers of health, the following table shows the extent to which the powers referred to have been applied during 1911 :—

Metropolitan borough.	No. of premises caused to be supplied.	No. of legal proceedings.
Battersea	148	—
Bethnal Green	5	—
Finsbury	131	—
Fulham	15	—
Greenwich	39	—
Hackney	8	—
Hampstead	105	—
Holborn	14(*a*)	—
Islington	358	5
Lambeth		1
Paddington	21	—
Poplar	9	1
St. Marylebone	327	—
Shoreditch	78	13
Southwark	129	6
Stepney	40	—
Westminster, City of	143	1
Woolwich	2	—
Total for 17 boroughs	1,572	27

(*a*) Number of notices served. In the majority of cases the work was completed during the year.

Revenue Act, 1903.

Revenue Act, 1903.

Under section 11 of the Revenue Act, 1903, on the certificate of the medical officer of health that the house is so constructed as to afford suitable accommodation for each of the families or persons inhabiting it, with due provision for their sanitary requirements, there is exemption from or reduction of inhabited house duty, as follows :—

(1) Where a house, so far as it is used as a dwelling house, is used for the sole purpose of providing separate dwellings—

(*a*) The value of any dwelling in the house which is of an annual value below twenty pounds shall be excluded from the annual value of the house for the purposes of inhabited house duty ; and

(*b*) The rate of inhabited house duty, in respect of any dwelling in the house of an annual value of twenty pounds, but not exceeding forty pounds, shall be reduced to threepence ; and

(*c*) The rate of inhabited house duty, in respect of any dwelling in the house of an annual value exceeding forty pounds, but not exceeding sixty pounds, shall be reduced to sixpence.

For the purposes of these provisions medical officers of health were called upon to certify numerous houses during the year, and in some instances the application was granted, in others it was refused, while in others, again, it was only granted after alterations had been made to meet the conditions necessary, before certification. The Act appears to be instrumental in ensuring a higher standard of dwelling accommodation than before.

The number of applications received and certificates granted during 1911 is shown in the following table :—

Applications for certificates, Revenue Act, 19 .

Metropolitan borough.	No. of houses for which applications for certificates were received during 1911.	No. of tenements comprised therein.	No. of tenements for which applications for certificates were		
			Granted.	Refused.	Deferred or withdrawn.
Battersea	17	29	12	9	8
Bermondsey	—	—	—	—	—
Bethnal Green	7	26	—	—	—
Camberwell	63	289	3	8	278
Chelsea	6	63	6	57	—
Deptford	7	14	1	6	—
Finsbury	7 houses	35			
	block dwellgs	346	—	381	—
Fulham	—	1,109	942	60	107
Greenwich	—	—	—	—	—
Hackney	—	1,156	1,156	—	—
Hammersmith	45	119	25	—	94

Metropolitan borough.	No. of houses for which applications for certificates were received during 1911.	No. of tenements comprised therein.	No. of tenements for which applications for certificates were made.		
			Granted.	Refused.	Deferred or withdrawn.
Hampstead	6	12	—	—	12
Holborn	4	9	2	7	0
Islington	2	4	3	1	0
Kensington	33	74	59	4	11
Lambeth	60	134	100	34	—
Lewisham	148	244	232	12	—
Paddington	6	37	35	—	2
Poplar	—	—	None	—	—
St. Marylebone	6	49	49	—	—
St. Pancras	11	30	—	17	13
Shoreditch		62	28	34	—
Southwark			56		
Stepney	4	37	30	7	—
Stoke Newington	—	—	—	—	—
Wandsworth	127	269	239	24	6
Westminster, City of	6	40	35	5	
Woolwich			None		

Section 35 of the Housing and Town Planning Act extends to common lodging-houses at which the charge does not exceed sixpence per night the provisions of Section 11 of the Revenue Act, and hence reference is made in some of the reports to the action taken by medical officers of health in respect of these houses. In certain instances modifications and improvements of houses were made by keepers with a view to their obtaining exemption from inhabited house duty.

Factory and Workshop Act, 1901.

Section 132 of the Factory and Workshop Act, 1901, requires that every medical officer of health shall every year report specifically on the administration of the Act in workshops and workplaces in the district under his supervision. A form of table is prescribed by the Home Secretary and contains a summary of the inspections made and the defects found and remedied in workshops and factories, together with other information that lends itself to statistical statement.

It will be seen from the following table, comparing the work done in 1911 with that done in previous years that there is little variation from year to year in the number of defects found, although there has been some increase in the number of workshops under inspection.

Workshops.

	1905.	1906.	1907.	1908.	1909.	1910.	1911.
Number of workshops on register ...	35,187	36,632	37,891	37,673	37,782	37,742	43,085
Number of inspections, excluding inspections of outworkers' premises	86,071	79,526	81,171	84,058	84,174	89,040	89,997
Total number of defects found ...	19,023	19,407	22,071	22,012	21,522	21,888	21,013
Want of cleanliness	6,522	7,206	8,319	7,130	7,256	7,248	6,725
Want of ventilation	828	736	652	639	727	607	681
Overcrowding	347	461	295	237	278	250	253
Sanitary conveniences: Insufficient	284	296	256	278	377	262	293
Sanitary conveniences: Unsuitable or defective	3,411	3,717	4,229	5,255	5,377	5,402	5,516
Sanitary conveniences: Not separate for sexes	239	251	388	376	292	312	277

Dr. Collingridge, medical officer of the City, again comments on the fact that workplaces, however unsuitable, may be brought into use without notice, and that unless nuisance can be proved the unsatisfactory conditions cannot be remedied. In the Camberwell report, there is mention of a case of scarlet fever occurring in a house occupied by a furrier, necessitating the disinfection of several hundred pounds' worth of furs, which was, however, successfully carried out. Dr. Parkes again calls attention to the unsatisfactory condition as regards lighting, warming, and ventilation of the 54 basement workrooms in Chelsea, which have accommodation for some 400 workers. Dr. Whitehouse, medical officer of health of Deptford, comments upon the generally satisfactory condition of the home of the woman outworker, which, he states, is often more cleanly than that of the woman who is not a homeworker. This fact was also observed in Kensington, by Dr. Sandilands. Dr. Thomas gives some interesting particulars of the outworkers in Finsbury. Incidentally he mentions that 80 per cent. of the whole number were apparently well. 20 per cent. were ailing. There were 9 cripples and 4 persons with phthisis. It is remarked that the boxmakers had a lower standard of cleanliness than other persons and their homes were more frequently verminous. In the Hampstead report, mention is made of the discovery that an

underground bake-house was being used, although not so used at the passing of the Factory Act of 1901. The occupier was informed that the use of the room was illegal, and it was thereupon discontinued. Dr. Allan, medical officer of health of Westminster, refers to the use of market basements for pea shelling and walnut shelling, and directs attention to one where 20 women were found, who stated that they were occasionally employed from 3 a.m. to 5 p.m. In another basement, where fruit sorting was being performed, there was a disused water closet in a very objectionable condition. Overcrowding during working hours is also found in the neighbourhood of the market and special inspection is necessary to ensure better conditions. There is mention in one or two of the reports of unventilated or defective gas heating arrangements, but this defect appears to be much less frequent than in previous years. With regard to Islington, it is stated that the drying of clothes in bakehouses still continues in some instances, and the closing of inlet ventilators is prevalent and requires careful watching.

Places where food is prepared for sale.

Ice-cream premises.

Section 43 of the London County Council (General Powers) Act, 1902, gives powers for controlling the conditions under which ice cream is prepared for sale. The provisions of this section are now widely applied and nearly all the reports give account of the action taken. The following table summarises the information thus available and shows the number of these premises in each metropolitan borough and other particulars :—

Metropolitan borough.	Number of places.				No. of inspections, 1911.	No. of notices, 1911.	No. of prosecutions, 1911.
	On register at end of 1910.	Added in 1911.	Removed in 1911.	On register at end of 1911.			
City of London ..	241			243			
Battersea	185	16	27	174	583	4	1
Bermondsey	144	—	5	139	195	12	—
*Bethnal Green ..	104				209		—
Camberwell	219	12	12	219	444	6	—
Chelsea	33	4	3	34	20	2	—
Deptford	122	22	15	129	197	19	1
Finsbury	82			97	142	17	—
Fulham	129	22	6	145	214	14	—
Greenwich	126	1	9	118	138	—	—
Hackney	159	19	3	175	193	21	—
Hammersmith .	212	8	50	170	182	14	—
Hampstead	83	3	4	82	314	36	—
Holborn	40	—	5	35	140	1	—
Islington	235	35	41	229	134	18	—
Kensington	173	15	12	176	172	2	—
*Lambeth	24						—
*Lewisham	—	—	—	—	—	—	—
Paddington	116	2	10	108	67		—
Poplar	151			116		45	—
St. Marylebone ..	86	10	—	96	121	8	—
St. Pancras	491			491	385		—
Shoreditch	89	11	13	87	115	14	—
*Southwark	129				72	18	—
Stepney	160	35	10	185	354	46	—
*Stoke Newington ..	38						
Wandsworth	287	42	25	304	480	53	—
*Westminster, City of	150						—
Woolwich	86	9	6	89	178	9	—
Totals, excluding boroughs marked*	3,648			3,641			

Other premises where food is prepared for sale.

Further powers for the sanitary control of premises upon which food is prepared for sale are conferred upon sanitary authorities by section 8 of the London County Council (General Powers) Act of 1908.

This section provides against contamination of the food by urinals, waterclosets, ashpits, etc., requires that the water supply shall be free from contamination by any watercloset, prohibits drain inlets within the building and the deposit of refuse beyond that which is required for the purposes of the trade, and, moreover, requires due cleanliness to be observed in regard to the room or shop and the apparatus and utensils and persons employed in it. A considerable amount of work has been done in London under these powers, varied conditions being dealt with in their administration.

The annual reports of medical officers of health supply information as to the number of premises inspected and the number of inspections as shown in the following table :—

Metropolitan borough.	Premises used for the preparation and sale of food. (*a*)	Number of inspections.	Metropolitan borough.	Premises used for the preparation and sale of food. (*a*)	Number of inspections.
City of London ..	883	1,598	Kensington	604	1,516
Battersea	174	383	Lambeth	248	25
Bermondsey	919	6,430 (*b*)	Lewisham	67	9
Bethnal Green.. ..	225	977	Paddington	616	102
Camberwell	182	395	Poplar	278	965
Chelsea	64	82	St. Marylebone ..	183	445
Deptford	117	244	St. Pancras	622	1,157
Finsbury	237	293	Shoreditch	264	
Fulham	85	147	Southwark	311	2,069
Greenwich	119	219	Stepney..	400	869
Hackney	71	109	Stoke Newington ..		585
Hammersmith ..	162		Wandsworth	539	816
Hampstead	494	958	Westminster, City of..		3,630
Holborn	349	1,915	Woolwich		83
Islington	746	412			
			Total for 26 boroughs..	8,959	

Inspection of food.

Nearly all the reports have accounts of the seizure or surrender of unsound food. Dr. Collingridge states that the inspectors of the City Corporation seized nearly 2,240 tons of diseased, unsound and unwholesome meat, poultry, offal and fish during the year, including 23½ tons of meat found to be tuberculous. At Billingsgate Market, fish to the amount of 1,835½ tons was condemned by the inspectors of the Fishmongers' Company. As the result of inspection at the City wharves, 166 loads of unsound food were removed, the greater portion being voluntarily surrendered by the owners. In Bermondsey, it was found necessary to destroy nearly 200 tons of food at the wharves and a much larger quantity than this, chiefly grain, was disposed of for purposes other than human consumption. From other premises within the borough miscellaneous food to the extent of over 27½ tons was conveyed and destroyed as trade refuse. Reference is made to the large proportion of complete pigs' carcases arriving from Russia, which were found to show tuberculosis in the glands of the neck. The disease would not have been detected if the carcases had been divided and wholly or partly cured. Pressure was brought to bear upon the exporters, with beneficial result, so that later the seizures became much fewer. In Finsbury, 48 tons of diseased meat and 165 tons of decomposed food were confiscated during the year. Dr. A. E. Thomas states that the quantity of meat confiscated was much more than that in any previous year, and suggests the hot weather and railway strikes as probable causes. Reference is made to the importation into cold stores in Finsbury of Australian beef containing worm nests in the parts adjacent to the stifle joint, 51.6 per cent. of the hind quarters were found to be so affected. In Southwark 3½ tons of beef was destroyed for this cause. Dr. D. L. Thomas, of Stepney, also had experience of this parasite, which has been described as occurring in Australian cattle, under the name of *Spiroptera reticulata*. Early in January, 1911, 80 casks of about 3 cwt. each of salt beef were received at one of the Stepney wharves. The casks contained briskets and flanks and as the result of a superficial examination, 14 per cent. of the meat was found to be unfit for food. The attention of the owners was directed to this condition, and it was suggested that the meat should be destroyed. The owners, however, asked permission to re-ship the goods to Australia, in order that it might be converted into manure, but the Stepney Public Health Committee, after consideration of all the facts, refused to grant permission for this to be done, and ultimately the meat was destroyed. In Dr. Collingridge's report there is also reference to this matter, but the chief veterinary inspector to the City Corporation points out that some little time was necessary to inaugurate a satisfactory system of inspection in a country like Australia, and adds that improvement is shown in some of the latest consignments.

Unsound food to the amount of some 200 tons including the 80 casks of Australian beef, was destroyed in Stepney. In Southwark, 196 tons were destroyed or otherwise disposed of, and of 43,353 samples of foodstuffs examined in the borough, 10,054 were found to be unsound. Dr. Lennane mentions that in Battersea, during 1911, of 1,897 pigs slaughtered at one slaughterhouse, 7 carcases and 79 heads showed evidence of tuberculosis and were surrendered and destroyed.

(*a*) Other than bakehouses, milkshops, slaughterhouses, and ice-cream premises. In some cases the figures relate to restaurant-kitchens only.

(*b*) Including visits for the purpose of sampling under the Food and Drugs Act.

The reports relating to the following districts show that proceedings before the magistrate in connection with unsound food were instituted in the instances stated.

Sanitary Authority.	No. of Proceedings.	Result.
City of London	1	1 conviction.
Battersea	1	Defendant absconded.
Bermondsey, ...	4	3 convictions. 1 bound over.
Bethnal Green	8	7 convictions. 1 defendant absconded.
Finsbury	4	4 convictions.
Fulham	2	1 conviction. 1 case dismissed.
Poplar	1	Committed for trial.
St. Marylebone	5	5 convictions.
St. Pancras	1	1 conviction.
Shoreditch	2	1 conviction. 1 defendant bound over.
Southwark	2	1 conviction. 1 case dismissed.
Stepney	7	7 convictions.
Wandsworth	3	2 convictions. 1 case dismissed.
Westminster	5	3 convictions. 1 case dismissed with costs against City Council. 1 defendant absconded.
Woolwich	1	1 conviction.
Totals	47	37 convictions.

It will be seen from the above table that of the 47 instances in which proceedings were taken, convictions were secured in 37 instances, four cases were dismissed, in three instances the defendants absconded, in two instances defendants were bound over, and one case was committed for trial.

In some of the reports illustration is given of the difficulties met with in instituting proceedings against the vendors of unsound food. Thus, in Finsbury, the defendant asserted that the business and the seized meat belonged to another person, and an unstamped agreement was produced to confirm this statement. The magistrate, however, convicted and defendant was fined £100 and costs. In Fulham a quantity of unsound meat found in the ice safe of a butcher was seized by the inspector, but the summons was dismissed on the ground that it was doubtful whether the meat was intended for the food of man. Dr. Porter, in the report relating to St. Marylebone, mentions the case of the seizure of two tuberculous pigs' heads. The defendant pleaded that he had purchased the heads from a dealer in the Central Meat Market, and had paid full price for them. The dealer was found and corroborated this statement, but the magistrate convicted. Neither the vendor nor the dealer denied that the heads were tuberculous, but both evidently relied on the system of inspection in vogue in the market, and had not made a personal examination of the goods which had, as a matter of fact, escaped inspection. The St. Marylebone Borough Council drew the attention of the City Corporation to the matter, and communicated with the Councils of all the Metropolitan Sanitary Authorities with a view to united action being taken. Several of the reports contain reference to similar experiences in connection with meat derived from the Central Market, and Westminster instituted a prosecution of a central market salesman, which was, however, unsuccessful. Dr. Millson, of Southwark, makes mention of a quantity of condensed milk on the premises of a general grocer. On one of the cases was found a paper, on which was written "This milk is intended for pigs' food." It was argued that the defendant was accustomed to sell condensed milk for this purpose, but at the adjourned hearing of the case the magistrate convicted, with a fine of £50 and costs. In the Stepney report, Dr. Thomas mentions a case where the defendants, evidently in good faith, admitted that they had no idea what a tuberculous gland would look like, and he raises question as to the knowledge of the symptoms of this disease possessed generally by slaughtermen in the country, where inspection is inadequate and often non-existent. He suggests as a remedy the licensing of slaughtermen, and instances as a parallel the Midwives Act. He points out that the enforcement of the latter Act has not created any dearth of midwives, and that similarly if slaughtermen were licensed there would in a little while be no want of qualified men to fill the demand. In Dr. Collingridge's report the chief veterinary inspector of the City Corporation also comments on the lack of knowledge of farmers and pig breeders concerning tuberculosis, and suggests that County Councils might arrange lectures and demonstrations at various centres, to which interested persons should be invited.

Shelters.

The following figures, which are taken from the annual reports, show the extent to which the existing shelters were used during the year 1911, for the accommodation of persons and families, while their homes were being disinfected.

Metropolitan borough.	No. of persons accommodated.	Metropolitan borough.	No. of persons accommodated.
City of London	—	Kensington	(*a*)
Battersea	14	Lambeth	—
Bermondsey	23	Lewisham	—
Bethnal Green	2	Paddington	(*a*)
Camberwell	—	Poplar	—
Chelsea	40	St. Marylebone	28
Deptford	—	St. Pancras	10
Finsbury	26	Shoreditch	8
Fulham	—	Southwark	663
Greenwich	—	Stepney	59
Hackney	35	Stoke Newington	—
Hammersmith	(*a*)	Wandsworth	—
Hampstead	—	Westminster, City of	1
Holborn	3*a*	Woolwich	—
Islington	32		

(*a*) No shelter maintained by borough council. In the case of Holborn 3 persons were accommodated in the Finsbury Borough Council's shelter.

Mortuaries.

The number of bodies received into the mortuaries of the metropolitan borough councils during the year is shown in the following table :—

Metropolitan borough.	Total number of bodies received into mortuary.	Number of infectious bodies received into mortuary.	Metropolitan borough.	Total number of bodies received into mortuary.	Number of infectious bodies received into mortuary.
City of London	204	—	Kensington	340	2
Battersea...	287	10	Lambeth	376	4
Bermondsey	186	5	Lewisham	152	—
Bethnal Green	362	4	Paddington	282	2
Camberwell	346	—	Poplar	471	—
Chelsea...	115	—	St. Marylebone	322	3
Deptford'...	92	1	St. Pancras	417	15
Finsbury...	260	9	Shoreditch	397	1
Fulham...	174	2	Southwark	716	2
Greenwich	120	1	Stepney	581	2
Hackney	446	1	Stoke Newington ...	35	—
Hammersmith	262	—	Wandsworth	206	—
Hampstead	84	—	Westminster, City of ...	373	2
Holborn	107	—	Woolwich	192	1
Islington...	646	5			

Rat Plague.

Towards the end of 1910 special attention was directed by the Local Government Board to the possibility of plague being spread by the agency of rats, and Dr. Thomas, the medical officer of health of Stepney, in December of that year asked the managers of all the wharves in Stepney to communicate with him immediately if dead rats were observed in any number on the wharf premises.

In June, 1911, Dr. Thomas received information that dead rats had been found at Middleton's wharf. Four of the rats had died. One was in a moribund condition, and was killed. Three of the dead rats were sent to the Local Government Board for bacteriological examination, and it was reported that two of them had died from pneumonic plague. The third was in a state of advanced decomposition and could not be examined. Four days later six more dead rats were found, one of them too decomposed to touch. Of the five sent for examination two were deemed to have died from pneumonic and one from bubonic plague. The remaining two, owing to decomposition, could not be examined. The Public Health Committee of the Stepney Borough Council at once made arrangements for rats to be caught and examined, and issued a circular to medical practitioners asking that information of suspicious enlargement of glands occurring in the course of their practice might be communicated to the medical officer.

It was thought possible that the disease amongst rats might spread by way of the County Council's sewers. The Public Health Committee of the London County Council, therefore, arranged for rats to be caught and sent for examination to the London School of Tropical Medicine. During the course of the inquiry, which lasted from July to October, 119 rats were caught and sent to Dr. H. B. Newham for examination. Not one rat, however, was found to be infected, and the work was discontinued.

The London Equalisation of Rates Act, 1894.

The Equalisation of Rates Act provides that the London County Council shall in each year form a fund from a rate of sixpence in the pound on the rateable value of London. The contribution from each parish to the fund is to be in proportion to its rateable value, and the amount thus produced is to be distributed among the local authorities in proportion to population. Where a sanitary district comprises two or more parishes, and the aggregate of the contributions from such parishes is less than the grant apportioned to the district, the difference is paid out of the fund to the sanitary authority of the district, and no payment towards any equalisation charge is required from any parish in the district. Subject to the above, when the contribution from a parish is less than the grant due, the difference is paid out of the fund to the sanitary authority of the district forming or comprising the parish; and if it exceeds the grant to the parish, the Council, for the special purpose of meeting the excess, levies on the parish a county contribution as a separate item of the county rate.

Every sum paid to a sanitary authority must be applied in defraying the expenses of the sanitary authority incurred under the Public Health (London) Act, 1891, and so far as not required for that purpose those incurred in respect of lighting, and so far as not required for that purpose those incurred in respect of streets, and where the sanitary district comprises two or more parishes the sum paid must be apportioned among such parishes in proportion to their population, and the amount apportioned to each parish credited to each parish in the reduction of the rate required from such parish towards the above-mentioned expenses.

A statement of the amount of the grant or equalisation charge made to or levied upon the sanitary districts in the county in respect of the year ended 31st March, 1912, will be found in Volume I., page 51.

Conference on Public Health.

On the 6th April, 1911, at the County Hall, a Conference of Public Health Authorities in London was held in order to discuss matters of importance arising out of the administration of the Public Health (London) Act and cognate Acts. One of the principal subjects of discussion was the regulation of furnished rooms, which has been under the consideration of the Council's Public Health Committee for several years. In March, 1909, the Committee had before it a report pointing out that the Poor Law Commission laid stress on the pressing need for further regulation of furnished rooms which it was stated are a conspicuous evil not only in London but in many provincial towns In the same report some particulars were given of the examination of some 800 houses in London wholly or partly let out in this way. There was evidence that the rooms were generally dirty, overcrowded, and improperly used, and that the class of person accommodated was similar to the class received in common lodging-houses. There was difficulty, however, in framing a definition, and the matter was adjourned by the Committee for the consideration of the Conference in the hope that further discussion might lead to some solution of this difficulty.

Other subjects discussed and on which resolutions were adopted by the Conference were as follows:—

Houses let in lodgings.—That the efficient administration of section 94 of the Public Health (London) Act, 1891, relating to the registration and regulation of houses let in lodgings is a matter of extreme importance to the public health of London.

Pulmonary Tuberculosis.—(A) That the principle of compulsory notification should be extended to all cases of pulmonary tuberculosis. (*The Order of the Local Government Board of November*, 1911, *has given effect to this resolution.*)

(B) That the establishment of tuberculosis dispensaries throughout London is urgently required.

Measles.—A. (1) That a better organisation is desirable in London for the control of measles in schools.

(2) That during a serious outbreak of measles children under five years of age should be excluded from school attendance.

(3) That compulsory notification of measles is desirable.

(4) That the cleansing of the infants' departments and of the furniture, lower walls and floors thereof, shall take place once a week.

(5) That accommodation should be provided in the Metropolitan Asylums Board's Hospitals for urgent non-pauper cases of measles. (*This part of the resolution has been met by the provisions of the Metropolitan Asylums* (*Measles*) *Order of the 30th May*, 1911.)

(B) That in the interests of public health the school regulations should provide that all children from houses infected with measles should be prohibited from school attendance.

Water supply to tenement houses.—That houses of three or more storeys occupied by more than one family of the working class should have at least one water supply and a sink placed on a landing convenient for the occupants of the second and third storeys.

Places where food is prepared and exposed for sale.—(A) That it is desirable that regulations should be made to limit the pollution resulting from exposure in an improper manner in public places or adjacent to the public way of food and food receptacles.

(B) That it is desirable that all places where food is prepared for sale should be regulated by by-laws made by the London County Council and administered by the sanitary authorities, and should be subject to annual licensing by the sanitary authority.

Notification of Births Act, 1907.—That in view of the adoption of the Notification of Births Act, 1907, throughout London, and the provisions of the recent orders of the Local Government Board with regard to the compulsory notification of consumption, the appointment of one or more women health visitors, or women sanitary inspectors, in each metropolitan borough is eminently desirable.

Chapels of rest.—That it is desirable that chapels of rest, apart from mortuaries for bodies awaiting inquest, should be established by sanitary authorities.

That all private mortuaries should be registered and regulated.

Rag Flock Act, 1911.

An Act entitled the Rag Flock Act, 1911, was passed during the year, and has for its object the prevention of the use of flock made from rags unless such flock conforms to a standard of cleanliness prescribed by regulations to be made by the Local Government Board. The possession, use, or sale, of flock in contravention of the Act renders a person liable on summary conviction to a penalty of £10 for a first offence or to a penalty of £50 for any subsequent offence. At the end of the year the Local Government Board had under consideration the question of making regulations under the Act prescribing a standard.

Homeless persons.

On the instruction of the Public Health Committee the sixth census of homeless persons in London was undertaken on the night of the 17th February, 1911. The following table enables comparison to be made of the figures obtained for the several years from 1904.

Number of persons found homeless at night.

Date.	Men.	Women.	Young Persons.	Total.
29th January, 1904‡	1,563	184	50	1,797
17th February, 1905..	1,869	312	..	2,181
8th February, 1907..	1,998	402	4	2,404
15th January, 1909..	566 †1,629	170	23	2,388
18th February, 1910..	732 †1,778	220	17	2,747
17th February, 1911..	768 *†694	256 †65	2	1,785

In explanation of the above table it should be mentioned that in each case where the sets of figures are shown in brackets for any one year, the uppermost set denotes the number of persons, presumably homeless, found actually in the street on that particular night. The figures marked with a dagger, relate to persons who most probably would have been in the streets were it not for charitable effort. Thus, on the night of the 17th February, 1911, there were 160 men receiving food in a Salvation Army shelter in Great Peter-street, Westminster. In the King's Tents belonging to the Church Army, there were 41 men at work, and in two shelters used in conjunction with the tents, there were 101 men, and 298 men respectively. In the school room of the Primitive Methodist Mission in Whitechapel-road, there were 94 men, and in a shelter in Paul-street, Shoreditch, under the control of the Willow-street Mission, there were 65 women. These figures together make up the 694 men, and 65 women referred to in the table. The people found actually in the streets, included 768 men, 256 women, 1 boy of about 16 years of age, 1 baby in arms; in all 1,026 persons. Therefore for comparison with the figures obtained in previous years, the total number of homeless persons is 1,785. This is the lowest recorded number, and is less by 962 than the total for 1910.

* 160 of these men were in a shelter consuming soup and bread, but would be turned out immediately on the conclusion of their meal.

† Men or women accommodated for a few hours in shelters but unprovided with beds.

‡ A smaller area than in later years. Estimated total about 2,000 persons.

The following table shows the total number of persons who, on the night of the 17th February, 1911, might have been regarded as homeless, on the ground of being unable to pay for a bed.

Description.	Men.	Women.	Young Persons.	Total.
Number of men who were receiving food in a Salvation Army shelter	160	—	—	160
Number of men in the King's Tents	41	—	—	41
Number in shelters in connection with the King's Tents	399	—	—	399
In other institutions where food and shelter only are given	94	65	—	159
Persons found homeless in the streets	768	256	2	1,026
In licensed common lodging-houses where no charge is made	1,148	27	22	1,197
In unlicensed houses where no charge is made	731	352	14	1,097
Beds in licensed common lodging-houses paid for by charitable institutions	246	—	—	246
Persons in casual wards	962	129	—	1,091
Total number of persons found homeless, or resting in shelters, or occupying free beds in common lodging-houses, shelters and casual wards	4,549	829	38	5,416

A detailed report on the subject was printed and placed on sale.

Water supply.

In his sixth annual report Dr. Houston refers to the passing of the Metropolitan Water Board (New Works) Act and the Thames Conservancy Act, 1911, and comments on the deletion from the former Act of the clause conferring an "unrestricted right" to abstract 130 million gallons of water daily from the Thames. He quotes figures to show the loss of water that occurred in 1906, an exceptionally dry year, and points out that any circumstance which prevents or curtails abstraction of river water during drought means the provision of increased storage accommodation, and may mean that the water taken into store is of inferior quality. Several reasons are advanced in support of this latter contention. Periods of drought are usually associated with bright sunshine and warm weather, and Dr. Houston states that his experiments show that the typhoid bacillus in water dies much more rapidly in summer as compared with winter temperatures. Dr. Houston continues as follows:—

"Again it should be noted that curtailment of abstraction powers during drought must coincidently lead to serious depletion of the reservoirs, and so when the floods come subsequently there is the temptation to abstract water of unsatisfactory quality, which entering partially empty reservoirs, of course cannot be fit for filtration purposes for some time afterwards." From the experience gained during the drought of 1911, Dr. Houston infers that high temperatures need not necessarily result in "algal" troubles. Some remarks are moreover made on the respective merits of sand filters and mechanical filters, and it is stated that bacteriological tests did not demonstrate perfect efficiency of the former under strenuous conditions of working.

Dr. Houston concludes by stating that to a progressively increasing extent the safety of London's water supply is being secured, but expresses the opinion that the "*quality* policy" of the Metropolitan Water Board should be directed towards securing an "epidemiologically sterile" water antecedent to filtration by means of storage (sedimentation, devitalisation and equalisation) aided, if need be, by the occasional employment of supplementary processes of water purification.

Health visitors.

During the year 1910 owing "to the small and rapidly sinking surplus on the Exchequer Contribution Account" the Council felt itself obliged to attach the following conditions to contributions by the Council to salaries of health visitors, viz.:—

(1) That the contributions are for one year only.

(2) That the contributions are dependent upon there being sufficient surplus on the Exchequer Contribution Account to enable payments to be made after making provision for the discharge of the existing statutory charges on that account in full; and

(3) That in the event of the available surplus being insufficient to meet the payments in full the Council's contribution will be liable to abatement or may be discontinued altogether.

On 4th July, 1911, the Finance Committee advised the Council that the Exchequer Contribution Account was likely to show a deficiency each year in future, in which event no payments would be possible towards the salaries of health visitors. It was estimated that the deficiency in respect of the financial year 1910–11 would probably amount to £31,000, and that in view of the conditions attached to the contributions made in the year 1909–10, it would not be possible to make any payment for the year 1910–11.

Midwives Act, 1902.

Registration

The number of midwives giving addresses in London whose names appear on the Roll of Midwives for 1911 is 3,797. This number includes midwives who may perhaps have removed from the County, but, owing to the fact that they are not practising, their present addresses have not been reported to the Central Midwives Board, and consequently appear as London addresses. Of this number, 578 notified their intention to practise during the whole year or for shorter periods.

The qualification of the London midwives is as follows :—

Qualification of Midwife.	Number not giving notice of intention to practise.	Number giving notice of intention to practise.	Total.
(*a*) Holding certificates from the Central Midwives Board	1,854	278	2,132
(*b*) Holding a certificate, obtained as the result of an examination prior to the passing of the Midwives Act	1,294	212	1,506
(*c*) Enrolled by virtue of having been in *bona fide* practice as midwives a year previous to the passing of the Act	71	88	159
	3,219	578	3,797

Inspection.

The midwives in classes (*a*) and (*b*) are entitled to use the description "certified midwife by examination." Of those giving notice of their intention to practise, the untrained midwives, class (*c*) represent 15 per cent.

The 578 midwives who gave notice of intention to practise cannot be taken as the number of midwives practising at any given time in the County. In some institutions it is the custom for a midwife to act as an assistant for three months or less after she is qualified, and her place is then filled by another newly qualified assistant, who in her turn gives notice of intention to practise. At any given time it may be estimated that some 400 to 450 midwives, or nearly 13 per cent. of those on the roll are in actual practice in London. The remaining 87 per cent. act for the most part as monthly or general nurses under medical supervision. Of the practising midwives 56 were working entirely within poor-law institutions or lying-in hospitals and were under medical supervision; 160 others were attending patients on behalf of charitable, poor-law or other institutions, and were paid either a salary or a fee for each case allotted to them. The remainder practised independently.

All practising midwives, except those working in hospitals under medical supervision, are subject to inspection by the Council's officers, to ascertain whether they are complying with the rules of the Central Midwives Board as to cleanliness, the possession of antiseptics and appliances, the keeping of registers and case books and the sending of the required notices to the Local Supervising Authority. The work of inspection was carried out by Miss E. Macrory, M.B., Ch.B., L.M., D.P.H., and Miss M. A. Pilliet, M.B., Ch.B.

In addition to the ordinary routine inspection, special visits are paid to the midwife when any case of a septic nature or a persistent high temperature occurs in her practice, and in all cases of inflammation of the infants' eyes. The inspectors also advise midwives on any points of difficulty which may arise in the course of their duties, and in some instances instruct the midwives as to methods of work. On occasion a midwife is accompanied by the inspector either to a confinement or on a subsequent visit to a patient to ascertain whether her methods of work are efficient. This is done where there is any reason to believe that the midwife's work is not up to standard, and also in cases where a midwife has applied to the Central Midwives Board for approval to supervise the training of pupils for the Board's examination. The inspectors paid 1,468 visits to midwives or institutions employing midwives. In 930 cases the report was satisfactory, in 83 unsatisfactory, and in 455 the midwife was not seen. The 83 unsatisfactory reports relate to 61 midwives, 44 were reported unsatisfactory on one occasion, 12 on two occasions and five on three occasions.

Most of the unsatisfactory reports related to cases in which some slight breach of the rules had occurred, and the midwife's attention was called to the matter by the inspector, who was subsequently able to report favourably. In cases of a more serious nature, or where the midwife had a bad record previously, the matter was reported to the Midwives Act Committee of the Council, and a letter of caution was sent to the midwife. This occurred in twelve cases on the following grounds :—

Delay in advising medical assistance for the mother	1
" " " " feeble child	2
" " " " inflammation of child's eyes	4
Not making arrangements for care of patient when unable to attend	2
Failure to take temperature and pulse	1
Resuming work before complete disinfection after a septic case ..	1
Not giving notice of intention to practise	1

Prima facie cases of negligence or misconduct were found against three midwives, in one case a conviction

on a charge of drunkenness was communicated to the Central Midwives Board, and conviction of a midwife for procuring abortion was also reported to the Board

Charge.	Result.
Neglect and want of cleanliness	Cautioned by Board.
Negligence and want of cleanliness	Name removed from Roll.
Evading inspection and want of care for patients	Cautioned by Board.
Drunkenness (conviction)	Cautioned.
Illegal operation (conviction, sentence of five years' penal servitude).	Name removed from Roll.

There is a gradual improvement in the work of midwives generally, and, as the number of untrained midwives diminishes year by year, the number of instances of disregard of the rules as to cleanliness and of failure through ignorance to recognise serious conditions has diminished. The Council's inspectors have paid special attention to the untrained midwives and instructed them as to the use of antiseptics and the reading of the clinical thermometer.

There are some five midwives who are illiterate, but other members of their family enter up their registers for them. A copy of the rules of the Board translated into Yiddish by the Jewish Board of Guardians at the request of the Council was supplied to the Jewish women in East London who have difficulty in understanding English. There are some 12 or 13 Jewish midwives and two Italian midwives in practice in London.

Fees charged by Midwives.

The fee a midwife receives for attending a confinement and the subsequent visiting for 10 days varies in different localities from 5s. per case upwards, but usually a fee of 7s. 6d. to 10s. is expected. The charities employing midwives pay 5s. or 6s. a case, and provide the midwife with registers, forms, antiseptics, etc. It is apparent from the number of cases taken by midwives and the small fees paid that very few can rely solely on their practice as a means of livelihood. Many of them are married women who do not trouble to obtain a large practice, a few keep lying-in homes; others, especially those with a fairly large practice, are approved by the Central Midwives Board to give practical instruction to pupils preparing for the Board's examination. The pupil resides with the midwife and goes with her to cases. The fees for pupils are usually about £1 1s. per week, which includes board and lodging in addition to the practical instruction given by the midwife.

Maternity charity.

Many midwives are employed in Poor Law Infirmaries, and a large proportion of the 3,000 confinements in infirmaries are conducted by midwives, and many of the infirmaries are approved as training schools for pupil midwives. Over 5,000 cases are taken annually into the maternity hospitals, and some 18,000 to 20,000 are delivered in their own homes by midwives working for maternity hospitals or in connection with one or other of the free maternity charities.

Births notified by midwives.

From information received under the Notification of Births Act the following figures have been obtained showing the number of births notified by midwives:—

8	midwives	reported	over	500	cases	in the year.
3	,,	,,	between	400 and 500	,,	,,
11	,,	,,	,,	300 and 400	,,	,,
9	,,	,,	,,	250 and 300	,,	,,
20	,,	,,	,,	200 and 250	,,	,,
28	,,	,,	,,	150 and 200	,,	,,
36	,,	,,	,,	100 and 150	,,	,,
90	,,	,,	,,	50 and 100	,,	,,
86	,,	,,	,,	20 and 50	,,	,,

Most of the midwives who had 300 cases and upwards have qualified assistants, and many are approved by the Central Midwives Board to supervise the work of pupils. From information received under the Notification of Births Act, it is computed that some 30,000, or 25 per cent. of the total births in London, are attended by midwives, excluding the cases attended by midwives in infirmaries.

Uncertified women.

Since March, 1910, by Section 1 (2) of the Act, no woman, unless she be certified under the Act may habitually and for gain attend women in childbirth except under the direction of a registered medical practitioner.

Enquiries were made into all cases in which it came to the knowledge of the Council that a delivery had been conducted by an uncertified woman, and in 17 instances there was evidence that the woman had been engaged beforehand and had received fees for three or more confinements. Proceedings were instituted and fines in fourteen cases amounting to £23 11s., with £11 7s. costs were imposed In three cases the woman was convicted and bound over for 12 months. In one instance an uncertified woman was tried on a charge of manslaughter and was sentenced to four months' imprisonment.

Most of the other women reported as having conducted cases were found on enquiry to have acted in emergency, or else they had only conducted one case and could not be described as practising habitually; these women were informed of the provisions of the Act, and in some cases cautioned by letter.

Medical help.

The rules of the Central Midwives Board provide that in certain circumstances a midwife must decline to attend alone and must advise in writing that the case is one requiring medical help. The form on which this written advice is given is sent to a medical practitioner, and a copy is forwarded to the local supervising authority. During the year 3,477 of these notices were received. The figures for the previous years were: 1905, 1,113; 1906, 2,320; 1907, 2,533; 1908, 2,755; 1909, 2,894; 1910, 3,026. The rise in the figures is no doubt due to the fact that midwives realise more fully the importance of complying with this rule of the Board. Notices were received from 353 midwives. Midwives in infirmaries and hospitals under the direction of a qualified medical practitioner are not required to comply with this rule.

The number of instances of advising medical help in the practice of midwives during the year may be summarised as follows:—

1	midwife	reported	advising	medical	help	146	times during the year.
1	„	„	„	„		100	„ „
1	„	„	„	„		81	„ „
5	midwives	„	„	„		40 to 60	times during the year.
36	„	„	„	„		20 to 40	„ „
66	„	„	„	„		10 to 20	„ „
243	„	„	„	„		less than 10	times during the year.

The reasons assigned by the midwife for giving the advice were as follows:—

Pregnancy.

Pregnancy—			
	Purulent discharge	3	
	Abortion or miscarriage	53	
	Deformed pelvis	8	
	Varicose veins	20	
	Ante partum hæmorrhage	119	
	General unhealthy conditions	80	
			283
Labour—			
	Presentations—		
	Unable to make out	25	
	Difficult breech	54	
	Face	26	
	Funis	46	
	Transverse	37	
	Difficult twins	16	
	„ triplets	2	
	Persistent occipito posterior	39	
	Hand	20	
	Placenta prævia	18	
	Prolonged labour (uterine inertia, contracted pelvis, etc.)	581	
	Laceration of perineum	298	
	Prolapse of uterus	4	
	Hæmorrhage during labour	9	
	Retained or adherent placenta	245	
	Exhaustion or collapse	26	
	Hysteria or fits	10	
	Excessive liquor amnii	4	
	Uterus not contracting	1	
			1,461
Lying-in—			
	Rise of temperature	225	
	Post partum hæmorrhage	133	
	Pain or swelling in leg	23	
	Abdominal pain or swelling	21	
	Pain or swelling of breast	11	
	Quick pulse	5	
	Eclampsia, convulsions	15	
	Collapse	15	
	Puerperal mania	4	
	Offensive lochia	6	
	Sub-involution of uterus	4	
	Excessive sickness or headache	12	
	Severe diarrhœa	4	
	Continued sleeplessness	3	
	Other illness	37	
			518

Child—

Injury at birth	10	
Malformation or deformity	112	
Skin eruption or rash	42	
Jaundice	25	
Convulsions	44	
Partial asphyxia	57	
Bronchitis, etc.	19	
Inflammation of eyes	261	
Feebleness and prematurity	488	
Bleeding from cord	5	
Stillborn (before midwife arrived)	65	
Death of infant	42	
Congenital specific disease	3	
Inflammation of navel	3	
Abnormal sickness	9	
Other conditions in child	27	
	—	1,212
Infectious diseases in patient's house		3
		3,477

Assuming that 30,000 births are attended annually by midwives, the above figures show that medical assistance was required in 11·5 per cent. of the cases; in 7·5 per cent. on behalf of the mother and 4·0 per cent. on account of the child.

Still births.

During the year, 220 midwives reported having stillbirths in their practice. The number of stillborn children being 634. This represents 2 per cent. of the births.

1	midwife reported 18 stillbirths	18
1	„ „ 12 „	12
3	midwives each reported 10 stillbirths	30
3	„ „ 9 „	27
6	„ „ 8 „	48
7	„ „ 7 „	49
7	„ „ 6 „	42
12	„ „ 5 „	60
19	„ „ 4 „	76
28	„ „ 3 „	84
55	„ „ 2 „	110
78	„ „ 1 stillbirth	78
220		634

The form for notifying stillbirths provides for information as to (*a*) sex of child; (*b*) period of gestation; (*c*) whether macerated or not; (*d*) presentation.

The information obtained under (*a*) showed that 336 still-born infants were males, 295 females, and in three cases the sex was not stated.

The following table shows the information obtained under (*b*) and (*c*):—

Condition of child.	Total cases.	Period of gestation.				
		Full term.	8 months.	7 months.	6 months or less.	Not stated.
Macerated	375	154	88	95	38	—
Not macerated	253	151	43	35	23	1
No statement	6	1	—	—	2	3
Total	634	306	131	130	63	4

The presentations were as follows:—

Vertex	398	Hand, arm and shoulder	6
Complicated vertex	26	Funis	4
Breech	93	Placenta prævia	3
Complicated breech	9	Born before arrival and presentation not known	58
Footling	27		
Transverse	8		
Face or brow	2	Total	634

Some additional information was obtained as to still-born infants not macerated, of eight or more months' gestation, as follows :—

Concerning the child—	
One of twins	10
Hydrocephalus	7
Malformed child	8
White asphyxia	1
Cord round neck	1
Anencephalic head	1
Born in membranes	1
Concerning the mother—	
Ante partum hæmorrhage	3
Small pelvis	1
Difficult labour	5

Death of mother or child.

The rules of the Central Midwives Board require the midwife to notify to the local supervising authority all cases in which the mother or child dies before the attendance of a registered medical practitioner. In 53 cases midwives notified the deaths of infants, and in two cases notices of deaths of mothers were received.

By the courtesy of the London coroners notices are sent of inquests in which midwives are concerned and one of the Council's inspectors attends the court to hear the evidence and learn whether the midwife has complied with the rules of the Board. One hundred and eleven inquests were thus reported upon. These included inquests on cases attended by uncertified women, as well as by certified midwives. The verdict in 103 cases attributed no blame to the person in attendance. The following table summarises the verdict with respect to cases in which blame was attributed :—

Confinement conducted by	Total number of inquests.	Deaths of mothers.		Deaths of infants.	
		Censured.	No censure.	Censured.	No censure.
Midwives	102	1	9	5	87
Uncertified women	9	1	1	1	6
	111	2	10	6	93

The cause for the censure shown in the foregoing table was as follows :—

Not advising medical assistance to mother early enough	1
Not making arrangements with another midwife when unable to attend case	1
Want of ordinary skill (uncertified women)	2
Delay in advising medical assistance for infant	4

In each case where a midwife was found to have failed to comply with the rules of the Central Midwives Board, a letter of caution was addressed to her.

The medical evidence given at the inquests as to the cause of death was as follows :—

Mothers.		*Infants.*	
Septicæmia	4	Atelectasis	11
Rupture of uterus	2	Suffocation at birth	14
Pulmonary embolism	1	Suffocation in bed	13
Heart disease	1	Prematurity	19
Hæmorrhage during labour	1	Convulsions	8
Bursting of cyst in pancreas	1	Bronchitis and pneumonia	8
Suffocation from regurgitation of food from stomach during labour	1	Concussion of brain at birth	1
Collapse from long labour	1	Malnutrition	2
		Tetanus	1
		Shock from scalding (accident)	1
		Hæmorrhage from cord	1
		Septicæmia from pemphigus	2
		Congenital heart disease or malformation	6
		Stillbirth	12
	12		99

Puerperal fever.

During the year 1911, 302 cases of puerperal fever were notified in the County and the Registrar General records 142 deaths from puerperal septic disease during the year. Two deaths recorded by the Registrar General refer to cases which were notified in 1910, and three deaths occurred in 1912 of cases notified in 1911, while in two cases notified as puerperal fever the deaths were certified to be due to eclampsia and were classified by the Registrar General under accidents of childbirth. The term puerperal septic disease used by the Registrar General includes puerperal septicæmia, pyæmia and sapræmia, as well as peritonitis and metritis occurring in connection with parturition. A list of deaths is received weekly from the Registrar General and the deaths are compared with the notified cases so that it is possible to ascertain whether the latter terminate fatally. Of the 302

notified cases, 97 proved fatal, a case mortality of 32 per cent. Of the remaining deaths recorded, 3 were deaths in London institutions of women confined outside London, and probably notified as puerperal fever in the district where the confinement took place. The other deaths were those of cases which were not notified.

Early information of notification of cases of puerperal fever is received from the Metropolitan Asylums Board or from the borough medical officers, and I am indebted to the latter for information as to by whom the patient was delivered. The following table gives the results of these inquiries which relate to the 302 notified cases and 48 deaths of cases not notified in London :—

Delivery conducted by	Cases.	Deaths.
(*a*) Medical practitioners (including cases attended by medical students and also cases in which a medical practitioner was in charge of the case, but the birth took place before his arrival)	219	92
(*b*) Certified midwives (including cases in which birth took place before her arrival)	68	16
(*c*) Medical practitioner and certified midwife, *i.e.*, cases in which a midwife was unable to deliver and called in a medical practitioner	8	4
(*d*) Hospitals and poor law institutions	24	14
(*e*) Uncertified women	4	2
(*f*) Cases of miscarriage or abortion where no attendant was engaged	24	14
(*g*) Cases where patient died in London, but was confined elsewhere ..	3	3
	350	145

The cause of death as stated in the death certificates in the 142 fatal cases where the deceased was confined in London is shown in the following table :—

Cause of death.	Notified cases.	Unnotified cases.	Total.
Puerperal septicæmia, toxæmia, and septic absorption..	71	19	90 (15)
Puerperal peritonitis	6	13	19 (3)
Pyæmia	5	—	5 (2)
Sapræmia	1	2	3 (1)
Puerperal fever (not defined)	8	3	11
Metritis, perimetritis, parametritis and endometritis..	1	2	3
Toxæmia of pregnancy	—	1	1
Infective endocarditis	—	1	1
Phlegmasia alba dolens	—	1	1
Post partum eclampsia	2	—	2
Pelvic cellulitis	2	—	2
Phlebitis after parturition	—	1	1
Erysipelas after parturition	—	1	1
Pyonephrosis and toxæmia..	—	1	1
Salpingitis	1	—	1
	97	45	142

The number of fatal cases of puerperal fever which followed abortion or miscarriage was 21. The classification of these cases is shown by the figures in brackets in the last column of the above table.

The age incidence of the 350 cases was as follows :

	Total.	15–20	20–25	25–30	30–35	35–40	40–45	Over 45	Age not given.
Recovery cases ..	205	10	39	61	53	26	7	—	9
Fatal cases.. ..	145	4	25	41	28	23	22	2	—

In cases where a midwife was concerned the Council's inspector visited the midwife, learnt particulars of the case from her, made enquiries as to any other patients recently attended, and took steps to ensure that the rules as to disinfection were fully carried out before the midwife resumed her work.

The rule which requires that medical help shall be advised when the patient's temperature rises to 100·4 deg. and remains above that figure for 24 hours has proved useful in affording information concerning cases in which there is danger of the development of puerperal fever; 225 notices were received stating that medical assistance had been advised for this reason. The inspector learnt from the midwife whether the high temperature was persistent and in 181 cases it was found that the temperature had fallen, or that no further symptoms of puerperal fever occurred. In some cases where the temperature remained high, although the case had not then been notified, the midwife was directed to undergo the usual disinfection before going to another case. In 44 instances the rise of temperature proved to be the first indication of septic trouble and the inspector was thus able in some cases, before the notification as puerperal fever was known to her, to prevent the midwife from attending other patients until disinfection had been thoroughly carried out. In cases of puerperal fever the services of the nurses of the Queen Victoria Jubilee Institute, the Ranyard and the Holloway Institutes are usually available so that when the midwife ceases to visit, the patient is left in the hands of a skilled nurse to carry out the directions of the medical practitioner called in. In cases where a midwife has pupils or assistants one of them is sometimes set apart to nurse the septic case, attending no other patients meanwhile. A midwife is thus usually able to carry out disinfection and resume her work with as little delay as is necessary to ensure that she is no longer likely to be a source of infection to other patients.

The following table shows the day of the puerperium on which (*a*) the rise of temperature (if noted) occurred, (*b*) medical aid was obtained, (*c*) the case was notified as puerperal fever, and (*d*) the death took place if the case were fatal.

	Day of confinement.	2nd day.	3rd day.	4th day.	5th day.	6th day.	7th day.	8th day.	9th day.	10th day.	After 10th day.	Total.
Rise of temperature—												
Recovery cases	1	1	10	9	6	6	1	—	5	1	6	46
Fatal cases	—	6	3	2	1	1	—	—	—	—	2	15
Medical aid obtained—												
Recovery cases	3	1	6	13	5	4	2	3	5	2	8	52
Fatal cases	2	6	1	2	—	2	—	—	—	—	3	16
Notified as puerperal fever—												
Recovery cases	—	—	2	6	4	3	3	3	5	7	19	52
Fatal cases	—	—	2	2	3	2	2	—	—	—	2	13*
When death took place in fatal cases	—	—	1	2	—	—	1	2	—	2	8	16

Of the 8 deaths occurring after the 10th day of lying in, five occurred before the 20th day, another before the 30th day, and two after the 30th day. In 7 cases (1 of them fatal) no rise of temperature above 100·4 deg. was noted by the midwife during her attendance, and medical help was either called by her for some other reason or else it was called by the patient's friends after the midwife had ceased to attend.

The parity of women who contracted puerperal fever was ascertained from the midwife to be:—

	Total.	Primi para.	2 para.	3 para.	4 para.	5 para.	6 para.	7 para.	8 para.	9 para.	10 para.	Over 10 para.
Recovery	52	13	9	8	3	6	4	1	3	2	1	2
Fatal	16	5	1	4	1	—	2	3	—	—	—	—

The following conditions were noted among the cases of puerperal fever attended by midwives:—

	Recovery.	*Fatal.*
Laceration of perineum	2	—
Retained or adherent placenta	4	3
Ante partum hæmorrhage	1	—
Post partum hæmorrhage	5	1
Ragged placenta (thought complete by midwife)	3	—
Prolonged labour	1	—
Syphilis or gonorrhœa	1	1
Pneumonia	—	1
Macerated infant	1	—
Domestic trouble after confinement	2	1

In six cases of puerperal fever, birth took place before the arrival of the midwife.

Nine midwives each had two cases during the year, in three instances the interval between the cases was three months or more and there was no reason to connect the cases with one another.

* 3 fatal cases attended by midwives were not notified.

The circumstances of the remaining six cases were as follows :—

A had a case in June, was disinfected and resumed work and conducted some 30 deliveries, all doing well. Six weeks after the first confinement a second case occurred, the patient was found to be suffering from syphilis and to this cause the disease was attributed. The later case proved fatal.

B had two cases in the same month, the second case was delivered before the first was notified as puerperal fever. The first case was fatal.

C had two cases in three weeks. The first case was normal during the midwife's attendance on it, but when notified the midwife was disinfected. The second case was confined four days after her disinfection. Neither case was fatal.

D had two cases within three weeks. She was disinfected after the first case was notified and resumed her work. Four days later the second case was confined and developed the disease the day following. Both these cases were fatal.

E had two cases within six weeks. After the first case was notified the midwife was disinfected and conducted several cases which went on well; the second patient had a ragged placenta. Neither case was fatal.

F had two cases within 16 days. She was disinfected after the first case and seven days later delivered the second case, which proved to be a very mild case. The former proved fatal.

Accidents of Childbirth.

In addition to the list of deaths from puerperal septic diseases, the Registrar-General supplies a weekly list of deaths from accidents of childbirth. Among these are included cases of eclampsia, pulmonary embolism, puerperal mania and pneumonia occurring after confinement, as well as deaths resulting from hæmorrhage and difficult labours. 152 deaths from accidents of childbirth were recorded during 1911. In 15 of these cases the deceased was attended in her confinement by a midwife. The cause of death in the 15 cases was as follows :—

Collapse following ante partum hæmorrhage	6
„ „ post partum „	2
Rupture of the uterus	2
Eclampsia	1
Pulmonary embolism	1
Phlebitis	1
Suffocation due to regurgitation of food during labour	1
Convulsions	1
	15

Ophthalmia Neonatorum.

It is the duty of a midwife to advise that medical help is required when inflammation of the eyes, however slight, occurs in infants. Great stress has been laid by the Council on the importance of strictly observing this rule. When a notice is received from a midwife that medical assistance has been sought on this account, the Council's medical inspector at once visits the infant to ascertain that it is receiving the medical assistance which the midwife has advised, and the medical officer of health of the borough in which the patient resides is immediately informed of the severity or otherwise of the case and whether the infant is being removed to a hospital for treatment. The midwife is also visited to learn particulars as to the case, the antiseptic precautions taken beforehand, and the disinfection adopted by the midwife after each visit to the case. It was found in some cases that when medical assistance was obtained, the medical practitioner, after examining the infant's eyes, gave directions to the parents as to the course of treatment and left instructions for them to seek again medical help if the inflammation did not yield to treatment, and if there was no improvement in the condition of the child's eyes. So long as the midwife remained in attendance, the treatment was for the most part carried out, at all events once a day; but many of these cases had not recovered by the tenth day, the time the midwife usually ceases her attendance. It was also found impossible for the midwife personally to attend to the infant's eyes as often as was requisite, *i.e.*, in some cases four or five times daily, and this duty was then left to the friends of the patient, who were utterly ignorant of the need for using clean rags and sterile water.

The Council felt therefore that risk was being incurred by allowing cases of inflammation of the eyes to receive no more attention than was bestowed on them by the people living in the house. The Queen Victoria Jubilee Institute, the Ranyard Nurses Society, the Holloway Nursing Institute, and the Nursing Sisters of St. John the Divine were therefore approached and asked if they would be willing to allow their nurses to undertake, under the direction of the medical practitioner called in, the care of these infants in order to see that the necessary irrigation or swabbing of the eyes was properly done, and at the proper intervals. All the above societies readily consented and during the year their services were made use of in 68 cases.

During the year 261 notices were received from midwives, stating that medical assistance had been advised on account of inflammation of the eyes of infants, and, in addition to these, 17 other cases came to light in which medical help was not called by the midwife; the onset is stated to have occurred after the midwife had ceased to attend in 13 of these 17 cases, in 3 the midwife failed to advise medical help because the symptoms were slight and in one case a medical practitioner was already attending the infant for other reasons. In 7 instances where medical help was advised it had not been obtained when the Council's inspector visited the child. None of these cases was very severe and the infants eventually recovered. There was delay in obtaining medical help in 14 cases due to

the fact that signs of inflammation were not recognised. In all other cases medical help was obtained either on the day of onset or the following day.

The Council's inspectors investigated all the cases and endeavoured to watch the progress of the patients and learn the final result. 218 cases were reported to be completely cured. In 13 cases there was impairment of vision, 17 died while still suffering from the disease, and in 30 instances the result could not be ascertained owing to the removal of the parents, who could not be traced.

The day of the puerperium on which signs of inflammation were first noticed was : day of confinement, 18 cases ; second day, 23 ; third day, 38 ; fourth day, 33 ; fifth day, 28 ; sixth day, 29 ; seventh day, 26 ; eighth day, 23 ; ninth day, 19 ; tenth day, 11 ; later than tenth day, 26 ; not ascertained, 4 cases.

A history of vaginal discharge in the mother was obtained in 111 instances, *i.e.*, in 40 per cent. of the cases.

The antiseptics used for the child's eyes at birth or as soon afterwards as possible were boracic lotion in 125 instances ; perchloride of mercury (1 in 4,000 or weaker) in 102 ; silver nitrate (a 1 or 2 per cent. solution)in 27 ; protargol in 1, and biniodide of mercury in 1 instance ; in the remaining 22 cases sterile water was used. An interval between the birth and the use of an antiseptic occurred in 50 instances owing to the fact that the infant was born before the arrival of the midwife.

The following facts relating to the 13 cases in which impairment of vision supervened were learnt :

(1) History of vaginal discharge in the mother during pregnancy. Perchloride of mercury (1 in 4,000) followed by boric acid lotion, used for eyes 15 minutes after birth (infant born before midwife's arrival). Onset of symptoms on day of birth. Medical help called in on day after birth. Infant removed with mother to hospital on third day.

Result : Infant reported blind.

(2) History of gonorrhea in father of child. Boric acid lotion used for eyes 30 minutes after birth (infant born before arrival of midwife). Onset of symptoms on third day. Medical help obtained on fourth day, and infant removed with mother to infirmary on fifth day.

Result : Infant reported blind.

(3) No history of vaginal discharge in mother obtained. Boric acid lotion used for eyes 15 minutes after birth (infant born before arrival of midwife). Onset of symptoms on fifth day. Medical help obtained at once. Infant removed with mother to infirmary on seventh day.

Result : Infant reported blind.

(4) History of vaginal discharge in mother during pregnancy. Perchloride of mercury (1 in 4,000) used for eyes 20 minutes after birth (infant born before arrival of midwife). Onset of symptoms on day after birth. Parents refused to call medical help until fourth day. Out-patient at Ophthalmic Hospital.

Result : Sight in one eye lost, the other seriously injured.

(5) History of inflammation of the vagina in mother. Boric acid lotion used for eyes at birth. Slight symptoms on third day, but medical help not obtained until thirteenth day Infant removed to hospital. The midwife was severely cautioned for not advising medical help in this case.

Result : Sight in one eye lost.

(6) No history of vaginal discharge in mother, but a child in same house had inflamed eyes. Boric acid lotion used for eyes 15 minutes after birth of child (born before midwife's arrival). Onset of symptoms on tenth day. Medical help obtained at once. Out-patient at hospital.

Result : Sight in one eye lost.

(7) No history of vaginal discharge in mother. Boric acid lotion used for eyes 15 minutes after birth (infant born before midwife's arrival). Onset of symptoms on third day. Medical help not obtained until eighth day.

Result : Loss of sight in one eye.

The midwife was severely cautioned as to delay in advising medical help in this case.

(8) No history of vaginal discharge in mother obtained. Boric acid lotion used for eyes at birth. Slight symptoms on eighth day. Medical help obtained on tenth day.

Result : Loss of sight in one eye.

(9) History of vaginal discharge in mother. Boric lotion used for eyes at birth. Onset of symptoms on eighth day. Medical help obtained on ninth day.

Result : Both eyes affected, but no loss of vision.

(10) No history of vaginal discharge in mother. Boric lotion used for eyes at birth. Mother is stated to have " washed " the eyes with breast milk. Onset of symptoms on eighth day. Medical help obtained at once.

Result : Sight of both eyes impaired.

(11) History of vaginal discharge in mother. Perchloride of mercury (1 in 4,000) used for eyes at birth. Onset of symptoms on fourth day. Medical help obtained at once.

Result : One eye permanently injured, other eye normal.

(12) No history of vaginal discharge in mother, onset of symptoms on eleventh day.

Result : Sight of one eye impaired.

(13) History of vaginal discharge in mother. Perchloride of mercury used for eyes at birth. Onset on fourth day.

Result : Infant has a slight squint; otherwise normal.

These results summarised are as follow :—

Blind in both eyes..	3 cases.
Blind in one eye, other damaged	1 case.
Blind in one eye, other uninjured	4 cases.
Both eyes damaged	2 „
One eye damaged	3 „

In 8 of the 13 cases where impairment of vision resulted, the onset of symptoms occurred on or before the fifth day of life. In 6 instances among the 13 there was a history of vaginal discharge in the mother.

The 278 cases of inflammation of the eyes occurred in the practices of 135 midwives.

1	midwife and her assistant had	19	cases during the year ..	..	19
1	midwife had	9	cases during the year		9
2	midwives each had	7	cases during the year		14
2	„ „	6	„ „		12
4	„ „	5	„ „		20
12	„ „	4	„ „		48
9	„ „	3	„ „		27
25	„ „	2	„ „		50
79	„ „	1	case „		79
135					278

All the midwives who had three or more cases during the year have extensive practices, and it was found that many of the cases reported were very slight and the eyes were normal in a few days. So far as could be ascertained there was no evidence that infection was carried from one case to another.

The Council had under consideration the question of hospital treatment for severe cases and an endeavour was made to secure accommodation for the mother and infant so that while the child was being treated it would not be deprived of the advantage of being breast-fed.

The ophthalmic hospitals and the general hospitals had difficulty in providing such accommodation, but in some instances both mother and child were admitted to the poor-law infirmaries. Of the cases occurring in the practice of midwives during the year, in 12 instances mother and child were admitted to hospitals or infirmaries and in 20 cases the child alone was admitted ; 101 other cases were treated by the ophthalmic and general hospitals as out-patients.

In March the Council made an order extending the provisions of section 55 of the Public Health (London) Act, 1891, to ophthalmia neonatorum. Of the 673 cases notified from that time until the end of the year, 188 were in the practice of midwives.

Classes for midwives.

The Council has arranged classes for the further instruction of midwives at four centres in London. These classes are attended by midwives who have been in practice for many years, and also to some extent by pupils to supplement the training they are receiving elsewhere.

Midwives showing lack of knowledge of their work have been advised by the Council's inspectors to attend these classes.

CHAPTER XXXIII.

Special Report submitted by the Medical Officer of Health during the year 1911.

I.—*Report by Dr. Hamer on an Outbreak of Typhoid Fever in London in September*, 1911.

On Thursday, 14th September, the notification list showed marked increase in the number of cases of typhoid fever, there being 30 cases notified during the week ending Saturday, 9th September, in Finsbury, as compared with 0, 0, 1, 0 and 1 in the preceding five weeks.* On proceeding to Finsbury Town Hall it was ascertained that the outbreak was an explosive one, most of the patients having sickened during the last week in August or the first week in September. In families in which multiple attacks had occurred, the interval between the dates of sickening of the several relatives in question was quite short. (See particular as to dates of onset in appended Table.) Dr. Thomas, Medical Officer of Health for Finsbury, and I analysed the information available and, *prima facie*, it was obvious that some suspicion attached to two articles of food, viz., ice cream and fried fish. Milk, to which of course consideration was in the first instance given, was clearly not at fault. Approximately one-third of the total number of sufferers (at that time already amounting to more than 40), might, it transpired, have consumed milk supplied by a particular vendor, but with regard to at least 24, *i.e.*, more than half the total number, the possibility of consumption of milk retailed by this vendor could be excluded. There still remained a remote chance that some of the 24 sufferers who had not partaken of the milk of this vendor, as milk, might have consumed milk, derived from one and the same source as that supplying the particular vendor, in the form of ice cream. Careful enquiry as to the sources of milk supply of the ice cream vendor who had sold ice cream to a considerable number of the sufferers did not, however, show that he had obtained any milk from the source supplying the suspected milk vendor. Even if the supplies of the milk vendor and the ice cream vendor had been, unknown to either of them, derived from some common source, there remained at least 9 out of 40 sufferers (within the area of the explosion) who had not partaken of either the suspected milk or the suspected ice cream. Moreover, it was learnt later that 5 or 6 other sufferers living within the area, and at least 6 sufferers living outside the area of the explosion, but whose illness was in all probability contracted within the area, had not partaken of either the suspected milk or the suspected ice cream. This outstanding 20 or 21 cases could not, having in view dates of onset of attack, be ascribed to contact with preceding cases. It was, further, in the highest degree improbable that, at the time of occurrence of the explosive outbreak, 14 or 15 other cases (or, including the cases living outside the area, 20 or 21 other cases) would arise in the affected area quite independently of the cases constituting the explosive outbreak itself.

It was noted that some 5 or 6 of the total number of sufferers living within the area had been away from London at a time when they might conceivably have been infected. On the other hand, the dates of going away from, and of returning to, the area permitted of these 5 or 6 sufferers having been infected within the area itself. The possibility of contamination of a water main was, of course, considered, but the distribution of the cases lent no support to such an hypothesis, and it may here be noted that the age distribution of the sufferers from typhoid fever in this outbreak was quite an exceptional one, children and young adults were affected in altogether undue proportion, indeed all the persons attacked, with only four exceptions, were between 5 and 26 years of age. It will be seen later, moreover, that sufferers were in the main drawn from a particular social class. This notable selection for attack of persons at certain ages, and, further, of persons of a particular social class practically negatived the possibility of the outbreak having been due to water or milk. On the other hand, it strengthened a suspicion which was now increasingly entertained that some such medium as ice cream or fried fish was in question.

Enquiry was made as to other possible sources of infection, *e.g.*, shellfish or watercress; very few of the sufferers had consumed either of these articles of food. At the time of the outbreak the mussel season had barely commenced, and as a matter of fact the sufferers had only quite exceptionally eaten shellfish. The same statement is true with regard to watercress. Enquiry was also made as to common use of swimming baths, but again with a negative result.

It was now felt that the important point to determine, in the first instance, was the proportion of sufferers who had partaken, within the possible period of incubation, of one or other of the two foods, upon which suspicion was now seen especially to fall, viz., ice cream and fried fish. All the patients who could be found, and who were able to answer, were seen and questioned, and the results now to be summarised were ultimately obtained. For the purposes of the enquiry an area included within a radius of one-twelfth of a mile (440 feet), from a centre around which the cases were aggregated, was defined as the area of the explosion. The centre of the area was fixed at a point midway between the shops of the vendors of fried fish and ice cream referred to below as X and Y.

* The notifications in London as a whole were 73 in the week ending 9th September as compared with 17, 12, 17, 14 and 28 in the preceding five weeks.

The analysis includes 54 cases notified from houses within or immediately adjoining the area of the explosion, and 8 other cases.

Limiting consideration for the moment to the 54 cases—

*22 of the sufferers had within a period of one month, and at a time before the beginning of the illness which was consistent with the hypothesis that the article of food might have been the cause of the illness, obtained ice cream from a particular vendor, Y.

7 may have done so.

*25 had not done so.

§48 of the sufferers had within a period of one month, and at a time before the beginning of the illness which was consistent with the hypothesis that the article of food might have been the cause of the illness, obtained fried fish from a particular vendor, X.

†1 may have done so.

*5 had not done so.

The 8 cases notified from outside the area include a man living at Walthamstow and a girl living in Camberwell, both of whom worked in the area; a child, aged 9, living in Fulham who was staying with relations near the area, at the time when she was presumably infected; a man, a lad, and two girls, all of whom lived at some little distance from the area, but frequently made purchases withinit. Of these 8 patients, 2 had frequently eaten ice cream, obtained from Y, 4 others ate ice cream, but had not obtained it from the suspected shop, the remaining two were adults who were quite clear that they never ate ice cream. Seven of the patients had been in the habit of visiting the suspected fried fish shop, but one of them as a rule only bought fried potatoes there. The remaining case was that of a girl who passed the fish shop on her way from work and may have purchased there, though as to this there was an element of uncertainty.

If the 8 cases just referred to be included as constituting part and parcel of the special outbreak, and if the 6 notified within the area which were probably not cases of typhoid fever be excluded, there are 56 cases in all. Of these 21 had, and 28 had not, partaken of ice cream from the suspected shop, and as to 7 others there is an element of doubt. Again, 52 had, and 2 had not, partaken of fried fish, and as to 2 cases there is an element of doubt. It is clear that an ice cream hypothesis is in itself inadequate as an explanation of the special prevalence.

A fried fish hypothesis, on the other hand, would account for all the cases save two, or at most four.‡ Having regard to the size of the population residing in the area, and to the degree of prevalence of typhoid fever in London at the time, it might have been anticipated that, apart from any special cause operating in the area, some two or three cases would have occurred there during the month of September (*i.e.*, coincidently with the special prevalence). Thus the exceptional cases referred to above might conceivably be regarded as entirely unconnected with the special prevalence, and on this view of the matter a fried fish hypothesis would fit the facts ascertained concerning all the 54 cases of the special prevalence. This hypothesis is seen, therefore, to demand careful examination, but before proceeding further it is desirable to refer to a preliminary difficulty which may perhaps be felt.

A consideration frequently advanced in connection with study of the percentage of sufferers from typhoid fever, who give a history of having obtained fish from a particular source, is the following. Everyone eats fish just as everyone eats bread or meat, and hence it can be no matter for surprise if all the sufferers in a particular outbreak are found to have eaten fish. Further, it is argued, when, an outbreak involves a particular area, it may be that one fried fish shop has practically a monopoly of the supply in that area; and hence again, it is said, no one need be surprised if it transpires that all the sufferers have obtained fish from the particular shop. These lines of argument, *prima facie*, command acceptance. Anyone, however, who endeavours to obtain a considerable number of histories as regards fish eating from sufferers from typhoid fever in London, will be convinced of their inapplicability, and observation of control populations conclusively demonstrates that the lines of argument in question are beside the mark. In 1900, on the occurrence of the first recognised outbreak of fish typhoid, enquiry was made by the Council's officers in Southwark as to the habits as regards fish eating of a control population; a similar enquiry was made in 1908 in Bethnal Green, and yet

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* Includes three cases which were probably not typhoid fever.

§ Includes two cases which were probably not typhoid fever.

† Includes one case which was probably not typhoid fever.

‡ The two cases occurred in one family. Both patients had been out of London during some portion of the period in which they must have been infected, and it may be that the cases were thus wholly unconnected with the cause of the special prevalence in Finsbury. On the other hand, the patients lived only a few doors from the fried fish shop, and it is, of course, conceivable that they may, despite the testimony given by them, have been infected from this source by reason of their having eaten fish of unknown origin which was, as a matter of fact, obtained there. The two remaining cases were those of the child who, when she went to the fried fish shop, usually purchased "taters," and of the girl who passed the shop on her way from work and may have purchased there.

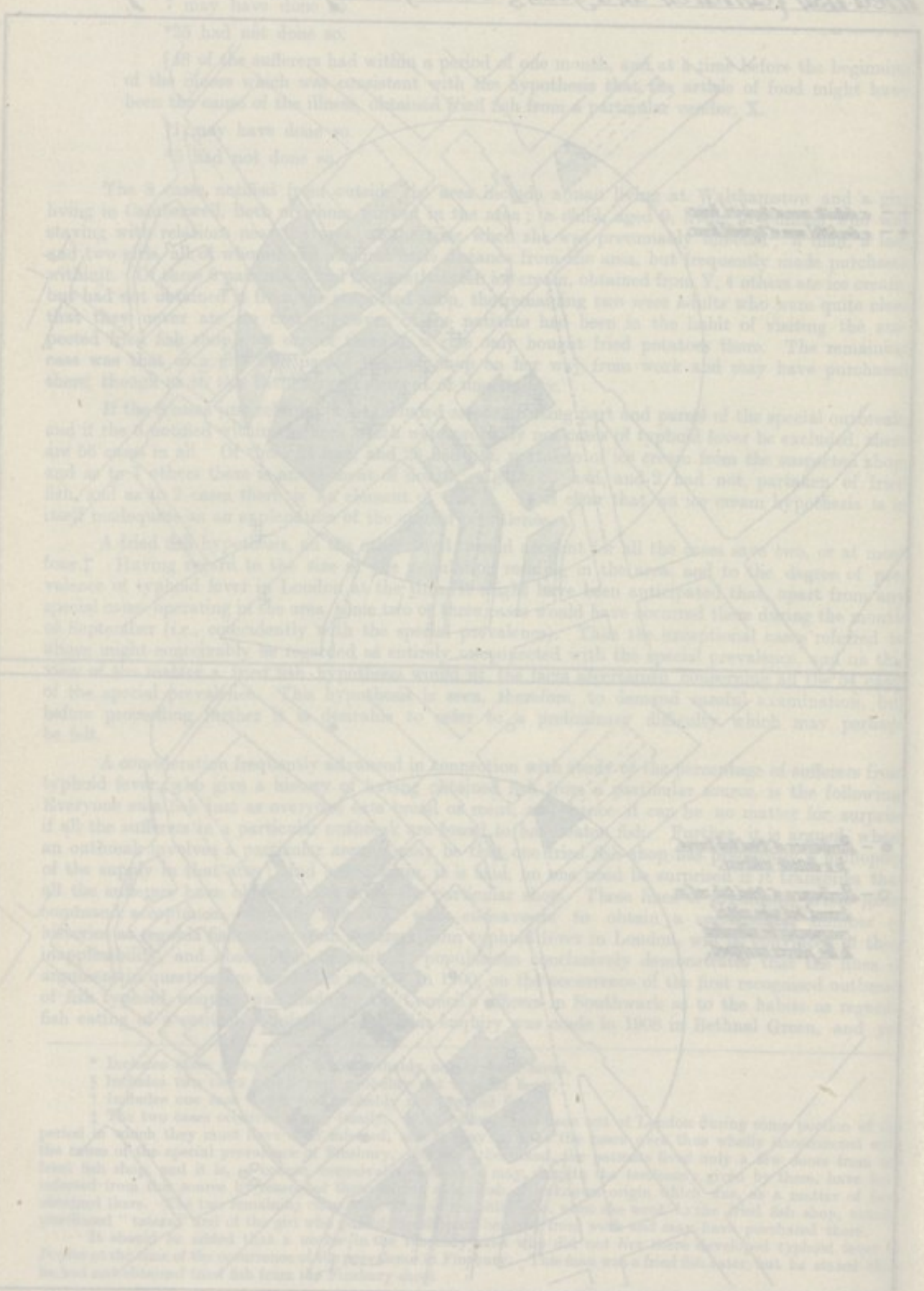
It should be added that a *worker* in the Finsbury area who did not *live* there developed typhoid fever in Poplar at the time of the occurrence of the prevalence in Finsbury. This man was a fried fish eater, but he stated that he had not obtained fried fish from the Finsbury shop.

Diagram Z.

Maps of the particular area affected by the outbreak; the upper map shews the distribution of cases of Typhoid Fever; the lower map shews the distribution in the same area of purchasers of fried fish {children and young adults} at a particular shop.



The hatching which is purposely confined to the area within the circle represents certain grades of social condition based on Mr Chas Booth's classification. The unhatched portions represent areas in which the population belongs to higher social grades. The classification is referred to in the text and is represented in the maps as follows:- grade B grade C grade D.



another enquiry was made in connection with the present outbreak by Dr. Thomas of Finsbury and myself. The results of these enquiries were as follows :—

Borough in which outbreak occurred.	Total population of area in which enquiry was made.	Percentage of population who did not eat fried fish at all.	Percentage of population eating fried fish obtained from a particular suspected shop.	Percentage of population eating fried fish obtained from other sources and not from suspected shop.
Southwark	900	42	42	16
Bethnal Green	283	37	63	
Finsbury—				
Outer ring	769	41	49	10
Inner ring	148	32	68	—
Total area	917	39	53	8

From these enquiries it is clear that more than one-third of the control populations in the areas selected (and they were in each instance populations in which there might be expected to be a specially large percentage of eaters of fried fish from a particular source) gave a history of not having eaten fried fish from any single shop. This statement also holds good if the analysis be limited to persons between 5 and 25 years of age, *i.e.*, to persons of the ages which are specially apt to suffer in outbreaks of fish typhoid. (See Report on outbreak of 1900, Ann. Rep. Med. Off. of Health, County of London). It is therefore clear that the fact that a history of fried fish eating from a particular shop (within a period which may be looked upon as covering the time of infection) is obtained in practically all the persons who may be regarded as making up the special prevalence, strongly points to fried fish as the source of the mischief, provided always, of course, that a number of persons sufficiently large is concerned, to eliminate mere chance coincidence. It is in point of fact exceedingly improbable that distribution of cases of typhoid fever among, say, fifty fried fish eaters, without involvement of any persons who had not partaken of fried fish, could be the result of mere chance, unless, of course, the fifty fried fish eaters had all been assembled together on a particular occasion upon which they all partook of fried fish and also of some infected article of food such as cockles or mussels. This much being premised, it remains to examine the results obtained in the Finsubry enquiry relating to control populations from another point of view.

In Finsbury the enquiries as to fried fish were supplemented and controlled by similar questions with reference to ice cream, and they were made in two control populations, one to the north, the other to the south, of the two shops coming under suspicion. The results also admit of being analysed according to the distance of the component populations from the particular centre in question. "Inner radius" refers to a population living in some portion of an area within 220 feet of a central point, taken midway between the ice cream shop and the fried fish shop, and situated some 30 yards from each shop. "Outer ring" refers to families living within the ring included between two circles of 220 feet and 440 feet radius described from the same centre. The two control population include merely sample families and not the entire population within the "inner radius" and the "outer ring." The results obtained are exhibited in the annexed table.

Result of enquiries made in two "control populations" in Finsbury, October, 1911.

FRIED FISH.

Age.	Inner Radius. Population			X's shop.			Others.			Non-eaters			Outer Ring. Population			X's shop.			Others.			Non-eaters.		
	M	F	P	M	F	P	M	F	P	M	F	P	M	F	P	M	F	P	M	F	P	M	F	P
0— ...	2	9	11	—	8	8	—	1	1	2	1	3	43	31	74	21	15	36	8	2	10	18	15	33
5— ...	9	6	15	7	4	11	1	2	3	2	2	4	52	51	103	30	28	58	1	11	12	22	18	40
10— ...	9	—	9	5	—	5	—	—	—	4	—	4	41	49	90	24	32	56	8	5	13	14	13	27
15— ...	2	8	10	2	7	9	—	—	—	—	1	1	28	47	75	16	26	42	6	8	14	9	15	24
20— ...	9	7	16	7	5	12	—	—	—	2	2	4	23	32	55	7	13	20	5	8	13	11	11	22
25— ...	14	18	32	12	16	28	—	1	1	2	2	4	58	60	118	29	41	70	12	8	20	21	17	38
35— ...	7	9	16	7	8	15	1	—	1	—	1	1	50	64	114	24	27	51	7	7	14	21	31	52
45— ...	8	10	18	3	4	7	—	—	—	5	6	11	40	29	69	13	13	26	4	4	8	25	13	38
55 — ...	1	9	10	—	3	3	—	—	—	1	6	7	19	26	45	5	8	13	6	5	11	8	14	22
65— ...	4	7	11	2	1	3	—	—	—	2	6	8	10	13	23	4	4	8	—	—	—	6	9	15
75 + ...	—	—	—	—	—	—	—	—	—	—	—	—	1	2	3	—	—	—	—	—	—	81	2	3
All ages	65	83	148	45	56	101	2	4	6	20	27	47	365	404	769	173	207	380	57	58	115	156	158	314
0–5 ...	2	9	11	—	8	8	—	1	1	2	1	3	43	31	74	21	15	36	8	2	10	18	15	33
5–15 ...	18	6	24	12	4	16	1	2	3	6	2	8	93	100	193	54	62	114	9	16	25	36	31	67
15–55 ...	40	52	92	31	40	71	1	1	2	9	12	21	199	232	431	89	120	209	34	35	69	87	87	174
55 + ...	5	16	21	2	4	6	—	—	—	3	12	15	30	41	71	9	12	21	6	5	11	15	25	40

ICE CREAM.

Age.	Inner Radius. Population.			Y's shop			Others.			Non-eaters.			Outer Ring. Population.			Y's shop.			Others.			Non-eaters.		
0— ...	2	9	11	—	2	2	—	—	—	2	7	9	41	33	74	—	—	—	9	3	12	33	30	63
5— ...	9	6	15	3	3	6	1	1	2	5	2	7	51	47	98	1	2	3	13	8	21	38	37	75
10— ...	8	—	8	4	—	4	2	—	2	2	—	2	40	48	88	1	2	3	10	12	22	29	34	63
15— ...	3	8	11	—	6	6	—	1	1	3	1	4	25	44	69	2	—	2	5	8	13	18	36	54
20— ...	9	7	16	4	1	5	—	2	2	5	4	9	23	33	56	—	—	—	1	5	6	22	28	50
25— ...	13	19	32	1	2	3	1	1	2	11	16	27	57	59	116	—	1	1	6	5	11	52	54	106
35— ...	7	9	16	1	—	1	—	1	1	6	8	14	49	65	114	—	—	—	5	8	13	44	57	101
45— ...	8	9	17	—	1	1	—	—	—	8	8	16	41	30	71	—	—	—	3	3	6	38	28	66
55— ...	1	9	10	—	—	—	—	—	—	1	9	10	18	25	43	—	1	1	1	1	2	17	23	40
65— ...	4	7	11	—	—	—	—	—	—	4	7	11	9	15	24	—	—	—	—	—	—	9	15	24
75 + ...	—	—	—	—	—	—	—	—	—	—	—	—	1	3	4	—	—	—	—	—	—	1	3	4
All ages	64	83	147	13	15	28	4	6	10	47	62	109	355	402	757	4	6	10	53	53	106	301	345	646
0–5 ...	2	9	11	—	2	2	—	—	—	2	7	9	41	33	74	—	—	—	9	3	12	33	30	63
5–15 ...	17	6	23	7	3	10	3	1	4	7	2	9	91	95	186	2	4	6	23	20	43	67	71	138
15–55 ...	40	52	92	6	10	16	1	5	6	33	37	70	195	231	426	2	1	3	20	29	49	174	203	377
55 + ...	5	16	21	—	—	—	—	—	—	5	16	21	28	43	71	—	1	1	1	1	2	27	41	68

N.B.—In some cases persons returned as fish eaters or ice cream eaters have purchased not only at X's shop or Y's shop, but also elsewhere. These persons are necessarily included both under the heading "X's shop" (or "Y's shop") and under "Others," and consequently some of the total numbers of eaters and non-eaters shown in the above table exceed the total population. The rejection, moreover, of a few indefinite returns causes slight differences in the total populations shown in the two tables.

An important inference may be drawn from the figures as regards the areas supplied by the fried fish shop and ice cream shop respectively. The proportion of eaters of fried fish from the suspected shop, in the families questioned, of course diminishes on receding from the shop (from 68 per cent. in the "inner radius" to 49 per cent. in the "outer ring"). The proportion of ice cream eaters from the suspected shop is much smaller to begin with, and diminishes far more rapidly than this (from 19 per cent. in the "inner radius" to 1 per cent. in the "outer ring,"). It is quite clear, in fact, that the area from which the suspected ice cream vendor drew his customers is a much smaller one than the area from which the fried fish vendor drew his customers.

From these figures it clearly follows that an ice cream hypothesis (apart from any examination into the number of ice cream eaters among the sufferers from typhoid fever) is *prima facie* inadequate as an explanation of the outbreak; for nearly three-fourths of the ice cream vendor's customers were from the "inner radius," and yet more than half the sufferers were in the "outer ring."

Further study of the table shows that in the "inner radius" only six fried fish eaters were found who obtained fried fish from a source other than the suspected shop, all of whom, however, also purchased from X's shop, but in the "outer ring" there were numerous fried fish eaters obtaining fish from other sources than the suspected shop. A difficulty, however, with regard to the fried fish hypothesis here presents itself. If the control populations be divided into those to the north and those to the south of the centre, it transpires that nearly half the former give a history of purchasing fried fish from the suspected shop, and yet the number of cases of typhoid occurring in this population is quite small, for the brunt of the epidemic fell upon the population south and east of the centre. It was found later, however, that this comparative freedom from attack of the population north of the centre finds explanation when consideration is limited to the early evening purchasers (see p. 88). For, when the middle day and later evening purchasers are excluded, the percentage of customers among the northern population to total customers of the suspected vendor becomes quite low—in fact is less than 2 per cent.

A further point of considerable importance may now be mentioned. If a fried fish hypothesis be, for the purpose of argument, accepted, it is possible to predict (from the figures given in the Table) the number of sufferers from typhoid fever who would probably be found to eat ice-cream.

In the "inner radius" the ice cream eaters supplied by a particular vendor, at ages 5–25, are 42 per cent. of the whole number of persons. It might be expected, therefore, that out of the total number of sufferers in the inner radius, about half would be Y's customers; in fact 14 out of 25, *i.e.*, 56 per cent. were found to purchase ice cream from him. On limiting the enquiry to a sample of the "outer ring" population lying to the south of the shop, there were at ages 5–25 only 6 per cent. of Y's customers, but in certain portions of the "outer ring" close to the "inner radius" the percentages rises higher, say, to from 15 to 25 per cent. Hence, out of the total number of sufferers in the "outer ring," less than a quarter should be Y's customers; in fact, there were only 6 or 7 out of 26, *i.e.*, about 25 per cent. This analysis demonstrates, therefore, the inadequacy of an ice cream hypothesis on the one hand, and on the other the adequacy of a fried fish hypothesis to explain the distribution of ice cream eaters among the sufferers.

Having now disposed of the ice cream hypothesis, it becomes necessary to examine how far a fried fish hypothesis explains the peculiar topographical distribution, age distribution and distribution of attacks among families and in single sufferers, observed in the Finsbury outbreak.

Study of the *topographical distribution* of the cases shows, as has already been mentioned, certain

marked peculiarities; thus, if the area surrounding the fried fish shop be divided into four quadrants—north, south, east and west—the cases of typhoid fever will be seen to be almost entirely confined to the eastern and southern quadrants. There was, in fact, only one case in the northern quadrant and no case at all in the western quadrant. The escape of the western quadrant is readily explained when it is noted that that quadrant has no ordinary resident population, being entirely covered by Post Office buildings. A large staff occupies these buildings, but the men are catered for upon the premises, and they do not as a rule purchase food at shops in the area. The escape of the northern quadrant with only one case cannot, however, be similarly explained. It hence becomes clear that, if fish sold at the fried fish shop were the cause of the special Finsbury prevalence, there must have been circumstances associated with the distribution of the fish which caused differentiation as regards incidence of typhoid fever upon the areas surrounding the shop. It was, of course, possible that only one particular batch of fish was at fault. Examination showed, moreover, that there were certain special features with regard to fish distribution, considered in relation to time and space, from the shop and these are clearly deserving of detailed study.

(*a*) At the dinner hour every day some scores of persons who do not reside in Finsbury purchase fish at the fried fish shop—the outbreak, on the other hand, was, with the few exceptions noted, confined to the near neighbourhood of the shop. If fish were at fault it was unlikely to be fish consumed in the middle of the day.

(*b*) The almost exclusive attack of sufferers at the ages included in the age group 5-25, points to limitation of the operation of the cause of the outbreak to persons at these ages, and question, therefore, arose as to whether at any time of day children and young adults constituted an exceptionally large percentage of the purchasers.

(*c*) The topographical distribution of the cases already referred to raises questions as to the possible existence of differentiating circumstances—for example, such as are associated with social status of the people living in the various streets and courts surrounding the fish shop. Purchasers of fish might be, so to speak, selected for attack by reason of their buying a special kind of fish, and paying a special price for it. In this outbreak, as has already been found to be the case in fish-borne outbreaks of typhoid fever occurring in 1900, 1903, 1908 and 1910, the history given by some of the sufferers clearly directed suspicion to plaice, and in a few instances mention was especially made of the fact that a ½d. of 1d. piece of his fish had been purchased, the sufferers giving such a history being as a rule young children.

It was clear, therefore, if the infected fish had been distributed on one particular occasion only, that the incidence of the resulting disease upon age, and upon localities enar the shop, would vary considerably according to the time when the fish was sold. Suspicion was in this connection naturally directed to the evening when frying first commenced, inasmuch as observation showed that at this time the ages of the persons leaving the shop, and returning to houses in the area, were not greatly different from the ages of the sufferers in the outbreak. Moreover, distribution of infected fish at this time might conceivably explain the topographical distribution of the cases, for in certain obvious respects the northern quadrant differed from the southern and eastern quadrants. It was decided, therefore, to have precise observation made of the customers visiting the fried fish shop in the early hours of the evening.

It may here be convenient to describe briefly the peculiarities of those portions of the area surrounding the fried fish shop which are occupied by a resident population. In doing this Mr. Charles Booth's scheme of classification of London populations will be used.*

The northern quadrant consists in part of houses fronting upon two main streets coloured for the most part pink or red on Mr. Booth's colour scheme, and in part of a much poorer side street (C, light blue) and a cul-de-sac (B, dark blue) opening out of the same, The eastern and southern quadrants each contain large blocks of artizans' dwellings (D, purple). They also contain houses fronting upon main streets (E, F, etc.), though not so large a proportion of the population lives in such houses as is the case in the northern quadrant.

The population living in houses fronting upon main streets (E, F, etc.) has almost entirely escaped attack. Leaving this better circumstanced population out of account, the eastern and southern quadrants contain large blocks of artisans' dwellings (D, purple); and certain streets and courts (B, and C, light blue and dark blue, or even black) cover the remaining portion of these quadrants, The persons in these two quadrants belonging to classes C and D have specially suffered from typhoid fever. Examination of the topographical distribution of the suffering population shows that if the cause producing typhoid fever in the area had been one which operated more especially upon persons of the classes C and D, then the distribution of cases in that area would necessarily have closely approximated to the distribution actually observed in this outbreak. On such an assumption the heavy incidence of the disease upon the eastern and southern quadrants at once finds explanation.

Before illustrating this in detail it is desirable, however, to allude to the question of *age-incidence*. The peculiar age-incidence in this outbreak has been already referred to. On Wednesday, 11th October, observation was kept upon all persons coming out of the fried fish shop between

* Mr. Booth's scheme of classification, beginning from below, included A, *black*—lowest class, vicious, semi-criminal; B, *dark blue*, very poor, casual, chronic want; C, *light blue*, poor, 18s. to 21s. a week for a moderate family; D, *purple*, mixed, some comfortable, others poor; and so upwards to E, F, G and H, *pink, red and yellow*, the more well-to-do populations. Previous experience in London has shown that fried fish outbreaks do not, on the one hand, as a rule implicate the pink, red and yellow streets, and on the other hand only slightly implicate the black and dark blue streets. It is the intermediate social class which especially suffers. Light blue and purple (C and D) dominate the areas implicated in fried fish outbreaks (see Annual Report, Medical Officer of Health, County of London, 1903).

6.30 p.m. and 8.30 p.m. Of the total number leaving the shop (279) about half returned, during the five or ten minutes during which they were watched, to houses within the area of the explosion; the large majority of these persons were under 20 years of age.* In fact, the age-distribution of the customers who were traced to houses within the area was practically identical with that of the sufferers from typhoid fever. The peculiar age-incidence observed in this outbreak, it may now be noted, very closely resembled that obtaining in the original fried fish outbreak of 1900, and in correspondence with this the ages of the persons who on leaving the Finsbury shop returned to houses in the area, in 1911, were practically identical with those of the population studied 11 years before in Southwark (Annual Report, Medical Officer of Health, 1900.)†

A precise test can now be made as to the sufficiency of an hypothesis that the cheaper portions of fried fish sold to the early evening customers on a particular evening in August were responsible for this outbreak. It may be safely assumed that the children and young adults would buy the cheaper portions of fish, and hence, if the destinations of the persons, say between 5 and 20 years of age, who left the shop between 6.30 and 8.30 p.m., and who were traced to their homes in the area, be plotted out upon a map, the distribution of these cases should correspond with that of the sufferers from typhoid fever. It will be seen on referring to the two maps that the correspondence is remarkably close; and the fact is even more important when the marked asymmetry of the distribution of the sufferers from typhoid fever and their exceptional age-distribution is borne in mind.

On the lower map certain houses to which a customer was traced are indicated, and further an "o" represents customers who can be assigned to a paticular area or street but whose precise home cannot be specified. Seventy customers in all were thus traced (see Diagram). On the corresponding upper map are shown the houses in which 56 sufferers from typhoid fever lived. Study of the two maps reveals the close similarity of the two distributions. The closeness of this correspondence may be further illustrated by dividing up the area (within the circle of 440 feet radius described around the chosen centre) into five areas with, roughly speaking, equal populations of some six or eight hundred persons each.

Areas.	Customers.		Sufferers.	
	Total.	Percentage.	Total.	Percentage.
I.	2	4	1	2
II.	6	12	7	12
III.	5	10	2	3
IV.	21	41	30	53
V.	17	33	17	30
	51	100	57	100

It will be seen that area IV. has over 40 per cent. of both customers and sufferers; area V. has approximately 30 per cent. in both categories; in area II. the percentage is 12 in each, and in areas I. and III. neither the customers nor the sufferers exceed 10 per cent. The chances against such correspondence being the result of mere coincidence must be very great.

These two lines of enquiry therefore, topographical distribution and age-distribution, considered separately and in conjunction, yield strong confirmatory evidence in favour of the fried fish hypothesis. The third line of enquiry has concern with the *distribution of attacks in families and among single sufferers*. An analysis of 52 cases shows that there were 29 sufferers who were the only members of their families attacked, there were eight families with 2 cases each, one family with 3, and one with 5. Of the 29 single sufferers all except one may have bought their fried fish independently of other members of the family to which they belonged. Six of the pairs of sufferers had bought fish conjointly but independently of any other members of their families. In the family with 5 sufferers, 4 had habitually eaten their fried fish together, the fifth had eaten fish from the same source, but not on the same occasion as the other 4. This last case was in all probability not a case of typhoid fever. The intervals of time between successive attacks in each house can be studied in the appended table. (See "Remarks" column as to the relationship of cases in family groups.) These intervals varied from a day or two to as long, in one instance, as twelve days. In striking contrast with multiple attacks in fried fish eating families stand the histories in cases 21 and 29 with regard to ice cream. Both sufferers were members of ice cream eating families and in each family only one member suffered.

It should be mentioned that coincidently with the Finsbury outbreak two groups of cases of typhoid fever occurred in other parts of London. Five cases belonged to St. Pancras and five to Lewisham. In each borough the sufferers had been supplied with fish from a particular shop, one shop being in St. Pancras and one in Lewisham. The attempt was made to trace the source of supply of the fish to the Finsbury, St. Pancras and Lewisham shops, but no community of supply was established. Judging from the dates of onset of illness in the sufferers the indications point in all three boroughs

* Persons who did not return to houses in the area include a few who went into public houses, some dozen who went into a picture palace, upwards of a hundred who walked away from the area (whether to return to it or not cannot be stated) a cabman who drove away, and one or two persons who mounted upon tramcars. The persons who did not immediately return to houses within the area included a much larger proportion of adults and correspondingly fewer children than did the persons who were seen to return to houses within the area.

† The age distribution of the Finsbury customers, as a whole, did not correspond quite so closely with that of the Southwark customers. The Finsbury shop clearly supplied a number of persons who lived at some distance from it, and these persons were as a rule older than were the customers who returned to houses in the area.

to the delivery in London of a consignment of infected fish on Thursday, August 17th, or Friday, August 18th. The deliveries of fish in London on these dates were in some instances from unusual sources, owing to the dislocation of traffic caused by the strike.

This outbreak adds yet another instance to the now growing list of outbreaks in which enquiry failed to show any other explanation than the consumption of fried fish. The circumstances of the outbreak afford further illustration of the peculiar features which have been described as typical of such outbreaks. There is the attack of a particular social class, the peculiar age-incidence, the peculiar distribution of the cases in family groups, the same frequency of the separate purchase of fish by the sufferer himself or herself, in cases in which only one attack occurred in a house. But the present outbreak is very instructive inasmuch as it was at first attributed to ice cream, and *prima facie*, there was something to be said for an ice cream hypothesis. Analysis of the facts shows, however, that at least half the sufferers in the outbreak had not eaten the suspected ice cream, and eight of the ten persons over twenty years of age attacked had not partaken of this ice cream. Moreover, study of the topographical distribution of the cases negatives an ice cream hypothesis.

The history of typhoid fever in London during the last twenty years shows that in numerous instances explosive localised outbreaks of the disease have occurred and that suspicion has fallen upon a food supply. In some instances question has been raised as to shell fish, in some as to ice cream, in some as to watercress, and in some as to fried fish. It is noteworthy that difficulty has arisen in some outbreaks as between cockles and fried fish, watercress and fried fish, mussels and fried fish and ice cream and fried fish. The need for careful analysis of the facts in each instance is apparent, and the present outbreak is deserving of study inasmuch as it strikingly illustrates difficulties which may be encountered in discriminating between one and another suspected food supply.

CHAPTER XXXIV.

Public Health Reports (continued).

REPORT OF THE EDUCATION COMMITTEE SUBMITTING THE ANNUAL REPORT OF THE MEDICAL OFFICER (EDUCATION) (DR. J. KERR) FOR THE YEAR 1911.

We present the report of the medical officer (Education) for the year ended 31st December, 1911. In presenting this report it should be pointed out that the Council on 25th July, 1911 (p. 329), decided to place the control of educational medical work under the county medical officer of health, and that Dr. Hamer, the officer newly appointed by the Council, entered upon his duties on 1st January, 1912. It will be seen that the present report relates to the year ended 31st December, 1911, and, for the views expressed in it, Dr. Kerr, who was then medical officer (Education), is solely responsible.

The report shows that during the year the doctors inspected 204,000 children at 9,785 sessions and that 62 per cent. of the parents were present at the time of inspection. More than one half of the children showed defects when examined in detail, and 38 per cent. had advice cards given. One third of the children suffered from enlarged tonsils and adenoids, and four-fifths from caries of the teeth. Cases of ringworm under observation numbered from two to three thousand throughout the year.

The two open-air schools at Birley House and Shrewsbury House were open during the year. The tuberculosis school at Kensal House has now been working since April, 1911, and playground classes have been considerably developed.

Nine cleansing stations for verminous children were at work, and the school nurses inspected. 251,592 children, of whom 14,893 were reported verminous, and 9,917 had notices served under the Children Act. Of these, 5,209 were ultimately cleansed at the Council's stations, and the parents of 285 prosecuted.

During the year there was an exceptional prevalence of measles, but the report points out that the measles death rate of 1911 was exceeded by that of every alternate year of the nineties.

Candidates taking up permanent appointments in the school service, and candidates to whom scholarships have been awarded are medically examined in the Public Health Department. The report shows that the number of candidates submitting themselves for a first examination during the year was 5,975.

Reference is made in the report to such subjects as (i.) enquiry into the means of differentiating the mentally defective; (ii.) the extension of special means of education for myopes, the semi-blind and the hard-of-hearing; (iii.) further provision for epileptics; (iv.) stammering; (v.) seating of classes, floor space, ventilation and heating of schools. Statistics of the work done are given in the appendixes.

REPORT OF THE MEDICAL OFFICER (EDUCATION) FOR THE YEAR 1911.

With this report the series for which I have been responsible during the past ten years is concluded. An attempt has been made to lay the foundations of school hygiene, as a study of national interest and value, on the basis of problems worked out on scientific lines by the staff of the department.

Administrative rearrangements under the Council at the end of 1911, transfers from the education officer to the medical department all arrangements for medical treatment. At the same time the educational medical work has been placed under the control of the medical officer of health, a change in organisation which can be justified if it is regarded as a first step to the co-ordination, under the control of one authority, of the sanitary service of the Metropolis, now carried out under a score and a half of different bodies.

The knowledge of school hygiene acquired is far ahead of practice, and with the exception of the opening of the Tuberculosis School at Kensal House there is no distinctly new step to record. Much, however, is slowly emerging, for with the demonstration, which is here practically completed, of the minor part played by the school under present-day conditions in the dissemination of scarlatina and diphtheria, and probably also of measles, the importance of the house becomes apparent. This also is apparent in the conditions of adenoids, anæmia and debility, largely due to the want of playing spaces, and to stuffy homes.

During the past decennium the London Education Authority has expended over £30,000 annually for the education of children who have died from tubercle before attaining adult working life.

Small groups of children still remain for whom no Authority seems statutorily responsible. The non-pauper imbecile, the morally uncontrollable, and the epileptic child are yet generally unprovided for, although legislation is in prospect. Private schools occasionally seem hiding places in which children are concealed from the protection which a public authority would exert over them.

A suggestion put forward some years ago that the statutory responsibility for all children should rest with the Education Authority, involves a further consideration not yet mentioned. The conditions of the public elementary schools are not wholly satisfactory from the health or social point of view; they will soon become good enough if every child in the country is compelled to spend some five or six years of its life in attendance at a State school. The ultimate benefit of such a requirement in the development of national solidarity and citizenship, and in the removal of class distinctions need not be dwelt upon here, but the benefit in national health and improved schools, and the desire for the betterment of education can scarcely be overstated. The opposition which such a proposition, as a matter of practical politics, would be likely to receive on sanitary and educational grounds is alone a proof of its necessity.

School hygiene has already passed beyond the school, in the wider outlook derived from study of the children there. It has become a matter of public health and national interest. Room to live, increased space for play, food and opportunities for cleanliness are the evident wants. Already public health considerations suggest that a statutory limit should be assigned to the number of people who may live on a certain area of land, and further that for each defined area buildings should only be allowed to cover a small proportion of the surface.

These larger considerations will have to be ever in mind in all school health problems.

Medical inspection.

The administration of medical inspection is set out in the tables of analyses printed in Appendixes II. to V. to this Report.

The full results of the medical inspection of children in London in 1911 gave over one-half of those examined as presenting defects, of which about two-thirds were recommended for treatment. This is neglecting dental defects, which are almost universal. As the diseases or defects are separately classified, the defects and children are not strictly comparable, but the proportion who are doubly notified is not large, so that the differences in the various age groups are scarcely significant. A summary from the tables shows the following numbers :—

Age Groups.	Departments.	Numbers examined.	Defects found.	Percentages.
Leavers— 12–13	Boys	36,954	18,034	48.8
	Girls	35,565	17,727	49.8 } 49.3
8-9	Boys	36,499	18,889	51.8
	Girls	34,964	17,732	50.7 } 51.2
Specials (any ages) presented by teachers, etc.	Boys	5,840	5,538	94.8
	Girls	7,260	7,394	101.8 } 98.7
Entrants	Infants ...	40,880	27,713	67.8

In the general summary of medical administration in the Appendix, 54 per cent. of the children had defects, and 38 per cent. had medical advice cards issued. Obviously the medical inspection now carried on, on about one-third of the children annually is not sufficient in the extent of the children examined, or else the results must be considerably discounted.

The majority of individuals if examined carefully enough, will be found to present variations from normal which may be recorded as defects, but only in a minority of these cases is the defect material.

The fixing of standards is of extreme difficulty, and when first it was thought necessary to inform parents that their children were in any way defective, the amount of defect was stated to be such that

" unless remedied it is likely to materially interfere with progress in school or future success in life." The majority of cases now recorded as defects could only very doubtfully be brought under this definition.

In the enquiries conducted some years ago it was considered as a result of experience that too detailed records of the findings of medical inspection tended to exaggerate the trivial. As a matter of economy in time and money these unimportant defects did not seem worth recording for all children. At the same time, as a scientific enquiry, no detail can be too small to record for some, but not necessarily all, children. As was pointed out in a previous report, the two purposes are quite distinct, scientific enquiry to gain accurate knowledge and general medical inspection for the detection and remedying of defects. Statistical analysis showed that all methods of inspection, whilst differing enormously in cost, gave practically identical results for the defects which really mattered, whilst for trivial things the more detailed the record the greater the number of defects noted.

So far as the doctors themselves are concerned, serious defects are about equally noted, but the slighter defects show increasingly the effect of personal equation. The differences of standard taken as to what requires treatment shows up too in the numbers referred. The following table shows the effect of personal equation in twenty-three fairly comparable schools taken at random as examined by five different doctors on examination in regard to these points.

Examining doctor.	Percentage of referred for treatment.	Percentage of throat defects.	Percentage of ear defects.
A	41	23	3
B	41	25	1
C	47	26	8
D	58	26	7
E	59	33	2
Average ...	49	29	4

Here the variation in numbers of children referred for treatment lies between 40 and 60 per cent. As the highest number occurred in the district which, if anything, was the best socially, the variation may be largely ascribed to personal equation in the examiner.

This small enquiry should be extended, as it may mean, as has already been suggested, that a series of definitions will have to be laid down for the degree of each sign or symptom to be registered under each heading, or the variability of the records taken later or elsewhere will make comparisons fallacious.

Re-inspection.

During 1911 the only share in medical treatment taken by the school doctors was in re-inspecting cases which they had recommended for treatment.

The results of the re-inspection is given for the several electoral divisions in the Appendix VII. From this it is seen that 63,752 children were reinspected. The work of taking out the figures from the cards was so laborious that two representative schools for each division were taken, and analysis of the details made. These 116 schools with 120,534 children on the rolls are probably sufficient to give nearly average results.

Reinspection returns from two schools in each electoral division (116 schools, with 120,534 on roll.

	Numbers.	Percentages.
Defects reinspected	7,639	100·0
Defects referred for treatment under Council's schemes	4,842	63·4
Not under Council's schemes	1,074	14·1
Dental defects	1,723	22·6
Defects in children not traced	753	9·9
Defects not treated—		
Still requiring treatment	3,422	44·8
Not requiring treatment	218	2·9
Defects treated—		
Privately	578	7·6
Otherwise	2,668	34·9
Results of treatment—		
Satisfactory	1,979	25·9
Unsatisfactory	434	5·7
Still under treatment	833	10·9

From the total 63,752 children re-inspected, there would be proportionately about 74,671 defect requiring treatment. There would be 31,730 who had received treatment, of whom 19,345 would have been satisfactorily treated, 4,242 would have been unsatisfactorily treated, and 8,143 would be still undergoing treatment, or otherwise undecided. These results may be taken as on the whole satisfactory for the present.

Training Colleges, Secondary and Trade Schools.

Since 1908, medical inspection has been carried out in all the Council's secondary schools, training colleges, trade and technical schools. It is just as important in these institutions as in the elementary schools, and from the economical point of view, probably more important. Each student is examined once a year, and each institution visited once in six weeks, so that the doctor can be consulted about pupils presenting any symptoms likely to effect their health or work. Every student has a medical record card showing at a glance the condition, so that the students are continuously under observation and are not permitted to continue at the institution, if through illness or other causes they become unfit. Appendix VIII. shows the defects noted.

A comparison of the lists of defects found in 1910 and 1911 shows a considerable improvement, the physique of many children previously noted as unsatisfactory having materially altered. The head masters and mistresses exercise vigilance and show keenness in obtaining prompt treatment of any ailments noted at the medical examinations, and the parents have responded to their efforts. Medical inspection is now looked on as part of the school routine, and opposition or dislike is not experienced in any quarter. The general physique of the students at the Islington College is superior to that of the students at the London Day Training College, probably on account of their less strenuous life.

Dr. Riviere points out that while many of the boys in the trade schools improve remarkably in physique under the combination of physical and mental training a few fail to benefit. This may be due to the lack of sufficient food, as many boys at these institutes appear to come from very poor homes. Good nutrition is essential if the best value is to be obtained from the scholarship. A boy of first-class ability may learn so easily as to get on in spite of a third-class physique. A boy of first-class physique will not be harmed by trying to push on his third-class wits, but a boy of rather poor physique and average intellect suffers from the strain, as do those who get really insufficient comforts and nourishment. This could be remedied by giving scholarships for a combination of mental and physical qualities, and not to children who are in the second grade in both respects. Such procedure would involve a medical examination of more candidates than at present when the examination is confined to those who have been awarded scholarships as a result of their mental work.

Non-maintained Secondary Schools.

On the 31st October, 1910, it was decided that the Council's scholars in attendance at non-maintained secondary schools, and all scholars attending aided trade and domestic economy schools, at which a system of medical inspection had not been adopted, should be periodically examined by the medical officer. About 3,500 scholars are affected by this resolution. Of the 38 aided secondary and other schools concerned, the Governors of 15 preferred that the scholars should be examined at the head office, on the grounds either of lack of accommodation or the undesirableness of differentiating at the schools between the Council and other scholars.

Medical treatment.

In the first medical report to the School Board for London ten years ago it was stated that—

Discharging ears.

> "The selection of children whose efficiency in school is damaged by dirt, parasites, chronic diseases of the ears or impaired visual acuity is just beginning. The treatment of all these matters is tedious, has to be thorough, but is a routine of the most monotonous and uninteresting description. The burden at present falls on the hospitals, and they have not yet adapted themselves to it. Whether even with time they can ever efficiently discharge this public duty is at least doubtful."

Experience in the case of chronic discharging ears has since then shown that it is hopeless to expect sufficient service from the hospitals. When on the passing of the Administrative Provisions Act in 1907 the management of the Queen's Jubilee Nurses proposed that the Council should subsidise them to act in connection with the schools, the aid was declined. Miss Susan Lawrence suggested that the institution might be useful in connection with discharging ears, for which nothing was being done. The difference in the cost of education in deaf schools as compared with ordinary schools would alone make treatment of aural cases a justifiable economy. In the case of children presenting chronic middle ear suppuration, not only is the deafness of account but the liability of the disease to invasion of the cranial cavity, and to end by death from meningitis, brain abscess or blood poisoning is considerable. Simple cleanliness if constantly maintained aids recovery, and by such treatment as an adjunct to the surgeon's efforts, a considerable proportion of recoveries are obtainable without the risk of serious and costly operation. If after several weeks of honest and maintained effort recovery is not obtained, then additional steps should be taken. Probably the child is still suffering from some throat or nose condition, adenoids or hypertrophic rhinitis or deep recesses of the ear are involved which require surgical relief, without which recovery is almost hopeless. Other cases are seen in such a condition of anæmia, ill-nutrition or debility that a residence for a time in a convalescent school in the country may be needed to stimulate the natural effort to recovery. The important point is that the nurse's treatment alone is often insufficient, that efficient syringing twice or thrice daily is but a first selective step, and that all cases which do not respond should be followed up to recovery. Without this end being reached, any scheme is incomplete and fails to accomplish its object.

An arrangement already reported on was carried out by Jubilee nurses in Shoreditch and Bethnal Green during 1909–10. The scheme here, owing to the absence of local hospitals or dispensaries, was not considered to have had a fair chance, and after an experimental trial of six months was abandoned as unsatisfactory. Its result was that of 405 children selected for treatment, the nurses treated 133, paying 5,014 visits to the homes. In 31 cases the discharge ceased and the ears remained dry, but in 61 other cases stimulated by the scheme, but not handled by the nurses, recovery was obtained from other sources. The cost of each case healed by the nurses' attention averaged £2 18s., but if the other cases are included as a result of the scheme, the average cost to the Council of each case recovered was a trifle under £1. As a financial transaction the Shoreditch scheme was therefore good value, but as an efficient means of dealing with discharging ears among a mass of school children it was a failure in that it left the majority of the cases no better than it found them. The cause of failure was chiefly want of medical prescription without which the nurses would not act, further, there were difficulties with parents, who refused to trouble about the nurses, and it was doubtful whether the nurses' work was sufficiently skilfully done.

On the termination of this experiment, another district of London was selected in Paddington, where the existence of St. Mary's Hospital and the Paddington Green Children's Hospital made conditions very favourable. Lists of children with discharging ears were compiled by the doctors and nurses in seventeen schools. The parents were notified that careful nursing is often efficacious, and a nurse called at the home and explained the necessity for treatment and how it could be obtained by the parent getting a prescription. Three weeks' daily treatment was given by the nurse in accordance with the medical prescription, and at the expiry of that time the nurse's record card was reviewed by the doctor. Every case was followed as far as possible. The majority were medically examined and prescribed for without cost to the Council. When inspected later by the Council's officials, discharge had recurred in certain cases; they were, therefore, returned for treatment as new cases. During the year, including the period in the early autumn when there was some interruption, the work may be summarised as having 245 cases put forward for treatment, of which 167 cases were handled by the nurses, 88 were returned as cured or relieved to the extent of not requiring further treatment, and 38 remained on hand. There were 8,088 visits paid to homes, of which 284 were preliminary. The cost of the nursing service to the Council was £90, so that each visit costs 2·67 pence. There were also 75 hospital vouchers used by the cases, so that this brings the cost up to £97 10s. Neglecting the 38 cases on hand and counting all the 88 as permanent cures this means an average cost per case cured of £1 2s. 2d., which is extremely moderate, and good value for the money spent. They represent about one-third of the number of cases sent forward, probably a better result than has ever been obtained from any systematic attempt to cure discharging ears among children on a considerable scale.

Tonsils and adenoids.

The children who suffer from enlarged tonsils and adenoids form the bulk of cases requiring treatment. No teacher should think herself fit to have charge of an elementary school class who cannot give a just opinion in the majority of cases as to whether a child is suffering seriously in this respect. Certain powers of destroying or digesting hurtful foreign elements, whether living or dead, and possessed by nearly all the body cells, were described in previous reports. In the more specialised structures these powers are in comparative abeyance, but are prominent in some leucocytes or white corpuscles, and especially those found in lymphatic structures. The defensive powers of these lymphatic cells may be seriously lowered by poisons such as alcohol, or the chemical products of fatigue they may also be raised by certain chemical vaccines now prepared. These powers should be vigorous and active in ordinary good health. The normal tissues about the surfaces of the nasal and mouth cavities are chiefly exposed to noxious foreign elements, of which perhaps the most dangerous are living organisms. In individuals of robust health the leucocytes have such powers that conditions of chronic inflammation rarely show, but in others of less vigorous constitution, or debilitated by depressing surroundings, or such causes as want of food or fatigue, chronic inflammatory conditions soon show themselves.

The tonsils on each side of the fauces are the most easily seen of such lymphatic masses. All degrees of enlargement may be seen. It may be such that from mere mechanical obstruction correct articulation is prevented (this is noticed sometimes even in pupil teachers), or the enlargement may cause increased efforts at breathing resulting in mouth breathing. The accumulation of decomposing secretions on the surface and in the crypts of the tonsils often lead to the production of offensive and poisonous bacterial material. The surface of the tonsil itself appears as a weak spot for the entrance of various organisms, being a main portal for instance for the entry of rheumatic, scarlatinal, diphtheritic, or other dangerous blood infections. The enlarged tonsils are usually indicators of further changes. The lymphatic masses about the upper part of the naso pharynx, and the mucous tissues about the posterior ends of the turbinate bones especially, are liable to become greatly hypertrophied and sometimes cause much trouble from their chronic irritation whether by mechanical substances in the air or more commonly micro-organisms, from want of proper drainage of the surfaces, from actual deformities in development of the upper jaw, or from want of development, due to the habit of mouth-breathing having become established at an early age. Mere catarrh started probably by the baby's comforter is apt to set up mouth breathing. Catarrhal attacks may result in infection of the lymphatic tissues and in children of low vitality the infection sets up chronic inflammation. Thickening of the soft palate leads to impaired tones in the nasal sounds. Discharges sometimes start pharyngitis, which gives the child an excoriated upper lip and the appearance of having nasal trouble. A remote result not

uncommon is persistent conjunctival troubles and blepharitis, which if a cure is to be hoped for requires treatment at a throat rather than an eye hospital. The associated conditions of throat and nose are a common cause of recurrent headaches in young children.

For some reason apart from the organs of the special senses the existence of hypertrophied lymphatic structures in the naso-pharyngeal region, adenoids especially, is associated with a peculiar mental condition which has been termed aprosexia. Such children are often submitted for examination as suitable for special schools, and the condition has been classed as spurious mental defect. Apperception is greatly lowered and the attention cannot be maintained. The nutrition of the frontal areas of the brain seems affected, whether by accumulation of fatigue products from interference with lymphatic drainage, or in other ways, cannot be settled. The condition is remarkable for variability. Quite sharp and intelligent at times, they are as often dreamy, absent-minded and wool-gathering. The variations depend on the condition of the nose and throat, and are more obvious when the structures there are swollen from catarrh, or from humidity of the weather. These children are always mouth breathers, and often have other sequelæ of the adenoids from which they suffer, not the least of which is said to be a character in later life timid, fearful and doubting. The most important immediate change is, however, a thickening of the tissues starting in the structures about the Eustachian tubes, leading to the middle ears, often causing secondary aural changes and leading to very intractable deafness in later life. In slighter cases recovery appears to take place, and they may leave school apparently well, whilst the slow changes are leading to ultimate inefficiency from hardness of hearing. Dr. Fairfield has drawn attention to the considerable number, over 5 per cent., of the mothers attending medical inspection who present hardness of hearing due to aural suppuration or old adenoids. Sometimes during childhood the grosser form of suppuration of the ears takes place and this is more likely to happen in those scarlatinal or measles cases who suffer from adenoids than in others. In 1,000 East-End children Miss Ivens found aural suppuration existing in 15 per cent. of the mouth-breathers, but only in 2·8 per cent. of the others. Mouth-breathers are more disposed to all the dangers of suppuration of the ears, meningitis, or blood poisoning than other children, and many lives are cut short from neglect of this condition. Even in the inspection of children sitting in their places the majority of mouth-breathers are at once apparent, and it is also noticeable how educationally they gravitate to the lower classes. It is difficult to be sure whether by mere mechanical obstruction a vicious circle is set up, but every surgeon with experience knows how the child with open mouth, frequently nasal discharge, and generally unintelligent appearance is often wonderfully altered by operative treatment.

The breathing drills of the infant school should require the child to breathe both in and out with the mouth shut, and would have good effect in calling the teacher's attention to the condition when existing. Any teacher who notices the conditions should warn the parents. If in addition the child habitually snores regularly at night, it may be confidently asserted that such child requires operation to clear the naso-pharynx from obstructions. Up to 10 per cent. of children at admission will be found to be mouth-breathers, and during school ages the proportions remain comparatively steady.

In the Islington schools about one-third of the children were noted by Mr. Cecil Rowntree as having enlarged tonsils or adenoids, and in one-third of these (10 per cent. of all) to a pathological extent, whilst about one-third of this last number (about 3 per cent. of all) urgently required surgical treatment. The proportions, however, vary at different seasons and in different districts. Miss Ivens, found in the East-End among the aliens that 34 per cent. of those who heard well had open mouths, whilst of those who presented discharging ears 78 per cent. were mouth-breathers. In a careful examination of 1,500 children in Chelsea schools Mr. Macleod Yearsley gave 44 per cent. as having enlarged tonsils or adenoids and 7 per cent. as requiring surgical treatment. It has hitherto been taken that other conditions, such as dental caries would be materially caused by or contribute to this lymphatic hypertrophy, but enquiries carried out by Dr. Norman show that, at different ages in both boys and girls, dental caries is about equal in amount in both mouth and nasal breathers.

In many cases, even after operation, mouth breathing persists unless the child is taught correct breathing, and in the mentally defective about 50 per cent. are mouth-breathers, the habit having been set up by some infantile catarrh and allowed to persist. Some medical authorities have suggested that mere breathing exercises alone will act as a remedial means for the relief of the symptoms of nasal obstruction arising in connection with adenoids, and by this means one large hospital is reputed to keep its operative list of child out-patients down. It would only be in the slightest cases of mouth-breathing that it would ever be practicable to get material benefit by means only of breathing exercises. Dr. A. C. Williams selected boys whose throats were not normal, but in whom the symptoms scarcely required surgical treatment. They included cases without other symptoms but with enlarged tonsils; or which showed a tendency to mouth-breathing; cases which might mean slight adenoid growth where there was a history of snoring, some nasal discharge, or granules noticeable in the pharynx. Several of these had previously had operations for adenoids. Some of these cases were treated by the ordinary school breathing exercises. Some others were always put in the front row and the teachers kept them under special observation. The mothers were also asked to see that the children went through ten minutes' breathing exercise night or morning. Watched through six to twelve months or more, improvement was not always easy to determine, but as the conditions were carefully noted before the procedure was determined the estimate as to improvement is quite unbiassed. In a few cases "not improved" the conditions were distinctly worse.

Breathing exercises.	Slightly enlarged tonsils.		Adenoids ?		Mouth breathing.	
	Improved.	Not improved.	Improved.	Not improved.	Improved.	Not improved.
Ordinary school routine	5	6	—	12	4	12
Special attention by teachers ..	4	2	5	2	4	—

In slighter cases of partial mouth-breathing there is evidently a tendency to recovery which may be aided by reasonable care and breathing exercises. The advice which is so often heard as having been given by the family doctor, that the child would "grow out of it" has therefore an element of truth, provided the child escapes without more serious damage or without becoming the victim of a slowly progressing hardness of hearing in later life. In Dr. Williams' observations of those children who had handkerchiefs, three times as many showed improvement when compared with those who were without handkerchiefs. In many schools the proportion with handkerchiefs is as low as 10 per cent., but this may be raised to 70 per cent. by teachers who establish "handkerchief drill."

Dr. Wells has taken a series of children whose ages vary from 3 to 13 years of age, all scholars of Council schools, on whom he operated for tonsils and adenoids at the St. George's Dispensary, Blackfriars. The first 50 were operated on between 18 and 24 months before the last note taken and the second 50 between 12 and 18 months previously. In eliciting the symptoms before operation the parents were always asked to describe these as far as possible so as to avoid any suggestions being made as to the existence of particular symptoms. Most of those recorded were, therefore, actually noticed by the parents and should be noticeable to an observant person. Certain other symptoms noticed at the time, apart from the throat, are also recorded. In several cases where the nasal septum was deflected, or the mucous surfaces of the turbinate bones either hypertrophied or atrophied, the conditions were found unchanged later. In one case, a girl of 13 had suffered nocturnal incontinence regularly till operation, after which it had only occurred once in twelve months. The chronic gastro-intestinal catarrh, called mucous disease by Dr. Eustace Smith, which is common in these cases was present in twelve cases, but had disappeared when examined later. The symptoms noted by Dr. Wells before the operation and remotely after recovery from it, were as follows :—

100 "adenoid" cases and symptoms noted.	First series of 50 cases.		Second series of 50 cases.		Percentage presenting symptoms.	
	Before operation.	A year and a half later	Before operation.	One year later.	Before operation.	At least a year later.
Subjective.						
Snoring	43	1	39	3	82	4
Mouth breathing	45	3	45	2	90	5
Frequent colds	29	3	34	5	63	8
Deafness	9	1	12	1	21	2
Noises in ears	3	—	—	—	3	—
Aural discharge	6	—	18	5	24	5
Nasal discharge	9	1	14	—	23	1
Speech defect	4	2	2	—	6	2
Frequent sore throats	24	1	16	—	40	1
Cough	5	1	4	1	9	2
Sickness	2	—	1	—	3	—
Mental dulness	2	—	2	—	4	—
Enlarged glands	6	1	2	—	8	1
Night terrors	3	—	6	—	9	—
Objective						
Hypertrophied tonsils	34	—	42	—	76	—
Adenoids	50	—	50	—	100	—
Deflected septum	2	2	1	1	3	3
Turbinal hypertrophy	2	2	2	2	4	4
Atrophic rhinitis	1	1	—	—	1	1
Mucous disease	6	—	6	—	12	—

Satisfactory as these results appear it is to be remembered that they are the results of one skilled operator, and that from the small number of serious complications in the form of turbinate hypertrophies or rhinitis they probably represent an unconsciously selected class of cases sent from the schools to the dispensary, although Dr. Wells thinks his selection was quite unbiassed and that the results are chiefly due to the careful following up possible in the clinic.

Allusion was made in last year's report to the serious risks of out-patient practice, the scandal of children suffering from shock and vomiting in the streets and being refused admission to public conveyances. An eminent surgeon, Mr. Stephen Paget, in a lecture* at St. Bartholomew's Hospital a dozen years ago, before any public treatment had come into discussion, alluded to the conditions: "There is generally slight shock at least among the ill-fed, thin, nervous children of a London out-patient department; they are faint and miserable for a day or even two days, and want nursing, and half the troubles that may follow the operation—otitis, bronchitis, even pneumonia—come because the child is not taken into the wards, but must be turned out again back into the slums." But, apart from the complications of the rough and ready treatment subsequent to operations in the out-patient room, and remembering that striking as are the results of adenoid operations in many cases, the remote results are not always so good, often there is still reason to doubt whether the operation was skilfully or efficiently performed.

In an enquiry during the autumn by Dr. Pearson as to the results in children who had been operated on during the past ten years, the returns were so disappointing that it speedily resolved itself into seeking the reasons for such want of success. Children are not recommended for surgical treatment because they have adenoids, but because of symptoms which are the noticeable results, such as mouth-breathing, snoring respiration, nasal discharges, and associated deformities and defects. If the result of treatment leaves these conditions in existence it cannot be said to have been satisfactory. Merely to scrape a child's pharynx in a routine way is not sufficient for intelligent treatment, and yet many cases appear to go through this process. Two of the cases in Dr. Pearson's series had been operated on five times for adenoids and yet were not relieved as their noses were blocked by enormously hypertrophied turbinal bones. It is not merely that these hypertrophies are recurrences, but often also that they have not been treated at the time of operation. Just as the hundreds of medical certificates received of freedom from disease in children who were at the time obviously suffering from ringworm give evidence which cannot be gainsaid, so, although any surgeon knows how easy it may be to throw stones, it is almost impossible to resist the conclusion that there is want of care or skill on the part of many who operate for adenoids.

In this enquiry each teacher was asked to ascertain what children had been operated on for adenoids. The children were then examined by the doctor, who analysed his notes with the following result:—

	Total number.	Operative result.		Of the satisfactory cases.	
		Unsatisfactory.	Satisfactory.	Still mouth-breathers.	Wholly satisfactory.
After 1 operation	366	217	149	41	108
After 2 operations	26	15	11	7	4
After 3 or more operations ..	8	5	3	1	2
Numbers	400	237	163	49	114
Percentages	*100*	*59*	*41*	*12*	*29*

The cases were considered satisfactory when there was no evident or palpable obstruction to nasal-breathing. Among the 163 thus recorded 49 still retained the habit of mouth-breathing, although probably by training and breathing exercises as in Dr. Wells' cases this could have been removed. The other 237 were returned as unsatisfactory because the mouth-breathing was due to persisting but removable causes. These were nearly two-thirds of the cases operated on, and on the 237 children there had been 279 operations. The conditions which still remained after the operations were—

Unsatisfactory results in 237 of 400 children operated on.	Adenoids.	Hypertrophied tonsils.	Hypertrophied turbinals.	Deflected septum.	Nasal polypi.	Otorrhœa.	Deafness.
After 1 operation	63	48	99	61	4	14	10
After 2 operations	5	4	7	—	—	3	1
After 3 or more operations	4	2	3	—	1	2	3
Numbers	72	54	109	61	5	19	14
Percentages	*18*	*13.5*	*27*	*15*	*1*	*5*	*.5*

* St. Bartholomew's Hospital Journal, 1900, p. 103.

The places where operations were said to have been performed were—

400 cases (442 operations).	Satisfactory.	Unsatisfactory.	Total.
Large general hospitals	49	112	161
Children's hospitals	25	66	91
Provincial hospitals	34	51	85
Special nose and throat hospitals	10	8	18
Private operations	11	13	24
School clinics	29	19	48
Unknown	5	10	15
Totals	163	279	442

The adenoids here recorded were not sought for when other cause of obstruction was apparent. In absence of other cause the naso-pharynx was digitally examined and adenoids only recorded when they could be palpated. They were usually felt on the lateral walls and generally on the right. When median they often had a fibroid feel showing that they had been scraped.

It is not sufficient that provision is made whereby a third of the children who present pathological conditions among the large numbers with enlarged tonsils and adenoids can be medically or surgically treated in a satisfactory way with the minimum expense of time and trouble. While one-third of the children in the schools present conditions which represent a struggle against factors of ill-health, the causes must be sought out and removed as a public task. It is not a mere academic enquiry which is now being suggested, but a fundamentally important one, which also lies at the roots of tuberculosis and other causes of chronic debility. The external factors are the various kinds of septic organisms which gain access to the mouth and nose. Each human being goes through a period of acquiring a certain proportion of immunity against various diseases. Provided the dose is small enough almost any disease is overcome, or rather its germs are overcome, without the disease ever becoming evident. To judge from immunity reactions tuberculosis has affected 95 per cent. of the population before the limits of school age are past, but unless the doses of infection are large and repeated, or the child is depressed by the results of other diseases, as measles or whooping cough, it soon overcomes the attacking tubercular germs. In large towns almost every one acquires permanent protection against measles at an early period of life by going through the disease. Three-quarters of the population seem to have sufficient immunity to resist scarlet fever, the rest mostly acquire it by suffering an attack; but there are a number of germs of comparatively low pathogenic powers, against which only temporary immunity seems to be acquired. The common "dirt" inflammations of the eyes and ears and fungoid rashes of the skin, so evident among debilitated children and invalids, afford examples. Catarrhal attacks, the common cold, the micro-organisms of which cause an enormous diminution in health annually, can be resisted easily in vigorous health, but are so constantly present that any slight departure from a condition of resistance, a few minutes chilling, a slight attack of indigestion, will give the opportunity for invasion. The protection can be raised in many people for months by swallowing at the right time a medicinal dose of the protective vaccine. In the case of young children improper clothing and the use of dumb-teats or baby comforters must be most potent contributions to the catarrhal invasions which ultimately lead to development of the enlarged lymphatic tissues in consideration. These catarrhal germs are practically accompaniments of civilisation, the "stranger's cold" of St. Kilda, and the only method of dealing with them is by dilution. Increased living room must be found not only in houses but in cities and in school rooms. The factors contributed by the child itself depend to some extent on its bodily constitution, as a matter of heredity. The children of a family resembling a mouth-breathing parent in other respects will often be mouth-breathers too, whilst the rest are like the other parent and normal; but the lack of resistance in the cellular elements can be induced or cultivated as can be seen in the large, soft, well clothed, scarcely exercised workhouse or institution children so apt to develop chilblains or to suffer from adenoids. The children in some suburban localities which have no near playgrounds, who are well fed and well clothed, but whose freedom is restricted to maintain the gentility of their parents, have been pointed out in previous years as suffering from similar debility and adenoid hypertrophies in excessive numbers.

The want of personal hygiene which contributes materially to permanent damage of vision and hearing from slight dirt infections also is a factor in catarrhal conditions of the naso-pharynx. The mentally defective children learn mouth-breathing in large numbers because the natural channels are neglected. The children who do not use handkerchiefs are more often mouth-breathers than the others. Breathing exercises, where both inspiration and expiration are through the nose, and the mouth is kept shut for several respirations, should be an essential part of the infant school work. Handkerchief drill in the lower classes is also to be thought of in the ordinary school.

The inculcation of cleanliness beyond the level of the cleansing schemes ought to be part of the school work, and when the want of cleansing opportunities and the need of the tonic influence of bathing are properly appreciated, school baths will be insisted on as part of the prophylaxis against the lymphatic debility that shows ultimately as adenoids and in tuberculosis; but although the school cannot directly prevent the chronic catarrh, and possibly sometimes tubercular infection, set up by the use of baby comforters, some restriction is necessary. Their action is wholly bad both mechanically and as conveyers of infection. Their sale should be restricted.

Lastly, the reserve powers of the child must be cultivated. The absolute necessity for free exercise and fresh air means the need for playground areas beyond those attached to the schools. The children will have to be enticed into playgrounds if they are to live in towns and maintain normal health ; houses will have to be pulled down in order to obtain the spaces required.

To summarise, reaction to unhealthy environment is shown by the 30 per cent. of children who suffer from " tonsils and adenoids." Breathing drills call the attention of the teachers to the existence of the condition, and mouth-breathing due to catarrhal causes is diminished by the habitual use of the handkerchief. A considerable proportion of cases need surgical operation ; this may be extremely good in its results, but under the conditions in which it is at present carried out among elementary school children, is unsatisfactory in about two-thirds of the cases. Rational treatment, by preventing the ill-health of which these symptoms are the associates, would be the use of all means to prevent catarrhal attacks and all that serves to raise the child's reserve powers. The chief causes of catarrh in earliest life are the baby's comforter, ignorance and dirt. Room to live on the land is the principal need ; house room and all that it connotes ; school room ; free spaces of land for ventilation, pulling down buildings to provide opportunity of free play for children ; the provision of chances of cleanliness and the tonic effects of school baths. The expenditure of any sum of money on the health of children is of more national importance than its expenditure on the health of adults.

Attention has been drawn frequently to the vast mass of national inefficiency due to dental disease originating and neglected during childhood. The conditions in existence are indisputable, 80 to 90 per cent. of the children suffer from steadily advancing caries. The chief causes of this widespread disease are still doubtful and the remedy is not to be sought entirely in the toothbrush or dental chair. These merely mitigate results of deeper origin associated with the difficult conditions of infancy in overcrowded rooms and frequently with artificial feeding. Teeth.

The nutritional conditions of the first few months of infant life are of the greatest importance. It has been shown in the Report for 1905 that years of high infant mortality correspond later with crops of children whose measurements are below the average, and this gives a clue as to why it is that the districts in large towns where there is high infantile mortality also show stunted populations. The occurrence of bad nutritional conditions, more particularly rickets and convulsions, has been associated with honeycombed teeth in later life, and slight cases of lamellar cataract. Indeed, it is stated that this last defect was noted as exceedingly rare in Australia until the advent of condensed milk, since which time it has become comparatively common. Dr. Pollock has followed up these lines in his school examination by enquiring of parents whether the children presented were breast fed or bottle fed, and tried to correlate this to the dental conditions found in the permanent teeth. It was not expected to find any material effect on the deciduous teeth, but the entrants aged 4—6, the 8 year old group and the 12 year old group were all recorded. He found—

	Breast fed children.				Bottle fed children.			
	Number examined.	Teeth carious.			Number examined.	Teeth carious		
		Upper.	Lower.	Total.		Upper	Lower.	Total.
Entrants. Boys and girls (4—6) ..	123	118	152	270	55	61	83	144
Boys, aged 8	80	98	96	194	33	44	51	95
Girls, aged 8	157	193	220	413	53	90	97	187
	237	..	..	607	86	..	..	282
Boys, aged 12	118	48	71	119	27	18	31	49
Girls, aged 12	209	86	153	239	65	42	59	101
	327	..	..	358	92	..	..	150

The average number of obviously carious teeth in these various groups of children were—

Age.	Infants (4—6).	8 years old.	12 years old.
Breast fed	2.20	2.56	1.09
Bottle fed	2.62	3.28	1.63

So that the advantage of soundness of teeth is greatest in the naturally fed children at every age.

These results are confirmed by investigations also carried out during the past year on dental conditions of about 1,500 elementary school children in Kiel. The school doctor noted 12 per cent. as apparently faultless in regard to the presence of caries. No such healthy dentition was seen in any child stated to have suffered from rickets. There was only 1 per cent. among the bottle fed and as many as 21.3 per cent. among the breast fed children who showed mouths free from obvious caries. These conditions ran through the various other analyses recorded, *e.g.*, of children with very bad teeth, etc., confirming the observations in the London schools that the tendency to caries is probably largely a matter of structure of teeth partly due to heredity and to very early infantile conditions.

During the spring of 1911 toothbrushes were distributed among the children of thirteen schools in the East End. Three of these schools were gone over six months later and the dentist reported that considerable improvement in the cleanliness of the teeth was noticeable. The schools he inspected were :—

Farrance-street (*B.*) *School.*—300 brushes were distributed on 27th March, 1911, and when the school was visited on 26th October, 1911, 233 of the boys were still in attendance, 67 had left. Of these 233 boys 192, or 82.4 per cent., possessed brushes, all of which were in good condition, and most of them showed signs of recent use. The teeth on the whole were much above the average in cleanliness as compared with the teeth of the boys in adjacent districts, namely, Poplar, etc., where no brushes had been provided.

Farrance-street (*G.*) *School.*—Brushes were distributed to 305 girls on 6th April, 1911, and when the school was re-inspected on 2nd November, 1911, it was found that 263 of the girls were still in attendance, and of this number 243, or 92.4 per cent., had their brushes. The teeth of the girls were exceedingly clean and well kept.

Halley-street (*B.*) *School.*—109 boys received brushes on 29th March, 1911, and 80, or 73.4 per cent., were produced on 7th November, 1911. The teeth of the boys were on the whole clean ; it was found that soot was very popular as a tooth powder. Three boys confessed to having lent their brushes to other members of the family in spite of the warning of the teachers.

Cayley-street (*B.*) *School.*—253 brushes were distributed on 3rd April, 1911, and of the boys who received them there were 218 still in attendance at the school on 9th November, 1911. Of this number 195, or 89.4 per cent., produced the brushes. At this school also the condition of the teeth as regards cleanliness was on the whole good and much better than the average of adjacent districts.

Some beginnings of treatment have been made. The most notable is the school dental clinic organised by Miss Margaret McMillan in Deptford. This was opened on 17th October, 1910, and during 1911 has been subsidised by the Council on the same terms as the hospitals—that is a capitation fee of 2s. and payment of the dentist's salary. The clinic serves for 63 schools in Deptford, Greenwich, Lewisham and Peckham, covering a roll of about 45,000 children. The children sent, however, are limited to the eight year old group. In the first three months of the year inspections of neighbouring schools were made by Mr. Wallis, who found that the inspections of the school doctors were insufficient as regards dentistry, only the worst cases being selected. Since then Mr. Benjamin North, the dentist at the clinic, has given one afternoon a week to school visits. He has examined 3,173 children of the age of eight, 1,634 boys and 1,539 girls, in 37 schools on 33 half days, averaging 96 per session. Of these 79.5 per cent. boys and 79.2 per cent. girls needed dental treatment. Four fifths of the eight year old children require such treatment. The percentages are a little lower in the poorest schools, possibly due, as Mr. North suggests, to the survival of the fittest, the infant death rate among weaklings being very high in those districts, and possibly to the use of coarser food. The ill effects of decayed and sensitive teeth are, however, more marked among the poorer children, and the mouths are dirtier. Although the dentist examined eight year old children, the numbers at that age were only about a third of those treated. The school doctors notify many cases at other ages as requiring treatment, so that out of 2,318 treated 242 were below eight, 1,102 over eight, and 974 eight years of age. When the school inspection shows any child to require attention its parents are notified, and if they wish to take advantage of the public service, locally established in Deptford, an agreement to that effect is signed, and a promise given to pay 1s. This may be reduced by the Care Committee to one penny if the parents are poor, or as workpeople contribute to hospital funds. When the signed schedules have been returned to the school an attendance card fixing a time for attendance at the clinic is issued. About ten or eleven attendances are arranged for each session, and about eight attend, which just affords work as regards the eight year old children. With older children where much has to be done to each mouth this number would be too great. The cases who attend for medical treatment by the three doctors who work at the clinic, and cases to be operated on for adenoids or tonsils, often also require treatment for carious teeth or septic mouths before operation is justifiable. These cases are numerous and show the utility of dental and medical service being closely associated. During 1911 they numbered 262 extractions only, 593 fillings only and 1,463 extractions and fillings.

The general work shows that 75 per cent. require some teeth extracting, and that only a quarter of the cases can have their mouths made healthy by filling the teeth. The new arrangement from the beginning of 1912 whereby children from six to eight are taken will ultimately greatly reduce the number of extractions required.

		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Extractions	Temporary teeth	119	300	325	193	515	185	281	13	268	323	447	343	3,312
	Permanent teeth	52	70	25	25	60	43	38	2	49	40	48	25	477
Fillings	Temporary teeth	24	14	22	16	37	24	34	—	38	102	126	91	528
	Permanent teeth	169	262	342	196	414	224	398	18	458	434	311	283	3,509

Most of these 477 extractions of permanent teeth were hopelessly damaged molars of older children. Many were quite difficult operations where an anæsthetic was necessary and local anæsthetics were used, as general anæsthesia was forbidden. Arrangements have now been made for the use of nitrous oxide gas. The extractions are generally done on a Saturday morning. About 4,000 stoppings, nearly all amalgam with cement, were applied, and 87 per cent. to permanent teeth. This shows the good work of the clinic, as it means about 4,000 teeth made serviceable which otherwise would soon have been sensitive and lost.

The parents who in most cases accompany the children are always instructed as to the probable results, and the educational effect of these talks is very useful, as a considerable number return. The sale of good brushes for 2d. in the schools has been most effective in maintaining healthy conditions in the mouths after treatment. Of the 2,318 children treated the condition of the mouth when first seen was noted as : clean 89, fairly clean 873, dirty 1,196, and very dirty 160. The dirty generally had a sensitive tooth preventing one side of the mouth being used for mastication, whilst the very dirty ones had septic roots or stumps requiring urgent removal. The dental surgeon at Deptford has tabulated the cases of decay in the teeth at different ages in both permanent and temporary teeth. For the temporary teeth the following table shows the need of early dental care ; even at six years of age 64 per cent. of the children sent have four or more teeth carious and by seven this reaches 74 per cent.

Ages.	Numbers of children.	Percentage with number of carious temporary teeth.								Percentage with decayed teeth.
		1	2	3	4	5	6	7	8 or more.	
6	98	1.2	12.2	10.7	13.2	15.3	17.3	9.2	11.3	90.4
7	144	7.0	5.5	10.3	15.2	13.9	20.1	10.3	14.6	96.9
8	974	5.6	10.4	16.6	19.0	16.0	12.3	6.6	8.2	94.7
9	385	8.0	17.1	21.0	19.0	13.0	8.8	8.0	2.0	96.9
10	81	5.0	13.5	24.4	26.0	13.6	7.4	1.2	3.7	94.8
11	208	12.5	24.5	11.0	11.0	7.2	4.3	1.9	2.4	74.8
12	428	10.7	12.1	8.1	4.4	3.2	1.0	1.0	—	40.5

Mr. North thinks it will be necessary ultimately to examine the mouths of all children before six years of age, and then annually, to save an enormous amount of pain and sensitive teeth and the retardation which this causes in growth and development.

In the case of the permanent teeth there is no natural cure by loss as in the case of the temporary teeth, and here a functionally damaged tooth is a loss for the whole of life, but even during school days this loss is extensive, the loss of the first four permanent molars being quite common, and in the column of four permanent teeth carious the increase is rapid with age, and it is an increase not only in numbers of teeth attacked but in extent of damage, for so many teeth become unsavable and have to be removed.

Age.	Number of children.	Percentages with numbers of carious permanent teeth.					Percentages with unsavable permanent teeth.				
		1	2	3	4	1 or more.	1	2	3	4	1 or more.
6	98	6.2	4.1	2.0	1.0	13.3	—	—	1.0	—	1.0
7	144	24.3	16.6	11.1	4.1	56.1	4.8	2.0	—	—	6.8
8	974	28.0	24.8	11.4	7.7	71.9	7.6	3.2	.6	.7	12.1
9	385	27.2	30.6	12.4	10.9	81.1	10.7	5.2	1.3	1.5	18.7
10	81	22.2	35.9	14.8	18.5	91.4	12.3	10.0	6.1	3.7	32.1
11	208	13.5	23.8	26.4	27.0	93.5	22.6	22.1	7.2	5.3	57.2
12	428	9.3	22.6	22.4	35.2	89.5	27.8	25.4	9.8	10.0	73.0

Ringworm.

Ringworm continues to be one of the plagues of school life. The first nurse appointed by the School Board was a "ringworm nurse." In 1906 it was shown that ringworm cases corresponded to a school absence involving a loss of fee grant of between £5,000 and £6,000 annually. This meant an average of 2,950 children out of school. Subsequently the Attendance Department ascertained that the average crop absent at any time was about 3,500 to 4,000. In recent years there have been about 6,000 new cases yearly. Last year there were 6,231 new cases. This was one of the diseases in which several years ago it was pointed out that the hospitals failed to supply the public wants; a disease soon to become comparatively rare when public remedy is provided, as its extermination is entirely a matter of cost. When the treatment scheme became established, an enquiry by the nurses who filled up a card for each case, showed 3,542 cases of which 446 were being treated by Roentgen rays. The report on ringworm in 1909 stated that "It will be interesting a year hence to determine the effect of the organised attempt now being made by the hospitals to deal with this nuisance, as hitherto they have failed to make any impression upon the prevalence of the disease." Now, two years later, the record can be continued, that the disease appears to be just as prevalent as it has been at any time in the past half dozen years, although some effect ought to be expected shortly.

Favus, which is a more intractable disease, but of like nature to ringworm, prevailed in the East End so that a favus school for over 80 children was opened. This produced but little effect until radical treatment was resolved upon, Roentgen apparatus installed, and a cure insisted upon in every case. The disease was stamped out in a few months. The record for favus for 1910 is four cases and for 1911 also four cases. If ringworm is treated by the same assiduous method it can be almost as readily exterminated.

At present ringworm is costing the Council not less than £7,000 per annum, in the service of doctors, nurses and hospitals and loss of fee grant entailed, and in spite of this cost no appreciable difference appears in its prevalence. The returns for the Michaelmas term show that of the 1,272 cases returned as cured, the average school absence amounted to 5.89 months, and in the last quarter the average is 5.93 months. Each case of ringworm as it becomes known has a special card made out and the school nurse follows up the case to the best of her ability. If any case is alleged to be under treatment by doctor, it thereby passes out of consideration. Cases said to be treated by a chemist or at home are offered X-ray treatment, but if refused no action is taken. This is the weak part of the scheme. Certain other cases are, however, followed up and treated under the Council's schemes. About 20 per cent. now coming under treatment are by Roentgen rays. So far, up to the end of 1911, there is, however, no noticeable diminution in the number of cases being reported.

The nurses are most assiduous, and the laboratory renders all certainty possible in the diagnosis of cases. The certificates of medical men in regard to the ringworm specimens received at the laboratory are not now enumerated, as considerably over 90 per cent. were erroneous. During the year, 6,231 fresh cases have been reported. Of doubtful cases, in which specimens were submitted for microscopic examination, 2,926 specimens were examined. The ringworm fungus of various varieties was detected in 2,165, favus in 4, and no fungus could be found in 757 cases.

The following table gives a conspectus of this work during the seven years in which it has been followed:—

Year.	Specimens submitted.	Ringworm found.	Favus found.	No fungus found.	Insufficient material.
1905–6	988	597	104	257	30
1906–7	1,578	1,094	84	336	64
1907–8	2,175	1,705	25	347	58
Mar.) 1908 Dec.) ..	2,751	2,212	32	423	47
1909	3,019	2,343	37	568	45
1910	3,116	2,400	4	709	3
1911	2,926	2,165	4	757	—

The only drawback to the radical treatment of ringworm is that it would have to be considered as a public nuisance, and every case compelled to be cured within a reasonable time. Further, it is so prevalent that the private schools or other educational institutions, not under oversight of the Council, or indeed any sanitary authority, might still keep up reinfection of the child population. Otherwise the disease can be rapidly made to disappear, and its present cost to the Council indirectly is so great that it would probably, on financial grounds alone, be justified in spending even £10,000 a year for several years in stamping out the disorder, although the cost required would not nearly reach this figure.

Open-air schools.

The experimental open-air schools on the model of the Wald Schule of Germany have been fully described in previous reports. Two open-air schools were continued at Birley House and Shooter's-hill (Shrewsbury House). They were opened in April, and during the first few days the weather was exceptionally severe, the temperature running between 40 deg. F. and 50 deg. F. during the day, and several degrees of frost being registered at night. In spite of the inclement weather the school was carried on as usual, the children taking refuge in the Doecker shed during the blizzards of snow, and although most of the children came from homes with stuffy atmosphere and where closed windows are the rule, none of them suffered any harm from the unusual conditions of their schooling. Some

ordinary colds in the head occurred, but there was no loss of attendance. During the late summer, with a long drought, much sunshine and a shade temperature daily exceeding 80 deg. F, for weeks, the energy and vitality of the children fell off, exercise had to be curtailed, and there was a slackening in the weights of the children partly due at Birley House to some attacks of enteritis. The autumn, on the other hand, was again wet, windy and unsettled, and on several occasions the old time "London Fog" reappeared. There were, however, no ill effects on the children's health, and the attendance was steadily maintained.

The Doecker shed at Birley House has had moveable side windows arranged in case of inclement weather. Clogs have also been provided by charitable donations, and children with defective foot gear have used the clogs during school hours.

At Birley House the children on admission presented a miserable and uncared-for appearance and as the weather was cold and windy, and many of them were suffering from common colds, it would be difficult to imagine a more wretched looking class. They came from very poor districts and most of them were badly clothed and dirty. They were poorly nourished, had carious and defective teeth and were anaemic. At an examination of candidates nominated by teachers for admission to these schools almost every child seen is in a grave condition. A large proportion recommended are suffering from such lung conditions as fibroid changes, collapse or bronchietasis, all the result of repeated and neglected attacks of bronchial catarrh in the past. Several had family histories or family environment of phthisis, and some had previously been under treatment for this disease. It is difficult to say which of the children are actively suffering from tuberculosis. Two only seemed to be suffering from phthisis, but this is the final stage of chronic infection. Phthisis nowadays in a school child almost means that it has never had a fair chance in life. There were several children with greatly enlarged cervical glands and one case of tubercular elbow joint.

Of the 86 children first admitted 52 required dental treatment, and discharging ears were present in 6, defective vision 12, and for throat and nose defects 7 were noted as requiring immediate treatment. The chief difficulty in obtaining treatment was the apathy of the parents, and several children had to be told again and again before any attention was paid. As the children come from parts scattered over South London it was not easy for anyone to get actually in touch with the parents, and still more difficult to get the parents to spend time and money in coming to the school to be interviewed in regard to the provision of treatment. The conditions requiring medical treatment were all relieved except one or two cases requiring glasses. The dental cases were taken for treatment in batches either to the Deptford Clinic or St. George's Dispensary, but here the difficulty of taking the children came in and 31 remained untreated, some of them having been marked "urgent."

The following table compares the physique of the children admitted to Birley House with certain children measured as standards in London schools in 1906 :—

Birley House. 1911.			Weights.		Heights.		Kilos gain in 36 weeks.		Average weekly gain kilos.	
Sex	Age groups.	Number in age group.	Birley House.	Average of all L.C.C. schools.	Birley House.	Average of all L.C.C. schools.	Birley House.	Standard children.	Birley House in the summer and autumn.	Standard children in the year.
Boys ..	7	1	20.7	22.0	111.0	116.0	—	—	—	—
	8	3	25.8	23.5	127.3	120.5	2.7	1.4	.07	.02
	9	12	23.3	25.5	120.6	125.2	2.6	1.6	.07	.04
	10	13	26.0	27.6	128.1	129.8	2.8	1.6	.07	.04
	11	7	27.1	29.9	133.2	134.3	3.7	2.1	.09	.05
	12	5	29.9	32.5	137.0	138.7	4.9	2.6	.13	.06
	13	3	30.8	36.4	139.3	143.1	3.8	2.4	.10	.06
Girls ..	7	—	—	—	—	—	—	—	—	—
	8	3	20.8	22.9	119.6	120.2	2.2	1.5	.06	.03
	9	6	22.9	25.0	123.5	124.7	2.8	1.7	.07	.04
	10	5	22.3	27.2	123.6	129.9	3.1	2.0	.08	.05
	11	15	24.8	29.9	128.4	135.0	3.2	2.6	.08	.06
	12	10	31.6	33.3	140.2	140.6	4.0	3.0	.10	.07
	13	3	28.8	37.7	139.0	146.8	4.4	3.3	.12	.08

For reasons which will be given presently, it is doubtful whether in the comparisons given the gain in weight of the standard children is not considerably understated. The nutrition expressed in grammes weight per centimetre of height was calculated at the opening of the school and at the thirty-sixth week and showed a marked increase all round. It is not set out in tabular form, as the transfer of several children from one age group to another in such small groups, makes this form of statement inaccurate. The hæmoglobin percentages within the thirty-six weeks rose to be equivalent to those of 120 normal children taken in November and December at Goodrich-road, Heber-road, St. John's

North Cross-road, Dulwich and St. Anthony's (R.C.) Lordship-lane, Dulwich. The normal average being 55 boys gave 87.8 per cent. and 65 girls gave 88.9 per cent. At the opening of Birley House the boys and girls gave 81 per cent., which by the thirty-sixth week had come up to 88 per cent. In cases where there was a temporary fall this was ascribed either to the hot weather, or to teeth or other operations. There is probably a seasonal variation in hæmoglobin content of the blood. The chest expansion on admission was boys 1.9 inches, girls 1.8 inches, at the thirty-sixth week boys 2 inches, girls 2.4 inches. In the case of some of the children this chest expansion was very poor, two of the girls only giving half-an-inch, and several of the children 1 inch on admission.

The children at Shooter's-hill were of a similar type, but possibly even more anæmic than the children at Birley House, as 73 per cent. of the admissions were below 75 per cent. by the hæmoglobinator test, whilst by the end of the year only 2 per cent, remained below this mark.

The conditions of the children admitted were noted as—

Tubercular disease of lungs	5
Doubtful tubercular pulmonary disease	5
Other lung and chest diseases	40
Otorrhœa	15
Enlarged tonsils	14
Adenoids	10
Cardiac diseases	5
Disease of the eyes	11
Enlarged glands (not obviously tubercle)	13
Tubercular glands	4
Chorea	1
Curvature of spine	5
Torticollis	1
General malnutrition	49

Probably the majority of these children were tubercular in the widest sense of the term, but only 14 were definitely assigned to this heading. Of these, 5 were cases of pulmonary tuberculosis; they increased in weight, were less anæmic, and gained in appearance of general health, but the lung condition did not improve except in one case in which no traces of active lung disease could be detected at the time of leaving school. The asthma cases seemed to have attacks just as frequently during attendance at the open-air school as previously.

The great function of the open-air school is its stimulating effect on the merely debilitated child, it also enlarges the mental outlook, the child becomes happier and more interested in its work, preferring the open air to the classroom, and enjoying to the full this return to a more natural life. This can, however, be discussed later with the playground classes.

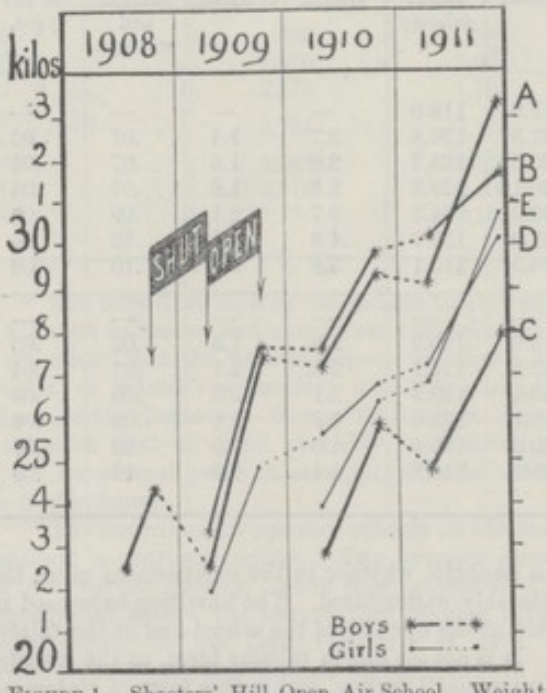


FIGURE 1. Shooters' Hill Open Air School. Weight of groups of children attending successive years.

Several of the children have been attenders at the open-air schools through successive years, and Birley House has remained in session through the winter, it is therefore possible now to review the cards of some of these habitues of the schools, who are obviously in very poor health and see how they stand in comparison with other or normal children.

From the cards of children at Shooter's-hill the weights on admission and on closing the school have been taken and averaged. Figure 1 shows these weights for different groups of children who have been in attendance 2, 3, or 4 successive years. The numbers dealt with are quite low, but it was only a few who were available for this statistical comparison. In Figure 1, line A gives the average weights for two boys of the same age present for four successive years; B is the curve for six boys of various ages who were present for three succcessive years, and, C, the curves for

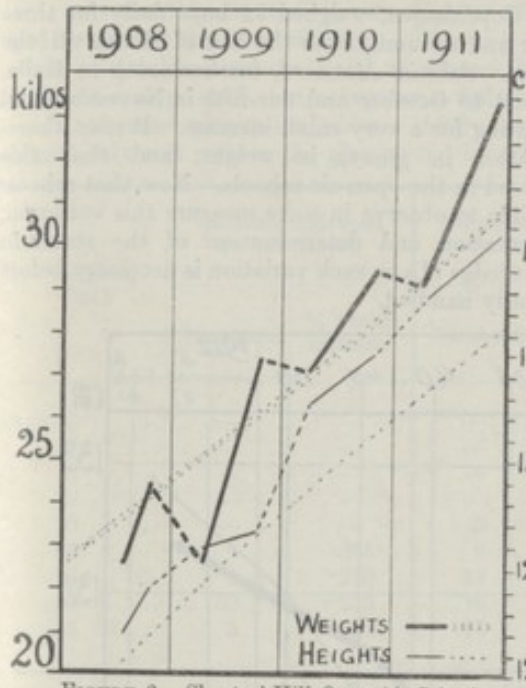


FIGURE 2.—Shooter' Hill Open Air School. Heights and weights, two boys born 1900, to shew seasonal variation, also London Elementary School standards without respect to season.

eight boys of various ages present the last two years. D, is the average values for 14 girls of various ages present in 1910 and 1911, E gives four girls present for three successive years, 1909, 1910 and 1911. The features of these composite curves are equally demonstrated by the curves either for children born in specific years, or for individuals. There is a rapid increase in weight whilst in attendance at the school, with a slackening or even loss of weight in the interval when the school was closed in the winter.

Studying individual cases, the two boys born in 1900 who attended Shooter's-hill 1908—1911, can be taken. Figure 2 shows their average weight by thick lines and heights by thin lines. The increase of weight was mostly during school time, with a retardation when the school was not held. The regularity of this alteration is seen through all the groups and in individuals, unless a child is actually going down hill from tuberculosis or has incidentally been thrown back by surgical operation or acute illness. Setting out the weights of the two boys recorded in Figure 2 as percentages of their weights on admission, and also their rate of gain for each period, as percentage of weight at beginning of the period, it is seen how regular these fluctuations are.

—	1908.			1909.		1910		1911.	
Percentages	School open.		School closed.	Open.	Closed.	Open.	Closed.	Open.	
Weights —P.C. ..	100	109		102	125	120	126	128	149
A.H. ..	100	108		98	118	123	133	131	140
Percentage gain weekly—P.C. ..	+·60		—·28	+ ·85	—·20	+·26	+·07	+·70	
A.H. ..	+·53		—·28	+1·17	+·20	+·38	+·08	+·27	

At first the effect of the open-air school as regards increase of weight seemed wonderful, children gaining at about double the rate of those in the ordinary schools. On the other hand, it is to be noticed, as seen in the Figures 1, 2 and 3, that whilst the increase of weight slackens in the winter period, there is, if anything, an acceleration of growth in height. This suggests a seasonal variation in growth of stature and increase of weight. Fortunately some years ago measurements had been made to ascertain standards for London school children; from these, annual rates of growth can be deduced. These rates, however, being annual, any seasonal variation is obliterated. Regular measurements of the same individuals at periods of a month are required in order to determine this seasonal variation if it exists, as it may be a factor of some importance in investigations in the future. At present, ignorance of the amount of such variation makes the comparison of the figures existing for growth of children in the open-air schools with that of normal children of doubtful value. The increase in weight of 12 children present during three successive years at Shooter's-hill amounts to 3·17 per cent. weekly, normal children at these ages growing at an average annual rate of .185 per cent. weekly.

This comparison, however, includes two periods of the open-air school at the beginning and end which, with the existence of a seasonal variation, would be unjust. If the increase of weight is reckoned from the opening of the school in 1909 till its opening in 1911, the average is .257 per cent. weekly; if reckoned from the close of the school in 1909 till its close in 1911, the rate is .181 per cent, weekly. The mean of these gives .217 per cent. weekly gain for the open-air children in two years as against a normal .185 per cent. gain. On the other hand, 30 normal boys in the ordinary school at Cator-street, during the 26 weeks, including the summer of 1911, gained weight at the rate of .326 per cent. weekly. Whilst at Kensal House, 10 weeks of the summer showed a rate of .48 per cent. against 10 weeks' winter rate .20 per cent.

These considerations as to a seasonal variation of growth are borne out by a few observations which have been previously recorded elsewhere, although their interpretation has not always been taken as due to this supposed seasonal variation.

Thus *Wretlind*, in Gothenburg, tried to show that children grew much faster during the three holiday months of summer than in the rest of the school year, which, indeed, was stated of the holiday school at Kensal House this year. *Wahl*, in Denmark, in an institution for girls weighing on 1st April and 1st October, found that the increase of weights of the summer half-year were one-third greater than in the winter six months. He noted somewhat similar growth in children who did not attend school.

Malling Hansen, in the deaf and dumb institution at Copenhagen, weighed 72 boys daily for three years, and found a rapid increase in weight in summer and autumn, from the end of March till the middle of August, giving the chief increase of the year. *Schmidt Monnard*, further south at Halle, found two-thirds of the increase in weight was in August to October and one-fifth in November and December, the first six months of the year only accounting for a very small increase. It may, therefore, be taken that there is a seasonable variation in growth in weight, and that this accounts for a considerable amount of the increase noticed in the open-air schools. Now that schools are to be kept open through the winter, it will be possible to observe in some measure this variation, but such observation will scarcely suffice for the observation and determination of the standard seasonal variation in healthy children. A complete knowledge of any such variation is necessary before many problems which are now arising can be satisfactorily handled.

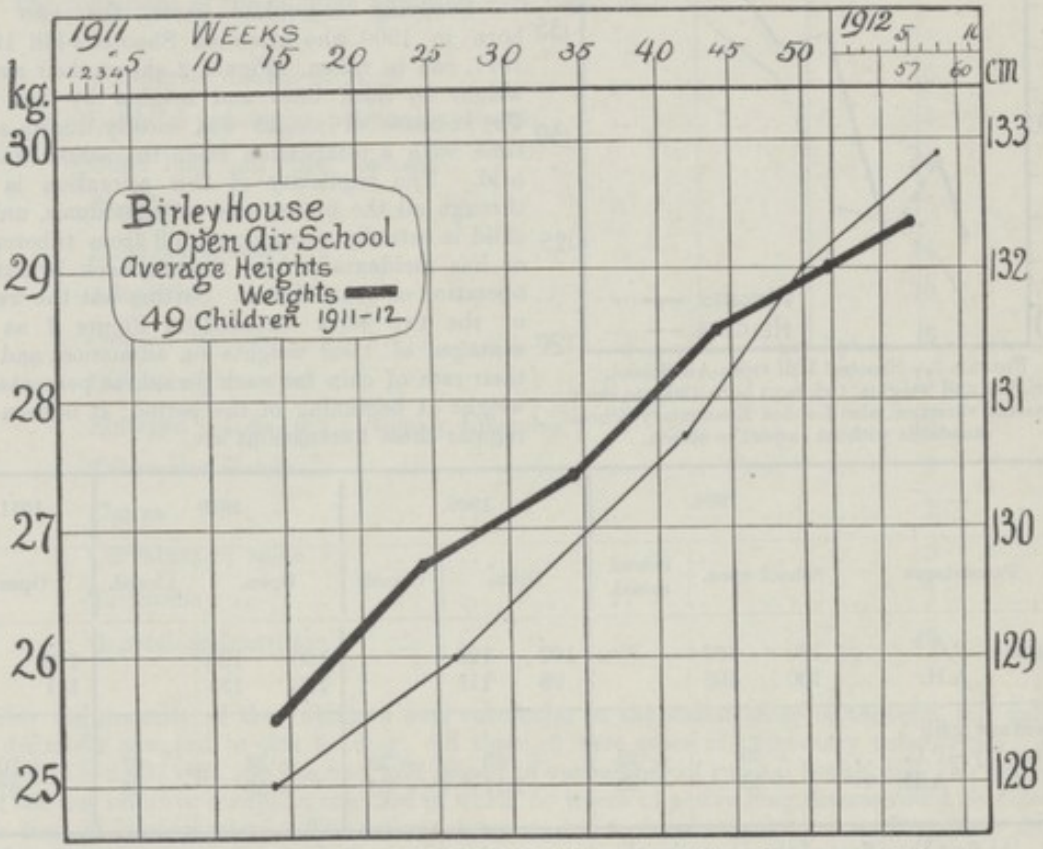


FIGURE 3.—Birley House Open Air School. Heights and weights to show seasonal effect.

For the past year, Figure 3 shows the heights and weights of 49 children at Birley House, summed for the 14th, 24th, 34th, 52nd week of 1911, and 7th week of 1912, and the heights at approximately corresponding dates. There was a slackening here in the summer, chiefly due to prevalent enteritis resulting from intense heat, and after about the 44th week of the year the winter slackening in weight is noticeable, at the same period an accentuation in growth is obvious. This interesting subject is also referred to later in connection with Kensal House School.

Playground Classes.

The playground classes described generally in previous years have been continued during 1911. Measurements of height and weight were taken in the playground classes of type A (central classes) and certain others, and at Cator-street, as already mentioned, a control measurement of children of the same ages in the ordinary classes of the school was made by observing 30 boys of various ages from 8 to 12, but of equal numbers at equal ages in the ordinary school classes. In 26 weeks the boys in the ordinary school presented an average weekly increase of .326 per cent. Those in the playground class, selected on account of debility, only gave about half this increase, namely, .154 per cent. weekly. The other classes of type A, that is central classes formed from delicate children selected from neighbouring schools as well, gave the following results :—

Weight.	Rochelle-street.		Daniel-street.		Turin-street.	
	Numbers.	% weekly increase.	Numbers.	% weekly increase.	Numbers.	% weekly increase.
Age 9	—	—	3	·400	—	—
10	6	·661	7	·857	—	—
11	6	·262	5	·362	—	—
12	6	·237	3	·406	19	·212
13	3	·819	—	—	12	·080

At the "Lawrence" the 20 children who got no school feeding were comparable with five who had meals and cod liver oil. The 20 "non-fed" showed an average weekly increase of .245 per cent. whilst the children on meals and oil showed .252 per cent., a positive gain if their otherwise poor condition is remembered, but otherwise a difference of no significance.

At other playground classes chiefly type C, where the children are drawn from the particular school only and were in the playground for from 20 to 26 weeks, the following results were noted :—

Weights, 1911	Gainsborough-road St. IV. (Boys).		Queensmill-road. St. VI. (Boys).		Essex-street. St. IV. & V. (Girls).		St. Paul's (Burdett-road), E. St. II. (Girls).	
	Numbers.	% weekly increase.	Numbers.	% weekly increase.	Numbers.	% weekly increase.	Numbers.	% weekly increase.
Age 6 ..	—	—	—	—	—	—	8	·188
7 ..	—	—	—	—	—	—	17	·228
8 ..	—	—	—	—	—	—	6	·132
9 ..	—	—	—	—	7	·295	5	·131
10 ..	—	—	5	·273	9	·177	—	—
11 ..	1	·385	7	·166	8	·219	—	—
12 ..	4	·210	13	·160	9	·251	—	—
13 ..	30	·233	18	·213	3	·230	—	—
14 ..	3	·237	13	·090	—	—	—	—

The increase in weight in these playground classes is probably below the average rate except at Rochelle-street and Turin-street, where the children were specially selected by the doctor as being ill-nourished or diseased. At Turin-street the boys of 13 scarcely gained weight at all. As it was thought that possibly the fresh air and greater movement might have altered metabolism so that growth was accelerated, the weekly average percentage of growth in height was also taken out. On the measurements of 1906 the annual rates for normal children give a weekly height percentage at 9 of .077, at 10 of .077, at 11 of .065, but the open-air boys who did not gain weight so rapidly as the normal boys, at Cator-street, gave ·094, whilst the indoor boys (normal conditions) gave ·073. The other results were :—

Percentage of height weekly increase April—Oct., 1911.	Rochelle-street.	Daniel-street.	Turin-street.	Gainsboro-road B.	Queensmill-road B.	Essex-street G.	St. Paul's, Burdett-road, G.
Age 6	—	—	—	—	—	—	·043
7	—	—	—	—	—	—	·047
8	—	—	—	—	—	—	·026
9	—	·079	—	—	—	·071	·040
10	·053	·099	—	—	·080	·079	—
11	·052	·079	—	·042	·069	·071	—
12	·085	·119	·100	·039	·066	·095	—
13	·095	—	·090	·080	·075	·080	—
14	—	—	—	·011	·054	—	—

There is no obvious relation between the rates of growth in height and increase of weight in these various groups of children.

Turning to other evidence of improved metabolism, there is the increase in hæmoglobin content of the blood. The figures are difficult to set out statistically and yet give a just impression. It is best to say that nine out of ten children in the open-air schools or playground classes show a considerable gain in this respect. How much of this is due to seasonal variation it is also impossible to say, but enquiry on the subject is desirable. During the time in these classes there is a steady gain in vitality, as shown by the healing of ulcers and cure of eye and ear conditions.

The first enthusiasm with which both the open-air schools and playground classes were received, amounted to an indirect condemnation of the school buildings and classrooms. Undoubtedly the cubic capacity of all elementary schools, and the amount of ventilation, is short of healthy requirements. The quantitative effects of the out-of-door schooling must, however, be somewhat discounted by the effects not hitherto noted of the seasonal variation in nutrition and growth which I have endeavoured to describe. At the same time the effects of bad ventilation in diminished metabolism show in the anæmia noticed in the spring. The effects of bad ventilation and gas lighting or stoves in giving off carbon monoxide, for which even in the minutest traces the blood has a powerful selective affinity, no doubt causes this to be a contributing cause of anæmia during the winter months.

The increased brightness, the alertness and absence of fatigue poisoning referred to by all observers who handle these children, are conditions which must be reproduced in the classrooms. Actual space can be converted into potential space by greatly increased window opening. In future schools, practically the whole outer wall should disappear for the greater part of the year; this is the only choice between nearly doubling the school capacity and a costly system of mechanical ventilation separate from the scheme of heating.

The playground classes, then, certainly aid the children by their frequent exercises, bring out their mental qualities and further their education without noticeably interfering with health ; beyond this they help the children to maintain a struggle for health against the ill effects of home environment, want of air, want of rest, want of clothes and food.

The open-air school, with its scheme of broken-up lessons and of rest and feeding, goes a little further than the playground class. The merely debilitated child gains considerably, but the main portion of the group of children who attend are not cured ; perhaps only a minority can be said to be materially or permanently relieved. The children who run temperatures, the children with lung conditions and with tuberculosis can be dragged along through school life, but they do not pass out fit.

The residential school of recovery first suggested seven years ago (Report, 1906, p. 44), is becoming, with increasing knowledge, an absolute necessity as an adjunct to the public educational system. Experience of one or two schools for 120 to 150 such children should now be obtained. Whether they are treated as educational institutions, which would be best, or as public health institutions, they are a necessity for the public provision for ailing childhood. As shown on p. 23, during the ten years I have been in charge of the medical supervision of London elementary schools a third of a million has been actually paid out for the education of children who died of tuberculosis before they were out of their 'teens. If the expense of cripple schools and of hospital and other medical treatment is added, the cost of this disease in school children in London in that time ran into a round million of pounds. Yet, whilst the residential school of recovery would take the child out of its environment of darkness or dirt or even tubercular infection and restore it to as healthy a condition as possible, it cannot wipe out the results of a defective heredity, or entirely prevent the recurrence of effects on a return to the old environment. The causes of most of the debility and ill-health seen among school children are the social conditions arising from sweated land, bad housing and hopeless poverty. "Prevention is better than cure," wrote John Locke, "and much cheaper." If, however, prevention cannot yet be accomplished, then the symptoms must be relieved. The school of recovery has not yet been tried, but the open-air school and playground classes have beneficial effects on the few children who have attended them. Improved housing is necessary in the schools themselves, and on these lines a very considerable extension of arrangements for many more children is necessary in the near future.

Kensal House Tuberculosis School.

The novel idea of a tuberculosis school, weighed and considered for several years, has ultimately taken shape in Kensal House. Towards the end of 1907 attention was drawn to the action of the Paddington Dispensary for the Prevention of Consumption in their efforts o avoid the spread of tubercle among the school children. Some instructions regarding tubertular cases were issued to managers of the Paddington schools early in 1908. A scheme for a tuberculosis school was drawn up during the year, and submitted in February, 1909. A year later, March, c910, the Council agreed to open this school, which was done in March, 1911. Kensal House stands In its own grounds of over three-quarters of an acre in extent, abutting on the Paddington Canal. It ihas large rooms, and the premises are accessible from the whole district of Paddington and North Kensington. The accommodation used for school purposes is confined to the ground, first floor and garden. Provision was estimated for 120 children, but at the end of the year this was cut down to 90, owing to room being wanted for cooking. The school as first projected was for children suffering from or predisposed to tuberculosis, or in an environment likely to infect them, and for children who have been discharged from sanatoria. The children were to be watched and educated, especially in the value of cleanliness, fresh air and exercise, and the dangers of tubercular contagion. This is the only logical kind of tuberculosis school. The ideal could not be put to the test, as under the Act of 1899 the Board of Education could not recognise the school unless they were satisfied that every child admitted was actually suffering to such an extent from tuberculosis that it could not properly benefit from education in the ordinary elementary school. The idea of the school as an educational instrument for prevention in the case of those otherwise likely to become infected had to be abandoned, and it became an institution for helping those already invalided from the ordinary schools. To make the best of the circumstances an agreement was arranged with the Paddington Dispensary. The Committee of this institution was to take the premises, carry out all alterations and repairs necessary, pay all rent, taxes and other outgoings, provide gas and electric meters, and give the Council facilities for storing wood and coal. The Council to provide furniture, books and other equipment, pay for teachers, heating, lighting and cleaning, and if meals became necessary to provide service and preparation, whilst the Dispensary Committee found the cost of food.

After a few weeks' work the occurrence of feverishness among the children called for notice. The reason was that this tuberculosis school differs from all others in admitting children who are suffering from active disease. Treatment in tubercular disease is mainly to obtain local rest, so that the tissues may not become invaded by the toxic poisons of the tubercle bacillus. This auto-intoxication has to be kept down whilst sufficient exercise is taken to sustain or improve physical condition.

The cases of active tubercular bone or joint disease attending the cripple schools have local rest procured by immobilisation of the affected part in splints, or by the use of plaster jackets or supports, so that any noticeable amount of fever among these tubercular children is comparatively rare.

In phthisis, or pulmonary tuberculosis, the lungs must move to keep up respiration and absolute local rest is impossible. A relative amount of rest is only procurable by general rest. Formerly this was accomplished by confining the patient to a bedroom, but now that the stimulating effect of fresh air is better appreciated, such patients pass much time in the open air, and are allowed gentle walking exercise so long as fever does not show. Any rise of temperature is taken as a guide to excess of exercise. In the children's wards of consumption hospitals or sanatoria, experience shows that a good deal of play is of advantage to spirits and health. Every now and then a child oversteps the mark, and so from day to day play has to be reduced for a time or even absolute rest prescribed.

No general experience had, however, been obtained of a tubercular school where the children had active, although not acute, disease. For those whose disease is in an active condition the tuberculosis school is more of a medical and remedial nature than educational, and schooling proper has, therefore, to be guided and varied according to the medical requirements shown by temperatures. Although it was not necessarily an open-air school yet the arrangements made at Kensal House were on the basis of such schools, and provided work, rest and play, but no feeding. Some of the children had not only a long walk twice daily between home and school, but repeated this in going also to and from dinner each day. Much rest had to be provided, and all physical exercise of a violent nature avoided. The games in such a school should be so regulated that any child reacting unfavourably can be withdrawn from undesirable exertion. The manual work also must not be too heavy.

Medical supervision has to be continuous. There is a great advantage in the Paddington scheme in home conditions being known, and the source of infection, apparently almost always an adult, being traced. The child and all the members of its family are examined, and on admission to the school a very exact record of each pupil's condition is made. With such a population as London to work among each suspected child ought to be inspected under X-rays, as physical signs are rarely marked in these children, and without the knowledge of environment it would be very uncertain work to attempt positive diagnosis in the best cases for this educational treatment. Recent work in Mannheim, indeed, showed that 42 per cent. of the 236 children suspected in school of tuberculosis, failed to react to Von Pirquet's tuberculin test, and were consequently to be taken as free from this disease.

The nurse records the temperature of each child morning and afternoon and the weight once a week. Children who show a morning temperature of 99 deg F. or more, rest on a couch for the rest of the day. An afternoon temperature of the same amount puts them on the resting list for next day. Children who reach 100 deg. F. are to remain in bed at home till seen by the dispensary doctor. At school the children are medically examined from time to time, the report cards gone over and the parents invited to be present and confer with the doctor.

On 29th June, 1911, a report was received from the Board of Education dealing with the school, setting forward the idea that it should be conducted more on the lines of an open-air school, and complaining of the lack of opportunity for adequate meals. These two last points are of very considerable importance. It would probably be better to assimilate such a school to open-air school practice as much as possible. The question of feeding the children is of supreme importance and will be discussed later.

The medical officer in reporting on the school could, therefore, only confirm the criticisms of the Board. The children attending had now been divided into three groups :—

(i.) Those whose temperature in the preceding week had exceeded 99 deg. F. in the morning or 100 deg. F. in the afternoon.

(ii.) Those above normal, but not above the limits of the first group.

(iii.) Those never above normal (98.4 deg. F.).

Badges were worn : blue, green (now replaced by red), and white, to distinguish the children of each group. The first group have to rest all day, and their education is confined to oral methods or silent reading. The second group can do ordinary lessons, but must be considerably restricted in physical exercise, drill, or play. The third group are the ordinary open-air school children. Were it not that being at home really means playing, sometimes, indeed, violently and excitedly, in the street, the first class of cases should not be in the school ; they are only suitable for a school sanatorium. The home journey to and fro, till recently often duplicated in the dinner hour, was entirely harmful to them. Nevertheless, the oral teaching and silent reading in school do much to check the moral evils which may spring up through the negative features of the usual treatment.

The provision of meals was much discussed. In many cases parents insisted on children, even with fever, going home to dinner. This was discouraged, with the approval of the Board of Education who still pressed for the provision of a suitable and substantial dinner for all the children, followed by a rest of two hours.

The clashing of different authorities, often viewing the same subject from a different standpoint and with differing purpose, the intense interest which each authority took in this pioneer work, made it difficult to get smooth working.

The Board of Education requirements, the Council's desire to meet them, and yet to aid the Dispensary Committee in carrying out their scheme, and this Committee's desire to work on certain definite lines in conformity with the rest of their general plan, led to numerous conferences and suggestions. It was finally decided that the medical work should be regarded as chief, the educational as subsidiary, and that medical treatment should be carried out in its entirety by the Dispensary Committee. The managers were also to take responsibility for feeding. In November the Board of Education considered it essential that the children should not be allowed to go home or to bring their own dinners, but that a satisfactory meal should be furnished at the school for all the children. This is now arranged. All children rest from 11.30 a.m., dinner has to be in two batches, boys 11.55 to 12.30, girls 12.30 to 1.5 ; all the children resting till 2 p.m. Each child, therefore, has one and a half hours' rest during the mid-day interval of school.

The results of the school cannot yet be set out in figures or even in qualitative assertions. Probably they will not nearly come up to the first expectations with which the school was proposed. The records, however, have already enabled an indication of the seasonal variation in growth n weight already referred to on p. 17, to be obtained. On visiting the school in the tenth week of 1912, the nurse drew attention to the fact that since school feeding had begun the children were not increasing weight at anything like the rate they had done previously. This was probably, however, merely seasonal and not due to school feeding.

There is much variation in these children partly due to their disease; for instance, one 12 year old girl weighed 25.5 kilo., whilst her neighbour of the same age weighed 48.0 kilo. The normal for their ages being 32. The average weights were taken for children aged 9—13, of whom there was a full record, as below :—

At 25th week. Age last birthday.	Sex.	Numbers analysed.	1911.				1912.	
			25th week.	35th.	45th.	50th.	5th.	10th.
9	Boys	11	23·40	23·78	25·16	25·52	25·88	26·08
	Girls	6	21·93	22·30	23·50	23·82	23·73	23·95
10	Boys	6	27·45	28·25	29·59	30·29	30·79	30·91
	Girls	7	26·56	26·88	28·14	28·63	28·81	28·88
11	Boys	6	28·35	29·51	30·06	30·40	31·11	31·41
	Girls	7	27·93	28·74	29·90	30·21	30·74	31·16
12	Boys	6	33·73	33·95	35·45	36·13	36·43	36·90
	Girls	7	32·11	33·11	34·73	35·06	35·93	36·44
13	Boys	4	28·00	28·65	30·32	30·60	31·47	31·62
	Girls	2	28·80	29·40	31·45	31·15	31·50	31·90
Totals	Boys	33	27·47	28·08	29·39	29·82	30·32	30·57
	Girls	29	27·42	28·06	29·42	29·74	30·13	30·44

Average weights at different times of groups of children at Kensal House School.

If the percentage rates of growth are calculated as weekly percentages for these periods they are very concordant throughout, as shown in the table :—

Age at 25th week.	Sex.	1911.			1912.		Whole period 25th week to 59th week—37 weeks.	Normal children 52 weeks (annual).
		25th to 35th week.	35th to 45th.	45th to 50th.	50th to 57th.	57th to 59th.		
9	Boys	·15	·60	·14	·15	·08	·301	·161
	Girls	·16	·54	·13	—·03	·09	·295	·173
10	Boys	·29	·55	·15	·17	·05	·304	·161
	Girls	·12	·47	·17	·06	·03	·295	·165
11	Boys	·41	·16	·12	·25	·10	·299	·163
	Girls	·29	·40	·10	·17	·13	·301	·190
12	Boys	·05	·46	·20	·08	·12	·295	·161
	Girls	·31	·48	·09	·24	·14	·305	·221
13	Boys	·25	·60	·10	·28	·05	·305	·233
	Girls	·21	·69	—·09	·11	·13	·292	·252
All the 62 children	Boys	·22	·47	·28	·24	·16	·300	·170
	Girls	·23	·48	·22	·19	·20	·300	·192

Kensal House children, weekly percentage growth in weight for different periods 1911–12.

The last column for normal children in this table is from annual averages, and the group figures in the bottom row are for the same age distribution of boys and girls as in the Kensal House total figures. Since the above table was compiled the rate of growth from 10th to 14th week of 1912 for the same boys and girls is .11 and .12 per cent respectively. This means that in the 35th to 45th week of last year these children put on weight of ten times the rate they have done (with increased feeding at school) during March of this year. These figures for Kensal House along with the facts given under the open-air schools, demonstrate the existence of a seasonal variation in growth. This is of great importance, and must be accurately determined for normal children by a careful special enquiry yet to be made.

The establishment of this school at Kensal House has been the means of bringing to light a new stratum among debilitated children, long suspected, but never definitely ascertained.

The battle with tubercle has to be gone through by everyone in the first few years of life. In a community like London the maintenance of a high average of the public health actually depends on the

maintenance of some infection by the causes of disease. Those affected need never suffer malaise, but they acquire and maintain the amount of immunity required to prevent epidemics, and catastrophal outbreaks. Tubercle as an infection is probably more ubiquitous than measles and although everyone acquires it, yet few become diseased. Not more than three children in a thousand in school, present evident phthisis. Yet searching the families of adults suffering from tubercle, children are found coming from such an environment, who are themselves infected and the observations taken in the school have shown that the majority are seriously infected. Only long observation can determine how extensive this infection is, and whether the main factors contributing to serious or lethal disease are heredity, debilitated physique or infection. It is possible from the Registrar General's records to reconstruct the facts for London so far as fatalities are concerned, but it is yet impossible to even estimate how many of those infected seriously are able to recover. That, however can be left for the moment. Dr. Letitia Fairfield by taking the ten years 1900–09 in order to average infectious diseases, ascertained that the mortality for London as deduced from the figures of the Registrar General, and re-arranged by interpolation in years of life, give for the common infections (measles, whooping cough, scarlet fever and diphtheria) and for tuberculous disease, the following numbers of deaths.

Ages.	2–	3–	4–	5–	6–	7–	8–	9–	10–	11–	12–	13–	14–	15–20
Tubercular diseases.	2,732	1,777	1,343	995	880	715	545	415	354	408	430	478	506	4,490
Infectious diseases.	7,183	4,763	3,097	1,650	1,150	853	503	330	190	134	90	60	45	180

By applying actuarial methods, these deaths can be shown to represent an amount of money paid out for schooling for the education of children who die before they are out of their teens. For the ten years the amount of schooling over five years of age given to tubercular cases came to 68,880 years, and for the infectious diseases deaths, 13,249 years of schooling. Taking the annual cost of education as £4 15s. per head annually, this represents £62,966 spent in educating children who die of infectious diseases and £327,185 on those dying of tubercular diseases in the period considered. This is money almost lost, as the children died before they had passed out of their teens, and therefore never made any adequate return for it. The estimate does not make any allowance for the cases who survive crippled or in chronic ill-health. If the deaths are so numerous it may be assumed that the ill-health without death is also extremely costly to the community.

These children are from homes where generally an adult is infected They may, therefore, be assumed if anything to have something of hereditary tendency to want of immunity. A study is required of the sources of infection and particularly infection by non-relatives. The home is likely to be itself infected. The child even if normally able to resist infection is still almost continuously exposed to it, and frequently possibly in more massive doses than are usual. The maintenance of robust health is necessary in such surroundings if infection is to be avoided. Adult men from fatigue and possibly also dust encountered in their work, are the most liable to infection. When the bread-winner is affected, as is so commonly the case, the invariable rule is a slow sinking of the family into poverty. The children, already possibly of weak immunity by inheritance, from want of food, and the surroundings and pressure of this poverty, want of sleep, of play, of clothes, of cleanliness are reduced to conditions of health which make infection almost a certainty. If tubercle is an infection pure and simple, predisposed to by the debility of overwork, and the want of vitality due to bad housing, poor wages, and caused by infection from other persons in the community, it is the duty of the community to come to the aid of the sufferers, whether actually diseased, or in danger of disease, and relieve them fully and freely. But even if the tendency to tubercle be largely inherited, that inheritance in the case of the bread winner or child, is aggravated by the conditions of life imposed by low wages and scanty living room. It is in the public interest to do all that is possible to relieve the tubercular child and to aid its natural tendencies to recovery. The chief aid that can be given is nutritional by the supply of plenty of good food, and the stimulation of metabolism by fresh air. Mid-day dinners can hardly be said to be sufficient. What ever in any way interferes with this supply is a direct obstacle to the child's chances of a healthy life. In addition, freedom must be procured from continual infection and from the care and worry, which affects even the children, of a sinking home. For these children so definitely affected that they wear the blue badge in school, the Tuberculosis School is only better than nothing, for the others, it is insufficient for their needs. They ought to be removed from the town altogether, and from their homes, and live with plenty of space in residential convalescent schools or camps of recovery.

Hitherto the school authority has not been able to do much against tuberculosis. Indeed the public health authorities have been very lax in regard to this disease, which is the chief single cause of disablement in adult life in this country. A great deal has been written and talked about the importance of tuberculous milk, and this has been enormously exaggerated as a factor in dissemination of disease, whilst the other contributory factors have been much neglected. The tubercular cow has, unfortunately, turned attention to itself, but it must be vanishingly small compared with the tubercular person as a cause of disease after the first year of life. Heredity from the past is almost unalterable in the present, but other conditions of debility notably the depressing factors, want of food, chronic fatigue, alcohol and the irritating factor of dust and infection are all more or less within immediate control if the price of control is paid. The tuberculosis tax must be paid in money or lives.

In the schools, obvious tuberculosis is cared for, so far as crippling diseases are concerned in the invalid schools. The provision for many of these cases is incomplete and insufficient in that there are no residential schools. The dangerous variety of tuberculosis, where the patient becomes infective to others, exists in obvious conditions in about three per thousand of the children in school. There is the whole strata of the child population already described, struggling chronically against this disease, who, in spite of neglect probably will recover, but damaged for life. They need help of the kind of which the Kensal House school is a beginning, but the help must go much further than at Kensal House.

The children known to be tuberculous from school inspections, have been listed. The names entered in 1910 numbered 564, and in 1911 were 1,228. As the mortality at school ages in London from tuberculous diseases recorded by the Registrar-General's returns, exceeds 500 a year, it is obvious that these school lists are very defective. The new tuberculous regulations and the coming of the Insurance Act will make effective following up of all tuberculosis cases a necessity. This following up is only possible by joint action of the Council and the borough councils. The final solution of what is tobe do ne in the case of poor tuberculous families is, however, a problem depending on the answer to many points which at present it would almost seem pedantic to discuss, but which are worth close and exhaustive investigation as they will affect millions of public expenditure in the near future.

Residential schools.

The treatment of ringworm at some of the residential schools might give rise to trouble. Arrangements have now been made to treat all suspicious cases at once with tincture of iodine, and to have any cases requiring it removed to the Metropolitan Asylums Board ringworm school, on the certificate of the medical officer.

Cases of ophthalmia or trachoma occurring in residential schools ought also to be removed. The question was raised in connection with a boy with some eye trouble, who was brought from Mayford to Upton House to benefit by hospital treatment. The surgeon at the Royal London Ophthalmic Hospital, became suspicious of the development of trachoma, and it was proposed to send the boy to the ophthalmic school, but the Metropolitan Asylums Board stated that they were unable to arrange for his admission.

Secondary and trade schools.

The greatest difficulty in secondary and trade schools is in connection with the treatment of dental defects. The results are better in the girls' schools than in the boys' schools. Medical inspection reveals pupils suffering from septic conditions of the gums of which they were quite unaware, but the treatment obtained is often far from satisfactory. There is seldom any attempt to stop the teeth, and some dentists appear to have little appreciation of the aseptic aspect of the case.

Training colleges.

In some training colleges the number of dental deficiencies is excessive ; it is attributable to extra county and particularly Welsh students who have neglected their teeth in early life, and who are either wearing false dentures in the training colleges or have to be advised to do so.

Examination of Candidates.

Candidates taking up permanent appointments in the school service are examined in the Public Health department before commencing work. Candidates for scholarships are also required to be examined before the scholarship is finally awarded. The number of candidates submitting themselves for a first examination during the year was 5,975. They may be classified according as they are examined for the permanent service, under special references, or for the award of scholarships.

Permanent service.

The first division includes all who work on the staff of the various educational institutions ; these are teachers and instructors, matrons, nurses, schoolkeepers and caretakers in all classes of educational establishments under the Council. The Appendix IX. gives particulars of the various candidates examined and the conditions noted as present. The numbers medically examined will not coincide with the number of appointments, as candidates from the Council's training colleges, having been under regular medical inspection therein, are not further examined on entering the permanent service within one year of leaving college. Of the 267 referred candidates 9 (5 male and 4 female) were referred a second time owing to the conditions not having been remedied, viz., 3 (1 male and 2 females) to a dentist ; 5 (4 males and 1 female) to an oculist ; and 1 female to an oculist and also for anæmia. Of the candidates referred a second time, 1 female was referred for two defects.

References.

In addition to the first examinations, 763 references were dealt with. These references relate to leave to be granted to employees absent owing to personal illness ; to teachers returning to duty after extended leave of absence (*a*) owing to personal illness ; (*b*) in order to visit educational institutions abroad or to study for degrees ; (*c*) to married women, under No. 115 of the Regulations with regard to the Education Service, and to teachers about to be superannuated.

In addition, about 200 claims were received from teachers for exceptional treatment as regards sick pay, in respect of absences alleged to have been due to infectious illness contracted directly in the course of the teacher's employment.

Scholarships and candidates for teaching profession.

The medical examination of candidates for the Council's scholarships serves a triple purpose. It prevents unsuitable scholars from taking up awards ; it is a factor in promoting the health and well-being of suitable scholars by insisting on the remedying of remediable defects ; and it safeguards the Council against pecuniary loss due to the payment of grants to scholars who are physically unfit to take advantage of a scholarship, and whose ultimate breakdown is but a matter of time.

The scholarships and awards granted by the Council fall into three divisions, each of which requires different treatment in so far as the medical examination of the candidates is concerned. These divisions are as follows—

(*a*) County scholarships enabling candidates to proceed to institutions of university rank.

(*b*) Technical scholarships enabling candidates to receive instruction in trades ; and special scholarships.

(*c*) Awards enabling candidates to prepare for the teaching profession.

The County scholarships are of four grades (junior, supplementary junior, intermediate and senior) and provide a complete scheme by which a boy or girl may proceed by various stages from the public elementary school to the highest grades of education, whether at a university, technical college or other institution, providing advanced training for a professional career. In medically examining these candidates the stage of the scholarship is carefully noted, as the strain increases with the award, and it sometimes happens that a candidate who has been accepted for a junior county scholarship is rejected for the succeeding awards because attendance at higher institutions would be injurious to health.

The medical examination of junior county scholars practically gives the defects of the brightest children of the age group, 11 years old last birthday, and, as the children must, in any case, remain in school until 14 years of age, the rejections are few. Most useful work is done, however, by making it a condition of award that all remediable defects shall be treated before the children are allowed to take up the scholarships.

Supplementary junior county scholarships are reserved for children of less than 14 and not less than 13 years of age who by reason of late development or other cause fail to obtain the junior county scholarships.

The intermediate county scholarships are open to boys and girls who are from 16 to 17 years of age on 31st July in the year of competition, and are tenable at approved secondary schools or technical colleges until the end of the school year in which the scholar attains the age of 18, but may be renewed for a further period of one year.

The senior county scholarships are intended to assist candidates of the age of 18 and upwards who desire to pursue a course of study at an institution of university rank. Appendix X. shows the number of candidates examined and the conditions found.

Of the 825 junior county scholars who were referred back for various defects, excluding those 28 whose scholarships were finally withdrawn, 197 (67 boys and 130 girls) were referred again owing to the conditions not having been remedied. A further analysis of these numbers shows that the causes of the second reference were for—

	Want of cleanliness. (1)	Vision. (2)	Teeth. (3)	Throat. (4)	Ears. (5)	Ringworm (6)	Skin. (7)	Nose. (8)
Boys	3	30	5	26	—	1	2	5
Girls	74	35	3	17	2	3	—	1

Some of the scholars were referred again for more than one defect.

Of the 97 supplementary junior county scholars who were referred back for various defects, one boy was referred again owing to defects of throat not having been remedied, and two girls were also referred for defects of vision and one girl for teeth.

Of the 38 intermediate county scholars who were referred for various defects, 1 boy was referred again as he had not obtained satisfactory treatment for defective eyesight.

The following table shows the nature of the defects of 28 junior county scholars who were rejected; one was rejected for two defects.

	Want of cleanliness (1)	Vision. (2)	Teeth. (3)	Throat. (4)	Nose. (5)	Tuber-culosis. (6)	General health. (7)
Boys	1	—	1	—	—	1	1
Girls	21	1	—	1	1	1	—

Two supplementary junior county scholars (girls) were rejected owing to unsatisfactory personal hygiene.

Of the candidates passed as fit 93 junior county scholars, 8 supplementary junior county scholars, and 2 intermediate county scholars were accepted with defects that did not easily lend themselves to treatment but which would not interfere with their studies.

The Council's scheme of trade scholarships is intended to encourage students to devote themselves to special branches of technical or industrial work. In medically examining the candidates the standard of examination is varied according to the trade that the scholar proposes to follow, because each trade has its peculiar effect upon the health of the workers. Appendix X shows the number of candidates examined in connection with each award, and the conditions found.

Of the 177 who were referred, 25 (1 boy, 24 girls) were referred a second time owing to the conditions not having been remedied. An analysis of these numbers is given in the following table—

Scholarship. (1)	Number referred a second time. (2)		Referred for											
			Want of cleanliness. (3)		Vision. (4)		Throat. (5)		Teeth. (6)		Nose. (7)		Skin. (8)	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Borough Polytechnic	1	...	...	...	...	...	1	...	...	...	...	...	...	...
Cookery	...	2	...	2	...	...	...	...	...	...	...	...	...	...
Corset-making	...	2	...	1	...	1	...	...	...	...	...	...	...	...
Dressmaking	...	2	...	1	...	1	...	...	...	...	...	...	...	...
Laundry work	...	5	...	5	...	...	...	...	...	...	...	...	...	...
Millinery	...	2	...	...	...	...	...	2	...	2	...	...	...	...
Ready-made clothing (designing and making of)	...	5	...	3	...	1	...	1	...	...	...	1	...	...
Tailoring (ladies)	...	2	...	...	...	1	...	...	...	...	...	...	...	1
Upholstery	...	3	...	2	...	1	...	...	...	...	...	...	...	...
Waistcoat making	...	1	...	...	...	1	...	...	...	...	...	...	...	...

Some of the scholars were referred again for more than one defect.

9 candidates (7 boys, 2 girls) were rejected for reasons set out below. One of the candidates was rejected for two defects—

Scholarship. (1)	No. rejected (2)		Reason of rejection.									
			Want of cleanliness. (3)		Throat. (4)		Teeth. (5)		Vision. (6)		Sundry. (7)	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Artificers, boy	2	...	...	...	...	...	...	...	1	...	1 (Poor physique)	...
Building	1	...	1	...	...	...	...	...	...	...	...	...
Cookery	1	...	...	...	...	...	...	...	...	...	1 (Heart disease)	...
Furniture and cabinet making	1	...	1	...	...	...	...	...	...	...	...	...
Mercantile marine	2	...	...	...	1	...	1	...	1	...	...	...
Ready-made clothing (designing and making of)	...	1	...	1	...	...	...	...	...	...	...	...
Tailoring (ladies)	...	1	...	1	...	...	...	...	...	...	...	...

The Council has made provision for a number of awards of a special character which cannot well be classed as trade scholarships. Appendix X. shows the number of candidates examined and the conditions found.

Of the 326 special scholarship candidates who were referred 79 junior domestic economy scholars (girls) were referred a second time owing to defects not having been remedied. The defects are indicated in the following table—

Scholarship. (1)	Number referred a second time. (2)	Referred for						
		Want of cleanliness. (3)	Vision. (4)	Throat. (5)	Teeth. (6)	Nose. (7)	Anæmia. (8)	Ears. (9)
Domestic economy, junior	79	56	15	4	2	1	2	4

Some of the candidates were referred again for more than one defect.

Forty-three (2 boys 41 girls) were rejected for reasons set out below. Some of the candidates were rejected for more than one defect.

Scholarship. (1)	Number rejected. (2)		Reason of rejection.											
			Want of cleanliness. (3)		Heart. (4)		Teeth. (5)		Vision (6)		Anæmia. (7)		Sundry. (8)	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Art	1	...	...	...	...	...	...	...	1	...	...	...	1 cerebral trouble.	...
Cripple	1	...	...	...	...	...	...	...	...	...	...	...	1 spinal caries.	...
Domestic economy ...	...	41	...	35	...	1	...	4	...	...	...	1	...	1 tuberculosis.

The Council's awards for the training of elementary school teachers provide a complete scheme by means of which a boy or girl may proceed by various stages from the public elementary school to a training college for teachers, and when conducting the examination the medical officer is required to certify that the candidates are in a fit state of health to take advantage of a scholarship, and that they are likely ultimately to satisfy the requirements of the Board of Education for recognition as certificated teachers. The ages of the candidates are as follows—

Pupil teachers, 16 to 18 (pupil teachers of handicrafts not less than 14 on the 31st July in the year of the award); bursars, 16 to 18; student teachers, not less than 17; training college students, not less than 18 on 1st August of the year of admission to a college; domestic economy training scholars, 18 to 30.

The results of the medical examination are shown in Appendix XIII.

Of the 461 candidates who were referred, 35 (3 males and 32 females) were referred more than once for reasons indicated below—

Awards. (1)	Number referred a second time. (2)		Referred for											
			Want of cleanliness. (3)		Throat. (4)		Vision. (5)		Anæmia. (6)		Nose. (7)		Hearing. (8)	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Bursars	1	12	1	4	...	...	...	3	...	3	...	1	...	1
Pupil teachers	2	...	...	3	...	...	...	1	...	...	...	...	...	...
Pupil teachers of handicraft ...	5	3	...	...	...	...	1	...	...	...	...	...	1	...
Student teachers	...	9	...	6	...	...	...	...	...	...	...	3	...	...
Training college students... ...	...	6	...	3	...	1	...	2	...	...	...	...	...	...

Some of the candidates were referred again for more than one defect.

Nineteen candidates (6 males, 13 females) were rejected for the reasons given in the subjoined table—

Awards. (1)	Number rejected. (2)		Causes of rejection									
			Want of cleanliness (3)		Hearing. (4)		Vision. (5)		Heart. (6)		Sundry. (7)	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Bursars	...	6	...	2	...	...	...	...	...	3		1 glands
Student teachers ...	1	2	...	...	...	...	...	1	...	1	1 goitre	
Training college students	5	5	...	1	1	...	...	...	1	...	1 bronchocele 1 systolic murmur and albuminuria 1 voice	1 laryngitis 1 paralysis 1 Grave's disease 1 tubercular nephritis

It is a very great hardship indeed, that persons who have spent years in training for the teaching profession, may be finally rejected as unsuitable for superannuation on some medical condition which when the sheltered condition and the great expectation of life of teachers is considered, probably will not, on the whole affect a member of the profession as it would a member of the general community. Candidates for the teaching profession ought to have the option of medical examination as qualification for superannuation should they pass their examinations at a much earlier age, say, seventeen, and should not be rejected for intercurrent illnesses, which leave comparatively trivial defects, such as slight roughness of a heart valve, after years spent in training. There ought in any case to be definite rules formulated by the department as to the conditions which are acceptable or non acceptable.

Personal Hygiene Schemes.

Elementary Schools—Verminous Heads.

The London County Council (General Powers) Act, 1907, and the Children Act, 1908, confer upon the Council as the Education Authority the power of conveying to suitable premises and cleansing children found to be verminous after the parents have been duly notified of the condition. To utilise the powers thus conferred, the Council has arranged for 24 cleansing stations to be opened ultimately, but pending the completion of these arrangements, the original scheme for securing the treatment of verminous heads has been continued with the success experienced in former years. The procedure of this scheme is as follows :—

The school nurse examines all the children at a school and notes the condition of their heads, using strict precautions against contagion. The head teacher is then supplied with a white card for each child whose head requires cleansing. The card, which draws attention to the condition and contains directions for cleansing, is enclosed in a sealed envelope and sent home by the child. At the end of the first week all cases not treated are separated from the other children and a red card with full

details is filled up by the nurse for each child still unclean. This is forwarded to the divisional superintendent, who has the card delivered at the home by the attendance officer. At the end of the second week, the assistant to the superintendent of school nurses visits the school and examines these children, who, if still unclean, are excluded. After exclusion the divisional superintendent takes out a summons under the Attendance By-laws; but if any child is properly cleansed before the hearing, it is re-admitted to school, examined by the nurse and the summons is not pressed, the circumstances being explained to the magistrate. The following table shows the result of the cleansing scheme as applied to heads (1911)—

Departments (1)	Number of Children Examined (2)	Number Clean (3)	Number verminous and White Cards served (First Notice) (4)	Number of Red Cards served (Final Warning) (5)	Number Proposed by Nurse for Exclusion (6)	Number Excluded for Prosecution (7)	Number Prosecuted (8)
Boys	873	852	21	8	3	3	—
Girls	45,119	37,626	7,493	4,921	3,809	2,689	257
Infants	17,622	15,835	1,787	1,082	743	482	32
Mixed	5,662	5,148	514	324	260	202	25
Special	638	501	137	86	59	35	1
Totals	69,914	59,962	9,952	6,421	4,874	3,411	315

The parents of 315 children were prosecuted, and fines varying from 2s. 6d. to £1 imposed. The percentage of children found to be verminous to children examined, was 14.2 in 1911, as compared with 22.4 per cent. in 1910.

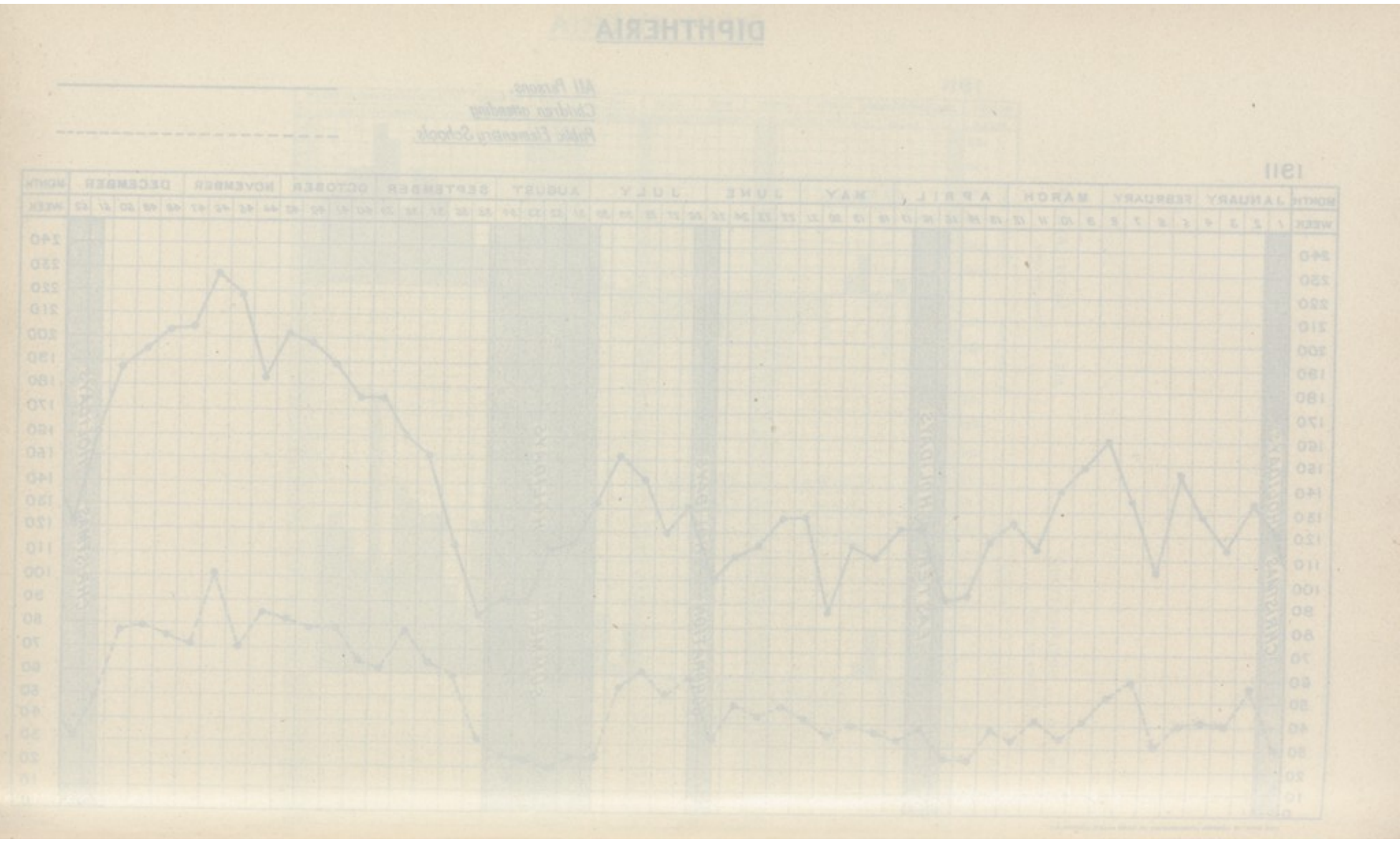
The head cleansing scheme was commenced under the School Board. It still gives very good results in districts where the cleansing stations are not in operation. The hair nowadays is much better cared for, and this cleansing scheme is very useful among the better class children who could not be sent to the cleansing centres and would often remain infected if not dealt with under the scheme. Often a medical certificate is obtained that the child is free from infectious disease, sometimes indeed from all "traces of vermin;" supported by these the parents are naturally indignant with the nurse's judgment which, however, is generally correct. The strictness shown towards scholarship candidates in respect of cleanliness of the head has reacted on the elementary and secondary schools. Only a very small proportion of scholarship children are rejected on this account and they are generally undesirable on other grounds.

Elementary Schools—Verminous persons and clothing.

As stated above, the Council has decided to exercise the powers for the cleansing of verminous children conferred upon it by the London County Council (General Powers) Act, 1907, and the Children Act, 1908. Clause 3 of Section 122 of the Children Act provides that the local education authority may require the local sanitary authority to permit the use of premises and appliances erected for the cleansing of the person or the clothing of persons infested with vermin. In view of this clause the Council has entered into agreements with nine sanitary authorities (City, Stoke Newington, Hackney, Poplar, Bermondsey, Camberwell, St. Marylebone, Hampstead, Woolwich) and is negotiating with five others (Battersea, Greenwich, Westminster, St. Pancras, Southwark) for the use of such premises and appliances. The agreements stipulate *inter alia* that the sanitary authority shall cleanse children attending elementary schools who shall be sent to the station by the Council, usually at the rate of 2s. a head for any number of cleansings within one calendar month from the date of the child's first attendance. In addition to these arrangements the Council has five stations (Finch-street, "Chaucer," Bath-street, Fountain-road, Sedlescombe-road) and is adapting premises or negotiating for the use of premises in four other instances, viz., Frankham-street, Lauriston-road, Pakeman-street and Sirdar-road.

The scheme adopted provides that the school nurse visits the school, examines all the children who are in a foul or filthy condition and supplies to the head teacher for each child a card drawing attention to the condition found. The card is placed in a sealed envelope and given to the children to take home. The school nurse forwards to the nurse in charge of the cleansing station to which the school contributes the names of the children concerned. After 48 hours, the nurse in charge of the cleansing station visits the school and examines all children who have had cards, and those cases not cleansed are separated from the other children. The divisional superintendent is asked to serve upon the parent or guardian a statutory notice requiring the parent or guardian properly to cleanse the child, and the medical officer of health for the district in which the child resides is notified so that the home may be dealt with under the London County Council (General Powers) Act, 1904, Part IV., if necessary. When 24 hours have elapsed after the serving of this notice, the nurse again examines the children, and conveys those still unclean to the cleansing station for compulsory cleansing. An opportunity is afforded to the children to attend at the cleansing station voluntarily. If a child again attends school in a verminous or foul condition after having been compulsorily cleansed at a station, the divisional superintendent is asked (1) to serve a second statutory notice requiring the parent or guardian properly to cleanse the child and (2) to take police court proceedings against the parents.

A complete report on the scheme cannot be made until all the projected stations are working, as until the scheme is complete, separate stations are so overworked that the results in the individual schools are not satisfactory. But the definite improvement in schools which are well situated with regard to cleansing is more than can be expressed in figures of children cleansed. The children come better clad, and where, at the first glance almost, the nurses used to find all the garments infested with vermin, they



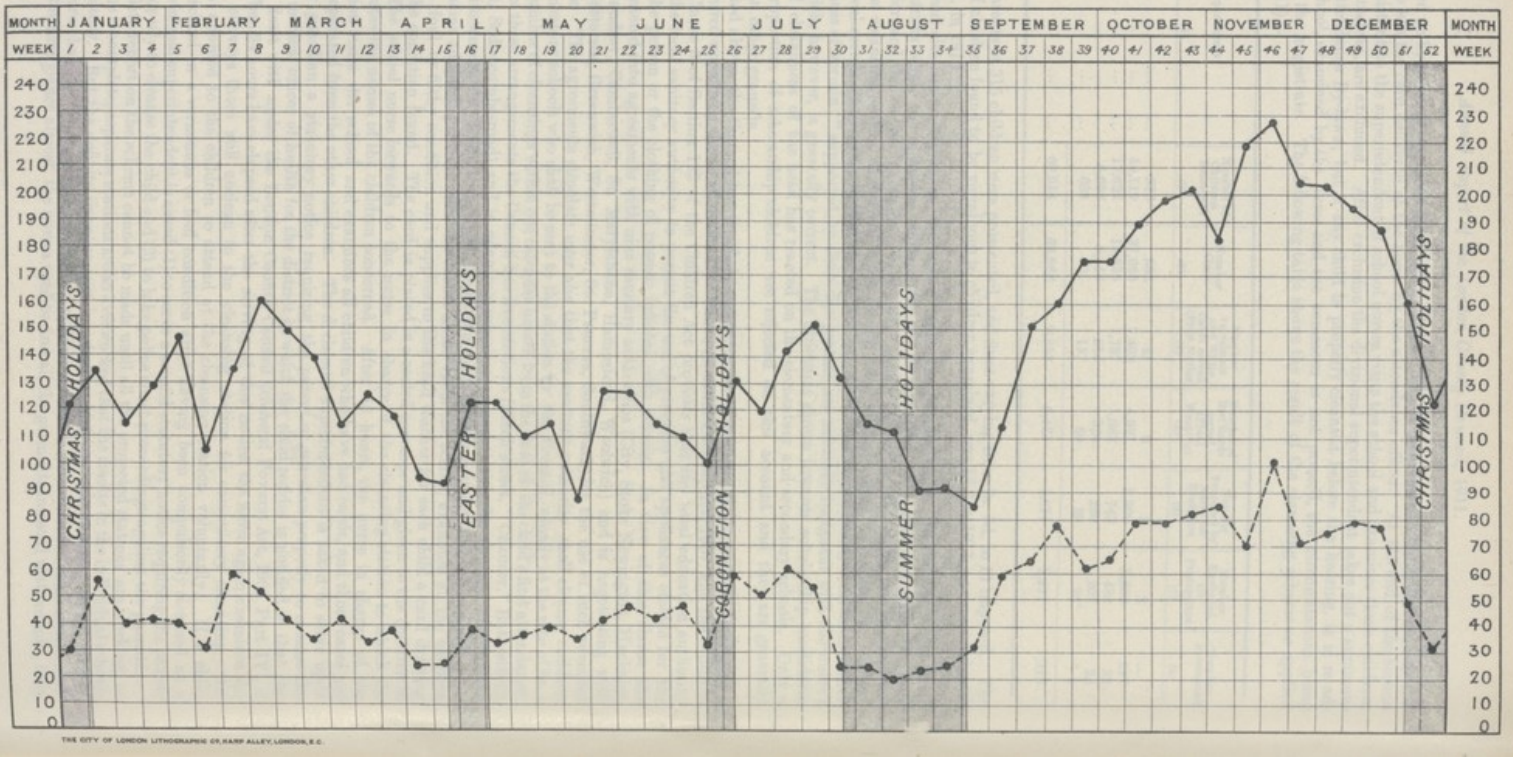
DIPHTHERIA

All Persons. ———————————

Children attending

Public Elementary Schools. -

1911



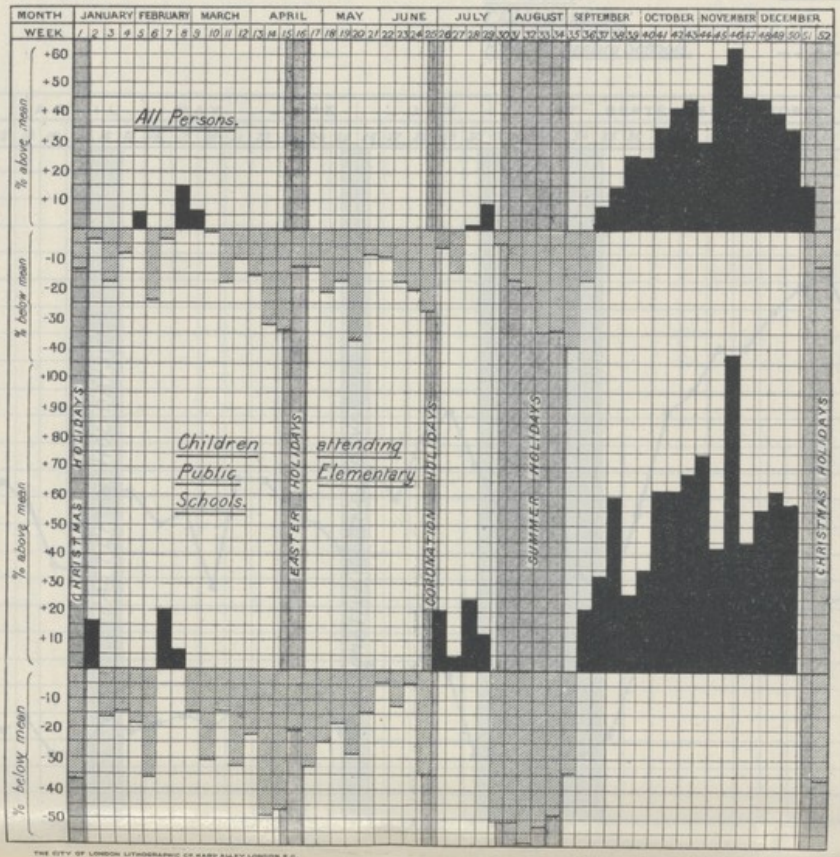
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DIPHTHERIA

1911

DIPHTHERIA

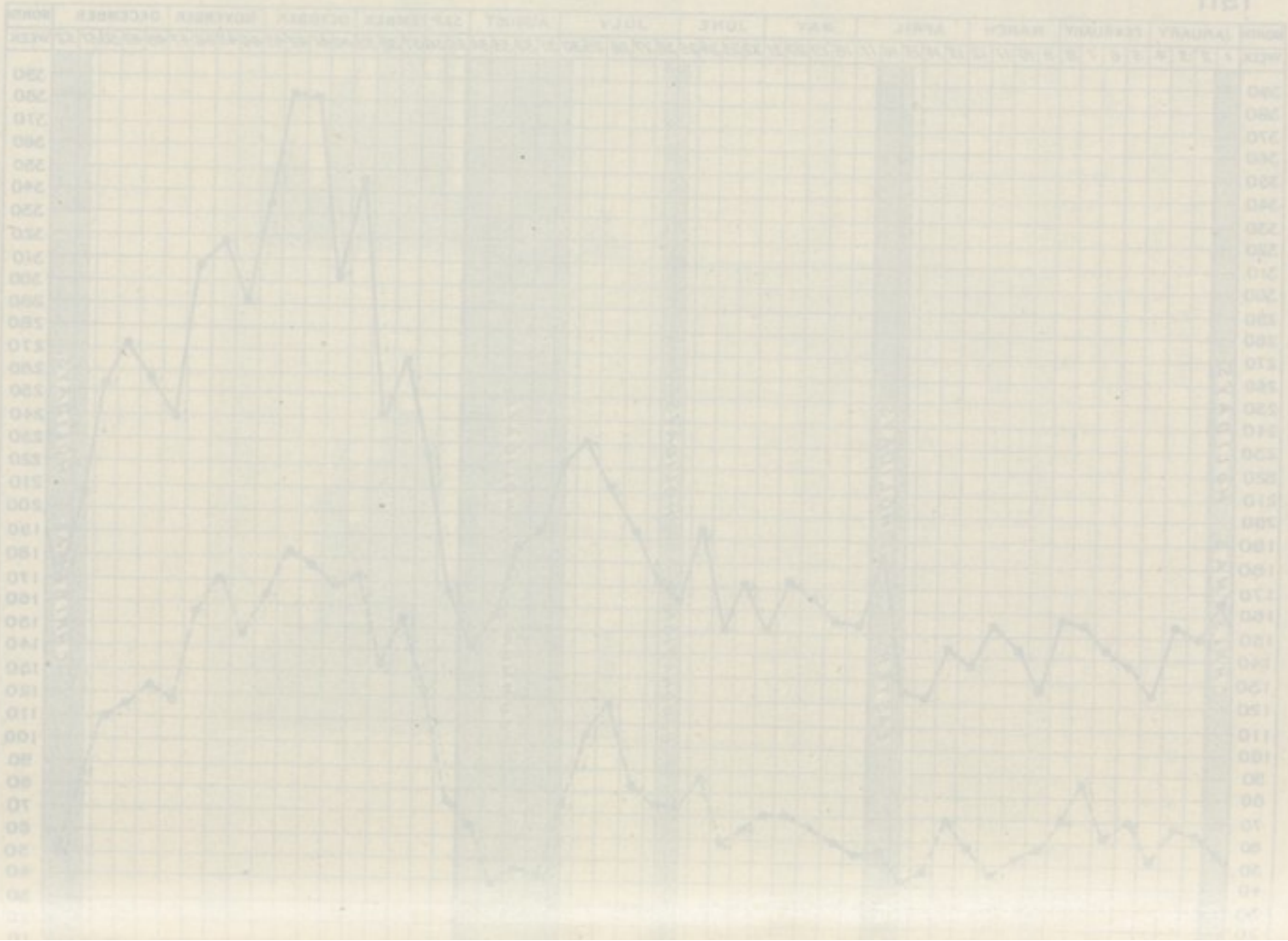
1911



MEAN NOTIFICATIONS 140 cases per week

MEAN NOTIFICATIONS 49 cases per week

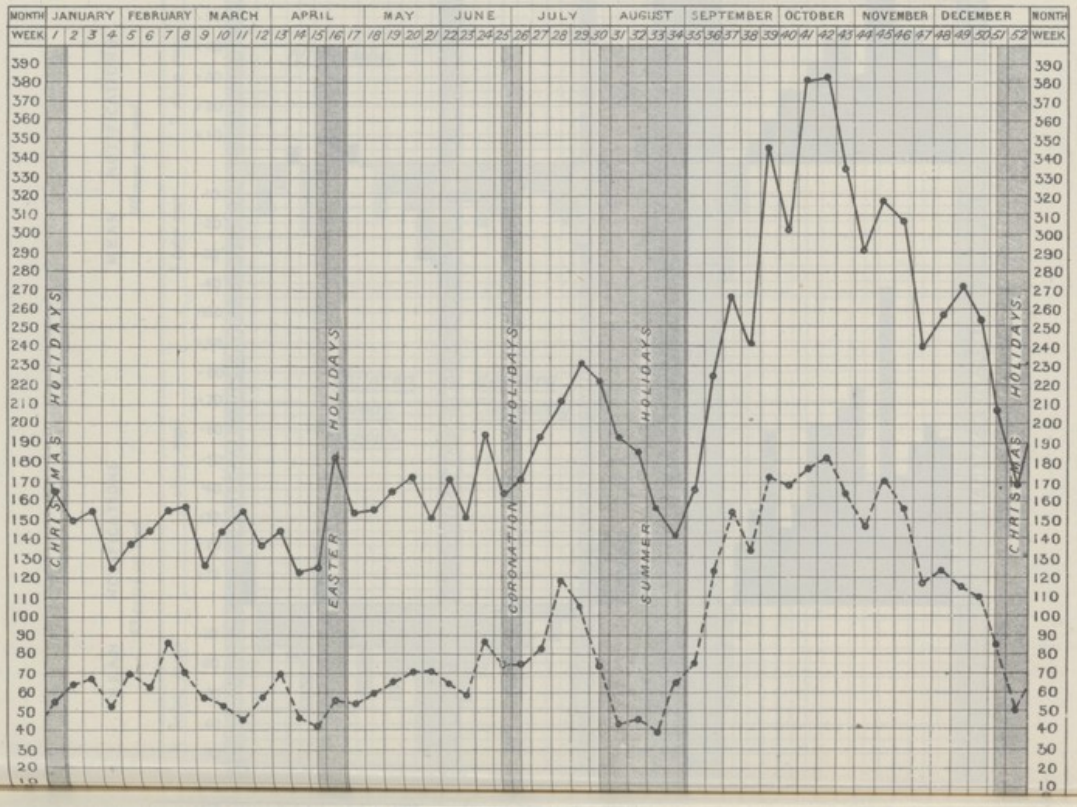
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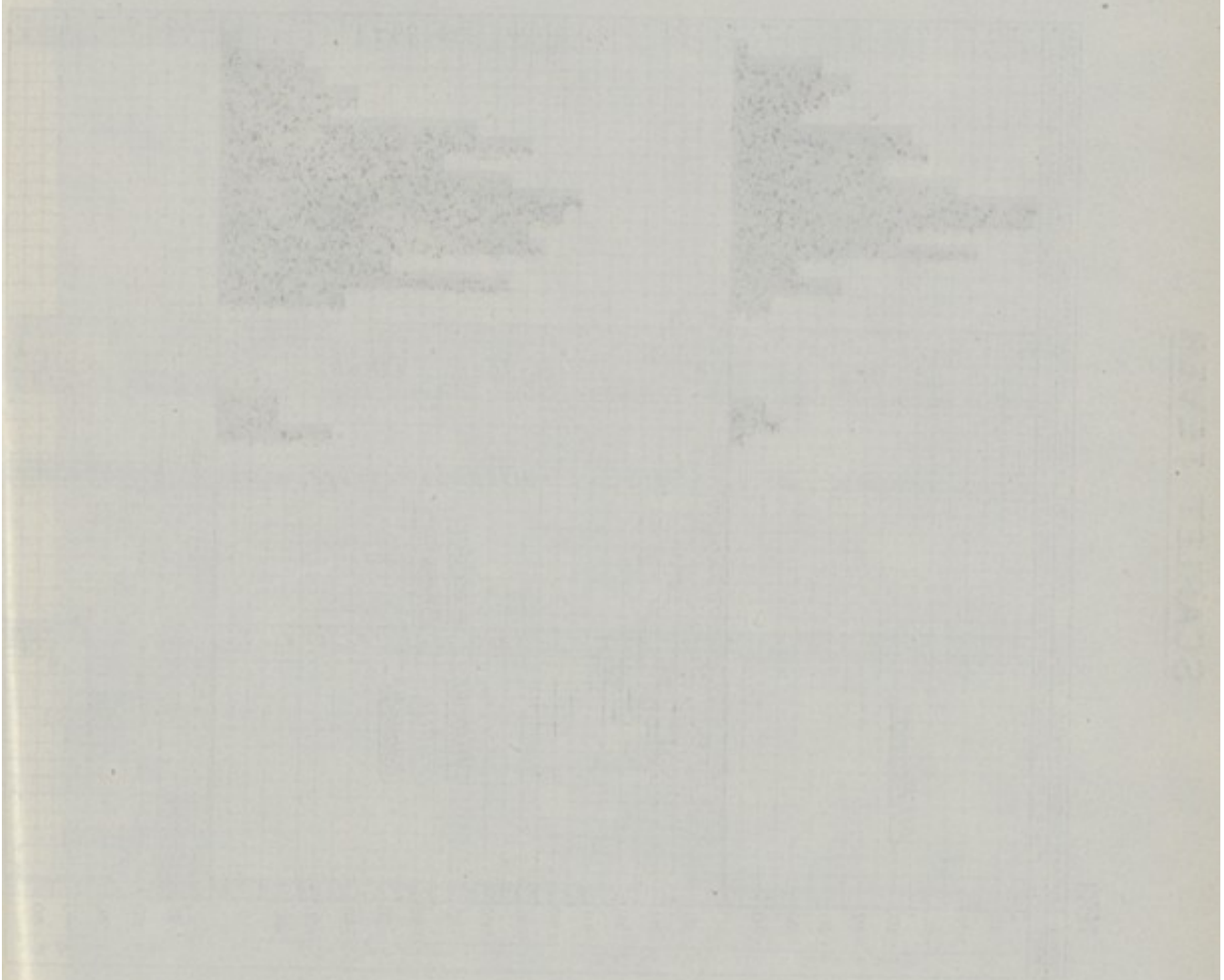


SCARLET FEVER

All Persons. ———————
Children attending
Public Elementary Schools. - - - - - - - - - - - - - - - - -

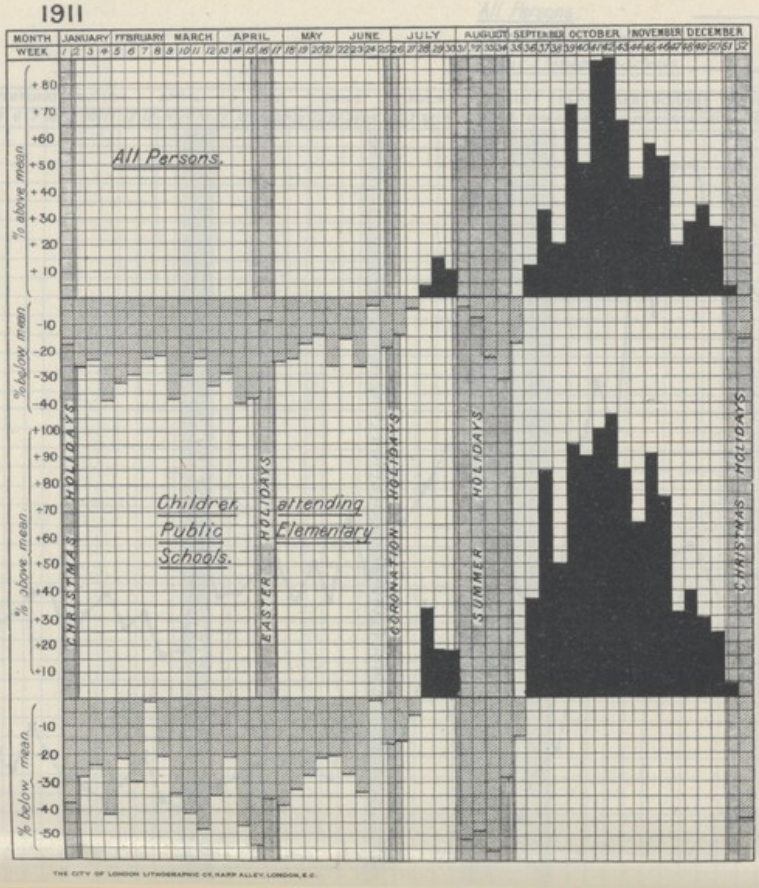
1911





SCARLET FEVER

1911



MEAN NOTIFICATIONS 89 cases per week

MEAN NOTIFICATIONS 202 cases per week

THE CITY OF LONDON LITHOGRAPHIC CO. HARP ALLEY, LONDON, E.C.

need now carefully to examine under-garments to discover the conditions. Still, the reports are that there is so much work that the nurses attached to the centres cannot fully cope with it. During the year 53 parents were fined amounts varying from 2s. to 10s., and costs.

The work done by the nurses and the nine cleansing stations may be summed as under—

Departments.	Number examined.	Number clean.	Number verminous and card M.O.24 se ved.	Children returned clean.	Number on whom statutory notices served.	Number cleansed at L.C.C. stations.	Prosecutions.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Boys	84,581	79,196	5,385	1,909	3,476	2,006	96
Girls	83,239	78,187	5,052	1,550	3,502	1,856	120
Infants	68,453	65,398	3,055	1,102	1,953	810	22
Mixed	12,080	11,256	824	262	562	272	29
Special	3,239	2,662	577	153	424	265	18
Totals ...	251,592	236,699	14,893	4,976	9,917	5,209	285

Secondary schools and kindred institutions—Verminous heads.

The personal hygiene scheme in girls' secondary schools and kindred institutions has continued in operation during the past year. The scheme was applied for the first time to one boys' school during the last term of the year. The inspection is carried out by the two assistants to the superintendent of nurses, one working in institutions north and the other in institutions south of the Thames. At the beginning of each term a thorough inspection of each pupil is made and a card containing instructions for cleansing the hair is given to all unsatisfactory cases and they are excluded from school. At an interval of a week the excluded cases are re-examined, and if again unsatisfactory, they are excluded for a second period of one week. In order to deal with obstinate cases, it has been decided that in the case of a scholarship holder, the scholarship should be withdrawn, and in the case of a fee paying pupil, the pupil should be permanently excluded from attendance at the institution, provided that at least four weeks shall have elapsed between the first and last occasions. Few cases are unsatisfactory at the second visit, and still smaller number at the third, but during the year 13 pupils (girls) were proposed for permanent exclusion from the institutions owing to unremedied defects in personal hygiene. The following table shows the conditions found during the past year.

Examination.	No. of Pupils.		No. of verminous heads found.		Percentage of unclean heads on the pupils examined.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Spring Term, 1911 ...	—	3,599	—	172	—	4.8
Summer Term, 1911 ...	—	3,679	—	209	—	5.7
Autumn Term, 1911 ...	98	4,288	12	366	12.3	8.5

Infectious Diseases.

Zymotic diseases and school.

The principal zymotic diseases in relation to elementary schools are measles, diphtheria, scarlatina, and occasionally, out of all proportion to its numerical importance, small-pox.

From year to year in this series of reports, various aspects of these diseases have been dealt with in relation to school work.

So long ago as 1893, the Medical Officer of Health pointed out that the summer vacation might afford an indication for ascertaining the influence of school attendance on notifications of infectious diseases. Each year a table has been published in the Report of the Medical Officer of Health, in which, by the use of percentages, of one month over the preceding, the effect has been set out so as to be unmistakably manifest. It varies considerably in its extent from year to year. There is, undoubtedly, some diminution in the number of notifications of infectious disease occurring during the periods of infection concurrent with the school vacation. Considering what the popular idea is of schools as centres of disease, the effect is surprisingly small. But the reduction of notifications by no means postulates reduction of disease through this cessation of school attendance, nor does it prove that school is a factor of any importance in relation to the zymotic diseases. There are indeed, reasons, as I showed in a statistical paper in 1896, for regarding school attendance as protecting children from risks of infection in a similar way to which it protects them from risk of death by accident. The aim in London, in regard to infection, has been to make the school safer than the street.

The holiday effect is a reduction which appears to amount to 15 or 20 per cent., but it has been already demonstrated by school enquiries in London, that during the vacation there is a reduction of 15 to 20 per cent. in the child population, and this exodus of children has frequently been noted by country medical officers of health as being the means of introducing infectious diseases locally. Even this, however, is masked to some extent by a much more potent factor, for many cases are brought to knowledge entirely through the efforts of school officials. The notifications of diphtheria and scarlatina are considerably swollen by cases of sore throat sent home from school, which, as shown later account for about one-fifth of the cases of scarlatina, and in the case of diphtheria include also the carriers discovered by the bacteriological results of school investigations.

In a general enquiry in the Battersea area of south-west London in 1909, and a subsequent investigation by Dr. Thomas, on the sources of infection in diphtheria cases, it was pointed out that there is a factor acting exclusively on school children which affects the notification of infectious disease during the school term—the system of visitation at the homes by the attendance officers whenever a child is absent, and the prosecution of the parents if satisfactory reasons for absence are not forthcoming. Possibly no other public service compares in efficiency and universality with this in its action on the whole population. Parents know that if they have no reasonable excuse, prosecution will follow; during school term, therefore, there is great pressure upon parents to seek medical advice in order to satisfy the visitors. This ceases with the holidays, and it is probable that numbers of mild cases are missed at these times, whereas they are frequently brought to light whilst the school visitors are active. In many of the 99 cases of diphtheria which Dr. Thomas investigated, it was found that the school attendance officer's visit preceded any notification, and this last was due to his demands for a doctor's certificate.

The discriminative requirements of the school attendance officer explain the increase in the immediate notification of scholars as compared with younger children, without giving any clue as to the real incidence of disease on these two groups of children. The indirect function of the school attendance visitor as a sanitary officer, has not hitherto met with acknowledgment, but when it is recognised, several things appear in a clearer light—the sudden drop in notifications when school ceases, and the no less sudden increase when the attendance visitor resumes his duties then appear in the relation of cause and effect. So that there is the double effect of school attendance officer at the home, and of teacher,

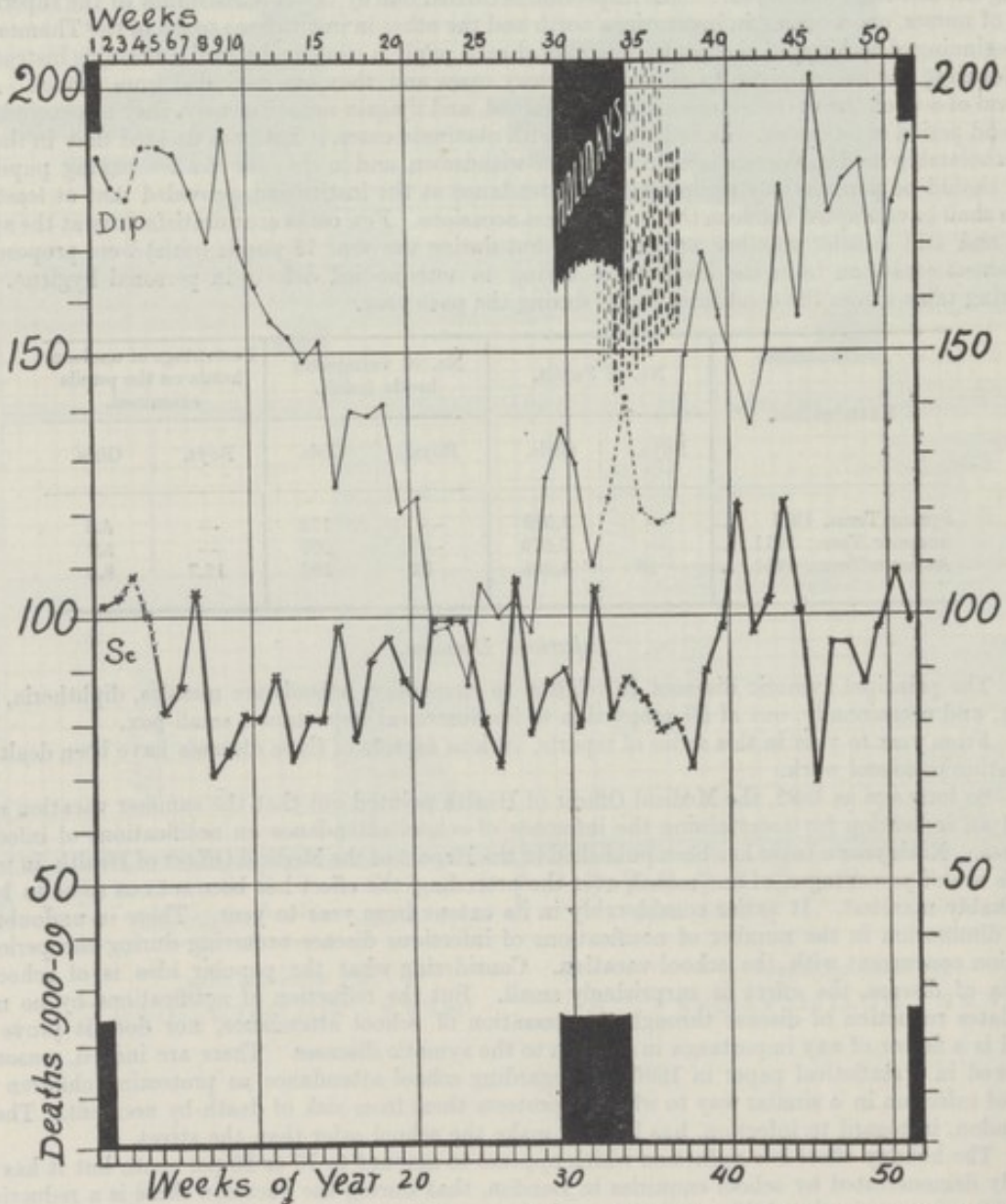


FIGURE 4.—London, 1900–09. Average weekly mortality, scarlatina and diphtheria, shewing absence of marked holiday effect. (See also Fig. 10.)

nurse and doctor in the school, bringing to light numbers of cases when the schools are open, sufficient to account for any drop when they are closed, without postulating a school effect which there are no other facts to support.

Were it not for these considerations, it would be exceedingly uncomfortable to think that the intricate and costly organisation which has been built up by which all the essential facts of the occurrence of each infectious case among elementary school children in London are daily registered and

watched, produces apparently no noticeable effect on the prevalence of such diseases as diphtheria or scarlatina. This, however, is to be expected when the effects of school attendance in respect to these diseases are fully examined. The enquiry alluded to above as to the causes of infection in each case of diphtheria notified in the heaviest week of 1909, showed that in only five per cent. could school infection come into consideration, and that there was not the slightest probability that it could possibly have had to do with any of the other cases. As regards scarlatinal cases, the Battersea enquiry completely negatived the theory of school influence. Measles from its nature is more likely to be disseminated by school attendance than either scarlatina or diphtheria. Unfortunately, the measles record, as will be shown a little later, is very defective, excepting as regards mortality. It is highly probable too, that in the future the effect of school attendance on measles among crowded populations will be shown to be less than is now credited. If the mortality figures of measles, diphtheria and scarlatina be set out as in Fig. 10, which takes the numbers each week in three weekly averages to equalise the varying times of fatalities in different cases, the holiday influence at Christmas is noticeable in the measles curve, but wanting in the others, although deaths are proportionately twice as numerous for diphtheria as in summer, and school influence should be more marked.

In the summer the holiday effect on measles mortality is unmistakable, whilst it is difficult to notice any effect on the diphtheria or scarlatinal curves which is not fully compensated by the reduction in child population. The holiday effect from migration is absent at Christmas. On mortality the effect of teacher and attendance officer is obviously negligible compared with their effect on notifications.

The weekly deaths for diphtheria and scarlatina, summed for the decennium 1900–09, are set out in Fig. 4 in thin lines for diphtheria and thick for scarlatina. Holiday periods are indicated in black on the chart, and the portions of the curves subject to holiday influence are dotted. The insignificance of this reduction is such that if the whole effect be ascribed to school attendance, the effects of migration being neglected, the result of the month's closure affects the annual number of deaths from diphtheria by 7 or 8, and from scarlatina by about 6, that is about 1 per cent. of the yearly mortality. Thus, in respect of scarlatina and diphtheria the effect of school influence on the diffusion of these diseases is not great, even if the highest estimate ever put forward be accepted, without discount, but when discounted in the view of other known factors it becomes vanishingly small.

Finally, to sum the general question, it cannot be too strongly insisted that under the conditions which have prevailed during the past ten years in London, the rôle of elementary schools in the diffusion of outbreaks of scarlet fever or diphtheria is so trivial that they may be neglected as factors compared with other causes, which hitherto have come in for little observation and but slight attempts at control. This long discussion of almost an academic nature, would have been out of place save for its bearing on any further expenditure through school efforts being thereby shown to be uneconomical, compared with expenditure in other directions for the repression of infectious disease.

Taking scarlatina, diphtheria and measles as the chief infectious diseases of school life, it is found that they continue to vary apparently without reference to school attendance or school treatment. The variation is shown for the past half dozen years in the following table:—

Disease.	Year.	Total numbers notified.		Weekly mean.		Percentage of school children to all persons.
		All ages.	School children.	All ages.	School children.	
						per cent.
Scarlatina ...	1906	20,333	8,371	391	161	41
	1907	25,923	12,307	498	237	48
	1908	21,648	10,291	416	198	48
	1909	17,389	7,716	335	148	44
	1910	10,513	4,700	202	90	45
	1911	10,484	4,640	202	89	44
Diphtheria ..	1906	7,934	2,549	153	49	32
	1907	8,597	3,170	167	61	37
	1908	7,671	2,809	148	54	36
	1909	6,617	2,212	127	43	34
	1910	5,391	1,861	104	36	35
	1911	7,268	2,572	140	49	35
Measles ..	1906		18,899	—	365	—
	1907	Non-	26,179	—	503	—
	1908	notifiable	19,385	—	373	—
	1909		20,145	—	387	—
	1910		25,677	—	494	—
	1911		31,905	—	614	—

Scarlet fever remains practically on a level with last year's record, and is generally on the downward grade. The type, too, of the disease is exceedingly mild. Diphtheria on the other hand, continues to vary about a level, and this year is considerably above the last. The high incidence of measles is fully discussed later. Charts are given showing the weekly notifications of these diseases, and also the weekly

percentage variation from the mean. The number of schools under observation for the above diseases were measles 777, scarlatina 400, and diphtheria 204. The departmental distribution was as follows :—

Disease.	Boys.	Girls.	Mixed.	Infants.	Special, &c.
Diphtheria	25	48	21	170	—
Scarlet fever	83	122	35	318	1
Measles	19	25	21	769	11

The following table shows the number of school closures during 1911 :—

Department.	Scarlet Fever.		Diphtheria.		Measles.		Scarlet Fever and Measles.	Scarlet Fever, Measles and Whooping Cough.
	Depts.	Rooms.	Depts.	Rooms.	Depts.	Rooms.	Depts.	Depts.
Boys' ...	1	—	—	—	—	—	—	—
Girls' ...	1	—	—	—	—	—	—	—
Infants' ...	1	1	1	2	*17	†13	1	1
Mixed	—	—	—	—	—	‡1	—	—

* 2 by order of the local sanitary authority, 1 by order of the school managers.
† 10 by order of the local sanitary authority.
‡ By order of the local sanitary authority.

The policy of excluding for varying periods unprotected children from infants' classes and departments has been continued. Unprotected children were excluded from 7 departments, and from 955 classrooms. All unprotected children under five years of age were excluded from 449 departments and those under six years of age in one instance from one department. In addition, all children under five years old were excluded upon 42 occasions, 35 of which were at the instance of the local authority as was also the case of all under six. On two occasions by request of the local authority, children under five years of age were excluded for diseases other than measles, one being for chicken-pox, and one for whooping cough.

Scarlet Fever.

The general tendency of scarlatina seems to be diminution in frequency, but zymotics follow long periods of secular variation, thus diphtheria had become almost unknown when it broke out virulently in the south-eastern counties in 1857. Holland, which as shown on p. 127 for many years has had the lowest death rate from this disease, is now suffering severely. Within our own memories influenza appeared to have become extinct when a recrudescence afflicted humanity in 1890 with all the severity of a plague. When scarlatina cases now occur in a district, children with slight sore throats are excluded to a greater extent than would have been thought necessary half a dozen years ago, and accentuating the so-called holiday effect when the disease is more prevalent. It is not clear that in the interests of the public health it would be wise, if it were possible to attempt, to utterly stamp out every case. Both with scarlatina and diphtheria a certain amount of immunity in the population seems useful in preventing violent outbreaks. This theoretical idea has not, however, been considered in practice, but every effort has been made to keep the schools free from suspicious cases. The school authorities always act in co-operation with the local authority, to this end.

At Winchester-street School, which stands about two hundred yards from the Caledonian and Pentonville-roads respectively, a prevalence of scarlatina caused special enquiries to be made in the autumn. There were altogether 132 children excluded from the school, which has an average attendance of 1,238 in the three departments. Of these exclusions 51 were sufferers, including 15 children who were excluded through having sore throats or other suspicious symptoms. One infant boy had a second attack within three months. The area in which these children live is nearly a square, bounded by York, Offord, Pentonville and Barnsbury-roads as shown in Figure 5. No cases occurred in the boys' or infants' department during the first four months of the year. In the girls' department there was an isolated sufferer in January, and a girl excluded as a home contact in March. Notifications, however, showed the disease scattered about the northern half of the district represented. Twenty-eight houses and seven schools were affected. The Winchester-street area, comprising the lower left quarter of the map, became invaded about May. The school invasion was characteristic of this disease. On May 11th a child living on the extreme north limit of the district was first absent from the infants' department suffering from scarlet fever, and on the same day three children, two of them sufferers, were notified from Classrooms A, D, and E of the girls' department. The first case in the house of the girl in Class A was an adult; the girl in Class E was excluded on account of a baby taken with scarlatina in the house; whilst for the girl in Class D the origin of the illness was not traced. Several children were excluded from the three departments on account of home infection, and during May 22nd to 26th five cases of sufferers occurred, again with characteristic school distribution. Three were in the boys' department, all in different classes, one was in the girls' department, and one in the infants' department. During June there were sixteen cases of exclusions for disease at home, but only two actual sufferers, one in the infants' department, and one in Class H of the girls' department. A considerable number of

notifications were received from the other schools during this period. In July only one child was a sufferer, a girl (in classroom F of the girls' department not hitherto affected), but eleven contacts were excluded, of whom two were notified as sufferers after the holidays. After the holidays numerous cases continued both here and in adjoining schools, the district was generally infected, but there was no evidence of any school distribution in the way of successive cases occurring within a day or two in the same class. Thirty cases were notified from the school during September, October, and November. Of these 14 were cases excluded as suspicious with sore throats, but without other evidences of illness.

The only instance raising a question of school influence and which led to detailed study of the outbreak was the absence from classroom D in the girls' department, of I. B., on September 18th, M. G., on September 19th, and C. L., on the 20th. But I. B. had been excluded in June on account of disease in the house. The illness there was that of a boy in the infants' school. They both remained out of school until the end of the summer holiday. The infant boy had a recurrence of the disease, and I. B. was also affected. In the case of C. L., a similar story was noted, as a baby was ill with scarlatina and the children had been excluded. M. G., who was absent the day before C. L.'s absence commenced, was a new case, the origin of which was not traced, but she lived in a house abutting on two others where cases of the disease had occurred, and which were again invaded in November, and house infection was as likely, if indeed not more probable, than school infection.

The four cases which occurred in the boys' department were in Classes A, C, D, and E, respectively, and there was no suggestion of school infection. In the infants' department two cases occurred in the Classroom H in May, but they were separated by over a week interval, and both came from infected districts. In September seven cases (one sore throat) appeared separated in five classrooms. In October again there were four cases separated in four classes, but seven cases of



FIGURE 5.—District distribution of scarlatina about Winchester-street in 1911.

suspicious throat were also excluded, in one case exclusion had taken place for disease in the house the previous May, and two others were from one house. All cases of suspicious throats were treated as cases of disease, but three out of every four of the children rapidly recovered and no other case occurred in the house. So that it is doubtful whether they were scarlatinal, although at the time no other course was practically justifiable and they stand in our records as suspected scarlatina.

The other schools in the district were also invaded by scarlatina, but their cases of disease were almost confined to residents of this area, as detailed later.

The following were the schools affected and except Manchester-street their position is shown on the map and marked by the letters attached to the name. The average attendance is given for each, and the percentage of cases of scarlatina; in addition, separately given, is the percentage of children with sore throats treated as suspicious, and elsewhere than this table included as cases of fever.

School.	Average attendance	Scarlet fever cases.	"Sore throats," etc.	Child contacts excluded.	School.	Average attendance	Scarlet fever cases.	"Sore throats," etc.	Child contacts excluded.
Cloudesley-street ... (C.S.)	340	.88	—	1.76	York-road ... ... (Y.R.)	1,100	1.82	—	4.90
Richard-street ... (R.S.)	1,079	1.49	.74	5.28	St. Thomas ... (S.T.)	445	.90	—	1.57
Thornhill-road ... (T.R.)	1,396	.57	.07	1.60	Risinghill-street ... (R.H.)	1,269	.71	.30	4.90
Vittoria-place ... (V.P.)	916	1.20	—	2.94	White Lion-street (W.L.)	874	.67	—	4.60
All Saints ... ... (A.S.)	314	.60	—	1.60	Winchester-street (W.S.)	1,238	2.91	1.20	6.50
Buckingham-street (B.S.)	1,143	1.75	.35	3.70	Manchester-street	1,235	.73	.11	2.30
Gifford-street ... (G.S.)	1,489	.33	—	1.21					
					Grand Total ...	12,838	1.16	.27	3.46

About five per cent. of the children in those schools had attendance affected. At Winchester-street in the centre of the district it was 10.6, the next four nearest schools 5.2, the rest 3.9, and, indeed, in the four most remote only 2.3 per cent. were affected by actual illness or exclusion as contacts.

On the map sketched in Figure 5, each circle represents a house known to us as invaded during 1911 by scarlatina. Houses marked with a cross did not affect school children. The plain circle means that children from that house were excluded from Winchester-street, although no school children were sufferers. Houses marked with a dot in the centre indicate children, but not sufferers, excluded from other schools. Houses where school children were sufferers are marked by half black circle; in Winchester-street cases the division is horizontal, in other cases vertical.

With the figures already given, and the evidence shown on this map, it can be seen that each of these schools had repeated introduction of the disease, but the only active part they seemed to take was in the discovery of early or mild cases, the "throat cases." Of these 35 were brought to light in school compared with 149 otherwise notified, nearly 20 per cent., which notification ceasing during holiday times forms a large factor in the supposed holiday influence on the disease deduced from statistical notification returns. Otherwise the schools are almost passive as regards a scarlatinal prevalence, and are only affected according to their proximity to an invaded district.

When the proportions of children in boys' and girls' departments whose attendance was affected by the disease are examined, whilst the proportions of contacts excluded are almost identical, the number of sufferers among the girls is in considerable excess compared with boys. These facts suggest the factor of house exposure. The numbers were :—

Departments.	Average attendance.	Numbers.		Percentages.	
		Sufferers.	Contacts.	Sufferers.	Contacts.
12 Boys' departments	4,139	25	127	.59	3.05
12 Girls' departments	4,059	45	132	1.00	3.25
13 Infants' departments	4,510	113	195	2.46	4.34
1 Mixed department	130	1	1	—	—
	12,838	184	455	1.44	3·54
Total school children affected		639		4.98	

Although this enquiry is not full enough to establish, it is entirely confirmatory of the suggestion put forward in a previous report that perhaps eighty per cent. of the population may be regarded as comparatively immune to scarlatina as now prevalent, and that only the remaining twenty per cent. are likely to take it under the usual conditions of exposure. This comparative immunity is no doubt mainly inborn, and contributed to by conditions of good health. It explains the escape of schools, and the want of any marked influence of schools in distributing the disease. It also explains the strange but usual mode of invasion among a school population where the first few cases occur almost simultaneously in different departments and in different classes. The escape of the boys compared to the girls, the latter more exposed in the homes, and the excess of the less immune infants attacked all bear out the proposition.

To demonstrate an inborn or family immunity would be exceedingly difficult, but on distributing

the cases in the district to the various houses and again on examining the occurrence in the houses, there is either this family tendency, or else a remarkable tenacity of infectiousness in the house or family. This point was dealt with some years ago, but is worth reverting to.

In the district considered there were 225 houses ascertained to be invaded, 133 had school children sufferers, 78 had school children excluded but no school child suffering, and 14 had no school children affected. In the 133 with school children as sufferers there were also 197 children excluded as contacts. In 17 cases it was ascertained that the first sufferer in the house was not attending school. Of the 78 with 172 school children excluded but not suffering, the first case was ascertained in 42 instances, 33 being infants and 9 adults. Of the 14 houses with no school children affected 9 were cases of infants before school age, and 5 adults. As regards Winchester-street School, 62 houses were affected. In 14 the first case was a baby and in 3 an adult, in the remainder it was presumed to be a child of school age. 41 houses had the 51 sufferers attending Winchester-street and also 27 contacts excluded. These 51 sufferers included 15 excluded from school for "sore throats," more than a quarter of the sufferers, who, but for the school, would have been largely missed, 21 houses had no Winchester-street children as sufferers but had them excluded as contacts. The single house, however, did not always affect a single school, in one instance it affected seven schools. There were single exclusions of child contacts from houses in 41 cases, and single sufferers in school children in 59 cases, of whom 18 were "throats."

There were 49 double exclusions either exclusions alone, 34 children, or sufferers alone 4, of whom a pair were "throats," or a sufferer and a contact paired, covering 60 children. In 123 instances three children were excluded, 16 sufferers and 53 contacts, and in 47 instances 4 or more were excluded. These groups of children went out of various schools in many cases. In 174 houses the children attended one school, in 32 two schools, in 5 three or more schools.

In these 225 houses in this area there were 145 school children sufferers and 344 contacts, a total of 489 school children directly affected; whilst in the schools shown in the area the children affected numbered 184 sufferers and 455 contacts, a total of 639 children affected. The difference of 39 sufferers and 111 contacts drawn by the schools from a much wider surrounding district shows how the disease outbreak was chiefly confined to the small area in question. The tendency of the disease to recur in families or cling to houses, discussed in a previous report, is shown in this district by separate house records and dates given below as compiled from the school notifications.

House A.	House B.	House C.	House D.	House E.;	House F.
18.7 Sufferer.	23.5 Contacts.	3.4 Contacts.	28.4 Contacts	11.5 Contacts.	20.6 Sufferer.
18.7 Sufferer					
18.7 Contacts	7.12 Contacts.	9.10 suspicious "throat" case	7.6 Contacts.	26.9 Sufferer.	18.9 Sufferer.
				28.9 Contacts.	22.9 Sufferer.
17.11 Contacts.					
17.11 Sufferer.					

House G.	House H.	House I.	House J.	House K.	House L.
25.9 Sufferer.	14.3 Contacts	28.7 Contacts.	19.5 Contacts.	4.4 Contacts.	6.9 Contacts.
25.9 Contacts					
27.9 Sufferer.	25.9 Sufferer.	29.8 Sufferer.	7.11 Sufferer.	27.10 Sufferer.	13.10 Contacts.
	25.9 Contacts.		13.11 Contacts.	27.10 Contacts.	
26.10 Contacts.				31.10 Sufferers.	

House M.	House N.	House O.	House P.	House Q.
20.2 Contacts.	24.4 Contacts.	29.9 Sufferer.	16.6 Sufferer;	19.7 Sufferer.
			16.6 Contacts.	21.7 Contacts.
5.9 Sufferer.	1.6 Contacts.	7.11 Contacts.	12.7 Sufferer.	
5.9 Contacts.		1.12 Contacts,		19.9 Sufferer.
			14.12 Sufferer.	
			14.12 Contacts.	

The most noticeable facts, on a general review of the district and the records, are the comparatively low infectivity of the disease, its want of severity which has been a feature now for many years, its domesticity in relation to houses and the absence of class infection in schools. It presents a sharp contrast to measles, which is infective days ere illness declares itself, and which formerly generally showed class infection, as it often does yet, whereas in scarlatina the child may be covered with a rash and yet apparently not infect. In many cases discovered peeling in school, sometimes in attendance during the whole course, as shown in previous reports, infection arising in the school from such cases is not only uncommon but a rarity.

The reasons for the disease presenting an exacerbation commencing with comparative suddenness and ceasing almost as suddenly it is impossible at present to determine. It may depend to a considerable extent on such variable factors as atmospheric temperature, humidity, or prevalence of dust, but is almost certainly due to an accumulation of a certain proportion of non-immune persons in the community, who have not hitherto been tested by exposure to the infection and abundant opportunities of close contact. This want of immunity, and the exposure to risk of infection are the two great factors to be followed up. The first depends partly on inheritance and partly on depressed vitality from defective nutrition, poor ventilation, bad housing, and generally debilitating conditions during infancy. The second is also related to the want of living room which when seen in aggravated conditions is called overcrowding.

With the school information alone these subjects cannot be followed out, but the enquiry is feasible and of value. It would require a continued watching for some four or five years of such a

district as this, whose population had been carefully noted in relation to age, and to the incidence of the disease. It would probably show that the control of zymotic disease by many of the measures at present adopted is largely imaginary and that general conditions which have not yet been determined are more effective factors on which to direct attack. That for children the opportunities for cleanliness, for play, for avoidance of fatigue, sufficient living room and sufficient playing room would give more promise of reducing zymotic death-rates than any further special measures which can be suggested at present.

Diphtheria

As shown in the table on p. 119, following on a period of quiescence there has been a considerable increase in diphtheria cases during the latter part of 1911. Dr. A. Newsholme years ago pointed out that such increase is to be expected during the winter after a hot and dry summer. The 45 schools under special observation were visited 60 times, and tube cultures taken from suspicious cases. As a result of the 1,305 cultures examined 100 children were excluded as infectious and another 74 as harbouring germs of a suspicious nature.

Until this year cultures were taken from the throat only, but now the nostrils as well as the fauces are invariably examined, and in a considerable number of cases bacilli were detected in the nostrils when missed in the throat. The ears have also been occasionally tested and the work of Dr. Helen Hanson, referred to later, shows that they may be regarded as occasionally a possible source of danger.

The persistence of diphtheria at Brixton-hill due to a carrier has been noted below, although as the girl is not yet free the history may have to be completed later.

At Princess-road School diphtheria which had appeared in May, 1911, continued in spite of careful watching. It recurred in different classrooms of the three departments. There were 3 boys, 2 girls, and 35 infants sufferers, and 1 girl and 6 infants excluded on bacteriological tests, although only 2 infants were actually determined as carriers. The effect of school cleansing or disinfection was shown by the persistence of the cases after closure and disinfection of the rooms. The contrast between the day school and residential school is apparent in the following record.

In the spring and autumn of 1911 outbreaks of scarlatina and diphtheria respectively caused much anxiety at Brixton-hill Industrial School for Girls. The illnesses, however, were under control throughout. In the notes and records, the name of one child constantly recurs. The other children come incidentally, but the illness in the school seems to so centre round this child that she may be taken as an instance of the tendency to harbour infections which some few individuals present. R. C., aged 11, was removed to the South-Western Fever Hospital on December 28th, 1910, with scarlatina. Enquiries failed to detect the source of her infection, as she had been in school for a considerable time, and no new girls had been admitted for about a month. None of the officials could be connected with scarlatinal cases, and it was concluded that the infection may have been brought in by some of the Christmas parcels which the children receive. She was transferred later to the Gore Farm Convalescent Hospital, and returned to school on March 27th. She appeared in good health, save for a finger which was bandaged, and from which a sequestrum of bone was subsequently removed. After a week of quarantine she was returned to her dormitory, where 27 other children slept. Here, after three months of absence, she was made much of by her companions, of whom 12 were later notified with fever. On the evening of April 5th one child showed scarlatina. It was feared that others might be already infected and examination led to another girl being isolated the same night. During the next ten days 13 children were notified to have scarlet fever, most probably infected by R. C. Eight others were isolated as suspicious. Three further cases occurred on April 21st, and one on the 25th, probably infected from the secondary cases. As soon as suspicion fell on R. C. she was isolated, notified afresh, and removed to hospital. No blame could be attributed either to the school or hospital authorities for these "return cases" as every precaution which experience justified had already been taken.

Many of the cases were so mild in nature that in the ordinary population they would have passed unnoticed. Without the history of exposure to scarlatinal infection accurate diagnosis would have been impossible. One of those isolated as suspicious was only confirmed by the occurrence of peeling three weeks later. The constant vigilance and isolation of the suspects brought the outbreak to an end with the last case on April 25th. By the end of June all the children were back in school, and R. C. was apparently quite well. But the tale is not yet finished, for on July 28th a girl was isolated with a sore throat which might have been scarlatinal or diphtheritic, and on the 30th removed to hospital, where the provisional diagnosis of diphtheria was confirmed next day. "Carrier" cases were sought for at once. Seven suspicious cases, one of which was R. C., were isolated. Germs of diphtheria were cultivated from them on July 31st and on August 1st, although otherwise they appeared in good health. By August 4th they were clear except R. C. A few other cases were detected, but rapidly cleared up. R. C. continued to give positive results, so that she was sent to hospital on August 16th. Four children in all went to hospital of whom only two presented symptoms of illness, the other two being "carriers." The "carriers" isolated numbered 25. Altogether 273 swabs were examined in the laboratory. Positive results, as indicated by the Klebs-Loeffler bacillus being present, were found in 63, doubtful diphtheroid organisms in 28, and the rest were negative as regards diphtheria. By August 30th all fear of spread of diphtheria was at an end, and the rooms were disinfected. This small outbreak is a good example of the diffusion of diphtheria, probably from the unsuspected carrier, R. C. It was controlled by repeated swabbing, and by isolation of the carriers and suspects. Although the isolation arrangements were severely tested, they were found sufficient. On each child returning from hospital she was isolated until three successive cultures taken on separate days, were found negative. The child was then bathed, the nose, throat and ears, as far as possible cleansed, and fresh clothing given before taking her school place.

R. C. and another child returned from hospital on November 2nd. They were placed in isolation, and cultures from the throat found to be negative. As R.C. appeared to have been the source

of trouble, before admitting her to class all treatment of the throat which might have interfered with the growth of organisms was intermitted, when almost at once, although the throat was doubtful, cultures from the nostrils were teeming with diphtheria. So also with the other child who had returned with R. C. She was returned to hospital on November 11th and her companion not clearing up was sent off on November 17th. The companion rapidly cleared, but four months later, R. C. is still in hospital, whilst the school itself appears free from disease. Cultures taken from her after Easter, 1912, still present the Klebs-Loeffler bacillus, which was found to possess virulency when tested on animals.

Aural discharge and diphtheria.

Dr. Helen Hanson has investigated the frequency of the diphtheria bacillus in the ear discharges found in children in elementary schools. There are many varieties of diphtheroid organisms found in secretions of eyes, ears, nose or throat, and actual diphtheria organisms have been isolated from pustules or sores about the face, but without actual tests for virulence by inoculations it is often impossible to be quite certain that the true diphtheria organism is present. In these cases, which were bacteriologically examined in detail by Dr. Ludwig Rajchman, the reactions were morphologically and by culture such that if taken from throat swabs they would have been diagnosed as diphtheria. Some cases are returned as suspicious in that though they gave most reactions they were not quite typical perhaps morphologically, or at least that without a virulence test to confirm the diagnosis it could not be positively returned as diphtheria. The schools where the enquiry was made were noted as follows :—

Name of School.	Department.	Approximate Roll.	Number with Ear Discharges.	Number with suspicion of Diph. Bacilli.	Positive finding of Diph. Bacilli.	School history for past six months.
Aldenham-street ...	B	313	15	1	1	0 boys, 2 girls sufferers.
	G	309	15	3	1	
	I	300	2	—	—	
Amwell-street	M	500	4	—	—	—
Ann-street	B	229	6	—	—	—
	G	338	2	—	—	
	I	287	6	—	—	
Buckingham-street ...	B	380	6	—	—	1 girl, 1 boy, 1 infant suffered, 3 infants contacts.
	G	386	3	2	1	
	I	503	8	—	—	
Camden-street	I	450	5	—	1	3 infants suffered.
Detmold-road	B	400	5	—	—	—
	G	400	5	—	—	
	I	400	6	—	—	
Herbrand-street... ...	B	130	6	1	3	Numerous cases of tonsilitis, no diphtheria reported.
	G	114	5	1	1	
High-street (Stoke Newington)	B	232	3	—	—	3 girls and 1 boy suffered, 3 boys contacts.
	G	200	9	1	1	
	I	251	6	1	—	
Lancing-street	B	200	1	—	—	1 girl sufferer.
	G	275	4	—	1	
	I	174	2	—	—	
Manchester-street ...	B	450	4	3	—	1 boy and 2 girls sufferers, 5 girls contacts.
	G	437	8	3	1	
	I	425	5	—	—	
Prospect-terrace ...	B	331	5	1	—	2 girls home contacts.
	G	400	5	2	1	
St. George-the-Martyr ...	B	144	4	—	1	0 boys suffered.
Totals		8,958	155	19	13	

There was no connection traceable between previous diphtheria in the school or family and the occurrence of the bacilli in the aural discharge. In none of the cases traced back for six months had a case been recorded in the person or family of one of the diphtheria bearing discharging ears. There was just an indication of seasonal influence in that the spring cases showed 20 per cent. with diphtheria, the summer 34 per cent., and the autumn 22 per cent.

Measles.

The increasing number of cases of measles in the last half of 1910 was the prelude to an epidemic outburst, long expected, but short and sharp, in the spring of 1911.

Measles is certainly the most serious of the zymotics, accounting in this country for one quarter of the deaths in the second and third years of life. The only consolation is that it is selective and that the majority of the fatalities are probably among the best spared weaklings.

The recent 1910-11 epidemic was not confined to London, although here the reduced prevalence during the past ten years, by increasing the proportion of persons liable to the disease, may have accentuated the suddenness and extent of the outbreak. Still the deaths from measles in 1911 were

2,570, a number, as shown in Fig. 7, considerably exceeded in each alternate year of the nineties, viz., in 1890, 1892, 1894, 1896, and 1898. As regards mortality, the outbreak was not in any sense a record, indeed it just touches the mean mortality for the years 1841-1900. So far as incidence of cases is concerned, the numbers have not been precedented since the annual record has been fully kept for school cases.

For 15 months previous to October, 1910, measles deaths had fallen to an average of 22.6 per week, against 38 weekly for the decennium 1900-1910, and 44 weekly for the Nineties, and 50 for the Eighties.

During the summer and early autumn of 1910 a prevalence of German measles complicated the school observation which has always been maintained in recent years. With the autumnal rise in October, 1910, an increase in the case notifications coincided with an increased death rate. True measles was therefore in excess of the average, creeping about London, and raising the average weekly measles mortality to 86 for the next four months. In March, 1911, there was a sudden increase to a weekly average of 169, declining to 95 for April, and remaining below the normal since. The epidemic ceased more suddenly than it had begun. The margin of susceptible cases was reduced to between 15 and 20 per cent. of the children in the schools, averaging 18.4 per cent.

In 1911 the weekly mortality from the beginning of September averaged 8; whilst the mean weekly incidence of the same period among school children was 61. These figures are much below the normal for the month. Figure 6 shows the progress of the epidemic in numbers of deaths weekly by the continuous line; the dotted line giving the ten years' averages.

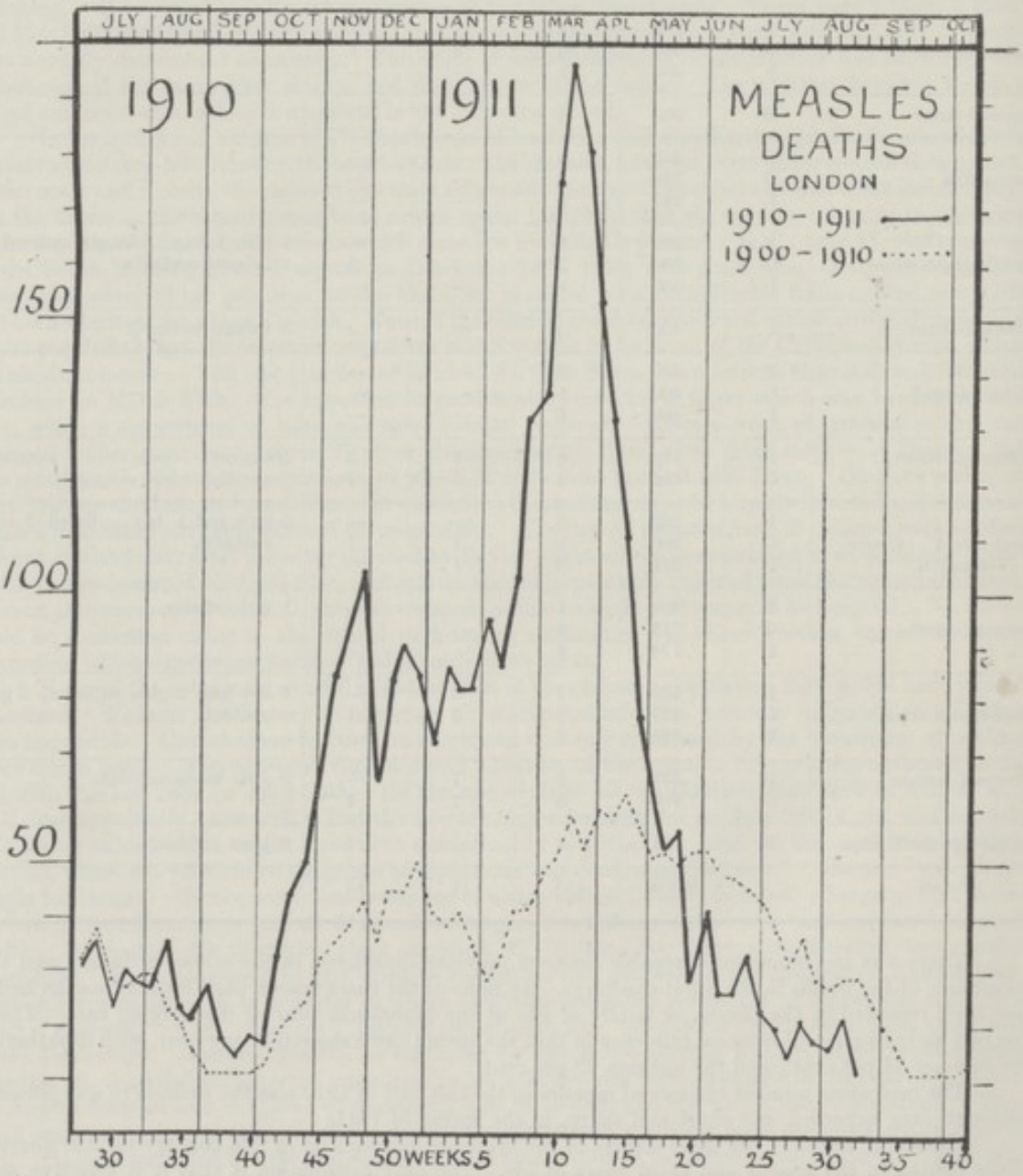


FIGURE 6.—London. Weekly mortality from measles during 1910–11 outbreak, and averages for 1900-10.

The natural history of measles is not yet quite clear. Certain unknown factors affect the prevalence of all the zymotics. To eliminate the effect of chance epidemics figures are taken for about 20 years from tables published by the Registrar-General. Rates per million living have been calculated for various countries and several diseases to show the variation in their relative prevalence. The zymotics affecting the same elements of the population are comparable with each other in the same country.

1887 to 1908.	Deaths per million living.						
	United Kingdom	France.	Prussia.	Austria.	Belgium.	Holland.	U.S.A.
Measles	354	810	260	382	457	258	101
Scarlatina	135	171	275	511	158	31	104
Diphtheria	199	864	750	788	315	127	87
Tubercular consumption	1,425	—	2,160	3,470	1,368	1,608	12,627

In the case of the United Kingdom these figures can be still further sub-divided.

	Deaths per million living.			
	United Kingdom.	England and Wales.	Scotland.	Ireland.
Measles	354	386	413	168
Scarlatina	135	149	141	71
Diphtheria	199	228	177	81
Tubercular consumption ...	1,425	1,343	1,780	2,165

Scotland and England with birth rates of 29.6 and 29.2 respectively are comparable, Scotland having the higher measles death rate, although children do not begin school till at least a year later than in England. The age and sex distribution of the Irish population, the low birth rate (only about 23.1), scattered and sparse child population, and possibly defective registration will account for the zymotic

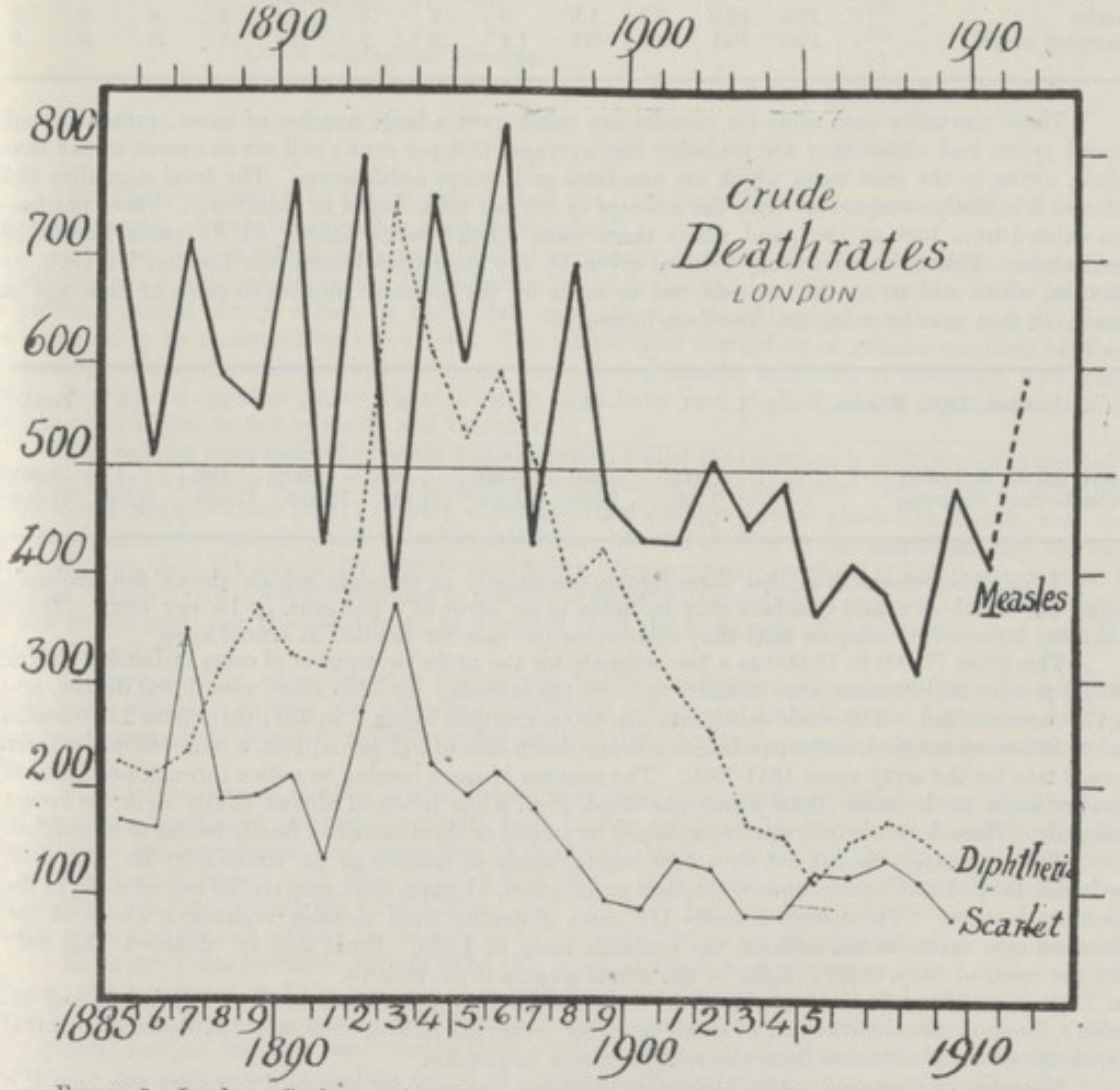


FIGURE 7.—London. Crude annual death rates for measles, scarlatina and diphtheria to shew secular variation 1885-1911.

rates being half those of Great Britain. National characteristics evidently make a great factor in this prevalence. These diseases vary secularly with time. Fig. 7 shows the death rates from the three chief school zymotics year by year for the past 25 years in London. It will be seen that these diseases show a diminished prevalence in recent years, although in measles this is least marked. As regards diphtheria especially, this may be due to the unknown causes hidden under the term "epidemic constitution," but probably is mainly due to increased spread of knowledge and care for the sick. The dotted part of the measles line gave an estimate in November of the 1911 measles death rate which actually was 570 as shown in the figure.

There is very imperfect knowledge of the number of measles cases occurring, the ages of incidence, and the fatality rate. One attack gives great protection against future attacks. Of 24,256 cases compulsorily notified in Aberdeen in 1893-1902, only 2.46 per cent. were supposed to be second, and 0·05 per cent. third attacks. In attempting to set forth the incidence of cases at different ages, the relative protection of previous attacks has almost always been neglected. Many writers have fallen into errors and concluded that there is a lessened liability to attack at higher ages, a conclusion which is not justified by the experience of isolated communities, and only possible by neglecting the immunity already existing in the population.

In London information as to the number of cases existing is frequently derived for public health purposes from second or third-hand reports furnished by school teachers, attendance officers, and others to the education and sanitary authorities. Another source of information is in the mortality returns. Unless a school child lives in a family where a case of measles develops, or a death from the disease occurs, there is little probability of the occurrence of cases of measles being known. Careful studies, inagurated by our Woolwich Enquiry of 1902-1906, have shown that at different seasons from one-third to three-quarters of the children entering school have suffered from the complaint. This proportion will vary from year to year and to very great extent. The following table shows the percentage case mortality (Aberdeen, 1893–1902) in Aberdeen, where notification was compulsory, the case mortalities of both measles and whooping cough were highest among very young children.

Age years	1	2	3	4	5	6	7	8	9	10	11	12
Measles	13.9	10.0	3.4	1.6	.9	.7	.5	.5	.4	.6	.2	.0
Whooping cough	12.5	10.1	3.3	2.2	1.6	.5	.7	.1	.3	.0	.0	.0

These mortality case rates for measles are taken over a large number of cases spread through several years, and whilst they are probably fair averages (3·3 per cent.) will err in excess rather than deficit, owing to the mild cases which are non-fatal and escape notification. The total mortality (3·3 per cent.) is justly comparable with the average of 3·5 per cent. found in Edinburgh, where notification existed from 1880 to 1901, and where there were 2,882 deaths among 82,544 cases known by notification. Taking the mortality returns given by the Registrar-General for London for 1909, an estimate, which will err on the low side, can be made for the probable number of cases at each age in London in that year by using the Aberdeen figures :—

London, 1909, Measles.	—1.	—2.	—3.	—4.	—5.	—10.	—15.	Total.
Actual deaths registered	513	997	416	187	125	106	17	2,361
Probable cases occurring	3,700	9,970	12,235	11,687	13,889	17,500	8,500	77,000

It must be remembered that these figures are merely an estimate which shows the probable ratios, but which as actual numbers may be liable to an error of 5 per cent. or 10 per cent. There is reason, however, to suppose that they understate the case for London at school ages.

This gives 77,000 to 78,000 as a low estimate for the probable number of cases in London during 1909, but only 20,100 cases were notified through the schools. In 1910 there were 1,980 deaths, and 25,677 cases notified. The crude death rate was 440 per million living. In 1911 there were 2,570 deaths and 31,905 cases notified, corresponding to a crude death rate of 571 per million, a trifle below the mean annual rate for the sixty years 1841-1900. The number of cases coming to notice through notifications does not seem to be more than about one-third, even when followed almost hourly as in the recent outbreak. These facts are only partly explained by second or third cases in a family failing to be notified.

This estimate is borne out by a very careful study of measles at St. Helen's by Dr. Paterson. He found that of 1,367 cases known through notification, 41 cases died, exactly 3.3 per cent, as in the Aberdeen returns. There were actually 170 cases of deaths from measles registered, which, at the Aberdeen case rates, would indicate the probable cases at 4,038. From this he deduced that only 33.8 per cent. of cases came to light by the school returns in St. Helen's.

Figure 9 has been constructed on the basis of the returns at Aberdeen, Edinburgh and St. Helen's, to show the distribution of cases probably occurring during 1909, and the amount of actual knowledge of them obtained from the school returns in London.

Mortality is discussed rather than case incidence, because for practical purposes this last, if a thorough knowledge of the cases could be got, would vary with the birth rate and the child population

more than any other factor. Practically every child suffers measles sooner or later under the crowded condition of life in English towns. The mortality varies with other factors which mostly reduce the opportunity for personal contact; thus, the urban counties present higher mortality rates than rural counties.

The social condition, which in the higher ranks means better care for children and also relative isolation of young families, is such that probably the average age at which measles is contracted in the working classes is under five, whilst in middle or upper-class children it will approximate to seven or eight. The younger the family the higher the death rate is likely to be, and this as well as contact is a partial explanation of rates in one, two or three roomed houses.

The Aberdeen figures, when analysed according to the number of rooms in the house, gave :—

Rooms in house	1	2	3	4	5	All houses.
Average number of inmates ...	4.1	5.2	5.8	6.2	—	—
Cases	1,067	11,464	6,779	2,046	2,675	24,031
Deaths	73	348	122	19	22	584
Case mortality per cent. ...	6.8	3.0	1.8	.9	.8	2.43

The disease depends on a *contagium vivum*, which has not been yet isolated. The infection does not cling to fomites or persist out of the body, so that any special disinfection of things or places is probably unnecessary.

It has been demonstrated in carefully regulated institutions that, like the other infectious diseases, children with measles can be nursed in the same wards with other susceptible children without the latter running serious risk of infection, if strict aseptic precautions are maintained.

The published returns of the City Hospital at Providence, U.S.A., show that in an isolation ward with no other precaution in regard to prevention of spread of infection than attention to strict surgical cleanliness, the following cases were treated between March 1st and December 31st, 1910 :—

Scarlet fever	38
Diphtheria	18
Measles	38
Other contagious diseases	71
Non-contagious diseases	25
	190

Dr. Chapin states : " In the treatment of all the contagious diseases contact infection is avoided by strict asepsis, and air infection has been disregarded."

No case of cross infection occurred in the ten months, and only one case of measles and one case of chicken pox developed among the 190 patients treated in this ward. The conveyance of the infection is probably almost always direct, by particulate emanations in coughing and speaking, and the radius of infection to be measured by a few feet. The adoption or discarding of general methods of disinfection by municipal authorities has not in any way affected measles mortality at Aberdeen, New York, Paris, Providence or other places where the case rates have been studied, and if demonstrated to be useless general disinfection is costly and wasteful.

The sufferer from measles presents a latent period whilst the infection is multiplying in his body. The length and fixedness of this period suggest the evolution of some particular life cycle of an organism. After about the ninth day from exposure slight catarrhal changes appear about the mouth, nose and eyes, and thenceforward the child is highly infective. On the twelfth to the fourteenth day the rash has come out, then the infectivity rapidly diminishes. During recovery there is fine desquamation of the skin. Infectivity is usually assumed to last till all signs of desquamation are over. It has probably ceased before that, but the assumption of a month from the beginning of the illness is well over the margin of safety.

Carriers, that is, cases infective themselves, but not suffering any malaise, have been looked for in vain. These cases may play a leading part in the diffusion of scarlatina and diphtheria, but the high proportion of children who actually suffer measles almost puts the question of carrier cases out of the field.

The picture then of measles is of a disease very fatal during infancy, which every child suffers, and which confers almost complete immunity from further attacks. Its prevalence at any time varies according to the aggregation and proportion of children liable to be attacked, but also varies according to quite unknown factors with race, country and year. It is usually introduced into households by the children who go beyond the family circle, and who have hitherto escaped infection. Latent or carrier cases and second attacks are so rare as to be negligible, so far as administration is concerned.

Years ago I was fortunate enough to be able to watch the spread of measles outbreaks in isolated schools, and concluded that the outbreak if unrestrained ran through a school and exhausted itself in three weeks, and that the apparent good effect of school closure was an entirely spurious result. The only general method formerly used was to close a school when the attendance had fallen by 40 or 50 per cent. As there is an incubation period of nearly a fortnight, and as cases are infectious for four or five days before ceasing attendance through indisposition, it was possible to reconstruct, from subse

quent knowledge, the events illustrating the spread of an outbreak. It then became evident that closure of schools was not the cause of the stoppage of an outbreak, but that this would have occurred spontaneously without closure.

The futility of closure for measles is exemplified by the following diagram, which I made in connection with the closure of a school, which was carried out against my advice by a former medical

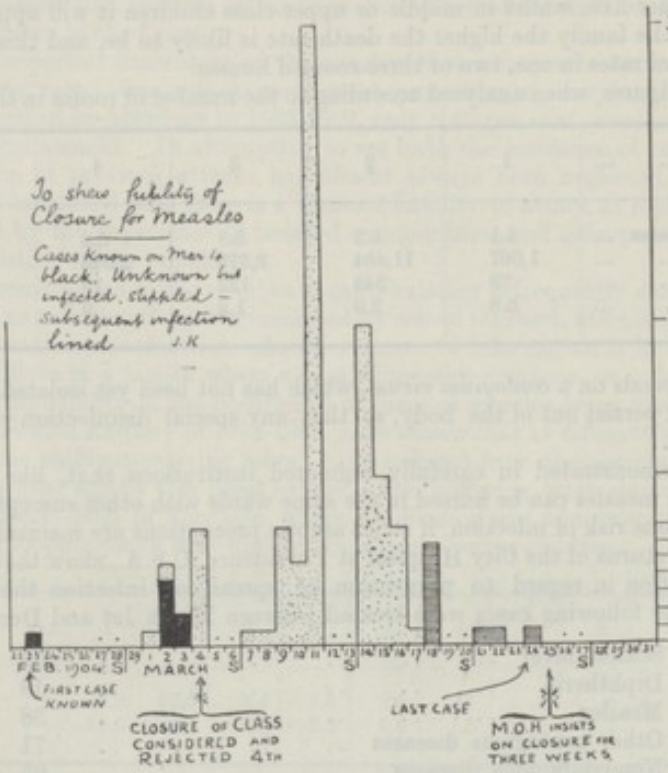


FIGURE 8.—Showing typical school outbreak of measles in reference to school closure.

officer of health for Hampstead. When the question of closure was considered, seven cases were known and it was concluded from their distribution that a larger number were already infected: subsequent events showed that 88 additional cases had been already infected when the presence of the disease was first announced, and that nine cases more may have been subsequently infected. The day after these 113 cases had all ceased attendance the medical officer of health insisted on closure. No subsequent case occurred. This was not the result of the closure, but because no case in the school had become infected during a fortnight before the date when closure had been insisted on.

From observation of classes it appears necessary for at least one-third of the children to be susceptible before measles spreads. Our analyses showed that whilst scarlatina, which is rarely school distributed on any extensive scale, usually presented itself as isolated cases in several classes, measles (more frequently school distributed) showed itself mainly in single classes. Before the recent epidemic measles outbreaks have been to some extent altered to approximate more and more to the scarlatinal type of distribution through the effect of our regulations in the past five years. The first case in an infant class is carefully watched for, and a list having been prepared of those who have not had measles, all these children are excluded from the class from the ninth till the fourteenth day after the last attendance of this first case. All infected children are thus excluded before being infectious to others in the class. The first crop of cases is frequently arrested, putting an end to the outbreak for the time being. If the first crop has not been arrested any further attempt to restrict the class outbreak is futile, and, as Fig. 8 demonstrates, closure is useless.

Sometimes all children under five are excluded. If the list of children who have already suffered has been prepared there is no reason to exclude them, whatever their age.

In the Woolwich enquiry, class closure was rigorously enforced on every possible occasion in the eastern portion of the borough, whilst there was no closure in the western portion. No difference resulted in the prevalence of the disease, but class closure cost a loss of 135 attendances per case notified, whilst individual exclusions cost 63 attendances, less than half.

Experience showed that measles only spread in infants' schools, that the liability to extension existed when from 30 to 40 per cent. of the children were unprotected by previous attack, and ceased when only 15 to 20 per cent. remained susceptible. Children in the standards were not liable to school spread of the disease. Incidentally, this is suggestive as to the cause of the continued escape of the partially protected population from serious small-pox outbreaks.

Rules were framed on these observations, *viz.* (1) to warn the parents of "unprotected" children in the class where a case of measles occurs, by means of advice cards describing symptoms, etc., to watch their children closely, (2) to exclude where necessary the "unprotected" upon the notification of the first case of measles, (3) to prevent intimate mixing and massing of children when the disease is prevalent, and (4) to allow children from houses where measles exists to attend boys' or girls' departments if they themselves have already suffered measles.

Suggestions for the improvements of our regulations would be welcomed, but no practical hints for betterment are forthcoming from those who criticise the regulations now in force.

Direct knowledge of measles cases is very incomplete, the lacunae can only be filled by some form of notification. The majority of measles cases are not attended by doctors. Notification by doctors, is therefore, wholly insufficient; if all cases were seen by doctors and notified, it would cost about £8,000 per annum to local authorities in London for fees alone.

Immediate notification by the householder to the school should be required in the case of any illness of a suspicious nature in any child of school age. For children below school age the medical officer of health might be notified.

Hospital provision for the worst cases might do something to reduce the chance of secondary septic infections, to mitigate the type of disease, and to diminish the death rate. In the case of measles it is unlikely that there would be the beneficial effect there is in diphtheria or scarlet fever, of preventing further spread in the family.

No useful changes have been suggested in the regulations of the Education Authority in regard to school attendance. It is very urgent in this as in other zymotics that there should be no indirect inducements to teachers to keep infective children in school. The abolition of the epidemic grant since 902 has acted to some extent as a promoter of disease among school children.

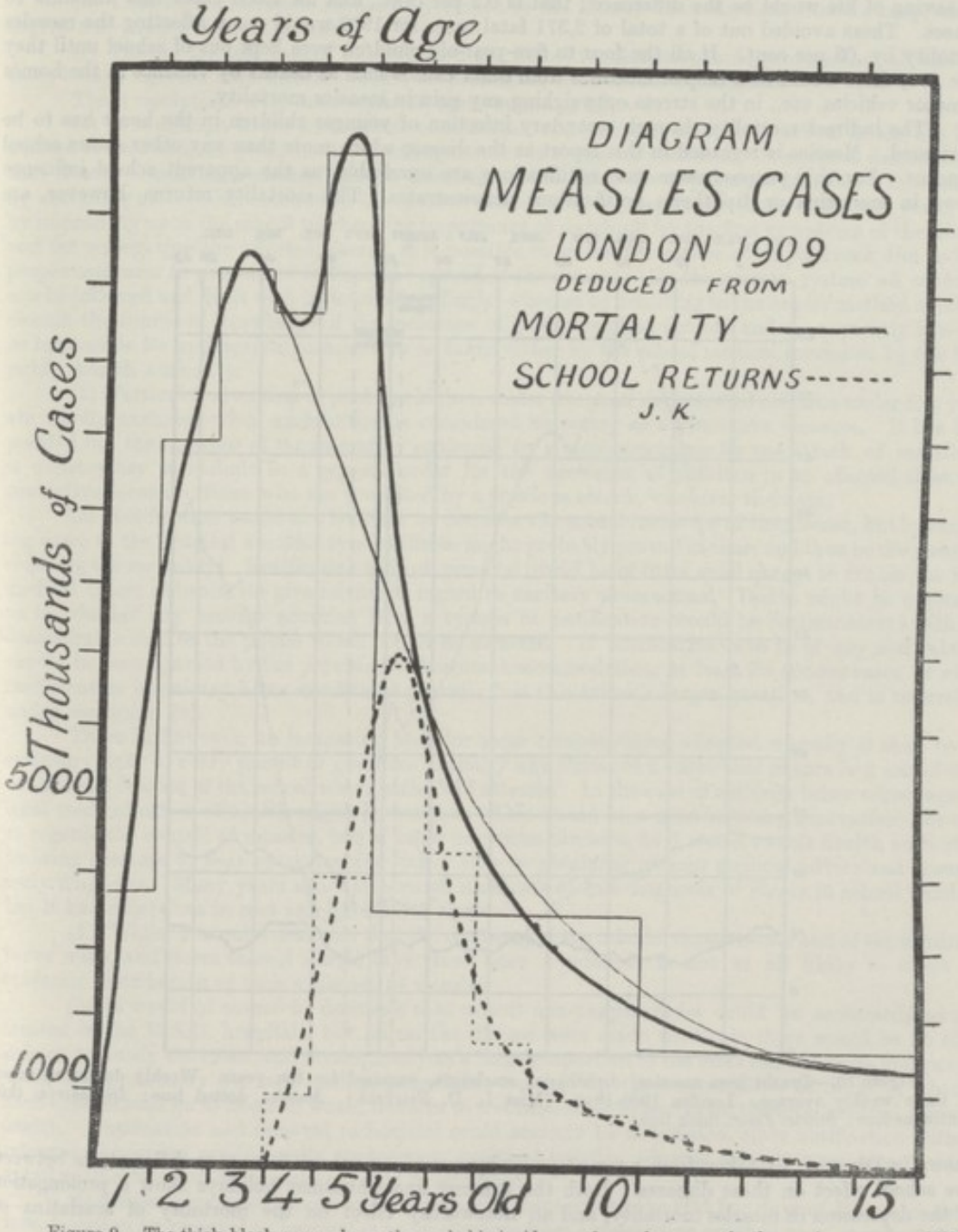


Figure 9.—The thick black curve shows the probable incidence of measles cases in the various years of life in London in 1909 as deduced from mortality returns. The thin curve shows the probable curve if school effect was permanently removed. The dotted curve gives the cases as known from school notification.

Raising the lower limit of school age is a favourite proposition with people who write or speak on measles. It has already been pointed out that Scotland, where the lower limit of school age is already higher than in England, suffers a greater mortality from measles.

The contagion of measles is incurred by a young child, either (1) in the family from another member, or (2) beyond the family.

In Figure 9 representing the probable distribution of measles cases at the earlier years of life in London during 1909, as deduced from the mortality returns, the effect (1) is shown by the ordinary form of curve rising to a peak and continued downwards in the thin curved line; the further effect (2), shown by a hump super-imposed on the curve in the fifth year, probably illustrates the effect of contagion on entering school. It shows that children in their fifth year in about two-sevenths of the cases occurring in 1909 may be supposed to possibly contract measles directly at school. The number of cases in question represents between 5 and 6 per cent. of all the cases. If school was excluded, the curve would probably be as in the thin line lower before about six to seven years old and more after but the difference is probably not very great. If it is supposed that by excluding four year olds till their fifth birthday these cases of school contagion could be prevented, this would mean postponement of 5.2 per cent. of the cases, or taking the concrete example of 1909 in London it would be approximately 4,000 cases. As the case rate mortality at 4 to 5 is about 0.9 per cent., and at 5 to 6, about 0.7 per cent., the saving of life would be the difference; that is 0.2 per cent., and for 4,000 cases this amounts to 8 cases. These avoided out of a total of 2,371 fatal cases for 1909 would mean affecting the measles mortality by .03 per cent. If all the four to five-year-old children were kept out of school until they were five, there would be a crop of fatalities from other causes such as deaths by violence in the homes or motor vehicles, etc., in the streets outweighing any gain in measles mortality.

The indirect mortality through secondary infection of younger children in the home has to be considered. Measles is regarded in this report as the disease which more than any other shows school influence. For this purpose mere case notifications are unreliable, as the apparent school influence shown in scarlatina or diphtheria notifications demonstrates. The mortality returns, however, are

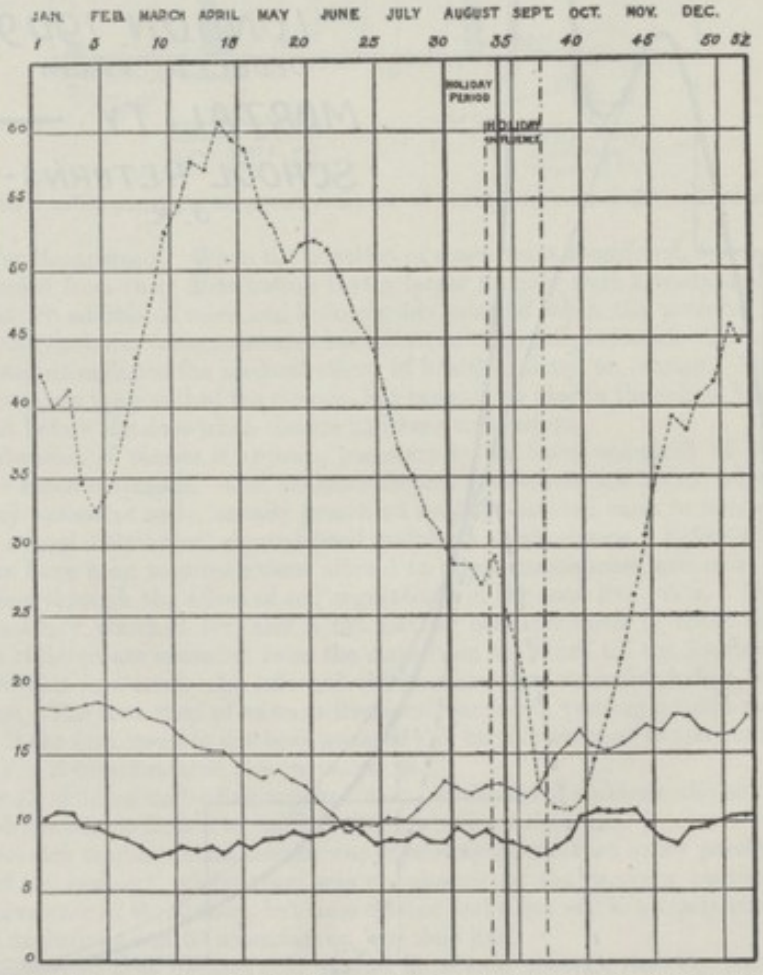


Figure 10.—Deaths from measles, diphtheria, scarlatina, summed for ten years. Weekly deaths as mean of three weekly average. London 1900-1910. (Miss L. D. Fairfield.) *Measles*, dotted line; *Diphtheria*, thin continous line; *Scarlet Fever*, thick line.

shown in Diagram 10, taken from a recent paper by one of our school doctors, to differentiate between the school effect on these diseases. Both the summer and Christmas holidays show a prolongation of the depression in measles mortality, and no noteworthy effect on the mortality of scarlatina or diphtheria.

This school effect is, however, a result of excluding all children from school; but schools cannot be entirely and constantly closed. The result of holding up the four to five year old children was

shown to be very small. The result of holding up all infants would, as far as direct school effects are concerned, not affect the measles mortality by 1 per cent., and after a few months, when stability had been assumed, with secondary infections of the younger children in the family going on as before, would probably scarcely have any measurable effect on the mortality of children under school age.

No hope is therefore here held out of materially affecting measles mortality in London by school closure. The mortality of this disease must be attacked by other means, such as compulsory (parental) notification, some hospital isolation for bad cases, education of parents as to means of treating the disease, and probably also the adoption of more scientific (aseptic) treatment of actual cases and especially improvement in regard to habits of life, housing and space to live.

On April 6th, 1911, shortly after the wave of measles had passed its height, a conference of representatives of various public bodies met at the County Hall and passed a series of resolutions, viz. :—

(1) That a better organisation is desirable in London for the control of measles in schools.

(2) That during a serious outbreak of measles, children under five years should be excluded from school attendance.

(3) That compulsory notification of measles is desirable.

(4) That the cleansing of the infants' departments and of the furniture, lower walls and floors thereof shall take place once a week.

(5) That accommodation should be provided in the Metropolitan Asylums Board's hospitals for urgent non-pauper cases of measles.

(6) That in the interests of public health the school regulations should provide that all children from houses infected with measles should be prohibited from school attendance.

These resolutions were later reported upon by me as follows :—

(1) It is difficult to see what better organisation can be found, as every practical means has been utilised to deal with the problem of controlling measles in elementary schools. It has been demonstrated that closure of schools is useless, that by warning parents upon the appearance of measles in a school, by excluding susceptible children in the class or classes affected, especially those under five years, and by impressing upon the school teachers the importance of watching for the first symptoms of the disease and for segregating the affected classes, it is possible to watch the course of an outbreak and to take proper measures to prevent or to limit the spread of the disease. By the present system an outbreak can be followed and dealt with in detail accordingly, whereas by resorting to the cruder method of school closure the source of knowledge of the incidence of cases would be cut off, and consequently it would be impossible for appropriate measures to be taken either by the school medical service or by the local public health authority.

(2) Particular attention is paid to children under five, and unprotected children under five years are wholly excluded when such action is considered necessary as a protective measure. It has been pointed out that in view of the immunity conferred in almost every case by one attack of measles it is unnecessary to include in a general order for the exclusion of children in an affected class as a protective measure, those who are protected by a previous attack, whatever their age.

(3) Notification would not be likely to decrease the actual incidence of the disease, but by removing cases to the hospital a milder type of illness might probably prevail in time, and thus be the means of reducing the mortality. Notification without removal would be of little avail except to enable the local medical officer of health to give advice in regard to sanitary precautions. Doubt might be expressed as to whether any benefits accruing from a system of notification would be commensurate with the considerable cost to the public which would be incurred. If notification is to be of any real value, it should be accompanied by the provision of hospital accommodation, at least for serious cases, or where inefficient or insanitary home conditions prevail; but this raises a larger question, and is referred to under resolution (5).

There is, however, an increasing need for some measure being adopted whereby it shall be the statutory duty of every parent or guardian to notify any illness of a suspicious nature in a school child to the head teacher of the school where such child attends. In the case of children below school age the local medical officer of health might be notified. This would be a most salutary innovation, not only as regards the control of measles, but of other infectious illnesses, as it would enable health authorities to bring pressure to bear upon parents with a view to obtaining prompt medical advice and ensuring early diagnosis. Many years ago I elaborated a scheme of free diagnosis of illness in school children, but it had objections in cost and liability to abuse.

(4.) Whilst it is quite desirable that the cleansing of the infants' departments and of the furniture, lower walls, and floors thereof should take place once a week, it is not at all likely to affect the epidemic distribution of such a disease as measles.

(5) It would of course be desirable that urgent non-pauper cases could be acommodated and treated in the M.A.B. hospitals, but unless the disease were made notifiable there would be no compulsion to notify the cases, and consequently as a large proportion of the class referred to as non-pauper cases would probably not seek medical attendance and advice, the responsibility of deciding whether such cases should go to hospital would devolve to a considerable extent upon the local medical officer of health. Notification and removal to hospital could scarcely be dissociated, since notification without removal to hospital would hardly produce any practical benefits, whereas the latter would necessarily entail notification before the patient could be admitted.

Measles is in its most infectious and dangerous stage during the first few days of illness, if therefore, isolation by removal to hospital is to be effective from a preventive point of view, it is imperative that the patient should be removed immediately the onset appears. In the recent epidemic only pauper cases of measles were admitted to the M.A.B. hospitals as a general rule, and these probably did not amount to more than 2 to 3 per cent. of the number of cases which actually occurred.

Removal to hospital in the case of measles would probably have scarcely any effect in preventing secondary cases arising as the complaint is most infectious in its very early stages, when it is characterised by catarrhal symptoms, and when, in most cases, the disease would not have been diagnosed. Consequently any susceptible contacts with the patient at that time would have become infected before removal to hospital. It is very probable, however, that the care and attention bestowed in hospital would have the ultimate effect of mitigating the type of the disease and preventing serious developments which so frequently ensue—such as suppurative eye and ear disease, broncho-pneumonia, or bronchitis, and the debility which often prepares the child's constitution for an invasion of tuberculosis. In this way hospital treatment might exert a salutary effect, and diminish the death-rate. The following quotation from the memorandum on measles issued by the Local Government Board during the recent epidemic may be of interest.

> "There are numerous cases of measles, the hospital treatment of which will increase the prospect of recovery. For most cases, however, it appears probable that domestic treatment will continue to be necessary, and that the greater scope for saving of life lies in more complete medical attendance, and in skilled nursing and supervision of patients treated at home."

The question of expense is one to be considered as there is no doubt that as hospital treatment became more universally adopted, as in other zymotic diseases, a large amount of additional accommodation would be required and that for a considerable part of the time the accommodation would not be utilised, so that it would also be costly. The whole question of hospital accommodation, however, is a matter for the Metropolitan Asylums Board.

(6) The existing rules in regard to measles seem sufficient to safeguard the health of school children, and of the public generally. There has been much criticism of the Council's rules on this subject, but no convincing arguments have been adduced to demonstrate that the attendance of children in senior departments, who have already had measles are a source of infection when a case of the disease occurs at home. It has already been stated that the infection does not cling to fomites or tend to persist out of the body, and the risk incurred in the conveyance of infection by means of an intermediary "carrier" is so infinitesimal as to be negligible as far as senior children are concerned, 90 per cent. of whom are probably immune by a previous attack. Further the practice of allowing protected children to attend school from infected houses is only followed in senior departments and *not* in infants' departments. The L.G.B. approve of this principle and it is now being generally adopted by school medical authorities. The following passage appears in the L.G.B. Memorandum on Measles, previously referred to :—

> "Older children are usually permitted to attend the boys' and girls' departments of schools from families in which there is at the time a case of measles. There is no evidence that this practice leads to spread of infection, whether this result be due to the fact that the infective material is seldom carried in clothes, or to the fact that most of the children in these departments of schools are already protected."

It may be added that in London, children are only allowed in such circumstances to attend senior departments if they have already suffered from the disease.

One source of criticism which must be always remembered arises from the Education Authority having hitherto carried out a uniform plan of treatment of infectious disease among school children throughout London, whilst locally the regulations and treatment of children out of school varies with the activity and ideals of the borough sanitary authorities and their officers, so that the regulations of the Council may be criticised in one district as too drastic, whilst a neighbouring authority considers these same regulations require tightening up.

Smallpox.

In 1911 there were 70 cases of smallpox received at the M.A.B. hospitals, of these 67 were from the Metropolitan area, 12 were cases attending Council schools, and 1 an evening student. Of the cases 46 were vaccinated, 9 of them being under 20 years of age. There were no deaths among them. Of the unvaccinated cases, numbering 22, death occurred in 9, 20 were under 20 years of age, with 8 deaths. In 2 cases the vaccination was doubtful and one died. For the whole number of cases the mortality per cent. of the vaccinated class was 2.2, and of the unvaccinated class 40.9, twenty times as great. Beginning with two cases of school children in one house in Stepney, notified on February 21st, two more in the same house were notified on the following day. The cause of the two which were apparently primary cases infected about February 1st was not ascertained. These four school children attended three schools whilst probably infectious, but no secondary cases resulted. One child, indeed, was in school for a week with the rash on her, and was summarily excluded by the medical officer of health for the district. Eight cases occurred, but none were notified in school children until March 2nd, when a child previously excluded for measles was notified as having developed the smallpox rash on February 24th. A boy attended an evening school on February 27th in an infectious condition, but no secondary case occurred.

School investigations were carried out in Poplar, Hackney, and Camberwell. At Tredegar-road Infant Department a case was reported on March 7th, whose onset was the third or fourth of the month and the rash appeared on the sixth. On the ninth two other cases were reported from the same school. The school was at first thought to be a centre of infection, but enquiry showed this not to be the case. The children all lived in the same street and the mother of two of them had had a mild attack two or three weeks previously. Three weeks later a fourth case was notified from the same school. Five other unvaccinated children were in the home, and were all vaccinated at the shelter. No further cases occurred there. There were 62 children contacts with the various smallpox cases and distributed over 10 schools to which 60 visits were paid by the medical officers.

It is fortunate that there was no further spread. Although, judging from records of the vaccinated condition of the community, the amount of immunity to smallpox in the population is decreasing it appears to be sufficient yet to hinder an extensive epidemic. So long as the cases are not too numerous to be rapidly shut off by immune persons comparative safety exists. It is at present impossible to say whether it is cheaper to the community to deal with smallpox, as was done in the present epidemic, or to insist on abundant immunity through vaccination. The present method means an amount of watching, visiting, and examining of individuals which may be expected to get more frequent and greater as time goes on and the community becomes less immune.

The school nurses and doctors who had not been vaccinated for seven years, were generally re-vaccinated, the results of the operation showing that they mostly enjoyed a fair amount of protection.

In several schools arrangements were made through the managers for the vaccination by public officials of those children whose parents wished it. The first step was a circular signed by the head teacher issued to the parents or guardians of the children as follows:

"I am advised by the Medical Officer (Education) that, as there is risk of your child having come in contact with smallpox infection, it is desirable to protect it as far as possible against the severity of the disease. If the child has not been vaccinated at all, this should be done to-day or to-morrow. If the child has not been vaccinated during the past seven years it would be better to have it re-vaccinated.

Vaccination can be done to-day or to-morrow at the school for your child, if you will sign your name at the bottom as agreeing to this, and return the paper to me."

A considerable amount of vaccination was thus indirectly brought about in the affected districts.

Catarrhal Conjunctivitis.

At Drury-lane Day Industrial School three boys were known in June to have "bad eyes," there was nothing suspicious about any of them, but on June 12th another boy was noticed with slight conjunctivitis. On July 17th all the boys were examined, and two of the first three noted as still having "bad eyes." They then went to camp at Ramsgate. On August 14th, when examined, all appeared well. After returning from Ramsgate eye troubles began and by the end of the month 21 cases of acute catarrhal conjunctivitis, not of a very virulent type, had occurred. A week later 41 cases were being treated, 16 with prescriptions obtained at hospital, and 25 with perchloride of mercury solution, one three-thousandth dilution. Either a fresh source of infection had occurred or more probably some of the previous cases relapsed and became infective. The Koch-Weeks bacillus was found in discharges. It was necessary to treat the disease energetically, and a nurse and doctor were detailed for the purpose. At one time fifty cases were affected. All recovered without ultimate bad result, but it was the end of the year before all were free. Possibly some were kept suspect long after danger was over, and some others were still suspicious owing to the energetic treatment being continued. Instructions were issued to all concerned in school pointing out that this variety of ophthalmia is very contagious and difficult to distinguish from simple conjunctivitis, except by its infectivity, also that it is very obstinate and prone to recur in its later stages.

It is spread from person to person either directly through the discharges from eyes, nose or throat, or indirectly through the agency of some article which has come in contact with a sufferer, such as clothing, handkerchiefs, or towels, schoolbooks, pencils, rulers, possibly doorhandles, and so on. The strictest precautions must be carried out in details, to limit the spread from affected persons. The most insignificant error may serve to break down the quarantine and prolong the school invasion for months. The teacher must be able to recognise both early and late stages of the disease, and conscientiously carry out all precautions in every detail. Each morning, first thing, the children must file past the teacher, who must isolate a child with the slightest abnormality in the appearance of the eyes. Any child once isolated should remain "affected" until the doctor definitely certifies him free. The infected children must enter school separately, and must be kept out of all contact with the healthy at all times. They must be separated at meals, and arranged so that healthy and affected are seated with their backs to each other. The infected ones enter last and leave first. All utensils from the affected children must be placed in a boiling solution of strong soda. No serviettes or tablecloths are to be allowed at meals, and seats and tables are to be wiped over with a cloth soaked in a strong disinfectant solution. Affected children must not enter any kitchen or service room, or in any way handle food, clothing, books or school apparatus. Separate washing and lavatory accommodation must be most strictly enforced. The towels used by patients must not be allowed to dry, but immediately dropped into disinfecting solution. No paper is to be allowed loose in any of the W.C.'s. These precautions were advised at Drury-lane, and, moreover, the affected children had their playtime separately and were not allowed to handle any playthings used by the others; no affected child was allowed to enter the classrooms or to touch any school apparatus or seat belonging to the healthy children; in the classroom used for the affected children all objects used were placed in a tub of disinfectant or else destroyed by burning; the desks and seats were daily wiped over by a cloth damp with strong disinfectant and the children did this themselves; all manual instruction was "out of bounds" for the affected; the teacher who had had anything to do with the affected children or their utensils, had to wash the hands before undertaking other duty; the children were treated in their classroom. The doctor saw them in the morning, and the nurse treated them night and morning. The children were instructed how to avoid the spread of infection when at home and were not allowed to loiter about the school.

Defectives.

Results of examinations

The medical examinations of children with a view to admission to special schools still increase in number. These examinations and the examinations of cases presenting special difficulty which have taken place for the past ten years constitute a kind of "school clinic for more detailed examination," as

it is now becoming fashionable to term it. The increase is mainly in doubtful school cases and in invalids. The numbers of children returned under the four chief classes are tending to remain stationary from year to year, as shown in the diagram.

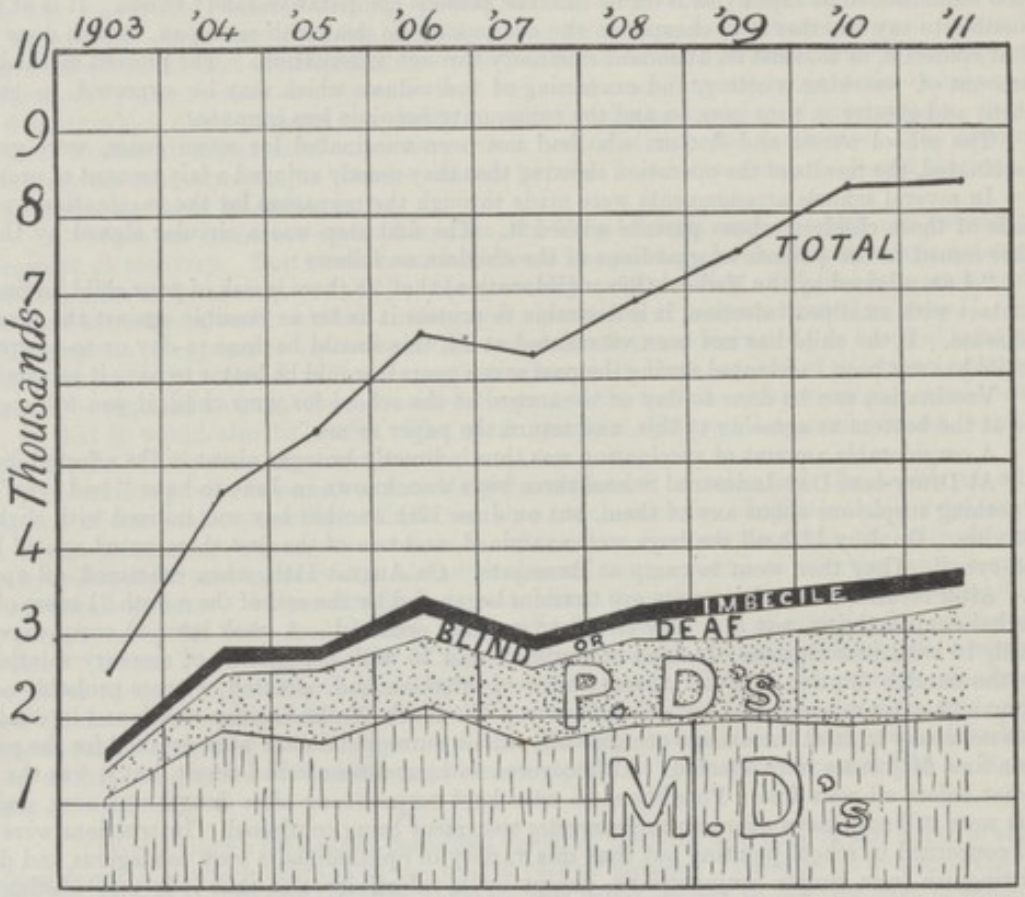


FIGURE 11.—London, 1903-11. Showing annual classification of children examined for admission to Special Schools.

The results of these examinations so far as educational differentiation is concerned were as follows :—

M.D.	M.D. and P.D.	P.D.	Blind.	Blind and Deaf.	Myopes.	Deaf.	Deaf and M.D.	Hard of Hearing.	Industrial School.	E.S.	Imbecile.	Invalid or Epileptic.	TOTAL.
1974	7	1246	103	2	90	120	4	9	29	2445	112	2176	8317*

* Some of the hard of hearing and myopes in this table are also included under E. S. or invalids. The total number examined was 8,228.

For many years lunatics and idiots have been distinguished, lunacy being a disorder of the mind in one who had previously been in full possession of his senses, while idiocy is a state of mental incapacity present from birth or from an early age.

Imbecility, a lesser degree of mental defect, was first recognised officially by the Idiots Act of 1886.

The establishment and control of schools under the Education Act of 1870 revealed a number of children unable to profit by the education offered to them. A committee of the Charity Organisation Society in 1876-7 recommended the foundation of special schools for imbeciles, while another committee of the same society in 1890-2 estimated that 1 per cent. of the children examined in the inquiry they set on foot were in need of special care and training. The first English day schools for the mentally defective were opened in Leicester and London in 1892, and were modelled to a large extent on the German special schools which had been in operation since 1867. The interest aroused by these schools and by the reports of committees of various societies led up to the special Departmental Committee on Defective and Epileptic Children, who reported in 1897 " that children exist who, on the one hand, are too feeble-minded to be properly taught in ordinary elementary schools by ordinary methods, and on the other hand, are not so feeble-minded as to be imbecile or idiotic." These, they pointed out, needed special educational treatment. The outcome of the labour of this committee was the adoptive Elementary Education (Defective and Epileptic Children) Act, 1899, under which children are at present admitted to special schools.

The interest in the questions of national physique arising from the revelations of the South African War and the reports of the Committees on Physical Education (Scotland) and on National

Deterioration led to demands for further inquiry, culminating in the Royal Commission on the Care and Control of the Feeble-minded. Feeble-minded being a generic term used by American writers for the whole class of mentally defective persons in contradistinction to the English use of the term as given below. This Commission adopted a triple classification of the mentally defective into idiots, imbeciles and feeble-minded, the definitions being—

An *idiot* is one so deeply defective in mind from birth or from an early age that he is unable to guard himself against common physical dangers.

An *imbecile* is one who by reason of mental defect existing from birth or from an early age is incapable of earning his own living, but is capable of guarding himself against common physical dangers.

A *feeble-minded* person is one who is capable of earning a living under favourable circumstances, but is incapable, by reason of mental defect existing from birth or from an early age, of competing on equal terms with his normal fellows or of managing himself or his affairs with ordinary prudence.

These definitions appear to have received general acceptation, but a certain amount of confusion arises if they are regarded as in all respects identical and conterminous with those implied by the Act of 1899, in which the essential test is educability in certain schools or classes. The lower limit of this basis is rather more circumscribed, power of self-protection alone, even in proportion to the age, being scarcely sufficient qualification for admission to a special school, while the other tests laid down in the formal definition apply essentially to adults and not children.

Yet, from the returns of the after-care committees, it would seem that the children in the special schools have not departed widely from the postulates of the Royal Commission, for if some have been able to manage their affairs with ordinary prudence, few have been able to compete on equal terms with their fellows from the ordinary schools.

The distinction is of importance, as those who declare that mental defect is lifelong and incurable only use the later definition which excludes those who have materially benefited by their education. They have, however, to admit that they cannot diagnose the slighter case with certainty at an early age.

The Act of 1899 would appear from the fact of requiring benefit from education to suggest the possibility of recovery or improvement, and although it excludes the backward it provides for those who suffer from retarded mental development, whether due to adverse factors, physiological or pathological.

The special schools must necessarily contain a certain number of doubtful cases, some bordering on ineducability, others on backwardness ; but these are revised at regular intervals.

The progress of the special schools in London from the medical aspect is recorded in my previous reports to the education authority, in which special problems and the difficulties arising therefrom have been discussed—

1903.—Over-age children in Standard I. Imbeciles and epileptics.

1904.—Word-blindness. The special treatment of backward children.

1905.—The distribution of mental qualities. Physiological variation in mental qualities. Intermediate schools.

1906.—Physical defects as a cause of backwardness. Classification of backward children. The associations of mental deficiency.

1907.—Development of articulatory capacity. Backwardness associated with physical defect.

1908.—A census of 5,000 children in the special schools to determine the number likely to do better in an intermediate school and the probable results of special school education on their subsequent wage-earning capacity. Moral defectives and permanent custodial treatment. Word-deafness.

1909.—The teaching of writing. The conduct of admission examinations. The use of observation classes. The use of the Binet tests of intelligence. The actual attainments of mentally defective children.

1910.—Combined mental and physical defects.

Tests of mental ability.

A special enquiry by examination of the children in certain special schools was carried out in the autumn, and the children were reported on both from a medical and educational point of view, and enquiries made to determine—

(*a*) The number of children in these schools at present fit to be transferred to ordinary schools.

(*b*) The number of children who would probably be fit for transfer before reaching the age of 13 years.

(*c*) The number of children who are mentally defective within the meaning of the Elementary Education (Defective and Epileptic Children) Act, 1899, *i.e.*, " not being imbecile, and not being merely dull or backward, are defective, that is to say, by reason of mental defect, are incapable of receiving proper benefit from the instruction in the ordinary public elementary schools, but are not incapable, by reason of such defect, of receiving benefit from instruction in such special classes or schools as are in this Act mentioned."

(*d*) The number of children who—

(i.) Are imbecile,

(ii.) Are ineducable,

(iii.) Have reached mental limit and cannot be expected to improve further by attendance at the schools.

Dr. Shrubsall, one of the assistant medical officers (Education), conducted each examination, which occupied about four times the amount of time usually given to the examination of a special school child. Dr. Shrubsall has dealt with the subject as thoroughly as school circumstances, without special laboratory provision, would permit.

Before a child can be admitted to a special school he must be examined and certified as suitable by a medical officer specially recognised for the purpose by the Board of Education. These examinations are held at special centres. The children regarded as unfit for ordinary elementary schools are nominated on special forms by the head teachers, often on the advice of the school doctor, or in the case of those not in attendance at a school by the divisional superintendents. Most children are nominated between the ages of 7 and 10, that is, at the earlier stages of their stay in the senior departments. When arrangements have been made for the admission examination the teacher and the parents of the child are invited to attend, and their help is of great importance. Many parents are brought to realise on such occasions that their children are not all that they imagined, and in any case it is desirable that they should know from personal observation that the child had been given every chance.

At each admission examination the medical officer considers the present condition, the personal and, if necessary, the family history of the child. He has the statement of the facts noted by the teacher, and if the child has attended school for a reasonable time and with fair regularity, this statement may be regarded as definite experimental evidence of the extent to which the child has shown itself irresponsive to tuition. The medical officer generally verifies these statements and searches for any pathological explanation of the retardation revealed.

The medical examination varies with the appearance of the child, which in some cases may at once reveal a definite defect or in others, as obvious idiocy, be such as to render further examination a waste of time. The doctor seeks to determine whether there are any defects of vision, hearing or other sense which have prevented the child from profiting by the instruction offered him, or any more general defect or ailment which may have exerted a retarding influence. He decides how far such defects are likely to be remediable and whether the child's condition is such that he may return to the elementary school while this treatment is being carried out or should be invalided from school attendance for a time to receive treatment, to be called up if desirable for a further examination after a period of from three to six months. Mental improvement can scarcely be expected until some time after the defect has been remedied, and in the past, when facilities for treatment were not easily obtained, some children were presented for re-examination who had actually deteriorated owing to the continued action of the primary cause of retarded mental development. Such children could not be educated in the elementary schools; but this class, which we termed "spurious defectives," at one time common, has now nearly disappeared. The examination is extended in any direction suggested by the appearance or history of the individual, and includes the record of stigmata or deformities and any nervous ailment which might cause deficiency, or even contra-indicate an attempt at formal education.

In addition some psychological and pedagogical elements are usually introduced. They serve more particularly to determine the question of educability and comprise tests of the power of attention and of response to stimuli. The most usual tests are selected from the response to simple commands, the power of recognising the nature and use of simple objects, colour matching and recognition, and the extent to which objects are recognised in pictures.

The pedagogical tests serve as a slight check on the teacher's estimate when the application form for medical examination has been filled in, or to give the requisite data when all such information is lacking. The tests usually cover the power of reading, writing and counting. When examining children the aim of the medical officers is not to find out what the child knows or has learned, but the extent to which the ordinary channels of education are open and available. The amount of schooling the child has actually received is considered and, so far as the history relates, his physical condition. It is a common thing for teachers to report that, in spite of special attention, often extending over a period of one or two years, the child has not progressed. This may be regarded as expert evidence of unsuitability for ordinary school methods, and if such a child is found to be dull of perception or appreciation, and particularly if his attention is difficult to fix, he is deemed to be deficient and to require such a special form of education as the ordinary elementary school cannot at present supply. Whenever age permits, a border-line case, which might be an example of delayed evolution although in some senses defective, is returned for a period to the infants' department.

One of the serious difficulties hitherto confronting the medical officers at admission examinations is the number of cases which have to be examined in a short space of time. This renders it sometimes impracticable to establish such friendly relations with the child as to persuade him to put forth his best efforts and reduces the number of tests it is possible to apply. The difficulty is lessened by devoting the maximum of time to the doubtful cases and passing the apparently obvious cases with considerable rapidity. This necessity renders the teacher's report of great importance, since at times it is from this alone that the child's attainments can be judged.

The children are re-examined about three months from admission, and after that at intervals of from six months to a year. The medical officer looks at the teachers' reports and the children's exercise books and manual work. The examination, in the main, follows similar lines to that at admission, but there is more opportunity, as a rule, to go into details or to follow out any particular line of inquiry. Up to the age of about 12½, children deemed reasonably able to work in Standard II. have been returned to the ordinary elementary school. After this age they lose so much by association with children much below their age, and their presence being often regarded as harmful by the class teachers it has been considered that they benefit more in the special schools for elder children. Such children, who are some three to five years behind their proper standard, are considered to come under

the terms of the Act, at any rate up to the age of 14. Beyond that age when the children are big and strong and suitable opportunities for work are available, it is difficult in disputed cases to obtain the necessary legal sanction to enforce their continued school attendance, and in such border cases adequate medical support could not be given to any legal proceedings.

In the enquiry the opportunity was taken of trying certain extended methods, and for a number of children, though in some instances with slight modifications of technique, the graded tests for developmental diagnosis associated with the names of Binet and de Sanctis were used. These are described later.

The children in each school were watched at manual work, play, physical exercises when these were in progress, and their behaviour in the street on their way to and from school was observed in addition to the special examination of each child.

The schedule filled in for each child noted, in addition to any points of ordinary medical inspection—

Attitude.
Evidences of motor disturbance.
Emotional condition.
Imitation of movements.
Habits.
Attention.
Ability to carry out movements to command.
Sensory perception and interpretation—
  Recognition and matching of colours.
  Differentiation of size and weight of objects.
  Response to a weight size illusion.
Immediate and remote memory—
  The carrying out of two or more orders successively, though included in one command.
  The repetition of sentences or sets of numerals read to the child.
  Report on short paragraph read by the child himself.
  Writing of a short sentence or a few words said once or twice only to the child.
  Questions on matters of daily life, such as breakfast.
  The multiplication table.
Memory in conjunction with powers or habits of observation—
  Questions on the destinations, etc., of trains, trams, omnibuses, etc., in the neighbourhood; the prices of such articles as children fetch from shops, etc.
General tests—
  Knowledge of left and right.
  Days of the week; day before yesterday and day after to-morrow.
  Description of a picture.
  Description from memory of an object, *e.g.*, a cat.
  Distinction from memory between two objects, *e.g.*, a fly and a butterfly.
  Recognition of coins.
  Detection of absurdities.
Educational tests—
  Reading and report of subject matter read.
  Response to written commands.
  Writing—transcription, dictation and spontaneous writing.
  Calculation—counting, simple sums, mentally or in writing; power of giving the correct change in a supposed transaction.

The Binet and de Sanctis tests were tried on a smaller number, for which purpose special additional schedules were employed.

In conducting the examinations every effort was made to set the children at their ease, and when necessary time was spent in casual conversation with this end in view. Any child who seemed to have been disturbed by any exceptional circumstances, such as the presence of onlookers, was re-examined on a subsequent occasion and the best results only recorded.

The following analysis gives the detailed results of each test or observation on the schedules of the 209 children examined :—

	Age—7	8	9	10	11	12	13	14	15
South-grove	.. —	—	—	—	—	13	29	21	10
Priory-road	.. —	2	8	10	7	15	24	15	12
Offord-road	.. 4	5	7	11	7	4	4	—	1

South-grove is a school entirely for elder boys, Priory-road comprises both an ordinary special school and one for elder girls. Offord-road is an ordinary special school from which the older boys are drafted elsewhere.

A nervous poise and somewhat slack general attitude were noted in the majority, the attention was apt to wander in a large number, but in only five was it really difficult to arrest. In about 10 per cent. there was some definite over-action of the frontal muscles during mental effort, inertia was a marked feature in about the same proportion of cases. An absence of ready response to cheerful stimulation and a lack of buoyancy was noted, particularly in the mass observations of the children at

exercises or play. The listlessness of the girls dancing in comparison with that in an ordinary school was very evident.

No child failed to imitate simple movements or to carry out a single command, but 13 failed to carry out a triple command, such as "Go and sit down in the middle desk, then take a ball from the box and put it on the table." It has been found that at such a test nearly all normal 4-year old children fail, about half the 5-year olds succeed, as do practically all 6-year olds. Of those that failed, 2 were aged 7, 3 aged 8, 2 aged 9, 4 aged 10, and 1 aged 12.

No child failed to match a coloured ball from the first Froebel gift with the others remaining in the box. The six balls in this gift are coloured respectively red, green, blue, yellow, orange and purple. The orange was often called dark yellow, and the purple, Oxford blue, dark blue, or dark red; these were accepted as correct. Twelve children failed to recognise the whole six by name, although in many cases tested both by asking them the names, or if that failed asking them to indicate a particular coloured ball. The ages of the children varied from 8 to 15. The number of colours recognised was 1 only in 1 case, 2 in 4, 3 in 2, 4 in 4, and 5 in 1 case.

Three children failed to pick out the largest wooden brick of a series, although it was quite four times the size of the next nearest in dimensions. This recurred even when the children were also asked the question by their class teacher.

A series of similar pill boxes containing shot, and weighing respectively 3, 6, 9, 12 and 15 grams, were employed. The test was tried by two methods, in the one the child was given the 3 and the 15 gram box and asked which was the heavier, in the other he was asked to arrange them in order of weight. The former test was not tried with the older children, but if they had made any absurd arrangement they were given two adjacent boxes and asked which was the heavier. The results of the arranging test appear to have some relation to manual work with wood and metals, as shown in the following table—

Number of errors.	Elder boys' school.	Other schools.	Total.
0	16	14	30
1	3	9	12
2	1	9	10
3	2	9	11
4	2	21	23
	24	62	86

Only 5 of the 30 in the second group who made three or more errors were below 11 years of age. On the other hand, 17 children appeared to have no idea or power of comparing weights at all, but guessed at random. Several of these preferred to hold both the weights being compared in the same hand at the same time, even after being shown how to compare another pair.

The size weight illusion consisted in presenting to the child two boxes of identical weight but differing in size. To most normal individuals the smaller appears to be the heavier on handling. In the boxes used the larger had to be made three times the weight of the smaller before many would admit that it was actually heavier. The actual weight of each box was just over an ounce. Of the children in the special schools, 105 said the smaller box was the heavier, 2 that they were equal in weight, and 48 that the larger was the heavier. The response that the larger is the heavier is said to normal for very young children, so that its persistence to later life may be an example of delayed evolution. but the results, age for age, seem too irregular to allow of definite conclusions—

Age.	Smaller the heavier.	Both equal.	Larger heavier.
7	1	—	1
8	5	—	1
9	8	—	5
10	11	—	8
11	7	—	3
12	14	—	10
13	28	1	10
14	18	1	8
15	13	—	2

The relation to manual training, if any, is shown by the numbers over the age of 12. In the elder boys' school 35 selected the smaller box, 11 the larger, and 1 said they were of equal weight; in the other schools, 38 selected the smaller box, 19 the larger, 1 said they were equal. The diminution of the choice of the larger box with increasing age was, however, more marked in the elder boys' school.

Immediate memory was tested by the performance of successive commands previously mentioned, a test only tried once or twice with each as it is affected by the influence of practice.

A more interesting test was the report made by the child on a passage he had just read; this is influenced by the degree of difficulty experienced in the mechanical process of reading.

Memory was also tested incidentally in the dictation since each child was told the sentence twice, and after the first few experiences was also asked to repeat it aloud, and was, if necessary, corrected before sitting down to write. The longest sentence used was "The dog saw the cat on the wall," but a third of the children were only able to recall five syllables or less under the strain of writing them down.

Remote memory was tested by the multiplication table, which was known parrot fashion up to about six times by nearly all the older children, and up to three or four times by some of the younger ones, but constant errors occurred at all ages by asking for a single pair, *e.g.*, 5 by 7. It appeared, too, that a response might be obtained by asking for five sevens, when it entirely failed on asking for five times seven. The children in some infants' departments march to their classrooms from the playground to the inspiriting strains of "three threes are nine," etc., and mass repetition of the tables is in common use. It would seem as if this established an unbreakable association of the table as a thing to be sung as a whole and not used piecemeal. At any rate, it suggests a rather more frequent practice in dodging in the tables.

Memory and observation were also required to answer question on the destination of the trams in neighbouring streets, and the companies whose trains ran through neighbouring stations. The answers of the boys in the elder boys' school, many of whom travel a distance, showed considerable local knowledge, but in the ordinary special schools blank ignorance was the rule, especially as to trains, even when the children passed the station every day. The girls showed a rather better knowledge of the contents of local shops, but were almost immeasurably behind the children in the ordinary elementary schools in this respect.

The request to put the right hand on the left ear produced more incorrect than correct answers but the error was often corrected after a time or on a repetition of the command.

Only 10 could not say which day to-day was. Of 18 children who knew the day of the week 11 were unable to give the name of either yesterday or to-morrow, 2 knew to-morrow but not yesterday and 5 yesterday but not to-morrow ; 33 who knew the preceding could not give the day before yesterday or the day after to-morrow. Some of the older children knew the date, but this and the actual day of the week was often only a matter necessitating a short memory as it is usually written down and often copied daily by each class.

For the test of describing a picture the illustrations in the various readers and in a child's toy-book were employed, save in a few cases in which to save time pictures hanging on the wall of the room were utilised. Strictly every child should be given the same picture as a test, but as it was necessary to examine more than one child at the same time this was impracticable, and it also appeared that the news of the picture used spread through the school in the case of the elder children.

The results were classified according to the type of response. Some would mention the name of one object in a picture only, *e.g.*, "cat," adding no qualifying adjectives to the noun ; others enumerated several objects, also without qualification ; other groups, instead of practically employing nouns as interjections, added a qualifying adjective or participle, *e.g.*, "little boy," "girl running" ; a more advanced group employed a short sentence such as "boys playing soldiers" ; others used two or three such short sentences for each picture, while a few gave a continuous narrative, or at least employed longer sentences. The frequency of each type is shown in the following table, which shows a steady improvement with age, though the more elementary type never entirely disappears. This, like other tests, shows evidence of delayed mental evolution in the majority and of almost complete arrest at an early stage in a smaller number.

Age—7	8	9	10	11	12	13	14	15	*Total.*
Type of response — One name per picture 1	3	3	2	2	—	2	1	3	17
Enumeration of objects only —	2	2	3	1	8	7	4	4	31
Enumeration plus descriptive adjective .. .. —	—	2	2	1	4	7	1	5	22
Enumeration plus descriptive participle .. .. —	1	1	1	—	2	7	4	1	17
Single short sentence .. 1	2	6	5	5	7	8	9	3	46
Two or more short sentences —	—	1	4	4	4	16	13	2	44
Continuous narrative or longer sentence .. —	—	1	1	—	5	7	3	3	20
									197

These results may be checked by a series of similar tests carried out two years ago in an ordinary school, from which it would appear that verbs are used in description between the ages of 7 to 8, short sentences at 8 to 9, and longer sentences 9 to 10. In a school in a good class neighbourhood where the children receive the benefit of reasonable home encouragement the age limits are lower. The continuous narrative or long sentence may be regarded as a point against educational incapacity at earlier ages and as evidence of benefit derived at a later age.

In the test of description from memory of an object the children were asked to say all they knew about some common object such as a cat. The object had to be varied for the reasons mentioned above, especially as after the first day it was noted each child began "a cat is a very useful animal." This expression was not counted, but other objects substituted. It is possible that this expression was a test of remote memory, as on inquiry it was found to occur in a reader in use in some schools. The answers were marked from 1 to 7 according to the fulness of the account, the minimum mark being for "a cat is a cat." The best result was from a child who knew all about the habits of the house fly and the bluebottle fly, but this was because he was in the habit of fishing and used gentles as bait. He was not equally good on other objects, but this shows the importance of finding the subject in which

a child is interested, when naturally a better idea of his potentialities can be obtained. The results obtained were as follows :—

Marks.	*Age*—9	10	11	12	13	14	15	*Total.*
1	—	—	—	2	1	2	1	6
2	1	—	—	4	3	2	2	12
3	—	1	1	3	2	5	—	12
4	—	1	—	2	3	3	—	9
5	1	—	1	—	1	1	1	5
6	—	1	2	—	2	2	1	8
7	—	—	—	1	—	—	—	1
								53

This test, although useful, took so long that it was used only in these cases recorded, and in the series where Binet tests were utilised in full.

A similar test was to ask for differences between two familiar objects, such as a fly, and a butterfly. Roughly, for two who succeeded three failed. Many children seemed to try to recall something they had heard rather than what they themselves had noticed. Many answers were absurd, but in a few cases unexpected power of observation came to light. Being different from ordinary school procedure the teachers thought the test likely to be confusing to the children. It is set down by Binet as one which eight-year-old children should pass.

A simpler test involving every-day experience and also the effects of school instruction is the power of recognising coins. For this purpose a full series was used, but for the younger children the values under 1s. only were employed, and even in the elder children cases of confusion between 2s. and 2s. 6d. were ignored in marking the result. Had these been included the results of the following table would have been reduced materially—

	Age—7	8	9	10	11	12	13	14	15	*Total.*
Knowledge—										
Plus	—	2	3	12	7	23	36	23	13	119
Minus ..	3	3	8	8	2	8	12	5	6	55
										174

The power of readiness in recognising absurdities was tested in a few cases, but led to such bad results that it was abandoned, save in the formal Binet series. The sentence was read over twice to the child who was told there was something wrong about it of the nature of a catch. The sentence chiefly used was "a man was walking along the street with his hands in his pockets and twirling his cane." This catch and others were detected by a few elder boys. The test is given as one for 11-year olds.

Each child was tested with a series of readers until his upper limit was determined; when he had read a passage he was asked to say what he had been reading about. The type of reading, the frequency of errors, and the accuracy of the subsequent report was noted. The range varied from two-letter words in an infants' primer, or in some cases single letters, to a newspaper extract utilised by Binet, which corresponds roughly in difficulty to a Standard III. reader. The results were :—

	Age—7	8	9	10	11	12	13	14	15	*Total.*
Reading capacity—Reads—										
No letters..	1	—	—	—	—	—	—	—	—	1
Letters uncertain ..	3	3	3	1	1	1	3	—	2	17
Some 2-letter words ..	—	3	7	10	4	6	10	1	3	44
Some 3-letter words ..	—	1	4	7	4	4	9	6	1	36
Infants' primer	—	—	—	2	3	7	8	3	2	25
Standard I. reader ..	—	—	—	—	1	8	10	10	5	34
Standard II. reader ..	—	—	1	—	—	1	4	1	—	7
Standard III. reader ..	—	—	—	—	—	—	—	1	1	2
Newspaper extract ..	—	—	—	1	1	5	13	14	9	43
										209

	Age—7	8	9	10	11	12	13	14	15	*Total.*
Type of reading—										
Nil	1	—	—	—	—	—	—	—	—	1
By letters..	3	7	12	10	6	8	15	3	5	69
By syllables	—	—	2	6	4	3	10	6	2	33
Jerky or hesitant ..	—	—	—	4	4	15	18	16	6	63
Straightforward	—	—	1	1	—	4	13	10	8	37
Expressive	—	—	—	—	—	2	1	1	2	6
										209

The jerky type of reading, in which each word is brought out as though an interjection expressive of pleasure or pain, is the characteristic of the special school boy in the main, though it is found in the infants' school and the lower standards. It is survival in the older defective children of a type

common at an earlier stage. Few seem to regard reading as a continuous process, so much mental effort being absorbed by the individual word. Persistent reversal of words, such as "on" reads as "no," or "was" as "saw" occurred in 19 cases, the age distribution being—

	Age—7	8	9	10	11	12	13	14	15
Number	—	2	4	4	1	1	3	3	1

This is another example of the persistence of an infantile trait. It may be noted that no characteristic case of complete word-blindness appeared in the series, that is to say, so far as inability to reproduce the sounds of some words was concerned, for many, as will be seen, the words carried little meaning.

The report on the matter read was tested wherever possible, the most interesting results being from those who could read a newspaper passage. The passage employed was that used by Binet and adapted by Goddard for use in New Jersey; it is arranged to show the manner of marking the results—

> Three / houses / burned / London / September 5th / A serious fire / last night / destroyed / three houses / in the centre of the city / Seventeen / families / are without a home / The loss exceeds / £5,000 / In rescuing / a child / one of the firemen / was badly / burned / about the hands / and arms.

There are thus 22 ideas, and the child was marked according to the number he reproduced, correct reports only being counted. After a brief experience, this was made easier by leaving out the word serious, putting middle for centre, seven for seventeen, five thousand pounds for £5,000, and saving for rescuing. The original version had proved a complete stumbling-block in the matter of reading.

Forty-three children, all but four of whom were in the elder boys' or girls' schools, were able to get through this piece of reading with more or less help, the number of points scored in the report being—

1	4	4	4	7	3	10	1
2	7	5	7	8	2	11	1
3	8	6	4	9	2		

Note was also made of the numbers who made serious errors, such as "five thousand children were burned," four made one error each, two made two errors, and one three such errors.

Binet reports that by the age of eight, the child is almost invariably able to read the text and recall at least two facts—that no child can report six or more ideas unless he can read the text within the minute, and that even the slowest reader can recall two items.

The 169 remaining children who could not with any help read this passage (71 could not read sufficiently to test even with a primer) were tested with passages from such reader or primer as was within their limit, and were marked in a corresponding manner. None obtained one-third marks, most being between one-sixth and one-twelfth, while twenty, although able to read very simple sentences, could recall no facts at all contained therein.

The results show about 60 of the 209 children examined as fit to learn from anything they read. In a few instances, the child was allowed to read the passage several times, but no great improvement was noted.

The meaning to the child of matter he has read was also tested by noting the response to a written command. The child was first asked if he knew what a letter was, such as would be brought by the postman, and on a favourable response being obtained he was further asked if he knew that such a letter might ask him to do something. He was then told that he would be given a piece of paper on which was written, as it might be in a letter, something which he was to do. If it said "lie down," he was to lie down, etc. He was then given a strip on which was typed a command, such as "sit down," "pick up a pen," "open the door," etc., and the result noted. If he did nothing, he was asked if he could read the typing, and if he said "Yes," was told to *do* what it said. Many only read it aloud or tried to copy it. Finally, they were asked what does it say, *e.g.*, "sit down," and on their replying, they were told, "Well, sit down." The effect of a second slip was then tried, and no case was entered as a failure without two or three attempts. With those that responded, four separate tests were tried, two being the commands as above mentioned, the third a question, as "What is twice two," or "What does a cat eat," and the fourth a more complex question, "If you had a shilling and spent fourpence, write down how much you would have left." The response to the last was often an oral and not a written answer, in which case the children were asked to read it through again, and see if they had answered it in the manner requested. A certain number responded correctly on the second occasion. Except for this fourth test, the words used were rarely of more than three or four letters, and were chosen with due reference to the reading capacity which had previously been ascertained. Several slips were needed to check against any leakage of information as to the questions asked. One boy on being shown a slip, on which was "Pick up a pen," promptly sat down, the proper response to a slip which had been used a little before. The results were—

Response.	*Age*—7	8	9	10	11	12	13	14	15
Tests I.–III.—									
Failed	4	7	14	15	9	9	25	9	9
Succeeded	—	—	1	7	5	22	31	27	14
Test IV. (arithmetical)—									
Some response	—	—	—	1	—	7	16	19	9
Correct	—	—	—	—	—	6	11	15	6
Incorrect	—	—	—	1	—	1	5	4	3

There is a general relation between the accuracy of the result and the age of the child, but it will be noted that the performance of the 15-year-old group is behind that of the 14-year-old. This will be noted in several other tables, and gives evidence of the probable level of attainments of those who leave for suitable work at the end of their 14th year, while the corresponding difference to be noted between the 12 and 13 groups shows a level at which there are more returns to the ordinary elementary school.

Writing was tested by transcription, dictation and spontaneous writing. In practice the dictation was tried first as, if this succeeded, the transcription test was unnecessary. It is a common experience to be told that a child can write, and on investigation to find that he can write his name and nothing else, sometimes not even a single component letter if asked for separately.

	Age—7	8	9	10	11	12	13	14	15	*Total*
Result—										
Correct	—	—	—	—	1	6	7	7	6	27
Errors in spelling, words being often quite unintelligible	—	2	12	16	9	20	44	28	16	147
Practically nil	4	5	2	3	3	1	—	—	—	18

The passage used for dictation varied in difficulty from "the cat was on the mat," to "two dogs saw the cat on the wall," or, as extreme efforts in good readers, "the horse pulled the cart" and "the cat caught the mouse."

It is impossible to do justice to the children's efforts by any description. Such efforts as the following by 13-year-olds show the limits counted as mere errors in spelling.

"Toos dag" = two dogs; "the huse grue the cr" = the horse drew the cart; while both "hte cat sro the bo" and "dok kat dn" are believed to mean "the cat saw the dog." "Cikice dit the cot and ma it nd" and "to gat leat the coi" are "the dog bit the cat on the tail"; "god cta a om the nest" is the version given by a boy of nearly 14 in an older boys' school for "the dog saw the cat was on the mat." It will be noted that many smaller words are often omitted; as mentioned above this dictation was also used as a test of immediate memory.

Dictation reveals several defects which may perhaps be grouped as varieties of word blindness, but their study might throw some light on educational methods. The lesser grades of defectives show the influence of associations of sound and in some cases the methods employed for reading may have been responsible for the inability to spell, in other cases associations of the word not the word itself are used, as in the case of a 13-year-old, who wrote "obni" for box. A child may make considerable progress in reading, but by the results of his dictation show that the letters have little meaning to him. Sometimes even transcription is impossible; thus, a boy of 13 copied "the cat sat on the box" as "c hcghctscaanhtepz." He would seem to be attempting really to write the words spontaneously from an ill-adjusted aural memory, or from the words as he read them silently, the interpretation being c = a false start, hcgh = the, ct = cat, sca = sat, an = on, hte = the, and pz = box. Such cases as these need much individual attention to obtain results and really require careful investigation in a way that can only be applied in some special observational centre rather than in the schoolroom.

Spontaneous writing was tested by asking the child to write down the name of an object, such as a pen or a box held up before him or otherwise indicated.

Result.	*Age*—7	8	9	10	11	12	13	14	15	*Total.*
Correct	—	—	4	5	2	14	25	21	12	83
Spelling incorrect but intelligible at the time ..	—	—	3	4	4	7	10	6	4	38
Unintelligible	—	1	4	5	2	6	11	7	5	41
Nil	4	6	3	6	5	1	5	1	—	31
										193

Under the heading spelling incorrect but intelligible are included such as "the bwhl is ylao" = the ball is yellow, from a child who had been shown a yellow ball, the response looked for being "ball"; while the unintelligible include the written responses of children shown the ink who wrote "eonem" or "ther is haxse in the haxse pot."

Calculation was tested by counting objects, counting money, giving change, and by little sums.

In counting objects it appeared that 10 were unable to count four objects which should be done by 5-year-olds, and 15 were unable to count thirteen objects, which should be done by 7-year-olds. All these were under 11.

In counting up the money it was first made certain that the children knew the value of all the coins, and if they failed at first a set of coins was counted over with them and later results noted; four or five coins only were employed, the denominations varying with the age and the results were as follows:—

	Age—7	8	9	10	11	12	13	14	15	*Total.*
Correct	—	—	1	8	5	14	23	19	16	86
Incorrect	4	6	9	9	8	18	29	15	6	104

The results both of this test and the next improve with age and especially with the out of school occupations if by any chance they involve practical dealing with small sums. In the giving of change the results were :—

	Age—7	8	9	10	11	12	13	14	15	*Total.*
Correct	—	—	—	4	2	6	12	11	9	44
Incorrect	4	6	10	13	11	26	41	22	13	146

The children were given a few coins and then a coin, say 2s., was offered for an imaginary transaction to cost, say 6d., and the hand held out for the change. The results show a great falling off from those of counting alone ; they vary nearly directly with age, but are at their best at 14 +. To count the correct result the child must actually hand over the required amount, not merely say it. According to Binet, who is confirmed by Goddard and others, a few 7's, about one-third of 8's, and all 9 year olds should pass this test. The more advanced children were given simple sums either as mental or written arithmetic. Practically their limit was easy sums in the four simple rules and perhaps very easy addition or subtraction of money. The results appeared to be below their stated school performances, and the time taken was longer than that of very much younger normal children. The method of asking a child its age and then how old it would be in two, three, or more years, and how old it had been two, three or more years ago was tried in nearly every case.

No case was counted as a failure in the following table unless it was unable to give its age plus or minus two years—

Age.	*Age in two year's time.*		*Age two years ago.*	
	Succeeded.	*Failed.*	*Succeeded.*	*Failed.*
7	—	3	—	3
8	—	7	—	7
9	3	13	3	13
10	13	7	9	11
11	6	8	4	10
12	20	13	12	21
13	41	16	25	32
14	32	2	19	15
15	14	8	11	11
Total ..	129	77	83	123

The series of tests associated with the names of Binet and Simon were tried on 33 children, partly as a check on the other methods and partly to experiment with their suitability for adoption as a standard. Several isolated tests belonging to this series are included in the group already mentioned, but the standard required for success was not always the same, so that the accompanying table of results refers only to those in whom the series was worked through—

	Succeed.								*Fail.*							
	7	8	9	10	11	12	13	14	7	8	9	10	11	12	13	14
(*a*) 3 *years old.*																
1. Cognisance of real objects by name ..	4	7	7	7	2	3	2	1	—	—	—	—	—	—	—	—
2. Memory for 5 syllables	4	7	7	7	2	3	2	1	—	—	—	—	—	—	—	—
3. Memory for 2 digits	4	7	7	7	2	3	2	1	—	—	—	—	—	—	—	—
4. Recognition of objects in a picture ..	4	7	7	7	2	3	2	1	—	—	—	—	—	—	—	—
5. Knowledge of family name	4	7	7	7	2	3	2	1	—	—	—	—	—	—	—	—
(*b*) 4 *years old.*																
6. Knowledge of own sex	4	6	6	7	2	3	2	1	—	1	1	—	—	—	—	—
7. Naming familiar objects	4	7	7	7	2	3	2	1	—	—	—	—	—	—	—	—
8. Memory for 3 digits	4	6	7	5	2	3	2	1	—	1	—	2	—	—	—	—
9. Comparison of 2 lines differing length	4	4	7	6	2	3	2	1	—	3	—	1	—	—	—	—
(*c*) 5 *years old.*																
10. Comparison of weights	1	1	2	2	1	1	2	1	3	6	5	5	1	2	—	—
11. Copying a square	2	6	6	3	2	3	2	1	2	1	1	4	—	—	—	—
12. Replacing triangular blocks	2	5	5	1	2	2	2	1	2	2	2	6	—	1	—	—
13. Counting 4 objects	1	5	4	5	2	3	2	1	3	2	3	2	—	—	—	—
(*d*) 6 *years old.*																
14. Knowing right from left	1	5	4	7	2	3	2	1	3	2	3	—	—	—	—	—
15. Memory for 16 syllables	—	—	—	—	—	—	—	—	4	7	7	7	2	3	2	1
16. Aesthetic judgment	2	6	5	7	1	3	2	1	2	1	2	—	1	—	—	—
17. Definition of objects by their use ..	—	2	4	3	2	2	2	1	4	5	3	4	—	1	—	—
18. Execution of triple order	—	3	3	2	1	2	2	1	4	4	4	5	1	1	—	—
19. Knowledge of own age	4	6	6	5	2	3	2	1	—	1	1	2	—	—	—	—
20. Knowing morning and afternoon ..	3	2	5	6	2	2	2	1	1	5	2	1	—	1	—	—

	Succeed.								*Fail.*							
	7	8	9	10	11	12	13	14	7	8	9	10	11	12	13	14
(*e*) 7 *years old.*																
21. Noticing missing feature in unfinished picture	1	—	1	2	1	1	2	1	3	7	6	5	1	2	—	—
22. Knowing number of fingers	1	5	3	6	2	2	2	1	3	2	4	1	—	1	—	—
23. Writing from copy	—	2	2	5	2	3	2	1	4	5	5	2	—	—	—	—
24. Copying diamond	1	5	3	4	1	3	2	1	3	2	4	3	1	—	—	—
25. Memory for 5 digits	1	2	3	2	1	2	1	1	3	5	4	5	1	1	1	—
26. Description of picture	—	—	1	1	1	1	—	1	4	7	6	6	1	2	—	—
27. Counting 13 objects	1	1	1	5	2	3	2	1	3	6	6	2	—	—	—	—
28. Naming 4 coins	—	1	—	3	1	2	2	1	4	6	7	4	1	1	—	—
(*f*) 8 *years old.*																
29. Reading and report	—	—	—	—	1	1	—	—	4	7	7	7	1	2	2	1
30. Counting money	—	—	—	3	1	1	—	—	4	7	7	4	1	2	2	1
31. Knowing 4 colours	1	2	3	3	2	3	2	1	3	5	4	4	—	—	—	—
32. Counting backwards from 20	—	—	1	—	—	1	—	1	4	7	6	7	2	2	2	—
33. Writing from dictation	—	—	—	—	—	1	—	—	4	7	7	7	2	2	2	1
34. Differentiating objects from memory	—	1	2	1	2	3	2	1	4	6	5	6	—	—	—	—
(*g*) 9 *years old.*																
35. Knowing the date	—	—	—	—	—	—	1	—	4	7	7	7	2	3	1	1
36. Knowing the days of the week	—	—	5	5	2	3	2	1	4	7	2	2	—	—	—	—
37. Making change	—	—	—	1	—	1	1	—	4	7	7	6	2	2	1	1
38. Defining objects other than by use	—	—	—	—	—	1	1	1	4	7	7	7	2	2	1	—
39. Reading and report	—	—	—	—	—	—	—	—	4	7	7	7	2	3	2	1
40. Arranging 5 weights in order	—	—	—	1	1	1	—	1	4	7	7	6	1	2	2	—
(*h*) 10 *years old.*																
41. Reciting months	—	—	—	—	—	—	—	—	—	7	7	7	2	3	2	1
42. Naming 9 coins	—	—	—	—	1	—	—	1	—	7	7	7	1	3	2	—
43. Sentence building	—	—	—	—	—	—	—	—	—	7	7	7	—	3	2	1
44. Problem questions	—	—	—	1	1	1	—	1	—	7	7	6	1	2	2	—
(*i*) 11 *years old.*																
45. Noting absurdities	—	—	—	1	—	1	—	—	—	—	7	6	2	2	2	1
(*j*) 12 *years old.*																
46. Memory for 7 digits	—	—	1	—	—	—	—	—	—	—	6	7	2	3	2	1

The results vary very closely with the age, though certain features in which the influence of training plays a more important role show better results than the others. Such, for example, are the naming of colours and the recitation of the days of the week. Binet and Simon rate the intellectual status of a child as the oldest age for which he can pass all the assigned tests but one, but to the level thus determined a year may be added for every five tests passed which belong to a grade above the year in question. They consider he whose final rank is three years or more behind the normal for his age is mentally defective. The results of the present series were—

Up to the normal for his age	1 (age 7)
One year behind	1 (age 8)
Two years behind	5
Three years behind	16
Four years behind	5
Five years behind	4
Six years behind	1

The children who were only a little behind presented the difficulty from the educational standpoint, they had not made or were unable to make any progress in reading and writing, which rendered it practically impossible to continue their instruction in large classes. Professor Binet has recently proposed a new series, or rather a re-adjustment of the ages for the tests in the former, and now considers that all these should be passed to give the intellectual age. Dr. Goddard, of New Jersey, has also recently published a list based on the foregoing, but modified according to his extensive experience, but by either of these schemes all the children would be appraised at five years, and if the test for that age at which all failed were omitted all would again fail with one of the tests appropriate to the age of eight, even if capable of passing the intervening grades. There can be no doubt of the high value of these tests, but on the one hand they take up too much time for general employment at admission examinations, and on the other hand it is very essential that the child should be in a thoroughly natural condition, which is not always the case on such an occasion.

These tests are suitable to test the progress of the children in a special school, but though they may show the child's intellectual status they do not necessarily indicate his fitness for instruction under the conditions at present prevailing in the ordinary elementary schools. This may be an argument for a re-consideration of the methods of teaching backward children since the tests have received an international approval as an index of general intelligence, though modifications

may be needed in some details, and for some ages there is scarcely sufficient evidence of the normal standard. It would be desirable to obtain satisfactory evidence as to the normal level of children at each age in the London schools, and to work in practice from the deviations from the standard thus established. In the United States, on the Continent and at Sheffield, it has been found practicable to carry out such a series through the medium of school teachers who have received instruction in the technique of these tests and who have worked together sufficiently long to ensure a uniformity in their standard of marking.

De Sanctis uses the following material: Five wooden balls painted in distinctive colours, three wooden pyramids, two wooden parallelopipeds, five wooden cubes all of the same size, 12 cubes of varying sizes, a small black cube, and a test card on which are painted triangles, squares, and rectangles to represent the outlines of the pyramid, cubes and parallelopipeds. The tests are—

1. The five balls are placed on the table and the observer says: "Give me a ball." The time taken in responding is noted on the stop watch.
2. The same five balls are again shown and the observer says: "Which ball did you give me?" The time is again noted.
3. The five identical cubes, the three pyramids, and the two parallelopipeds are mixed up on a table screened from the child. A cube not very different in size is shown to the child, who is asked to pick out all the bits of wood on the table which look like it. The screen is then removed, and the time of the performance and any errors noted.
4. The child is shown the test card of forms and the small black cube, and is asked: "Look at this piece of wood. Is there anything on the card which looks like the piece of wood? and if correct is directed to "pick out all the things that look like it." The time and errors are recorded.
5. The 12 cubes of various sizes are put on the table at different distances from the child, who is told, "Here are bits of wood like the things you were picking out on the card. Look at them carefully, and tell me how many there are, which is the biggest, and which is farthest away from you." The time taken and the errors are recorded.
6. All the test materials being concealed the child is asked four questions, each being answered before the next is asked.
   (*a*) "Are big things heavier or lighter than small things?"
   (*b*) "How does it happen that small things are sometimes heavier than big things?"
   (*c*) "Which looks bigger, a thing that is close by or a thing that is far away?"
   (*d*) "When things are far away, do they just look smaller or are they really smaller?"

The times of response are recorded, and the answers taken down verbatim. De Sanctis considers that ability to pass Nos. 1 and 2 only indicates intellectual defect of a high degree, ability to pass Nos. 1 to 4 or 5 with many errors indicates a moderate defect, ability to pass Nos. 1 to 5, but not No. 6, indicates a slight degree of mental insufficiency, while ability to pass all in normal time indicates a normal intelligence. Yet even such a child may rate as "backward" pedagogically. Goddard, however, thinks training comes into play, and that a child with a good training may pass even No. 6 and yet be feeble-minded.

The principle employed in these tests has in part been utilised, but not the exact method. The time taken was in all cases considerable, but it was not noted down exactly.

The Froebel gifts, which contain coloured balls and a series of wooden blocks of various shapes and sizes were used. For test three a mixed assortment of wooden bricks was placed on the table, and the child given a brick and asked to pick out all that were like it. For test four a rough series of pencil sketches was used, and the test tried both by asking the child to indicate the outlines like a given brick and to pick out bricks like a given outline. No case was regarded as having failed unless unable to do either. For test five cubical bricks only were used, the largest being about eight times as big as the next largest. The distances apart were such as to render it clear which was the farthest off and which the nearest from the other side of the room without any difficulty. Each question was asked separately, following the American system. In the case of test six the children were allowed to try experiments by lifting objects and looking at similar objects close by and at a little distance.

The tests were tried with 60 children, and the following table shows the one at which each first failed:—

		Age.									
	Test.	7	8	9	10	11	12	13	14	15	*Total*
1	..	—	—	—	—	—	—	—	—	—	—
2	..	1	—	1	—	—	—	—	—	—	2
3	..	2	1	3	3	1	—	—	—	—	10
4	..	1	1	—	—	1	—	—	—	—	3
5	..	—	5	7	4	2	3	3	2	1	27
6	..	—	—	—	—	—	4	5	3	3	15
											—
											57

Two children of 13 and one of 14 passed all the tests.

These tests show results closely correlated with age, but seem to serve to point out the lower grades more particularly.

Manual work was noted in progress, and appeared to show results superior to any of the other school occupations. The teachers' estimate was taken of each case, but this may be expected to vary in standard in different schools and classes.

The numbers in each category are fairly evenly distributed as between the senior and junior classes, but the standard naturally rises with age.

In connection with the domestic economy studies it was stated that a considerable number of the children had to be given the same elementary instructions day after day, and that many of them seemed totally unable to adapt themselves to meet the slightest variations of routine or surroundings. This statement, indeed, sums up the whole position of the mentally defective child.

The lack of all idea of correct movement, of grace or of sense of rhythm in comparison with the normal school child was constantly noted in connection with the physical exercises, and the children seemed listless and uninterested even in dancing movements to lively tunes. A similar slowness may be seen even in the process of getting the children away from school, they take longer to dress and do so in a more clumsy manner. Generally, however, the effect of a few years at school is shown in improved neatness, though the deficit from the ordinary school is always marked. Capacity for adaptation and consequent suitability for after school work does not run parallel with other school attainments. Several can carry out mechanical processes, such as simple reading, and yet, as they need to be told the same things every day, prove themselves entirely unfitted for domestic service or any but the roughest occupations.

Whenever there appeared any medical indication, this was followed up, and the child was medically examined along the lines indicated, while throughout a watch was kept for any causes of so-called spurious deficiency, such as might arise from the presence of adenoids or minor defects of vision or hearing. In ten cases measures were suggested, though many showed the signs of past defects which had been remedied—some, unfortunately, late in life. A few children with defective vision had an unlucky habit of breaking their glasses. There was no evidence that any defects which would have prejudicially affected education had been overlooked, though some had taken a long time to secure treatment; most, if not all these, antedated the present facilities for obtaining such treatment.

In the junior special schools the children seemed to divide almost automatically into two groups of higher and lower grade, the better results being obtained from the middle class or classes.

The child who does not respond to special instruction often remains in the lower classes until of such age and size that promotion to the top class is essential, partly for purposes of discipline, but also because he loses by constant association with much younger children, and has shown so much improvement in handiwork as to necessitate more advanced occupations and instruction. This child is a great contrast to the former, and often it would seem that two or three years in the special school has only advanced his academic status by some six months. The general intellectual progress is very slow, and the child falls more and more behind his normal age grade. The child who, after admission to the special school, responds at once to the smaller classes, simpler curriculum, and more individual attention is rapidly promoted from the lowest class, and definitely advances up to a certain point, though much more slowly than his fellow in the ordinary school. Some of this group in the middle classes show a recovery both intellectual and educational; from these are recruited those who return to the ordinary school; others, while still perhaps falling behind the normal for their age, show a relatively greater advance in intellectual than in educational status, and appear to supply the bulk of the promotion to the schools for elder boys or girls. In the latter schools, under a more stimulating and practical form of manual training, the intellectual side develops more rapidly, and in many a certain degree of recovery of lost ground in this respect undoubtedly takes place. When these elder boys or girls are tested only by their manual work or by questions on general topics, they show much less evidence of defect or retardation than is evident when they are compared with the normal child of the same age, or even much younger, in ordinary school subjects.

The volitional spontaneity of the child has to be taken into account since some of the lack of progress and development is due to an absence of desire to learn which may amount to more than passive resistance. The elder boys' schools, through the medium of their manual training re-act favourably on the volition. A boy sees that the work he does is really constructive, and so takes more interest. He learns to cobble boots or do something that some other boys of his acquaintance cannot, and his self-respect rises accordingly. He finds his new attainments open the way to a definite trade and to some extent realises their advantages. As he needs some knowledge of reading and arithmetic to apply to this more attractive occupation, an incentive to effort previously non-existent is brought into action which in some cases leads to rapid progress in the hitherto backward subject. Such children are likely to have been at all stages further behind academically than intellectually, but their lack of interest is a real defect of brain functioning, though the cure is a pedagogical rather than a medical problem. The brightening of the general intellect, resulting from the change to more congenial work, is sufficiently obvious to blind even some teachers to the more specialised educational deficiency, and in any case is a source of great difficulty when the question arises of giving evidence to enforce the attendance of a child over 14. If the child is fairly bright in appearance, and responsive to simple questions, and still more if he has obtained a situation and is said to be giving satisfaction, it is perhaps little wonder if the legal authority fails to be impressed by the evidence that in other respects his school status is only that of a child of 9 or 10. Yet were this child just under 14, few would argue that he should return to the elementary schools to be placed in Standard II. in the company of much younger children, where he would be a nuisance to the teacher and deteriorate afresh from the loss of the very practical work which had stirred up his dormant faculties. On the other hand, placed with bigger boys in Standard IV. or V. he would be unable to follow the readers or the arithmetic, would

lose most of the blackboard instruction, and would soon become discouraged and deteriorate. The return to the ordinary school means not only different and more rapid work, but instruction in larger classes and the loss of much of that individual instruction which had been available in the special school. Such a child is then clearly incapable of deriving benefit from the instruction in an ordinary elementary school, and is certifiable under the Act of 1899. When he is over 14 the circumstances are different; it is no longer a choice between two types of school, but between school and work. At some period between 14 and 16 the parents, if anxious that the child should go to work, will obtain a situation for him, or make some proposal for his employment. This proposal with a report of the teacher is submitted to the medical officer who examines the child.

The question of exemption is then considered when the boy's intellectual status is markedly in front of his educational, save, perhaps, so far as manual training is concerned, the benefits to the three R's of a year or even a year and a half of extra schooling may be measured by an improvement in grade of perhaps a quarter of a year, perhaps even by none at all. His general intelligence and his manual dexterity and knowledge of some trade will naturally show a much greater advance. Should, however, an opportunity offer of his entering suitable and instructive employment, and he be able to take reasonable care of himself under more or less supervision, it is usual to state that he is fit to leave if suitable work be found. If when a child is examined with a view to exemption, his response is bright and he is able to pass a fair number of the general and educational tests mentioned above, or such others as may be preferred by the particular medical officer conducting the examination, it is necessary to state that satisfactory evidence could not be given to support any steps taken to enforce attendance. If, on the other hand, the tests are not passed satisfactorily, exemption may still be recommended if suitable work is available, but any necessary action to enforce attendance could be supported by evidence in court. It is perhaps well to be clear that facts which would amply justify certification under 14 are not necessarily adequate for children over that age. The suitability of the individual for the proposed employment is but rarely a matter for medical attention. The main problem before the medical officer in considering children under 14 at admission examinations, or at visits to the special school, is whether the child will benefit by education at one type of school but not at another. The question whether or no a child *has failed* to benefit by education in the ordinary school is primarily pedagogical, and the medical officers should be able to regard nomination for examination as definite evidence to that effect given by an expert. The standardisation of educational attainments qualifying for such nomination is also a purely pedagogical matter. In practice the medical officers have to be on the watch against the bias of individual teachers to prevent any unloading on to the special schools of children who are troublesome or unlikely to do credit to the education they receive, and for one cause or another, about three-fifths of the cases nominated are sent back to the ordinary elementary schools. The child, once nominated, it is the duty of the medical officer to ascertain whether the deficiency is due to any preventable cause, and, if so, to notify it in order that the necessary steps may be taken. Now that medical inspection takes place in all infants' departments, the number of such cases is likely to be reduced. The causes of spurious deficiency being excluded, the question of permanency of the defect and of retarded development have to be considered, together with a few specialised defects which have relatively little influence on the general intellectual status. Diagnosis depends on the summation of a number of almost intangible character observations of behaviour, movement, attitude and response which, however, make up a well-recognised whole. Some tests of a phychological nature are needed, included among which are those employed in the present investigation. The decision must depend on the interpretation of the relation found to exist between the intellectual and emotional status, on the one hand, and the educational on the other.

Unfortunately, the psychology of education is as yet in a comparatively rudimentary state, in which much more experimental research is urgently needed, the only point on which there is general agreement is that the tests should be numerous and varied. Because a child fails at some one test involving the powers of attention, memory or perception, it does not follow that he will fail at another apparently involving the same factors. This renders evaluation difficult. In time, when a numerical expression of the norms for many tests has been determined, the matter will be much simplified. There is also the difficulty that the degree of reliability of each test has as yet to be ascertained, which can only be done by continued investigation of a group of children. It is in this direction that work such as that of Dr. Spearman and Mr. Abelson, described on page 63, is of value to the medical officers certifying under the Act of 1899. Until this standardisation has been completed by experimental research, it is only possible to use a number of tests and judge from the general result. Probably four cases out of five, if not a higher proportion, offer no special difficulty, the odd cases require prolonged investigation, spread over some weeks, to avoid the influence of chance variations. These doubtful cases could only be accurately diagnosed by the more detailed application of psychological methods such as are available at the psychological clinic in Philadelphia or in the training school where Goddard works at Vineland, New Jersey. Such investigations could be carried out in some central school with a staff specially trained in medico-psychological methods. Their labours, however, might be expected not only to decide on methods of diagnosis, but to throw a definite light on the psychology of teaching methods in general. It is possible that some children owe their extreme degree of retardation to the methods in use not being adapted to their needs.

Reliability of methods of examination is of the utmost importance both for education and for the determination of the border line between the child who can be made a passable citizen and the one who needs permanent custodial treatment.

This uncertainty as to reliability is the weak point in the tests of Binet and de Sanctis, which are the best graded series at present available.

Failing the existence of a sorting house, which has often been suggested in these reports already, doubtful cases, which have already been declared failures under ordinary methods, can only be admitted to special schools and the results determined by a method of trial and error. The results of this investigation, however, support the general accuracy of the diagnostic methods at present in use.

The medico-psychological and educational tests adopted indicate that the children in the special schools may be classed as follows :—

(*a*) Those far behind their normal grade both academically and intellectually ; undoubted defectives, many of whom will never be fit for any but the roughest work under strict supervision. It is probable that these children who approach the ineducable do better in schools at which special attention is paid to sense education. Those ceasing to progress in either direction are noted as ineducable, or as having reached their mental limit. Both terms must be understood in the sense that the children are unable to benefit to a reasonable degree by education in day special schools. The term "reached mental limit" is not very satisfactory, as it is possible that some children thus classified might improve under the conditions of life in residential schools or colonies, while others are fit for some work, though they are unlikely to make further progress in academic subjects.

(*b*) Those behind their grade intellectually, but more so academically. These are the children who profit by special school education.

(*c*) Those somewhat behind their grade intellectually but distinctly so academically. These are the disputable cases, one fraction being found in the special schools and another and larger in the ordinary schools. Somewhere within this group is the boundary of the merely backward. These are the suitable candidates for intermediate schools where such exist.

In my annual report for 1908 it was estimated by a special investigation that at least some 900 children, one-fifth of the total in the special schools, would do better in such an intermediate school. In the present inquiry a somewhat similar proportion was found, but the number of children of the age of 11 and under examined was too small to admit of accurate deductions. Intermediate schools would serve as clearing houses, through which doubtful cases would pass before certification for special schools. In the schools for elder children a certain number improve from grade (*b*) to (*c*).

(*d*) Children who are behind intellectually, but little behind academically. Few of these are in special schools, and those that are there owe the position rather to moral than educational defect. They are usually unreliable and cannot obtain employment after the school period.

(*e*) There is also the group of undoubted moral defectives. Intellectual tests entirely fail to discover these children. There are many who answer intelligently when questioned about their daily life or school work, and yet whose actions show they are incapable of forming a moral conception or of conforming to the conditions of social life. Such seem to need continuous care in residential institutions.

The children who pass from (*b*) to (*c*) and are able to undertake the work of Standard II. by 13 are those returned to the elementary school. It is not easy to say on which tests most stress should be laid, the opinion of the teacher must have great weight as must the educational tests of reading understandingly, dictation, and power of doing simple sums. If intermediate schools existed the prospect of successful return would be increased.

In the investigation now recorded a child who could read a Standard II. reader straightforwardly, give some report of what he or she had read, who responded to written commands, could write four or five letter words nearly correctly from dictation, wrote down an intelligible answer spontaneously and could do a simple sum, was regarded as suitable for an elementary school, if not well over the age of 13, and provided the general tests had not indicated a very special degree of retardation. Any case over three years behind the grade in the Binet tests or who showed a corresponding level in the series more extensively tried, was regarded as likely to repay better a stay in an elder school until such period after 14, at which he might be deemed fit for suitable work.

The distinction between cases recommended for exemption which were regarded as certifiable, and those not certifiable has been explained above.

As a result the 209 children examined may be classified as follows—

School.	*South-grove.*	*Priory-road.*	*Offord-road.*	*Total*
Fit for ordinary school	3	1	4	8
Probably fit by 13	—	9	4	13
Certifiable as defective under the Act ..	52	65	38	155
Imbecile	—	—	—	—
Ineducable	—	—	2	2
Reached mental limit	—	1	1	2
Fit to leave when suitable work is found	18	7	1	26

There were only 13 children under 13 at South-grove and all were well past their 12th birthday. The estimate for return to the ordinary school by the age of 13 was taken from 54 children of 10-12 at Priory-road and Offord-road, as it was felt that no reasonable forecast could be made of the prospects of the 26 who were under 10 and had not long been in the special schools.

The proportion thought suitable for return has been a little higher than at routine examinations (3.8 per cent. as against 1.7 per cent.), part of which may be due to personal equation and part to the much greater allowance of time per child (6 to 7 per session as against 25 per session). It is clear that

a more complete examination at which the child has ample opportunity to become accustomed to the examiner demands an expenditure of time which would allow not only of a definite opinion, but of some contributions to the psychology of education.

Certain psychological investigations were made in the schools by pupils of Dr. Spearman, with the permission of the Education Committee. The most important was presented as a thesis at the University of London by A. R. Abelson. It was on the Measurement of Mental Ability of backward Children. The work has extended over three years. Individual examinations were carried out on 131 children in 8 schools, 18 different tests being used. Only one test was used on any occasion. The work was always done in a separate room, quite free from any disturbance, and plenty of time was allowed for the observer and observed to get on friendly terms. The children examined were those who presented least evidence of defects, and who whilst they cannot make sufficient progress in the ordinary schools, yet advance considerably in the special school. Abelson designated them merely backward, but adds that these " backward children are of all mentally defectives the most interesting, since they are the most amenable to treatment." The main aim of the enquiry appeared to be the principles upon which practical tests of efficiency must be based.

At the start 14 groups of tests were tried. The following nine were continued through the enquiry, namely :—

Tapping test—to measure simple motor action.
Crossing out rings test—to measure rapidity of motor co-ordination.
Crossing out sets of dots—to measure one form of quickness of perception.
Geometric figure test. Power of placing a pointer within certain geometric figures.
Immediate memory for sentences, names and commissions.
Discrmination of length.
Interpretation of pictures.

Only the last three of these tests, memory for commissions, discrimination of length and the interpretation of pictures have been commonly used by the medical officers in the estimation of mental deficiency.

The whole of this work may, however, be regarded as an independent enquiry, as the methods of testing have been somewhat different, being more to measure the value of the tests, as well as to determine mental response.

The teachers' estimates of the practical intelligence of the children, and their attainments in arithmetic and reading were compared with the results of the tests. The boys and girls were separately graded in order according to their success in each test and according to the teacher's estimate of intelligence, reading, and arithmetic. The correlation co-efficient was then determined for each pair of groups. Each test was repeated and its reliability tested by these methods of correlation. The degree of reliability of the finished results were found to be high. There was an even and appreciable correlation between the results of the tests in the case of the girls, the average being .32. In the case of the boys smaller and more fluctuating values were obtained, with an average of .26. This point was noted early in the investigation, so that after only four schools had been visited girls alone were examined. It thus seems far harder to estimate a boy's intelligence by a few tests than that of a girl. The distribution of mental attainments being apparently more even among girls. Neither reading nor arithmetic correlate highly with other performances. They are no better, indeed, if anything, worse, than an average single test. Nor do they go together, an observation made by both teachers and doctors long ago, although not quantitatively estimated. The teachers' estimates of intelligence correlated mostly with arithmetical capacity, memory for commissions and sentences, and reading ability, the commissions memory was closest with girls, and reading with boys. This, Abelson points out, probably gives a clue to the working of the teachers' minds rather than to the mental capacities of the children. His conclusions are that :—

It is time to abandon too exclusive reliance on casual and intangible general impressions, especially when these have to be derived from a single brief interview.

Certain conceptions, such as that individuals may be classified into distinct types according to their mental processes, are becoming obsolete.

Methods of diagnosis should be checked by numerical estimates and correlation co-efficients.

The results obtained give no support to the " faculty " theory in psychology, so that a report by an examiner that he had tested memory, observation, judgment, reasoning, muscular co-ordination and so forth, would arouse no confidence in the procedure, on the part of the author. Of the tests themselves, all tests alike proved untrustworthy when used alone, the cardinal principle must be to pool several independent tests. When the tests are properly constructed and suitably graded any one of them is just about as effective as another. Moreover, the apparent intellectuality of a test may be very misleading. An unquestionably defective child may perform a test almost incredibly well while perfectly normal children may meet with surprising failure. More fundamental is the principle that the tests should be thorough enough to give results of some constancy. It is best for children on the border line between normal and deficiency and at least over eight years old always to use the same tests and make allowance for age. This is the usual method of the medical officers.

He thinks half an hour should be allowed for the examination and re-examination of each child, but his method would seem to require an even longer time.

He concludes that the general nature of mental deficiency is a " general lowering of that class of performances which is characterised by the need of clear consciousness. . . . The reason for applying a large number of tests is not to gauge a number of different factors in ability, but merely to obtain multiple evidence as to this one factor, the general level." This conclusion, at present popular, must be

very tentatively accepted, it is a reversion to the undifferentiated work of the past, and even apparently only holds for a restricted class of case. The value of the enquiry, however, does not depend on this physiology or psychology, but on the determination of reliability in the tests. If his conclusion that one set of tests is as good as another is confirmed as seems not improbable, for this is a matter of mathematics and not of theoretical psychology, the slight deviations of procedure adopted by different medical examiners become of relatively little importance. The author does not seem to have arrived at any further conclusions as to the educability of the children from his tests than those derived from the simpler work of the medical officers. His work deals with the work of many children, whereas the medical officer's work for the purposes of certification under the Act deals only with the performance of an individual child. The enquiry, however, is a good illustration of the advancing accuracy which quantitative methods are bringing into the most elusive and incommensurable observations in school work, and also illustrates the difficulty of doing such work under school conditions.

Easy treatment or oral teaching only in elementary schools.

In connection with the medical examination of children suffering from defective eyesight or hearing it is sometimes found that there are children who are not sufficiently bad to be classed as "blind" or "deaf," and many of them who will eventually attend myope or hard of hearing classes when provided, are, for the present, required to remain in attendance at the ordinary elementary schools. For some time past these children have been recommended for "easy treatment," for "oral teaching only," or "to sit in the front row." and the following instructions have been issued in regard to such cases:—

VISUAL DEFECTS.—*Children recommended for "easy treatment."*—These children usually suffer from a defect of one eye only or they have defective vision in both eyes of a moderate degree. With reasonable care school work should not cause strain of the eyes nor entail the risk of exaggeration of their visual defect. These children should sit in the front row of the class, sit upright and not be allowed to stoop over any literary work allowed them. Girls must do no sewing, but may learn knitting, provided it be taught by touch and not by sight. Boys and girls should be prohibited the use of books with small print or writing of any sort other than a bold large-lettered hand. They should not join in exercises that involve the reading or writing of masses of numerals or geometrical figures. They may read or write in large type preferably for periods not exceeding 20 minutes without a break. They should not be allowed to stoop over their work, and, if it be possible, the writing should be done free-arm fashion on a blackboard or millboard set up on the desk.

So far as school arrangements allow they should attend all the object lessons, demonstrations and oral lessons that are given in the school.

Drill, dancing, games of all kinds may be freely indulged in.

Home lessons of any sort should be prohibited.

Children recommended for "oral teaching only."—These children suffer from some serious defect of vision such as gradually increasing short sight. When no place can be found for them in a special school they are admitted to the elementary school with a view to their gaining the educational advantage of school discipline and such general knowledge as can be given them in the oral lessons of the classes.

The use of books, pens, paper, pencils and slates of any kind and for any purpose is to be prohibited and the child should be reminded at intervals by the teacher in a friendly chat that the prohibition is for his or her own benefit, and that they must do at home what they are trained to do at school.

If the class arrangements permit they may be allowed to write or draw on the blackboard in large characters free-arm fashion.

If a girl shows aptitude for handwork she may learn knitting by touch, but not by sight. Similarly, a boy may do the larger kinds of carpentry, but he must not use the rule or draw measured plans.

For the most part these children may drill and dance, but they should be warned against using gymnastic apparatus or dumb-bells, for example, in connection with the Children's Happy Evenings Association. They should be cautious in the playground games.

AURAL DEFECTS.—*Children recommended "to sit in the front row."*—These children suffer from slight deafness and it is essential that they should be allowed to sit in the front desks in the class.

Other children who are recommended for admission to a hard of hearing class have to remain in the ordinary school until places can be found for them in a special class. These children must also sit in the front row.

Speech.

From time to time attention has been called to the need for special educational treatment of stammering, as from one to two per cent. of children present this defect. Girls show a proportion of about a half per cent. throughout school ages, whilst boys increase from about a half per cent. in the infant department to as high as three per cent. at twelve years of age and four per cent. among the Standard VII. boys. Family predisposition towards nervous defects, and particularly stammering, is the chief point noted about this functional error. The frequency of some shock or accident involving nervous strain is also marked where history can be obtained.

Dr. Dick, who has been noting the varieties of speech defect, incidentally remarks on the number of children who, after passing through the standards, at the age of fourteen, when ready to leave school still express themselves in language so crudely formed and with such defective enunciation that they are hardly able to make themselves understood. A question has frequently to be repeated several times, and the listener must pay close attention to understand the child. He attributes this largely to want of home training, and says that frequently a child has two languages, the mother tongue and

the school language. The improvement in articulation among the children of the special schools in the past half dozen years, however, shows what part the school can play in modifying or educating this function. He found 111 cases presented by the teachers among 6,216 ordinary school children, that is 1.8 per cent. Of these, 60 stammered or stuttered, 12 presented lalling or lisping, 26 backward speech, and 13 defects due to adenoids, deafness or other physical causes.

Dr. Bellingham Smith, working in the East End, where there are many alien children, has analysed the nature of the defect present among 96 children (1.98 per cent.) chosen by the teachers from among 4,631 ordinary school children, of whom 1,843 were boys, 1,881 girls, and 907 infants. Of these children 3,816 were English and 815 were Jewish by parentage.

He arranges his cases as follows :—

(i.) Organic defects of the articulatory mechanism—	
Adenoids	10
Enlarged tonsils	4
Cleft palate	2
Hoarseness (from intra-laryngeal causes)	2
Enlargement of turbinals	1
(ii.) Functional defects of articulatory mechanism—	
Stammering and stuttering	44
Substituted speech (lisping, lalling, etc.)	24
Unclassified (lack of will 2, feeble voice 2, nasal tone 1)	5
(iii.) Central nervous defect—	
Congenital word blindness	1
Nerve deafness, post meningitic	1
Temporary aphasia	1
Not classified	1

Increased adenoid or turbinal growths, or enlargement of the tonsils rarely gives rise to defect of speech. This only occurs when the obstruction is almost complete, or the tonsils very large. Where adenoids have been left till structural changes occur in the articulatory cavities, these themselves may produce a permanent speech defect, even when the adenoids have been removed. The cause of the hoarseness noticed in two cases is often intra-laryngeal roughnesses or warts (papillomata), but it could not be definitely determined by the means at disposal in a school examination.

The functional causes were commonest and stammering was the most frequent. Of these, 20 were Jewish, 2.4 per cent. of the number of Jewish children, and 24 " English," or 0.62 per cent. of " English " ; 30 boys, 1.6 per cent. and 10 girls, 0.53 per cent. with 4 infants (3 boys and a girl).

The large foreign element made enquiry into the history and associated conditions difficult. Definite causes were only assigned by 13 ; of these one stammered after recovery from pneumonia, one after seeing a small brother killed, two after fright from other causes ; two learned through sitting next to stammerers at school, seven had elder members of the family stammer, and the remaining 31 assigned no cause.

The cases were classified—

(*a*) The commonest stammer was the simple noisy stutter on the first consonantal sound —27 cases, 24 of these being only on the first word of a sentence, the others on any words.

(*b*) The cases with silent struggling over words numbered 5.

(*c*) A stuttering repetition of the first syllable occurred in 7 cases, 2 of which had much overflow of nervous effort.

(*d*) A curious abrupt explosive kind of speech noticed in 3 cases.

(*e*) Stridulous inspiration with commencing speech noted in 2 cases.

As regards stammering, all these cases could sing perfectly. Although the voices were generally rather toneless, one was the best singer in the class. In 17 the defect was evident on conversation alone, in 27 on conversation and reading, and of these 18 read poetry better than prose. Parents or teachers described 19 as very nervous ; 9 were reputed much above the average in intelligence, whilst 4 were in arrear, although not actually mentally defective. One suffered with enuresis and 5 had other troubles. The stammering varied with health ; 1 nearly cured relapsed after tonsilitis.

The faulty function lies in incoordination of articulation with breath, and in the first variety of cases the children talk or read in a great hurry, almost with breathlessness. The fear that they may stammer if they stop leads them to place the breathing periods as far apart as possible and aggravates the condition. Regular breathing exercises, reading aloud and slowly, if necessary with the teacher, so that they learn when to fill their chests, cures the majority of these cases. They have to be taught to speak slowly, deliberately and from a full chest.

In the second variety, silent stutter, no air escapes at all, whilst in the third the fault lies in the second element, so that the first syllable is repeated. In the fourth variety the chest is not empty, but voice comes with explosive force, the over-action of the articulatory mechanism preventing slow escape. The fifth variety seems to mean approximation of the vocal cords during inspiration, so that a stridulus is produced on beginning to speak and the sentence is hesitating during the filling of the chest. It is not sufficient to attempt to remedy these cases in the ordinary school. The teacher must gain special experience and the children have special training.

Substituted speech—24 cases—mostly found in the infants' departments; easy sounds being used for more difficult ones, for instance in 11 cases R was replaced by W or L, in 4 cases voiced and voiceless consonants were not distinguished but used interchangeably as B and P or T and D.

In the worst cases, commonly called idioglossia, these rules are present, but sometimes there is no clue to the speech at all. These cases are usually inattentive, but gradually improve. Such bad cases are :—

S. McH.—Girl, aged 5½. Speech fluent, but quite unintelligible. Considerable irritability at not being understood, hears well and understands all said to her. Marked lack of attention when attempts are made to teach her sounds. Vowels pronounced perfectly, but B=P, soft C=TH., d=K*ee* or *ee*. K=tee. W=Ki-oo. Z=eth. Eight months later, after careful individual teaching, she read, recited well, and was intelligible, but still altered certain consonants, replacing s. by t., labial b by voiceless p, and so on.

E. V.—Boy, aged 8. Quite unintelligible at present, said to be improving. Is very inattentive; can produce sounds correctly, but introduces T or D for many consonants and quite irregularly, also interchanging b and d, fat=tat, bad=bab, very=derry, blink=derlink, bring=dring; voiced and voiceless gutturals are also replaced by dental, and aspirants omitted; y is transposed to l.

The unclassified defects are illustrated by—

J. M., a boy, aged 5½. Been 2 years in the schools, will not talk unless cajoled or threatened, cannot read the smallest words, never talks unless spoken to and then speaks with great distinctness. All his sounds are perfect. Intelligence apparently normal.

S. P., a boy 6½, of Polish extraction, 14 months in school, for six months never uttered a word, sits motionless and inattentive. Can produce all the sounds perfectly and knows alphabet. If addressed, appears stone deaf, taking no notice of questions or directions, now talks a little to the teacher, but never to other children. He is said to talk at home. Hearing and understanding would appear to be perfect, and he seems otherwise normal, but there is apparently complete lack of desire for speech.

J. M., girl, aged 12. At 4 years of age had an attack of encephalitis during which she lost the use of her limbs and speech. She could not speak till eight years of age; now is bad at reading and speaking, having attained the standard of a six year old. There is no lack of intelligence in other respects, but her home surroundings are bad.

Some few of these developmental defects which ultimately come right would well repay careful daily study and throw light on educational methods. They belong to the class of cases which require to be studied in a residential observational school, for which London has probably greater need than any other place, from the amount of material to be handled and classified here.

The stammerers exceed in number those mentally defective for whom a comparatively expensive education is provided. They are, however, more valuable members of the community. They all require encouragement and suggestion by direct assertion, sympathy and patience till they overcome their difficulties. Their general health must be kept at the highest level. They could in the majority of case be cured of their defect in a few weeks, or perhaps months' time, and yet there is no provision for the treatment of such cases within reach of the elementary school children in London.

The Semi-Blind.

The treatment of children too blind for ordinary schooling is included under the Education (Blind and Deaf Children) Act of 1893. It has usually been taken as including them in the ordinary blind teaching with Braille type and so on. This is educationally unsound, if it be taken that they are to be educated as if the eyes are of no use to them. The smallest amount of vision even if it only be the perception of direction of light is of some use in life. There is, however, a considerable amount of blindness of such a nature that ordinary schooling is largely lost, whilst education by the usual blind methods is still of less value for the purposes of later life, vision remaining of considerable use even in work. With the increased care of children these cases may be expected to diminish in number. Ten years ago a census of the causes of blindness was made in the blind schools. It has been regularly repeated since. *Ophthalmia neonatorum* accounted for 30 to 40 per cent. It is impossible yet to assert that this has materially diminished, as the proportion of semi-blind admitted has increased as a result of more careful examination. The 25 years' agitation of ophthalmologists has at last resulted in the Local Government Board making the disease notifiable, and it may be expected that blindness from this cause will drop to one-twentieth of its present amount in the next decennium. Cases of semi-blindness, too common at present from the same cause, will also diminish. The common cases of corneal scarring, due to phlyctenula, the results of ill-nutrition and want of houseroom and playground space, whilst they result in diminished wage earning power, seldom bring children into the category of blind.

High myopia except in the purely congenital non-progressive cases which are too exceptional to base general treatment on, has been recognised as requiring special educational means. Any child coming into school with noticeable myopia requires most careful consideration, and a child who in the earlier years of school life presents several dioptres of myopia, should be taken out of the ordinary school. In any case the condition of the eyes may be expected to get worse, the myopia will increase during the whole period of growth. The most that can be done is to retard deterioration. The dangers pictured by German writers, and so often adopted by English writers and applied to myopia generally may be said to apply only to this special class. Whilst the so-called school myopia may be dismissed as a danger to vision, the danger of school or any near eye work for these juvenile myopes is considerable. The eyes appear weak in structure, "slack set up" as a Yorkshire weaver described them. Deterioration in such eyes to the extent of blindness is more common than in any other class. In my own experience it has occurred from hæmorrhage or from detachment of the retina before full growth was accomplished.

High Myopia classes.

The High Myopia School, described in previous reports, was started experimentally. Two others are about to be opened. The experience has merely confirmed our knowledge, and now the experience acquired of its success makes provision for this class of child an urgent necessity.

The number of high myopes passed as requiring such treatment has been :—

Year.	For the Class at Boundary-lane.	Invalided, treated as Blind, or allowed to remain in E.S.
1909	6	18
1910	6	40
1911	7	83
1912 (up to May 20) ...	2	80
Total	21	221

The cases submitted from ordinary school examinations or elsewhere as possibly suitable for treatment as deaf were further examined at the Head Office with the following results as regards educational treatment proposed :— Deaf.

Elementary school	53
,, front row of class	45
Hard of hearing class	9
Deaf	133
Mentally defective	11
Imbecile	3
Physical defect, cleft palate, etc. ..	5
Invalided or exempt	23
	282

Of those advised for elementary school 38, and of those for front row 3 were cases with aural suppuration. The hard of hearing cases are few, not because there are few, but because there is little use referring them for treatment until centres are established.

The analysis of the causes of deafness is of great importance from the public health standpoint. Certain cases must always occur, but the majority even including congenital and hereditary cases could be prevented.

Mr. Yearsley has investigated the causes of the defect among 874 pupils of the Council schools for the Deaf. The records of other deaf schools are of comparatively little value, as generally they have not been made with a clinical or scientific purpose, and often it is doubtful whether they are wholly medical records. The records dealt with here are, however, the result of a critical examination of the history of each child as given by its parents, or on its admission papers checked and controlled by a thorough physical and functional examination. For convenience the classification used by Mygind, in his well-known work on deaf mutism has been used, although a more complete classification is desirable. The first grouping of these 874 children is as follows :—

		Boys.	Girls.	Total.	Percentage.
I.	Congenital	186	177	363	*41*
II.	Acquired	236	218	454	*51..*
III.	Doubtful	26	16	42	*4.8*
IV.	Unknown	8	7	15	*1.7*
		456	418	874	*99.9*

I.—Congenital cases.—The cases born deaf number 360 ; to these may be added 3 of true congenital aphasia, making 363 out of 874, or 41·5 per cent. Amongst the doubtful cases 23 are probably congenital and 1 is likely to be true congenital aphasia. The addition of these would raise the percentage of congenital cases to 44·3. Mygind writing in 1894, suggested that " Future investigators will perhaps prove that acquired deafness has a still greater preponderance in the causation of deaf mutism than we are authorised at present in believing." Here the majority of all cases are found to be acquired.

II. The acquired cases.—Those which are beyond dispute number 454 or 51·94 per cent. If 18 of the doubtful cases which were probably acquired are added, the number is 472, or 54 per cent.

Of these acquired cases the first group is Disease of the Brain and its coverings, constituting 18 per cent. of the acquired cases—viz. :—

Meningitis	49
Convulsions	10
Fits	23
Brain fever	1

It is probable that all were meningitis cases, although the exact nature of the cause would not be definitely ascertained nearer than the classification given. One of the cases was definitely recorded as " tuberculous meningitis."

Acute infectious diseases account for one-third of the acquired cases.

Epidemic cerebro-spinal meningitis, which is the most prevalent cause in America, is here only represented by one case. The older work of Mygind gave percentages as follows for statistics from various countries : Norway, 23·5 to 12·0 ; Pomerania, 26·8 ; Baden, 14·0 ; Denmark, 1·9 ; Mecklenburg, 1·5 ; Saxony, 1·1.

Scarlet fever accounted for 39 cases, together with one where it was complicated with typhoid. Of these 40 cases (8·8 per cent.) in 35 there was suppuration, 3 had middle ear catarrh, and 2 internal ear disease. Scarlet fever used to be a very large factor in English statistics of deafness, but during the present generation the mildness of the disease has materially lessened the aural sequelæ.

Measles figures as follows, measles 61, measles and scarlatina 1, measles with meningitis 3, measles with pneumonia 6—a total of 71, or 15·6 per cent. Suppuration had resulted in 38 of these cases, whilst catarrhal disease 6 and internal ear disease 24, account for the rest. The diminished seriousness of scarlatina as a factor of deafness partly due to increased attention paid to it by public health authorities, and partly to reduced prevalence of serious forms shows up well when measles and scarlatina are compared as factors of acquired deafness. Here measles is twice as important as scarlatina, but in the older statistics of Mygind the opposite was always the case. He gives :—

	Ireland. (Wilde)	Germany. (Hartmann)	Denmark.
Scarlet fever	7.0	11.3	20.8
Measles	1.4	3.6	5.3

Diphtheria is given as the only cause in 10 cases, and in 4 as the cause combined with scarlet fever or measles. This makes 14, or 3.1 per cent. Suppuration had resulted in 11 of the cases.

Pneumonia, now classed as an acute specific disease, is said to have been the cause in 13, or 2.9 per cent., 8 of which were due to suppuration and the rest to internal ear troubles.

Other acute diseases figuring in the history as a cause were typhoid 2, influenza 3, whooping cough 5, mumps 1, and rheumatic fever 1 case. The majority of these last cases were due to nerve deafness.

The constitutional diseases tubercle and syphilis are extremely prevalent in the community, but apart from the case of recovered tuberculous meningitis, which is a rarity, there was only one case in which tubercle could be assigned definitely as the cause. This was a case of old middle ear tuberculosis which had undergone more than a dozen operations. Considering the frequency of tubercle as an aural disease in very young children its absence in the deaf schools is remarkable and can only be due to its fatality. Our figures are borne out by other statistics which assign less than one per cent. to this cause. Congenital syphilis is responsible for an appreciable number of severe cases of acquired deafness in children. In addition there are a considerable number of cases which become affected in the last year or two of school life, and which, though too deaf for ordinary life, yet are not wholly deaf ; these do not come into the deaf schools. All kinds of causes are assigned, " paralysis, nerves, run over, unknown, improper medical treatment," and so on. It is only by careful enquiry that a number of these cases are known, Castex, in Paris, publishes (1908) 18 out of 719, or 2.5 per cent. ; Yearsley (1909) noted 17 of 225, or 7.5 per cent. There are 37 cases here assigned to this cause ; that is, 8.03 per cent. of the cases requiring education as deaf are definitely assigned to congenital syphilis. This alone is an argument for the sanitary control of this most serious disorder, which is so prevalent.

Primary ear disease is disease of the ear not due to infectious fevers, constitutional or brain disease. The cases under this head may be classified as—

(i.) Suppurative disease, not caused by the fevers. To render a child educationally deaf it must have considerable destruction of the middle ears or secondary implication of the internal ears. These cases numbered 51, or 11.25 per cent. The majority were due to naso-pharyngeal conditions, chiefly adenoids, and most were avoidable.

(ii.) Middle ear catarrh numbered 41 cases, and of these 40, or 98 per cent., were due to adenoids. This shows the necessity of attention to preventative measures, as every one of these cases should have been avoided.

(iii.) Otosclerosis is a remoter consequence which does not usually show before adult life, but which was the cause of deafness in a girl of eleven years of age.

Other influences.—Undoubted causes were fright or shock 9, injuries such as blows or falls 66, where the deafness is directly caused 45, or secondarily through concussion of the brain 5, or meningitis 16. Three cases were assigned to the problematical cause burns. Other improbable causes were teething 8, four of which were probably due to congenital causes, meningitis, scarlatina, and catarrhal middle ear disease respectively. One case ascribed to diarrhœa was probably the result of adenoids, and associated mucous disease.

Doubtful cases were 41, nearly 5 per cent. of all the children, and they were provisionally assigned as follows :—

Probably congenital	23
,, congenital aphasia	1
,, middle ear suppuration	2
,, ,, ,, catarrh	14
Fever (nature not ascertained)	1
	41

Causes were quite unknown in 15.

The congenital causes could probably be lessened in number by the application of eugenic principles, the most immediate of which would be the withdrawal of all support from adult "deaf and dumb" institutions, which, as Professor Graham Bell has suggested, are tending to develop a deaf mute variety of the human race.

Of the other causes it is reasonable to suggest that all the cases of suppuration or middle ear catarrh due to adenoids, and half the cases of deafness due to scarlatina or measles could be prevented by prompt employment of preventative measures. This would give a saving of cases of the following nature :—

Suppuration due to adenoids	51
Middle ear catarrh due to adenoids ..	40
Half the scarlatinal cases	20
Half the measles cases	36
	147

It may be fairly estimated that these 147 cases out of the 454 acquired, one-third of the cases, or 32.4 per cent., could have been prevented.

Epilepsy.

The need for provision for the education and care of epileptic children has been referred to annually since the first of these reports. The absence of this provision is a great gap in the educational system of London. The requirement is not great in bulk, but where it exists is intense, and can only be satisfactorily met by a residential institution. The family of an epileptic suffers severely, although, fortunately, the numbers of such families are not very great. Now the foreshadowing of legislative changes makes any authority hesitate before committing itself to the large capital expenditure needed to satisfy the requirements of this problem. Meanwhile tentative arrangements have been made for some cases to be taken at Chalfont and Lingfield.

In view of the fact that 300 children in London are not receiving education on account of epilepsy a suggestion for a small home for the worst cases has been considered during the past year. In considering the establishment of such an institution it has to be remembered that epileptics show wide variations in the degree of their affection and in their mental condition. Some have a fit only at intervals of several months, while others may have many fits in the course of a single day. Some are highly intelligent and attain to a good standard of scholarship, while others are of the most vegetative type of imbecility. Some are placid, others violent, insane it may be for short periods, measured in minutes, or longer periods, days, months, or even years. An individual of any one type may, with apparent suddenness, change to another. As a consequence classification has always been a matter of difficulty, and on the Continent it has been found advantageous to establish large colonies in which there is provision for farm colonies and workshops for those able to labour, schools of various grades, homes for the more defective, places of restraint, almost cages, for the more violent imbeciles, and asylums for those temporarily insane. All these institutions being under one management classification and transfer are easy, so that the best means can be adopted for the present and future welfare of each individual. In the absence of a special authority to deal with the feeble-minded generally such provision is scarcely possible and the present problem is the case of the epileptic of school age, 7 to 16.

A certain number who have fits of a mild type at rare intervals or who suffer only from the lesser grade of the affection known as *petit mal* are allowed to remain in the ordinary schools, or in the special schools if the epilepsy is associated with a degree of deficiency rendering instruction in the ordinary school impracticable. In these cases the teachers are warned of the inadvisability of endeavouring to push the children. In a number of instances, however, medical certificates are submitted showing that, in the opinion of the physicians on the staff of well-known hospitals, the children should be for long periods or even permanently excluded from work under the conditions prevalent in the Council schools. On the other hand there are also many cases in which it is suggested that some schooling should be attempted, but in which the fits recur with such frequency or violence as to cause a disturbance of school routine and discipline, rendering their presence most undesirable even apart from the effect on other non-epileptic children. Generally speaking, however, the epileptic children are also to a greater or lesser degree mentally deficient, either permanently or for a time after each fit. Experience has shown that accommodation can only be obtained for those slightly affected and who present little or no sign of mental defect, whereas it is the rather worse grade who are most in need of residential care. This is the more so as they not infrequently come from families of a poorer mental stock and do not receive that good home influence and training which is so important a part of education.

In a small home in which no great amount of grading could be undertaken, it is necessary to assume that the children would be approximately of one level, neither the best for whom some accommodation would be available nor the worst who would need both more immediate attention and probably ought to have permanent custodial care at the expiration of the school period. A home for from 40 to 60 children could be filled with those whose mental qualities would correspond to the intermediate grades of the special schools. It is wisest to assume that the fits will persist throughout the life of the individual, though in a considerable number great improvement will result. Education has, therefore, to be directed towards occupations which would involve no personal danger in the event of a seizure. Work on the water, about machinery or on scaffolding and the like is contra-indicated. The choice will generally be restricted to sedentary occupations, and though farm colonies play their part in the custodial treatment of adults, it may be doubted if it is of much avail to endeavour to lead a town bred

epileptic child back to the land. The general principle of life in such a school must be to secure a maximum of uniformity ; excitement of every kind, overstrain in work, and irregularity in meals and sleep being avoided. If overstrain and worry are avoided education can continue along the ordinary lines, but longer intervals between lessons and probably shorter periods for each lesson would be advantageous. It may be found necessary to modify the instruction given to individuals should worry and recurrent seizures be found to follow any special subject. This has not been found a practical working difficulty in the German epileptic schools. Exercise is important, but this and games will require special regulation, or the excitement in the playground may be more harmful than the mental work in the schoolroom. Personal influence and supervision are the determining factors, so that the personality of the superintendent, teaching staff and, indeed, of all the officers is of manifold greater importance than any considerations of site or structure of building. As regards the epileptic seizures it will be necessary to bear in mind that from time to time children will suffer from these and may need immediate attention, so that a special couch will be needed in each room on which they can be placed during the attack and on which they may remain for a time. After the attack is over there is usually a period in which the individual is not quite responsible for his actions, so that he needs watching. It has been found that children can remain on the couches in the classrooms or recreation room without disturbing the rest of the class. The trouble caused in the ordinary or special schools arising from curiosity on the part of some children and nervousness on the part of other children and the teachers disappears in a home or colony where a fit is an hourly occurrence. As regards the structural arrangements these seizures have to be considered in two ways. A child may be seized anywhere, so that it is necessary that immediate and easy access to it may be always possible, which will necessitate special arrangements in regard to the desking of the classrooms and the construction of the bathroom, lavatories and offices. As the children are liable to fall, though usually after a warning, unnecessary furniture and sharp edges must be avoided, and facilities be available for keeping children from falling out of bed. All staircases must have doors at each landing and all windows be specially guarded. This is the more necessary, as in the post-epileptic condition children may wander about in a condition of sleep walking. The Board of Education are believed to discourage stairs in epileptic homes, but with proper precautions they have been found abroad to present no real difficulties or dangers, so that this can scarcely be enough to settle the design of a building if other considerations render a two or more storied edifice more desirable. The great German institutions have three or more stories to each building both for children and adults. It is also advisable that unbreakable materials be used in place of glass and earthenware to avoid danger from broken pieces. The sleeping accommodation must be arranged to admit of instant supervision and detection of seizures, and the beds and bedding must be of materials so arranged as to diminish the risk of suffocation. It is necessary to arrange for night supervision. How far this will be required may vary from time to time. With some it may be enough for an attendant to be immediately adjacent and able to hear any sound in the dormitory. At any given time some children will be unable to receive instruction and arrangements for their supervision in the recreation room or dormitories will be needed.

There will be the usual risk of illness and infection, so that provision will be required for a sick room and isolation rooms.

Probably dormitories of not more than 12 beds will be found the most convenient, though all numbers from 4 to 60 or more are provided in existing institutions. Too large a number increases the risk of disturbance of rest at night. Bathroom, lavatory and office accommodation should be on the same floor and within easy reach of the dormitories. Sufficient recreation room must be provided to avoid the excitement of large gatherings, but if one room is available for those "not in school," the other rooms could no doubt be adapted to multiple purposes. Two nurses will be necessary at any rate at the beginning, though their duties will doubtless become lighter as the teachers and others become more used to dealing with epileptics. All the officers will require ample off-duty hours, as this class of work involves much more strain than an ordinary school or even hospital, the unexpected being very trying. Ample playground space, preferably grass, covered with facilities for gardening and outdoor occupations is desirable, but in all the arrangements it must be remembered that no child or even group of children can be left long without supervision.

Heart disease.

The importance of rheumatism among young children, as an insidious and almost unnoticed disease, exerting a powerful debilitating effect in anæmia, probably also retarding normal mental development, and sometimes leading to serious disturbances of the heart mechanism which, however, may not be detected till long after, has lately been increasingly recognised.

Dr. Norman, analysing his notes of children with respect to heart disease, found 9 boys (0.72 per cent.) among 1,235, and 28 girls (2.33 per cent.) among 1,198. In 2 of the 9 boys and 1 of the 28 girls a congenital malformation was diagnosed. A boy and a girl showed signs of the aortic valve being affected, otherwise all the cases were defects in action of the mitral valve. There were from three to four times as many defects among the girls as among boys and chiefly the elder girls.

Dr. Hadfield has made a preliminary enquiry in N.E. London as to the prevalence of rheumatism, and provisionally suggests that larger numbers of children than is usually supposed pass through rheumatism or chorea without heart disease appearing during school life, or as he terms it, permanent heart disease. This may, however, not be a permanent escape, as after some years definite signs may appear, and in older scholarship or pupil teacher candidates the gradual development of definite valvular signs is noted occasionally in the changing heart sounds. He rejected cases of indistinct or doubtful heart affection from his figures.

The cases were noted separately where parents were present and confirmed the diagnosis by their history, as follows :—

Heart condition.	Boys 64 in 2,942.		Girls 77 in 3,050.		Total children 141 in 5,992.	
	Unaffected.	Affected.	Unaffected.	Affected.	Unaffected.	Affected.
Rheumatic fever—						
Parents present	9	5	7	2	16	7
„ absent	2	—	—	—	2	—
Rheumatism—						
Parents present	14	3	14	6	28	9
„ absent	—	—	4	—	4	—
Slight rheumatism—						
Parents present	5	—	6	1	11	1
„ absent	1	—	—	—	1	—
Chorea—						
Parents present	7	1	16	1	23	2
„ absent	2	—	3	—	5	—
Rheumatism and Chorea—						
Parents present	1	—	3	2	4	2
„ absent	—	—	—	—	—	—
Heart disease alone—						
Parents present	—	7	—	8	—	15
„ absent	—	7	—	4	—	11
	—	23 0.8 per cent.	—	24 0.8 per cent.	—	47 0.8 per cent.

Dr. O. K. Williamson has also noted rheumatism and allied conditions, as well as heart disease. His results from 2,479 cases may be tabulated as follows :—

	Number.	Signs of heart trouble.	History of rheumatism		Chorea.
			With joint swellings.	Without joint affection.	
Boys—					
Senior	776	7+1	29	20	8+2
Infant	385	7+2	4	4	1+1
Girls—					
Senior	931	19+8	34	25	12+4
Infant	387	2+1	4	—	—

These 2,479 gave 1·9 per cent. showing some signs of heart trouble (1·5 per cent. boys and 2·3 per cent. girls), and in 1·4 per cent. of all the heart trouble was definite and indubitable. When ill-nourished and debilitated children are selected on this account rheumatism comes prominently forward, and heart disease is a striking part of the picture. Dr. Cardale examined particularly over 500 necessitous children—by this, meaning children fed at school. Of these 234 belonged to the Isle of Dogs, and 283 to the Homerton district, and he states that 181 were free from defect whilst 336 presented definite defects ; slight temporary variations from health being excluded ; 190 of the 336 defectives, or 56 per cent., presented what he regards as definite valvular affection of the heart, being about 36 per cent. of the necessitous children examined. In one school in the Isle of Dogs, 42 of the 60 being fed presented heart affection, temporary hæmic murmurs being excluded from the reckoning. Probably it is the anæmia resulting from antecedent rheumatism that had most to do with the selection of these cases for feeding, but the whole matter is worthy of very careful inquiry. The explanation of the frequency of heart disease given by Dr. Cardale is that a very large number of these children are neglected, poorly clothed, and badly shod ; that their homes are often draughty, cold and damp ; the children run the streets at all hours of the evening and night exposed to cold and wet, and frequently during bad weather they sit in their wet clothes and boots. Attacks of acute and subacute rheumatism are common, especially those insiduous attacks, of the subacute variety, which are regarded as "influenza colds," and receive no treatment but may leave valvular mischief. Obviously rheumatism may be difficult to detect, but it is well worth a very careful study in relation to age incidence, sex, locality, and possibly school work, for a careful physician of the last generation wrote a book on chorea, in which he concluded that it was largely a school-produced disease.

Spinal curvatures. Spinal curvatures, which we regard in London as mainly slight developmental defects only, run into serious disease in rare cases. Dr. Hirsch has carefully examined about 600 girls in Woolwich schools as regards these curvatures. The children were stood to toe a line, the hands hanging by the sides and the head held erect. The angles of the scapulæ were then felt with the

right and left thumbs respectively, and all cases in which one was higher than the other were put aside for further examination, when the spines of the vertebræ were marked out with a dermograph, and a plumb line fixed to a rod was dropped from the cervical vertebra; deviations were then recorded by a calliper gauge. Unfortunately a series at different ages could not be obtained, as children are only examined at certain age groups now. Those born in 1899 and 1903 were taken, and 3·39 per cent. of 383 girls born in 1903, and 6·25 per cent. of 240 born in 1899 were noted with scoliosis. The poorer the school the more curvature seemed to prevail. The cases were all mild except two, and a considerable proportion of them came under remedial treatment arranged by the Woolwich Branch of the Invalid Children's Association.

Miss Dobbie, who has special knowledge of these defects, having spent much time both in the surgical diagnosis and treatment of orthopædic cases and in the application of exercises to them, has made very careful notes on a considerable number of unselected children of the 8—9 and 12—13 year old groups, born in 1899 and 1903. She has analysed her records as follows :—

Age group	Sex	Numbers examined	Normal spines	Kyphosis	Lordosis	Kypho-lordosis	Lateral curves		Knockknees		Tendency to flat feet
							Slight	Definite	Slight	Definite	
8–9 ...	B	412	213	16	4	7	182	5	121	82	144
		per cent.	*51·69*	*3·88*	*·97*	*1·69*	*44·17*	*1·21*	*29·36*	*19·90*	*34·95*
	G	384	169	20	2	13	191	5	110	67	91
		per cent.	*44·01*	*5·20*	*·52*	*3·35*	*49·73*	*1·30*	*28·64*	*17·44*	*23·43*
12–13 ...	B	363	129	24	2	3	215	7	98	42	140
		per cent.	*35·53*	*6·61*	*·55*	*·82*	*59·22*	*1·92*	*26·99*	*11·57*	*38·56*
	G	326	100	24	4	12	202	9	91	56	102
		per cent.	*30·67*	*7·36*	*1·22*	*3·68*	*61·96*	*2·69*	*27·91*	*17·17*	*31·28*

Miss Dobbie also compared the older (12—13) group of children with reference to their vision, and obtained the following results, which do not seem to support the idea that spinal and ocular conditions are related :—

Spinal condition.	Sex.	Numbers.	Vision Normal. $\frac{6}{6}$	Vision fair. $\frac{6}{9}$	Vision fair. $\frac{6}{12}$	Vision bad. $\frac{6}{18}$	Vision bad. $\frac{6}{24}$	Vision. Unequal
Normal spines	B.	129	62	31	10	1	2	23
		per cent.	*48.1*	*24.0*	*7.7*	*.7*	*1.5*	*17.8*
	G.	100	32	26	12	8	1	21
		per cent.	*32.0*	*26.0*	*12.0*	*8.0*	*1.0*	*21.0*
Lateral curves	B.	222	137	34	7	6	2	36
		per cent.	*61.7*	*15.3*	*3.15*	*2.7*	*.9*	*16.2*
	G.	211	96	68	17	7	1	22
		per cent.	*45.5*	*32.2*	*8.0*	*3.3*	*.5*	*10.4*
Kyphosis lordosis, etc.	B.	29	20	4	—	1	1	3
		per cent.	*69.0*	*13.8*	—	*3.5*	*3.5*	*10.3*
	G.	40	17	11	7	3	1	1
		per cent.	*42.5*	*27.5*	*17.5*	*7.5*	*2.5*	*2.5*

Whilst these results from the primary schools are slight, they indicate that curvatures are not very serious, and they are in concordance with the more extensive investigation in secondary schools reported on last year.

School Planning and Apparatus.

Lighting.

The reports on natural lighting of schools tabulated hitherto have dealt with schools as units and merely given the conditions of lighting as a general statement, good, fair or bad, according to the impression on the observer.

During the years 1906–8 the returns showed for about 1,000 schools 68·5 per cent. returned as good, 9·4 per cent. fair, and 22·0 per cent. as bad in respect to lighting. With the modernising wave which swept over the schools about that time, many bad schools were either closed or structurally improved. The reports of some 1,300 schools during 1909–10 showed the natural lighting as good in 76·7, fair in 21·5, and bad in 1·8 per cent. The 22 per cent. badly lighted had now mostly passed over to fair or good. During the last period the artificial lighting cursorily recorded in a similar way showed 92·9 per cent. good, 5·6 per cent. fair, and 1·4 per cent. bad. These figures can only be taken as rough impressions

of schools as a whole. If separate class-rooms were taken as units, or if the separate place of eachchild was considered in reference to its lighting, this high percentage of satisfactory illumination would no longer be recorded. Until a couple of years ago the means of rapidly and accurately estimating local illumination was scarcely available for school purposes. Now several methods exist for measuring either (i.) the relative natural illumination of different parts of a room, which is the determination usually wanted ; or (ii.) the absolute amount of illumination in foot candles on any surface, which is the measurement required for estimating the value of artificial illumination, or for scientific investigations. Before these convenient methods were available, it was recognised that apart from direct sunshine the natural lighting of parts of a room was always a definite fraction of the out-door lighting. To determine this relation the angular opening of the illuminating area of sky was measured. Recognising that reflections in the room play an important part in its illumination, this method is being abandoned. A better way is to use a portable arrangement by which the illumination on a small white surface in any position can be compared against an image of the sky, the brightness of which can be diminished to equality by means of the aperture of an iris diaphragm. This aperture in size measures the relative illumination of the spot and includes the effect of all indirect and reflected light. The last method is to measure the illumination in actual foot candles. A variety of handy instruments have been devised recently. Mr. Harman has used a candle photometer made in a very portable and cheap form. Dr. Williams uses an electric apparatus in the schools, and Dow's Lumeter is a reliable instrument which has recently become well known. With these means at disposal school illumination will now enter on a new phase. The lighting at any place can be stated as a fraction of daylight, or in definite foot candles.

The physiological adjustment of the eye is such that it can bear an illumination by daylight which would be the cause of unmitigated glare by artificial light. Outside illumination is usually many hundred times as great as indoor natural lighting. It is generally stated as a thousand times greater than that of an average room. For this reason a relative photometer, such as that of Thorner, already mentioned, which measures by the aperture of an iris diaphragm the relative value of the illumination at various parts of a room in relation to the outside lighting, is the most convenient routine method of recording the natural lighting of a class room. The amount of light varies enormously in different school places. Figures 12 and 13 give measurements made by Dr. Williams in the absence of the

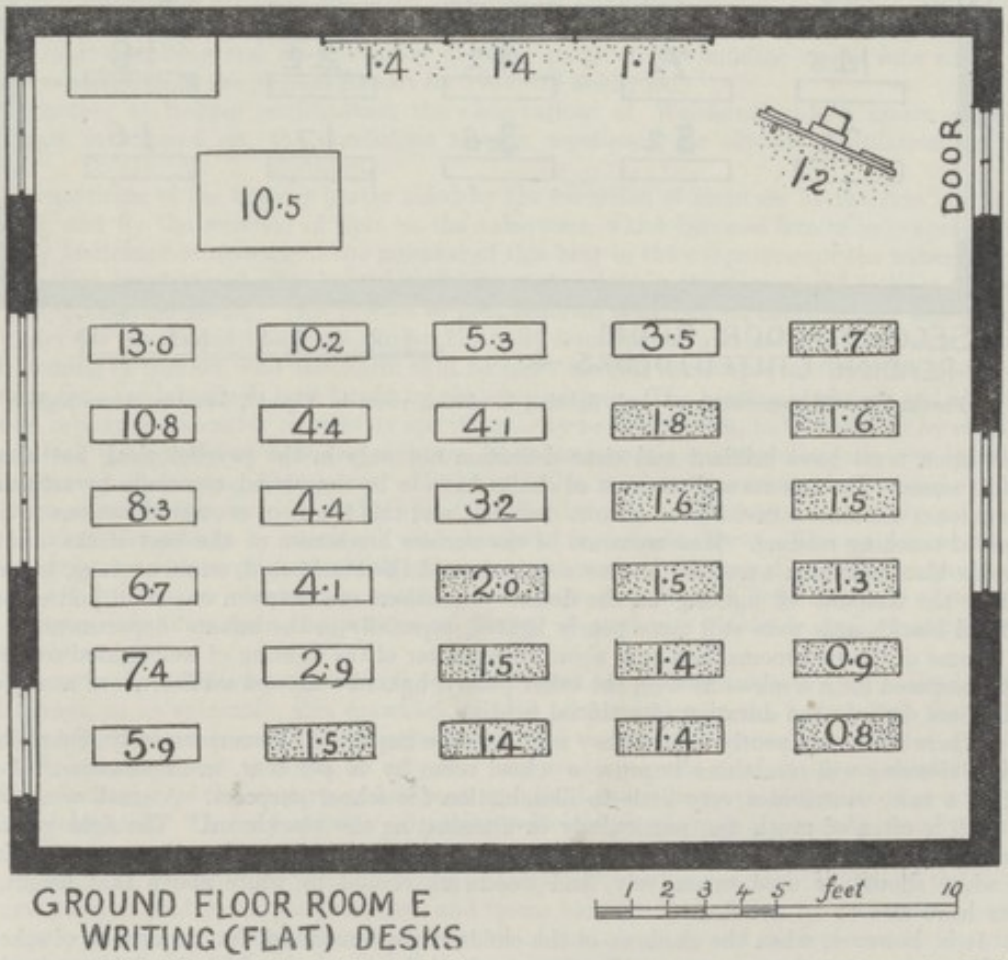


FIGURE 12.—Measurements of desk lighting in a schoolroom (lowest floor). Stippled desks are too dark for school work.

children at two o'clock on a clear, bright, but sunless day in November in two wide class rooms of the same school—the top of the windows being 13 feet high. The light is shown to vary ten or twelve fold on the desks. Desks which are stippled in the diagrams do not exceed 2 foot candles, and are judged too dark for school work. The minimum illumination of a school place should be 2·5 foot candles. On

the desks when tilted to the reading position, the illumination was always reduced. This is of importance because it is not often considered, and yet is the condition under which books are read. The condition in these rooms Dr. Williams summed by saying that boys near the windows would have better light than in a well-lighted room at home, whilst those in the remote desks would have lighting more comparable to that of a basement or cellar dwelling. Any place where diamond-type cannot be easily read by a normal eye at half a metre distance has lighting certainly too poor for school purposes. Whilst the lighting of the separate places affects the individual scholar, the illumination of the blackboard affects the whole class, and as a rule it is very poor. The contrast between the blackboard and the chalk requires to be good. For education the object on which the child concentrates

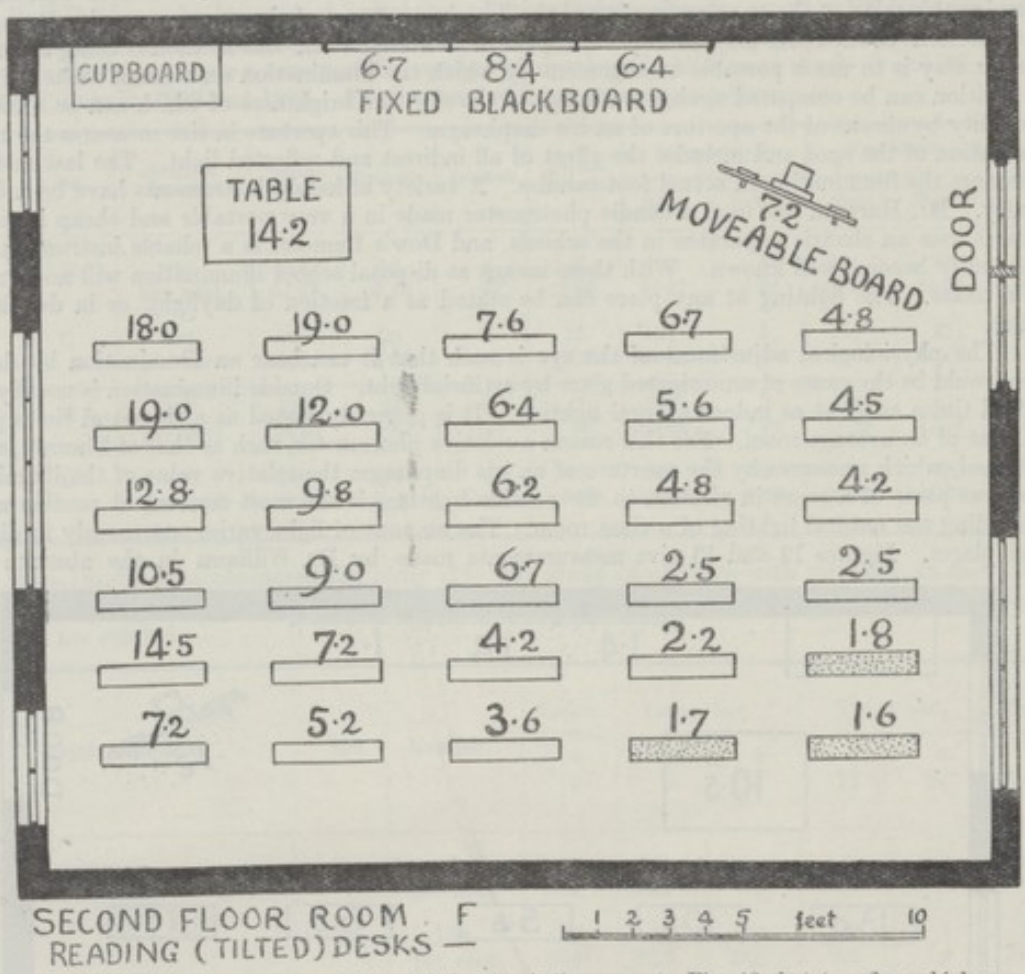


FIGURE 13.—Measurements of desk lighting in similar room to Fig. 12, but two floors higher.

its attention must have brilliant and clear definition not only in the psychological, but also in the physical sense. The colours and contrast of chalks have to be considered, especially by artificial light. Some colours are almost invisible at a short distance, and this is one of several objections to the Dale system of teaching reading. Measurements of the surface brightness of the best desks and of the moveable blackboards in a number of class rooms showed the blackboard, on an average, to have only one-fifth the amount of lighting on the desks. Variations ran between one-third and one-twelfth. The fixed blackboards were still more poorly lighted, especially in the infants' departments.

Some of the bad rooms, had only about one-quarter of the lighting of well-lighted rooms. Two rooms compared for a week—one well, the other poorly, lighted—showed a difference of nearly one and a-half hours daily in the duration of artificial lighting.

Where rooms are poorly lighted they may often be improved by comparatively slight alteration. Window cleaning will sometimes improve a school room by 40 per cent. in illumination. Borrowed light, as a rule, contributes very little to illumination for school purposes. A small window in the back wall is often of much use, particularly in illuminating the blackboard. The light green colour commonly used in the schools has a comparatively good reflecting power, but above five feet from the floor white should be used extensively, and woodwork should be white above that height. Dark dadoes have also to be avoided.

It is, however, when the shadows of the children are considered that regulation of school class rooms becomes pressingly necessary. All ordinary school class rooms in which the children sit with their backs to the main source of daylight should now be strictly forbidden. A window surface in the wall behind the children is excessive if its area exceeds one-fifth the window area in the wall to the child's left side, although for ventilation and to aid blackboard illumination a window is advisable high up on the back wall and as remote from the lighting windows as possible.

Glare may be the source of a considerable disturbance. It arises when any source of light throws a peripheral image on the retina stronger than the illumination of the objects whose images are central,

and for which the eye has been adapted. The protective strain thrown on these mechanisms of the eye is the usual cause of the ordinary glare by natural illumination, and is evident as a sensible and painful reflex to any one coming from a dark to a brightly lighted room. It is mostly caused in school by the use of certain forms of ribbed glass, or by badly set prism glass, or patterned glass which refracts small beams of light at low angles or nearly horizontally across rooms at about the level of the children's heads. These causes of glare are now becoming rarer in schools. The other variety, seen mostly in secondary schools, is where an excessive amount of specular reflection occurs from surfaces of books or paper. This occurs mostly with artificial light or in rarer cases where the student faces the daylight.

The windows behind the children still existing in older class rooms are a source of troublesome glare to many teachers, especially those with low degrees of astigmatism.

Illumination has a very important bearing on the size of classrooms. Whilst the illuminating window should be as large as possible for the sake of lighting, it has, in winter at any rate, to be as small as possible for the sake of warmth and prevention of draughts. The best lighting value on the furthest part of the room is obtained by a window carried right to the ceiling. If this be 13 feet, which is about the most useful limit from ventilating considerations, then the furthest centre of a desk to be sufficiently illuminated will be 20 feet off the window ; this gives a limiting width for the ordinary class room of 22·5 feet. Artificial illumination of school rooms was discussed some years ago, and now is being considered by a committee of the Illuminating Engineering Society, so that it need not be further dealt with at present.

The schools are most generally ventilated by natural means, which are the open doors, windows and Tobin's tubes provided, aided by wind, and by the heat produced by the warmth of open fireplaces, large low pressure water pipes, and the children's bodies themselves. Ventilation.

Fortunately the climate of London makes such arrangements tolerable for a considerable part of the year, but they can scarcely be called hygienic. In hot weather ventilation fails and the rooms become almost unendurable, in cold either stuffiness or draughts have to be withstood. In respect to ventilation practically all the elementary schools are unsatisfactory if judged by the standard of what is attainable and desirable.

Certain schools are ventilated mechanically and complaints of this ventilation are of regular recurrence. Some of them may almost be described as museums of mistakes, but speaking generally the ventilating arrangements are much below the capacity required, and it is too late to make effective improvements. The plenum system is the one adopted. It necessitates closed doors, or with open doors the short-circuiting and air-starvation of other parts of the building comes into effect. The conditions reported on in the Annual Report for 1904 still hold good.

Neglecting as lacking confirmation the observations of Weichardt, which assert a powerful fatigue toxin in expired air, the conditions already mentioned for efficient ventilation are easily realisable.

The nutrition of the body is partly aided by the excretion of moisture by the skin and mucous membranes, and by the removal of heat at the same time, which becomes late nt in evaporation. If there is any hindrance or slowing in the removal of this heat in the evaporationof the water from the skin, metabolism is interfered with, imperfect changes take place in the tissues, and feelings of malaise, fatigue and exhaustion result. This process of heat removal is carried on continuously and naturally, the air under the usual conditions being below the body temperature and not saturated with moisture. Such air coming in contact with the warm skin becomes heated, takes up quantities of moisture, and at the same time renders much heat latent by the evaporation. The heating of the air and absorption of aqueous vapour considerably reduces its specific gravity so that it rises, to be replaced by cooler and drier air, which again takes up heat and moisture, and thus a continuous circulation is kept up by each person, naturally ventilating themselves. If this air film is already considerably heated as in the plenum system, where the air carries the heat from the furnace to the rooms, and if the air is much moistened, then the process is interfered with, hindered and made slower. The air acts as if it were already used up, and malaise originates with fatigue and exhaustion. Although on the other hand, all the benefits of air flushing are obtained in keeping down dust, and doing a little to dilute objectionable odours, or even infections from the persons or clothes of particular children, and chemical testing shows it to be very pure.

The naturally ventilated school with its smaller air supply has many hygienic disadvantages, but not always, or so evidently, this drawback of heat accumulation in the body which results in the plenum school, where air is used for carriage of heat. If the air in a naturally ventilated school was kept in sufficient movement, it might be very foul and yet seem quite comfortable on most days.

The ventilation of the class room has been so fully detailed in previous reports that it need not be further elaborated. The impossibility of getting sufficient air through a naturally ventilated room, and the evils of carriage of heat by the air in propulsion systems will have to be remembered. The whole subject, in view of the new ideal of classes of forty, requires very careful inquiry by the Council, as it is now purely a matter of space and cost, and rooms have been devised to take advantage of wind, and by supply of large amounts of heat to have some of the advantages of natural ventilation without the disadvantages of the mechanical. To what has been written in previous reports, which sum the whole problem, it may be added that on the ten square feet basis satisfactory natural ventilation of school classrooms is almost impossible, that in any mechanical system without a supply of 1,500 cubic feet per head per hour there will be complaints, and that they will persist whenever the greater part of the carriage of the heat to the rooms is by the air.

Dr. Forbes has investigated the conditions of the water of the swimming bath at Drury Lane Industrial School. The pool, which has been in use for sixteen years, is 20 ft. by 12 ft. Swimming baths.

The water has a depth of 5 ft. 4 ins. at one end and 4 ft. at the other. The bath-room is roofed in, and is ventilated on the North and East sides by wooden louvred shutters. Each Saturday it is emptied, scrubbed out, and sometimes acid is used to clean the tiles. On Monday mornings it is filled by 4,300 gallons of water. The temperature of 60° F. is generally maintained by blowing in steam, and in cold weather the temperature is raised to 70° F. Batches of a dozen boys, after having washed over with soap and water, are allowed to bathe daily, remaining in as long as half-an-hour. If the bath is used twice daily the water is renewed in the middle of the week as well. Specimens of the water were bacteriologically examined on a Monday, before the bath had been used, Wednesday, and Friday, and of the sediment left on emptying the bath on Saturday.

On the Monday counts showed only about 100 organisms to the cubic centimetre—a satisfactorily low degree of bacterial contamination of the fresh bath water. The colonies obtained all appeared to belong to the Proteus group, and the presence of Bacillus coli could not be detected.

On the Wednesday, the temperature, 70° F., was somewhat higher, so that the comparison with the other examinations would not be strict. The contamination was approximately 4,000 organisms to the cubic centimetre. Various cultures of the *Proteus*, notably *Proteus Zenkerii*, were obtained. *Staphylococcus epidermidis albus* and *S. Pyogenes aureus*, *Sarcina lutea*, *Streptococci* of the *S. brevis fæculis* type, and diplocci of normal saliva were determined. Flasks inoculated with 50 c.c., 20 c.c., 10 c.c., and 5 c.c. of water also yielded *B. coli communis*.

On the Friday, the fifth day on which the water had been used but the temperature had not been raised above 60°, a contamination of about 1,200 organisms per cubic centimetre was determined. Some leptothrix and the organisms above mentioned were determined with the exception of B. coli communis.

In the deposit from the surface of the bath after running off the water all these organisms were present, notably the *Proteus* and *B. coli* group.

On reviewing the nature and numbers of organisms found at different times, it may be observed that they are such as would be most likely to occur, but the presence of *B. coli communis* and *S. fæculis* suggest the possibility of the bath being a possible medium of infection in cases of epidemic enteritis, or even in the event of its being used by a typhoid carrier, the possible transfer of *B. typhosus* In addition, the presence of organisms commonly found in the mouth indicate the possibility of the transmission of infective conditions of the mouth and throat. The largely increased number of organisms found during the week when the bath was being used at a temperature of 70° F. instead of 60° F. also suggests more frequent renewal of the water under such circumstances.

Seats and desks.

In the Report for 1909 the attitudes of children writing in class were discussed; further questions, however, in relation to the seats and desks for elementary school children were omitted. In large towns fitting and furnishing has to be controlled by the cost of materials and dearness of land. This does not concern the solution of problems which present themselves to the hygienist. He must consider first how to fulfil sanitary conditions, and having defined these requirements, they can be modified to practice, and the best compromise between economy and efficiency obtained. Space is the main requirement in school, or, indeed, in the lives of children in large towns. The minimum school space allowable by the Board of Education regulations has become the maximum permissible. Certain needs restrict, others would extend the dimensions of a class-room. The class must be well within range of the ordinary voice of the teacher. Normal children in quiet outside air respond to the forced whisper up to eighty feet, but one-third of the Whitechapel children under the best conditions obtainable in their schools fail with the test at twenty feet. It is, therefore, apparent that without straining the child's attention or the ordinary voice of the instructor, a greater distance from the teacher of about twenty to twenty-four feet would not be permissible. This gives a limit of twenty five feet for the length of an ordinary class-room. Such a distance also falls within the limits for visual acuity, allowing for the large percentage who fall short of normal vision.

The width of the room will be determined by the range of effective daylight; this depends on the height of the windows, which again are restricted in extent by the requirements of heating and ventilation. Class-room height above fourteen feet may be taken as ineffective for ventilation, and if windows are carried close to the ceiling, there is a limit to the position of any sufficiently lighted desk of about 21 feet from the window. If a gangway is allowed next the remote wall, this gives a maximum width for the room of twenty-two and a half feet.

The angle of lighting is commonly said to be insufficient when from a desk the top of the window subtends less than 25° with the horizontal. With a window 13 feet high this occurs at 22 feet on a desk 3 feet high.

With a class room of the size 25 ft. by 22.5 ft. by 14 ft (=7,875 cub. ft.) the number of children who could be accommodated depends on the sufficiency of the ventilation. Under the present regulations of the Board of Education, such a room accommodates fifty-six children; the exact number depending probably on the desking. Nearly all elementary class rooms present the exhausting *bouquet d'enfant*. School baths would do something to relieve this, but sufficient ventilation is more important. The British Association Committee on School Ventilation decided that 3,000 cubic feet of air per head per hour was advisable. If half that amount is taken as sufficient, then with seven changes an hour, which, unless mechanical ventilation is resorted to, is all to be relied on as possible in school under English climatic conditions, x the number of children who could be sufficiently ventilated would be $x \times 1500 = 7875 \times 7$, whence $x = 37$.

The educational size of classes has recently been fixed for the next generation as forty, and this number may also be taken as the greatest number which could be instructed under healthy conditions in the class-room, whose limiting dimensions have already been fixed. Hygienic considerations of the maximum space therefore coincide with educational in limiting the class size to forty pupils.

This discussion of the size of the class room with 14 square feet area, and approximately 200 cubic feet per pupil, may appear to set forth an excessive ideal to those whose conceptions have been based on the acceptance of the 10 square feet per head minimum of the Board of Education regulations, but the same regulations demand a much higher standard for secondary schools, where really the sanitary requirements should, if anything, be less than in the elementary school.

A commentary on the whole matter is, however, offered by the School Law of the State of Minnesota, recently revised (1910), which runs :—

> "146. No school room or class room, except an assembly hall, shall have a seating capacity that shall provide less than eighteen (18) square feet of floor space and two hundred and sixteen (216) cubic feet of air space per pupil, and no ceiling in buildings hereafter to be erected shall be less than twelve (12) feet from the floor."

The Swiss regulations require 14 square feet. Our standard of 10 square feet was probably taken from the Prussian regulations of 1867.

The arrangement of the forty children in the pattern class depends on the furniture used. They must be placed so that the teacher can see all faces. In the case of small children the teacher can overlook all, but with children in the standards further devices are necessary. To raise the teacher on a platform or dais restrains movement and on the part of the children means one of the most fatiguing of eye movements—that of continued raising of the eyes above the level. The teacher ought, therefore, not to be on any dais, but the desks should be raised on stepped flooring. The desks must be easy of access, the child should be able to stand up in its place, and the children in their places should be accessible to the teacher.

The desks should be simple, solid, easily repaired, and free from mechanisms which can injure fingers. All beadings, footrests, and means of distracting attention by foot play or of making noise should be avoided. Sloping the gangways instead of using steps serves to diminish noise, dust and bustle.

Almost any arrangement of the seats in the room will suit the primary requirement of being within reach of the teacher's voice and vision, but there is always a tendency if seats and desks are moveable to crowd them together, and sometimes a class is so crowded that three children are in the seats intended for two. Overcrowding must be made impossible ; therefore the seats should be fixed to the floor. Difficulties about cleansing may arise, but if footboards are avoided, cleansing is almost facilitated by the clear floor with merely plain standards screwed to it.

The isolation and ventilation of the individual child is of the greatest sanitary importance, and the isolated seat for each is the first requirement which must be fulfilled. Isolation is needed to prevent dissemination of disease, not merely the acute infectious diseases, but grosser forms of sores, impetigo, scabies or lice, and to dilute the offensiveness of odours from decaying teeth, discharging ears, dirty clothes, and other kinds of uncleanliness, due to want of washing. Isolation is also required to effect sufficient ventilation. The condition of fatigue, so wasteful of educational effort, is largely due to insufficient elimination of heat and aqueous vapour. This ventilation is naturally accomplished by the continual movement of a thin film of air, rising along the skin surfaces as the result of convection produced by the body heat. The elimination of heat and moisture is a physiological necessity and most powerfully affects the metabolism of the body. The " dead alive " feeling even in the chemically pure air of mechanically ventilated rooms is due to the air being used to carry heat, and therefore perhaps already as " used up " in this respect as if it had been breathed. There must be a definite free air space of some inches between each child and its neighbour. This excludes all forms of dual desks as hygienically unsatisfactory.

As regards isolation, the width of desk allowed to each child is of importance. At present with the Sheffield system in the schools 18 inches is allowed irrespective of the child's size ; 20 inches on dual desks. For the smallest children 18 inches is a minimum, but the lateral desk width should be allowed proportional to the size of the children, averaging 20 to 22 inches, and for the biggest children 24 inches. The best sizes have yet to be worked out in the schools.

School habits, due to fatigue from continued muscular efforts as well as from toxic causes and bad ventilation, are of importance. Myopia and scoliosis are often credited with being the result of school-acquired habits. Our English experience is against such a doctrine, although there is no doubt that in those congenitally so disposed school conditions may aggravate either the short-sighted tendency, or the spinal curvature respectively. The control of the school habits which contribute to these results, will be much aided by hygienically designed seats and desks, but it is to the teachers' knowledge and watchfulness that the first place has to be assigned. The habit of a near working distance is most harmful of all school tricks, bending the head close to the work, cramping the chest, straining the eyes and twisting the spine. It is a complex attitude developed by the fatigue and strain of premature fine finger work and eye work in the infant schools. The design of most modern school furniture has been mainly directed to combat this habit, to make the children sit vertically when writing, and to keep their eyes far from the work.

The prevention of curvature of the spine should be looked for by promoting good healthy tone instead of debility in the great muscle masses of the back in the growing child. The greater prevalence of these conditions among girls than among boys show that all the considerations of playgrounds, exercise and free space already urged in regard to the catarrhal conditions associated with lymphatic defects have weight here. In addition, attitudes fixed or maintained by muscular action of any kind are excessively fatiguing to children, and in the case of unsymmetrical attitudes the element of weight plays a considerable part in exaggerating tendency to deformity. The attitude which is most important is that for writing—it should be symmetrical ; the child must sit upright. This is obtained by the

proper relation of seat and desk dimensions to the size of the child. Seats adjustable to the individual child would be most advisable, but for their cost and the difficulty of securing proper adjustment. If, however, a knowledge of the sizes of the children in different classes is obtained, then the rooms can be fitted with stock sizes, always remembering that any error in size is preferable in the direction of largeness of the furniture rather than smallness. The smallest sizes should go on the left-hand file nearest to the windows, as the smallest children are not necessarily those most defective in hearing or vision. This avoids a big hard-of-hearing boy having to sit in a tiny seat in the front row.

The space between the children should be so great that no attitudes with twisted spine are necessary to prevent copying. In the dual desk, as Dr. Dufestel, of Paris, suggests, the left-hand child always suffers. The pupil on the right presses back his comrade with his left shoulder, and the left child, having the right arm stiffened to write, seeks a new position with his left arm outside the desk.

A back rest is necessary to prevent fatigue. For the writing position, which has been described before as the most important, the support should be low to fix the pelvis, so that the child sits vertically. For the resting or reading position the rest would be higher under the shoulder blades and sloped perhaps ten or twelve degrees backward; but then the child as it relaxes tends to slide forward on the seat. This position is generally assumed on the seat of a dual desk when it is pushed up against the desk behind which the child then uses as a back rest. Experience favours the low back rest, but a combined one would probably be worth experiment.

The ideal arrangement is a single seat and desk for each child, but single desks have been refused recognition as necessary for elementary schools. The advantages of the single seat are, however, too great to be sacrificed, and so there has been recommended single seats with continuous desks, sometimes for convenience termed the Sheffield desks. These were described in the Annual Report for 1904, from which Fig. 14 is reproduced. If the forty children are arranged at desks with five seats to each, the class can be set out in four rows of two desks, with gangways at each wall and up the centre.

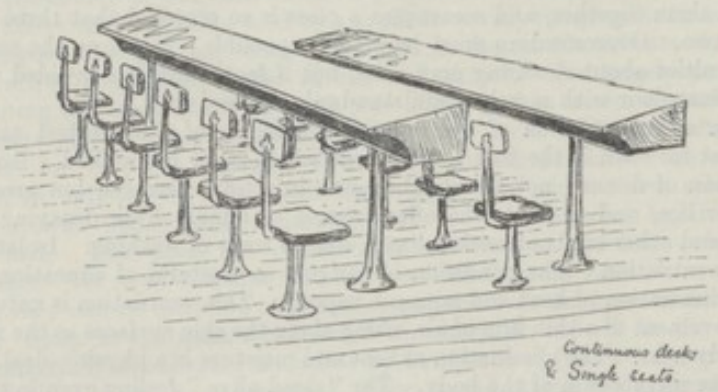


FIGURE 14. To illustrate the Sheffield system of continuous desks with single seats.

The dual desks used in most schools are of excellent pattern and dimensions, and probably as good as such a pattern of seat and desk can be, but they allow of crowding, not merely by undue approximation of desks, but by actually placing three children on one dual desk for some lessons. This appears a custom which only stringent regulation can prevent. Further, these dual desks necessitate two children of approximately equal size sitting closely in contact, and one of these at least in bad attitudes. They are noisy, and there are many accidents to fingers from the hinged tops. Cleansing of the rooms is always imperfect. Although provided in all sorts and sizes, they are not always intelligently used. Some rooms have only one size; one room measured had twenty-five dual desks of nineteen differing varieties according to dimensions. Frequently they are too small for the children, who, if told to sit upright, find their knees touching the book shelf beneath. This serves as a test of the suitability of the desk in largeness for the child.

Experiments have been made for some time with Sheffield desks. The opinions of those using them are still in suspense, although generally favourable. The great advantage here is the spacing of the children and the impossibility of overcrowding. Difficulties in school organisation are thereby raised, and some alterations in school methods necessitated. "Taking places," for instance, as a reward for industry is ruled out as an educational method, if seats of graduated sizes are to be used. These seats and desks have not, however, had the advantage of being fitted to rooms built to suit them. Other things being equal, rooms built for dual desks cannot be fitted with Sheffield desks with equal advantage if the 10 square feet basis is to be maintained. Each desk should have stencilled on it the maximum and minimum heights of children for whom it is to be used. As already noted, the lateral desk width in use, 18 inches for each child, is too small for most. For older children the spacing between the seats becomes too restricted. The low back rest for writing attitudes, is sometimes complained of in these seats. The silence of the class, the accessibility of the seats, the absence of footrests, the cleanliness and simplicity of the seats and desks are their great advantage. They are issued at present in eight sizes; the two smallest, 10 and 11 inch seats respectively, are for infant schools; the others with seat heights increasing by an inch from 13 inches are for the ordinary schools.

Remembering that children usually grow most rapidly about the middle third of the school year, and that it is better for the seats to err in the way of being too large, the seats should be fitted in classes to suit the various groups of children at about the eighth month of their school year, increase of height during the rest of the school year being small. With labelled desk sizes for children of various heights the children could be supervised as to their seats by a monitor. Each child in school should know its height and the size of seat it should occupy. The dimensions issued for Sheffield patterns are :—

	For infant schools.		For standards Boys, girls, and mixed.					
Desk sizes	1	2	3	4	5	6	7	8
Seat heights... ... Inches ...	10	11	13	14	15	16	17	18
Seat heights... ... Centimetres	25	27.5	32.5	35.0	37.5	40.0	42.5	45.0
Smallest child to be allowed	—	100	112	120	122	132	142	152
Group heights of children to use them	—	105–110	120	120–125	125–135	135–145	145–155	155
Height of biggest child to be allowed ...	105	112	125	130	137	147	157	—

The heights recommended are generally smaller than those given by foreign writers and commissions, as allowance is made for the desk to suit about the eighth month of the school year, and it is better to exceed in size than be too small.

For the distribution of these desks in class rooms the measurements of some 8,000 children taken in 1906 are useful. These children were distributed in percentages of those in each standard in the following height groups :—

Height in centimetres, up to		104	105—	110—	115—	120—	125—	130—	135—	140—	145—	150—	155—	160—	165—	170
Boys	I.	3.6	11.3	25.7	25.5	19.5	8.0	4.1	1.6	.2	—	—	—	—	—	—
	II.	—	2.6	9.6	25.4	28.7	24.2	8.3	1.9	.3	.4	—	—	—	—	—
	III.	—	—	1.5	7.6	24.4	27.6	20.6	12.2	4.4	1.3	.2	—	—	—	—
	IV.	—	—	.1	2.3	10.2	22.5	30.0	19.6	10.4	2.7	1.0	—	—	—	—
	V.	—	.1	—	.6	2.7	9.5	20.7	26.4	23.4	10.4	4.4	1.0	.3	.1	—
	VI.	—	—	—	.2	.5	1.7	11.6	22.6	24.7	19.5	12.3	4.8	.7	.9	.2
	VII.	—	—	—	—	.2	.6	4.5	10.4	21.4	24.5	18.4	10.5	4.4	3.2	.9
Girls	I.	3.2	11.2	25.7	27.3	17.3	7.8	4.1	.8	—	—	—	—	—	—	—
	II.	.3	1.5	10.2	26.4	30.8	18.8	7.8	2.3	.6	1.0	—	—	—	—	—
	III.	—	.2	1.3	9.4	21.4	27.5	23.3	10.9	4.7	.9	.3	—	—	—	—
	IV.	—	—	.1	.2	5.8	19.4	29.3	21.0	11.8	5.9	2.9	.9	.1	—	—
	V.	—	—	.1	.1	1.7	7.8	16.9	25.0	20.5	15.7	8.0	4.0	—	—	—
	VI.	—	—	—	.2	.2	2.4	7.7	14.5	20.3	23.7	18.6	8.7	3.4	.7	—
	VII.	—	—	—	—	—	.5	2.7	5.2	10.0	21.9	22.5	22.5	11.6	2.3	.7

From these numbers the proportions of desks to each room can be estimated. The larger sizes are more numerous for girls than boys in the upper standards, but the difference is not very great and for practical purposes may be averaged as in the lowest part of the table. The numbers are given for a class of 40 in each case :—

Desk size		No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.
Boys	I.	27	9	4	—	—	—
	II.	14	11	13	2	—	—
	III.	3	10	20	7	—	—
	IV.	1	4	21	12	2	—
	V.	—	1	13	20	6	—
	VI.	—	—	4	20	13	3
	VII.	—	—	2	13	18	7
Girls	I.	27	8	5	—	—	—
	II.	15	12	11	2	—	—
	III.	4	9	20	7	—	—
	IV.	—	3	20	13	4	—
	V.	—	—	9	22	9	—
	VI.	—	—	5	14	17	4
	VII.	—	—	1	6	18	15
All Children	I.	27	9	4	—	—	—
	II.	14	12	12	2	—	—
	III.	3	10	20	7	—	—
	IV.	—	4	21	12	3	—
	V.	—	—	10	22	8	—
	VI.	—	—	2	20	15	3
	VII.	—	—	2	9	18	11

These would be places for single seats and desks. Stress has not hitherto been put on seats and desks, as the dimensions used are of good proportions, and if intelligently used the sizes sufficiently numerous. The provision of sufficient space is of more importance than the exact model and dimensions of the furniture. It should be fully realised that furniture alone will serve but little purpose unless the teachers are alert in inculcating good attitudes, and that good attitudes mean avoidance of fatigue and, therefore, increased educational efficiency.

Miscellaneous.

Physical exercises.

The remedial exercises undertaken voluntarily and often out of school hours by the drill mistresses in girls' secondary schools have resulted in considerable modification of the physical defects. The pupils who present conditions suitable for such treatment are re-examined at regular intervals in the presence of the drill mistress; more regular, frequent and persistent treatment would prove beneficial. The sitting and writing positions which play a considerable part in the production of spinal defects still give rise to difficulty. During the course of medical inspection, Dr. Tchaykovsky has demonstrated the effects of bad attitudes to the pupils by the use of a full length mirror, with beneficial results on the general carriage and deportment. The drill costume which has now been adopted as the school uniform in many schools and worn daily by practically all the children has got rid of much of the over-weighting by corsets and petticoats, and led to improvement in general posture.

In some cases there is no provision of any sort of pavilion or covered shed in connection with the games ground, so that on rainy days the girls are obliged to travel considerable distances in wet boots and stockings. Considering the compulsory nature of games, it would be advantageous to insist on a change of footgear in wet weather, and to provide some sort of shelter for changing.

A special feature of the Graystoke Place Training College is the daily health exercises, which are taken for fifteen minutes prior to the commencement of college work. Dr. Tchaykovsky notes the improvement which results in the students after a few terms. These daily health exercises have been worked out by Miss Hughes, the gymnastic instructress at the college, and the following short note is taken from her account :—

The college work begins at 10 a.m. From 9.15 to 10 a.m. students come in three divisions (15 minutes each) for exercises. These are done in ordinary dress and are regarded as individual health work. There is no drill class element in it. Students take the same places each day, and the work is done quietly. They like it, and feel it a rest after their journey to college. This daily work gives the physical mistress opportunity of observing students more individually. It is also possible in connection with this work to give many hints about daily habits and more suitable ordinary clothing. The following exercises were given :—

(1) *Breathing.*—(i.) Use of handkerchief.
(ii.) Breathing through one nostril (to clear nasal passage).
(iii.) Normal deep breathing in good position of the body.

(2) *Abdominal Press.*—(General Corrective Figure Exercise).
"Draw In." Abdominal muscles are *gently* contracted.
"Relax." Abdominal muscles are *gently* relaxed.
Jerky movement must be avoided.

This movement is carried right up the spine, resulting in drawing back of the hips, straightening of the spine, flattening of the shoulder blades, expansion of the chest, and drawing back of the head.

The result is an easy and well-balanced position of the body.

The abdominal muscles become stronger and healthier, which with many girls has been a great help for constipation and indigestion, etc.

(3) *Dancing Step or Simple Dance.*—For circulatory purposes and also pleasure. This is changed daily, and thus puts variety into the work.

(4) *Arm Movements.*—Simple æsthetic movements are taken here, as the usual arm stretching movements are done in the ordinary training classes.

(5) *Corrective Movement.*—Head bending.
Trapezium movements for round shoulders.

These are used at first, if necessary, in classes where there is a large proportion of round shoulders and poking heads.

(6) *Breathing. Relaxation exercises.*—Students lie on the floor in complete relaxation, mental and physical, eyes shut. Normal rhythmic breathing is directed. This is not only physical rest, but mentally soothing. It has been useful to many girls suffering from sleeplessness and nerve strain.

Closure of Stormont House School

Stormont House for Mentally Defective Blind boys was practically an asylum in which numbers of children generally with degenerative nervous diseases had become collected. It was scarcely worthy of consideration as an educational institute and comparatively costly to maintain. On reviewing the cases several appeared fit for training in the ordinary blind or residential blind schools. The others were fit for such an establishment as Darenth or an asylum for mentally defective blind cases. The school was therefore closed, and the children disposed of to various institutions. The building is now being utilised as an industrial school for younger boys.

Remand Homes.

The Council being responsible for the medical supervision of residential special and industrial schools and places of detention, these institutions have now come into the responsibility of the school medical officer. In May, 1911, a conference was held between the officials of the department and the

various medical officers of these institutions. The duties of all were standardised to a uniform basis, a card system was decided to be the most useful form of records, and the question of a suitable scale of salaries considered.

In these institutions the Council stands *in loco parentis*, and the whole care of the personal health and hygiene of the children has to be supervised.

Places of detention from their very nature give rise to considerable difficulty. In 1897 by an order of the Local Government Board, children could be ordered by two justices, or a magistrate, to be taken under the Industrial Schools Act, 1866, to a workhouse or asylum of the district. The managers of the Metropolitan Asylums Board, after consultation with the Local Government Board, decided that it would be better to place the children so remanded in special homes. Under the Youthful Offenders Act, 1901, provision was made for this. The Act only gave the magistrate the power of sending the children to the remand homes after they had been brought before him, and after arrest children frequently had to be kept at police stations till their appearance before the magistrates. The Children's Act, 1908, made it compulsory that all children on arrest should be taken to remand homes. Children's courts were established. The London County Council was made the authority of the remand homes from the time the Act came into force, although actually they were not taken over till April, 1911, when the term " place of detention " was substituted for " remand home." The original scheme only admitted children from the sitting of the magistrates court, now they are admitted at any hour of the day or night.

The duties of the medical officers to the homes originally were purely consultative, they were only called in by the Superintendent when deemed necessary. Children entered, were bathed and mixed with the other inmates at once. Latterly an endeavour has been made to keep all new admissions apart, until examined by the medical officer. Children on entering the home receive a warm bath and clean clothes. Boys have their hair cut at once if verminous, girls only on the doctor's order. Only those in contact with them can realise how untrained many of these children are in ordinary matters of decency. All children under fourteen spend school hours in the schoolroom. Older children are given occupation. Short periods of drill are also prescribed, although space is rather limited. In the evening between the last meal and going to bed, reading or games are allowed. Boxing occasionally, especially when a spirit of insubordination threatens to develop, helps to relieve excess of spirits. Since this was introduced there have been very few attempts to escape. The food is plain and wholesome, and the effect of a week's stay on the health of the children shows in their appearance. Those who stay longer generally gain in weight and healthy appearance. Corporal punishment is rare. Detention in the punishment room on low diet generally is sufficient.

Acute illnesses are rare. Infectious illness occurred several times during 1911. The girls' section of the Pentonville home was closed twice for chicken-pox, one case of measles developed and a diphtheria carrier was detected and isolated for two months before free from infectiousness. The dirt infections, scabies, impetigo, pediculosis and ringworm are common. During the dusty season inflamed eyelids, and septic sores of hands or feet were very common. No attempt has yet been made to analyse the mental and physical conditions of these children, but this is a field which would well repay study, and each child should have a thorough record made and its finger prints taken, for future reference.

Want of occupation, according to Dr. Hawkes, seems one of the chief factors in bringing boys to the homes. The numbers increase with each year of life till school ages are past when they drop.

School status.	Infant schools.				Senior (standard) schools.								Left School.	
Ages	—3	—4	—5	—6	—7	—8	—9	—10	—11	—12	—13	—14	—15	—16
Numbers admitted.	6	12	19	27	32	67	117	163	192	228	286	316	251	240

A few of the children with chronic complaints not fit for a school are remanded again and again to the place of detention. These children should be sent to an infirmary or hospital, as the places of detention have few appliances or conveniences for treatment. The cases are, however, all treated and sometimes with very good results.

In reference to hop picking Dr. Williams states that whilst children of all ages go, the majority are from 10 to 14 years of age. They are intellectually average children so far as the standard in the schools shows. The absence is 14 to 16 days as a rule. The mother only accompanies the children in four fifths of the cases, the father only in most of the others, or a few go with other relatives. The social position of the children appears much better than would be expected, and normally they are much cleaner than when returning from hop picking. None were much below average, and about one-fifth above in respect to nutrition. The children appear to distinctly gain in health as compared with those who do not have a holiday, but they practically all return verminous and there are many cases of septic affections such as blight, blepharitis, and impetigo. Hop picking.

As the standard of cleanliness is raised in school, this annual incursion of children in a verminous condition, and many with septic conditions will have to be provided for, and the nurse sees all children who have been " hopping " at her first visit after their return to school.

The dust from a ventilator in one of the classrooms at Gifford-street was examined bacteriologically by Dr. Forbes. The ventilator is in a wall facing east and overlooking the backs of dwelling Dust.

houses. The large numbers of moulds and excess of *B. subtilis* made it difficult to estimate other organisms. Exceedingly small numbers of staphylococci probably the ordinary skin *S. albus epidermidis* and a *diplostreptococcus*, probably from saliva, were found, but no diphtheroid organisms and no *B. coli communis*. These experiments take much time, and the constant routine of medical inspection hardly allows the pursuit of other enquiries. Dr. Malcolm, however, apart from his official time, has made a commencement by investigating the organisms in the air, and in the dust of three classrooms at various times during the session in Christ Church, Deal-street (mechanically ventilated) and the "Davenant." Gelatine plates were exposed for a quarter of an hour for various times in front of the classes. No *B. Coli* were found even on plates exposed for three quarters of an hour. The number of organisms in a gramme of dust that fell was wonderfully alike in the three schools. Excepting moulds and sarcinæ and a few organisms, amounting to 100 but not to 1,000 in a gram, which resembled *B. Coli* but were not typical, and the spores of *B. Welschii* none of any interest were identified. One slide showed some organisms with a diphtheroid appearance, but neither cultures nor stains confirmed this. From what little has been done the dust of schools does not appear to be very dangerous, but from the pathogenic point of view the whole bacteriology of the schoolroom requires investigation as to the mode of distribution of recognisable organisms, their conveyance from school to home and *vice versa*, and as to the reality of any possible disease dangers from this source.

Feeding.

Under the Education (Provision of Meals) Act, 1906, which is administered by the Board of Education, the Board have intimated in relation to the Annual Reports for 1910 that in future annual reports of school medical officers for areas in which the Provision of Meals Act has been put in operation they will look for a section dealing with the working of the Act. It was necessary for this purpose to get an idea of the actual working of the feeding centres and during the autumn of 1911 the school doctors inspected those provided in their respective districts. The reports received were very varied.

The effect of feeding seems very indefinite. In a few cases marked improvement has been noticed. The strictness about admitting ill-nourished children makes it difficult to compare these children with others. They are generally very poor and compare unfavourably with those not fed at school. In a few places the provision of meals, the ordering and superintendence appear excellent. The meals given at the cookery centres are much better than those given anywhere else. In one-fifth of the feeding centres the conditions required material improvement, to make the giving of these meals an educational function, and to impress the hygiene of proper eating and cleanliness on the children.

There is need for dining accommodation at some of the secondary schools. Ill-nutrition and deficiency of nervous energy is frequently attributable to the strain of the journey home for a hurried meal in the dinner hour. For scholars, especially, this is of great importance as the meal obtained is often insufficient or unsuitable and under these circumstances no pupil, however clever, can take proper advantage of the scholarship without detriment to health. The advisability of a midday meal at school is urged by the teachers, but too often their efforts are in vain.

Racial characteristics.

In the autumn of 1910 an enquiry was begun at the Jews' Free School, in association with observers from the Galton Eugenics Laboratory. The physical and mental characteristics of the children being noted fully in school, the family and social conditions were being investigated by social workers. The whole facts were then to be analysed in the laboratory under the direction of Professor Karl Pearson. Owing to the requirements of the Board of Education this valuable work was interrupted before sufficient had been done to be of use, but it is now to be resumed, partly at private cost. Meanwhile Dr. Gordon Holmes has analysed the cards of 797 children in other schools, and born in 1899 or in 1903. With the help of the teachers they were separated into two groups, according to whether the home was described as good or bad. Good being satisfactory conditions of home life, whilst bad meant that from poverty or otherwise the homes were unfavourable. This last category included children whom the teachers thought unable to get sufficient nourishment and those receiving meals at feeding centres. These groups were then separated into those children of Jewish and non-Jewish descent, and the physical condition estimated by average heights and weights were taken out and set forth in the following table :—

E. London, 1911. Stepney.		Born in 1899.			Born in 1903.		
		Numbers.	Average Weight.	Average Height.	Numbers.	Average Weight.	Average Height.
Boys	Non-Jewish—						
	Good	75	29.73	132.94	69	22.72	119.34
	Bad	82	28.65	130.81	71	21.85	115.28
	Jewish—						
	Good	47	30.68	134.23	41	22.83	120.21
	Bad	22	29.27	133.90	16	22.12	116.50
Girls	Non-Jewish—						
	Good	38	29.89	136.50	51	20.92	116.15
	Bad	46	28.00	132.98	98	20.70	115.01
	Jewish—						
	Good	33	30.57	138.42	58	22.13	117.82
	Bad	40	30.60	135.90	10	21.30	115.40

The standards of good and bad homes had to be left to the personal judgment of the teachers, but in Stepney the Jewish families are much better off than those of other races in the same district; and it is probable that the Jews classed as bad are almost as well off as the "Christians" classed as good. The abundance of garments worn by those of alien descent may, indeed, make some little difference in weight. The precocity of the Southern races has to be remembered, and although at these particular ages they are the heavier and taller, they probably do not maintain the advantage into adult life.

Inattention.

The capacity for learning, like that for assimilating nourishment, has probably a very considerable seasonal variation about which at present we know nothing. Inattention is, however, ever present, and it may be regarded as a symptom of causes preventing learning or as a defect in itself. The whole matter of inattention in school should be investigated not superficially, but in an intensive way. Teacher and school inspector would have to collaborate with the doctor, and the work begun in the school folllowed up in the labaratory, till the whole problem is unravelled. For such a laboratory, a very necessary adjunct to the school work in London, not only for normal but abnormal children, although often recommended, there is as yet no provision. The investigation of inattention will be a slow business, it will not make much show on paper, but it will be an enquiry of extreme value to the educationist.

Dr. Langmead has made a preliminary enquiry, and although his results are too few to be of value, and the regulations make it almost impossible to find time to continue the work, yet the method tried was found useful. The teachers were asked to select all the children in whom they observed any difficulty of fixing attention. Those considered to be in any way mentally defective were then eliminated. There remained apparently normal but inattentive children, who were then examined by the doctor. He noted the child's name, age, and standard. Particular attention was paid to its general status as determined by clothes and cleanliness, recorded as very good, average, or bad. The hours of sleep were ascertained, the time of retiring, and of getting up. Any work out of school hours was enquired into, also the vision, hearing, general bodily constitution, such as washing, anæmia, and so on. The presence of enlarged tonsils or adenoids was ascertained, and a general remark made as to any evidences of nervous instability, excitability, fidgetiness, and so forth.

A neurotic disposition appears the chief cause of lack of attention among the children examined. In a few no adequate cause could be determined. In several as noted below various causes seemed to contribute.

Notes were taken of 28 girls at Baltic-street, a very poor school, and 9 boys at Rosebery-avenue. The cases were numbered girls 1—28, boys 29—37.

Factors of inattention.	Girls.	(Case numbers.)	Boys.
Neurosis—			
(1, 3, 4, 5, 11, 18, 22, 27)	= 8	(8, 35, 36)	= 3
Overwork and fatigue—			
(1, 2 (?), 6, 9, 13, 25 (?))	= 6	(31, 37)	= 2
General bad health —			
(6, 7, 9, 11, 20, 22, 24, 26)	= 8	—	= 0
Defect of vision—			
(12, 15, 16, 17, 22)	= 5	—	= 0
Defect of Hearing—			
———	= 0	(31 (?), 34)	= 2
Insufficient Sleep—			
(13, 16, 24 (?))	= 3	(31, 37)	= 2
Mental defect—			
(14, 17, 19,21, 23, 28)	= 6	—	= 0
Indeterminate—			
(8)	= 1	(30, 32, 33)	= 3

It is noteworthy that although only in five was visual defect assigned as a cause of inattention, it was sub-normal in 23 of the 37. The girls do much housework, and most of them had nervous tricks and movements.

CHAPTER XXXV.

Public Health.

Powers and duties of the Council.

Many important duties devolve on the Council in relation to public health. These duties are set forth in various Acts of Parliament, the principal Act being the Public Health (London) Act, 1891. This Act authorises the Council to deal with offensive businesses, to make orders adding to the list of infectious diseases notifiable under the Act, and to license slaughterhouses, cowhouses and knackers' yards. The Council is also empowered to take proceedings with respect to nuisance caused by a sanitary authority in removing, treating or disposing of house or street refuse, and to act in default when a sanitary authority fails to carry out its statutory duties. The Act also empowers the Council to make by-laws for regulating (*a*) the conduct of offensive businesses, and the structure of the premises on which they are being carried on; (*b*) for regulating the removal or carriage of offensive or noxious matter or liquid and as to the removal and disposal of refuse, etc., as to water-closets, earth closets, privies, cesspools and receptacles for dung. The Council is also required under the Act to pay half the salaries of local medical officers of health and sanitary inspectors, and may make representations to the Local Government Board as to the number of sanitary inspectors appointed. Copies of all periodical reports of medical officers of health must be given to the Council, and in the event of any medical officer failing to carry out this requirement the Council may refuse to contribute towards his salary. The Council is authorised by section 6 of the London County Council (General Powers) Act, 1908, to contribute any sum towards the salary of a health visitor appointed by a metropolitan borough council not exceeding one-half of the salary. In addition to the powers which the Council possesses under the Public Health (London) Act, 1891, to deal with offensive businesses, section 9 of the London County Council (General Powers) Act, 1908, authorises the Council to make by-laws for regulating the conduct of the businesses of a fish curer, vendor of fried fish, and rag-and-bone dealer. The supervision of common lodging-houses under the Common Lodging Houses Acts, 1851 and 1853, a duty at one time carried out by the police, has, since 1894, devolved upon the Council. By the London County Council (General Powers) Acts, 1902 and 1907, the Council is authorised to license common lodging-houses, to require the appointment of a resident deputy in each house; to make by-laws for regulating the conduct of such house and to cause any inmates who may be verminous to be cleansed compulsorily if necessary. In addition the Council licenses seamen's lodging-houses and enforces the by-laws made by it under section 214 of the Merchant Shipping Act, 1894. Further, under part VIII. of the London County Council (General Powers) Act, 1903, the Council is authorised to license premises for receiving horses for slaughter or dead horses. Powers with regard to safeguarding the purity of London's milk supply are given under various Orders and Acts, and are as follows:—Under the Dairies, Cowsheds and Milkshops Orders of 1885, 1886 and 1899, the Council has power to secure proper lighting, ventilation, cleansing, drainage and water supply of cowsheds and dairies and the sanitary condition of milk stores and milkshops. The Orders also forbid, under penalties, the use for human food of milk from a diseased cow, or from a cow with tubercular disease of the udder; under part V. of the London County Council (General Powers) Act, 1904, the Council is empowered to seize and slaughter, on payment of compensation to the owner, any cow in a London cowshed suspected of tuberculosis of the udder; under part IV. of the London County Council (General Powers) Act, 1907, the Council is authorised to take within and outside the county and examine samples of milk entering London; to proceed to the place from which any sample proving tuberculous was sent to London; to examine the cows thereat, and if any are found affected with tuberculosis of the udder, to prohibit the sending into London of further supplies of milk. The Act also contains provisions for the isolation of cows suffering from tuberculosis of the udder and for notice to be given of such cows to the Council's medical officer.

In addition to the duties enumerated above, part IV. of the London County Council (General Powers) Act, 1904, and part III. of the London County Council (General Powers) Act, 1909, authorises the Council to represent to the Local Government Board when a sanitary authority has made default in carrying out its duties in regard to the purifying and cleansing of articles and premises and accommodation for the storage of food.

Smallpox.

Early in 1911 an outbreak of smallpox occurred in London. On 21st February three cases were removed to hospital from the Mile End Infirmary, and subsequently other cases were notified in the Borough of Stepney. In addition to the occurrences in Stepney cases occurred in Westminster, Bethnal Green, Hackney, Deptford and Poplar. The total number of cases reported was 62, of which 10 proved fatal.

Experience in previous outbreaks had shown that slight cases are sometimes mistaken for cases of chicken pox, with the result that infected patients have not been isolated so early as would have been the case had the real nature of the disease been at once recognised. In these circumstances the Council decided to make chicken pox a notifiable disease for three months, and further to apply to that disease Sections 68 and 70 of the Public Health (London) Act, 1891. These sections impose restrictions on persons suffering from an infectious disease as regards exposure in public places and conveyance in public conveyances.

Typhoid fever.

Investigation was during the year made into an outbreak of typhoid fever which occurred in the Metropolitan Borough of Finsbury during the month of September. Attention was called to the suspicion which has from time to time fallen on various articles of food as the cause of

outbreaks of this disease in London during the past 20 years. There were two articles of food to which suspicion attached, viz., ice-cream and fried fish, and it is interesting to note that of the 56 persons attacked by the disease 21 had recently consumed ice-cream, while no fewer than 52 had partaken of fish. The report strikingly illustrates difficulties which may be encountered in discriminating between suspected articles of food.

Cerebro-spinal fever.

On 31st January, 1911, the Council made an order under section 56 of the Public Health (London) Act, 1891, extending for a further period of 12 months from 13th March, 1911, the notification of all cases of cerebro-spinal fever (epidemic cerebro-spinal meningitis) occurring within the County of London. It has been arranged with the medical officers of health of the sanitary districts for particulars of all cases of the disease notified in London to be furnished to the Council. This information is communicated to every medical officer, who is thus at once put into possession of all available information as to cases occurring in other districts, and facilities are afforded for observation in the event of the disease showing any tendency to spread. The services of Dr. Wanklyn, an assistant medical officer of health, are also available with a view to the investigation of cases in association with medical practitioners in London, should they so desire. During the year 1911, 101 cases were notified, making a total of 642 cases since notification became compulsory in 1907.

Health conference.

A conference between representatives of the Council and the metropolitan borough councils on various matters affecting public health was convened by the Council and held on 6th April at the County Hall. Representatives appointed by the Corporation of the City of London, the metropolitan borough councils, the Metropolitan Asylums Board and the Local Government Board attended. The undermentioned subjects were considered and resolutions passed thereon: (1) houses let in lodgings; (2) pulmonary tuberculosis; (3) measles; (4) water supply to tenement houses; (5) places where food is prepared and exposed for sale; (6) notification of Births Act, 1907; (7) chapels of rest.

Census of homeless persons.

In 1904, 1905, 1907, 1909 and 1910 censuses were taken of homeless persons in the County of London by the medical officer in order to ascertain the use made of common lodging-houses, and the provision existing for the accommodation of persons of the poorest class. A further census was made on the night of 17th February, 1911, and the medical officer submitted a report showing the number of persons found homeless on that night in the streets, on staircases or under arches, the number and sex of persons who might reasonably be regarded as homeless on the ground of not being able to pay for a bed, and the arrangements made for the shelter of persons of this description, and other information bearing on the question. It is worthy of note that on the night of the census there was vacant accommodation for 7,038 persons in common lodging-houses and for 704 persons in casual wards. Following the practice adopted in previous years, the report was printed and placed on sale.*

Royal Commission on Tuberculosis.

During the year, the Royal Commission appointed to inquire into the relations of human and animal tuberculosis made its final report. The conclusions arrived at by the Commissioners were (1) that man must be added to the list of animals notably susceptible to bovine tubercle bacilli; (2) that other mammals and man can be reciprocally infected with tuberculosis, that bovine animals are not completely immune to the human tubercle bacillus, and adult human beings can be infected with the bovine type, even the pulmonary form of this disease in man being sometimes caused by the bovine tubercle bacillus; and (3) that "there can be no doubt that a considerable proportion of the tuberculosis affecting children is of bovine origin," and that "a considerable amount of the tuberculosis of childhood is to be ascribed to infection with bacilli of the bovine type, transmitted to children in meals conisting largely of the milk of the cow." The report indicates the need for more ample powers than are now possessed by the Council for the exclusion of tuberculous milk from London, and the desirableness of the continual exercise of existing powers until the subject can be dealt with in a comprehensive manner by Parliament.

Public health (tuberculosis) regulations.

Under a general order dated 15th November, 1911, the Local Government Board issued a further series of regulations in relation to the notification of pulmonary tuberculosis. These regulations complete the system of notification inaugurated in 1908, and every medical practitioner (with certain exceptions) is now required to notify every case of pulmonary tuberculosis occurring in the course either of his public or private practice.

Milk.

During the year under review the reports presented to the Council on the administration of Part IV. of the London County Council (General Powers) Act, 1907, showed that between the date of the coming into operation of the Act and 31st December, 1911, 7,896 sampes of milk had been examined, with the result that 850, or 10.8 per cent., proved tuberculous. The milk came from 28 different counties. During the year 3,029 samples were taken, of which 316 were found to be tuberculous. The Council's veterinary inspector has visited for inspection purposes, since the Act came into operation, 1,622 farms and inspected 44,307 cows, of which number 574, or 1.3 per cent., were found to be affected with tuberculosis of the udder. During the year 503 farms were visited and 15,510 cows were examined, of which 91 were found with tuberculous udders. The owners of the animals affected undertook that the use for human consumption of the milk should be discontinued immediately.

Under the provisions of the London County Council (General Powers) Act, 1904, by which the Council is authorised to seize and slaughter any cow suspected to be suffering from tuberculosis of the udder, the cows in London cowsheds are examined about six times in the year by a veterinary inspector appointed by the Council. During the year under review 18 animals have been seized and slaughtered under the Act, and compensation amounting to £194 has been paid, the post-mortem examination showing in each case that the udder of the animal was tuberculous.

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* *Report by the Medical Officer, submitting the result of a census of homeless persons taken on the night of 17th February*, 1911 (No. 1417). Price 2d.

Infant life protection.

The Council administers (except in the City of London) Part. I. of the Children Act, 1908, and has delegated its powers in respect of this Part of the Act to the Public Control Committee. A staff of 2 male and 8 female inspectors is employed under the direction of the chief officer of the public control department upon this work.

The duties of the Council under the Act include the institution of inquiries as to persons who undertake the nursing and maintenance of infants, the fixing of the number of infants which may be kept in a dwelling as to which notice has been given, and the appointment of infant protection visitors to inspect places where infants are kept. The Council is required to satisfy itself as to the proper maintenance of the infants, and may arrange for the removal from a notified house of an infant improperly kept. Notice has to be given to the Council in cases where one infant is received, and the age limit of infants is 7 years. The Act also contains a provision making void any policy of insurance on the life of an infant when taken out by any person who shall have the custody of such infant for reward, and making it an offence for any such person to insure or attempt to insure the life of such infant. Offences under Part I. of the Act are punishable by imprisonment for a term not exceeding six months, or a fine not exceeding £25, and the fines are paid to the Council.

On 31st March, 1909, the number of homes under inspection by the Council's officers was 268, containing 668 infants, and on 31st December, 1911, these numbers had risen to 2,539 and 3,257 respectively.

Under section 2 (2) of the Act the Council, in cases where any infants have been placed out to nurse by any philanthropic society, may, if satisfied that the interests of the infants are properly safeguarded, authorise the society to exercise the powers of infant protection visitors in respect of such infants, subject, however, to the obligation to furnish periodical reports. The Council approved 17 societies for this purpose, but during 1911 three of these were, at their own request, relieved of the obligations which they had undertaken in the matter, in addition to one previously released.

Powers and duties of the Council under the Midwives Act, 1902.

By section 8 of the Midwives Act, 1902, every council of a county or county borough in England and Wales is constituted a local supervising authority over midwives within its area. The duties of a local supervising authority are:—(1) to exercise general supervision over all midwives practising within the county or county borough; (2) to investigate charges of malpractice, negligence or misconduct on the part of any practising midwife; (3) to suspend from practice any midwife if such suspension appears necessary in order to prevent the spread of infection; (4) to report at once to the Central Midwives Board the name of any midwife convicted of an offence; (5) during the month of January in each year to send to the Central Midwives Board a list of all midwives who during the preceding year had notified their intention to practise within the county; (6) to keep a current copy of the roll of midwives accessible at all times for public inspection; (7) to report at once to the Central Midwives Board the death of any midwife or any change in the name or address of any midwife; and (8) to give due notice to the effect of the provisions of the Act to all persons using the title of midwife. In addition to these duties, every local supervising authority is by section 5 of the Act compelled to pay its proportion of any deficit which may occur in the expenses of the Central Midwives Board, provided such deficit is approved by the Privy Council.

Supervision of midwives.

In order to carry out its duties of general supervision, the Council has appointed two women inspectors, who are duly qualified medical practitioners, to pay visits of inspection to midwives practising within the County, as well as to make special investigation into any case of puerperal fever occurring in the practice of a midwife, and to attend if possible any inquest held upon the body of a woman or infant upon whom a midwife had been in attendance. During the year 1911 there were 76 cases of puerperal fever in the practice of midwives, and 100 inquests were held in which midwives were concerned, 11 being on the bodies of women, and 89 on the bodies of children. A case of puerperal fever also occurred in the practice of an uncertified person, and inquests were held on the bodies of three children who were attended at birth by women who had not been certified by the Central Midwives Board.

Investigation of charges against midwives.

Charges of malpractice, negligence or misconduct on the part of six midwives were investigated during the year, with the result that the Central Midwives Board were informed that in five instances *prima facie* cases (negligence and misconduct, 2 cases; misconduct, 2 cases; negligence, 1 case) had been established, the charge in the sixth case not being sustained. The names of the midwives charged with misconduct were removed from the roll, but the Board had not during the period covered by this report, announced its decision with regard to the remaining charges.

During 1911 the Central Midwives Board announced its decisions with regard to two certified midwives against whom charges had been brought during the preceding year, the name of one of the midwives charged with misconduct being removed from the roll, while the other midwife was censured.

Suspensions—convictions.

It was not found necessary during the year to suspend any midwife from practice, but a midwife in the County was convicted of having performed an illegal operation and was sentenced to five years' penal servitude, her name being subsequently removed from the roll of midwives.

Number of midwives practising in London.

During the year ended 31st December, 1911, 557 midwives notified to the Council their intention of practising within the County during the year; and, in addition to these, 12 notices were received from persons who had acted as midwives on specific occasions, and 34 notices from midwives who intended to practise within the County during periods shorter than a year.

Notification of provisions of the Midwives Act.

Before 1st April, 1910, a woman who was not certified under the Midwives Act, 1902, was not prohibited from attending cases of childbirth, providing she did not take or use the title of midwife or any title of a similar nature; but on that date sub-section 2 of section 1 of the Act came into operation. This sub-section prohibits a woman who is not certified under the Act from habitually and for gain attending women in childbirth, legally qualified medical practitioners and persons rendering

assistance in cases of emergency being exempted from the operation of the section. It appeared desirable that the provisions of the sub-section should be known as widely as possible, and with this object the Council on 8th February, 1910, decided to give notice by public advertisement of the altered state of the law.

Practice of uncertified persons.

The publicity thus given to the provisions of the section did not, however, entirely deter uncertified persons from practising as midwives, for it became necessary during the year 1911 to institute legal proceedings against 19 women for infringing the law in this respect. Convictions resulted in 18 instances, fines amounting to a total of £35 18s., with £12 3s. costs, being inflicted in 15 cases; while three of the women were bound over not to repeat the offence, one being also ordered to pay 18s. 6d as costs of the proceedings. In the remaining case the summons was dismissed. In addition to these prosecutions, letters explaining the alteration in the law were addressed to 35 women.

In January, 1911, a woman whose name had been removed from the roll of midwives attended a woman in childbirth, and her patient having died, an inquest was held upon the body with the result that the midwife was committed for trial on a charge of manslaughter, and at the hearing of the charge was convicted, and sentenced to four calendar months' imprisonment, with hard labour.

Amendment of Midwives Act.

The Central Midwives Board having invited the Council to express its view as to the desirableness of deleting from sub-section 2 of section 1 of the Midwives Act, 1902, the words "habitually and for gain," the Council informed the Board that it appeared desirable that, in any amendment of the Midwives Act provision should be made for the omission of these words.

Rules of Central Midwives Board.

On 21st June, 1911, the Privy Council approved a new series of rules which had been framed by the Central Midwives Board. The rules came into operation on 1st July, and the Council sent a copy to each practising midwife in the county.

Accounts of Central Midwives Board.

The accounts of the Central Midwives Board showed an adverse balance for the year 1910, and the Council was called upon in May, 1911, to pay a sum of £76 15s. 10d. as its proportion of this deficit.

Health visitors.

The Metropolitan Borough Council of St. Marylebone made application to the Council for a contribution of one-half of the salaries of health visitors appointed by the borough council. The Council decided, as in previous cases, to make the contributions asked for subject to the condition, among others, that the contributions should be dependent on there being sufficient surplus on the exchequer contribution account to enable payments to be made after making provision for the discharge of the existing statutory charges on that account in full. Up to the present time twelve metropolitan borough councils have appointed health visitors.

Common lodging-houses.

Applications were received for licences to keep and use, as common lodging-houses, 306 premises in the County of London, and licences were granted in respect of 304 of these premises, one application being withdrawn and one refused. Two licensed keepers were fined £5 with 8s. costs for having infringed the Council's by-laws.

During the year licences to keep seamen's-lodging houses have been granted in respect of 36 premises Legal proceedings were instituted in 5 instances for keeping unlicensed seamen's lodging-houses. In each case a conviction followed and fines amounting to £44, with £4 7s. costs, were inflicted.

Nuisances.

During the year 375 complaints were made to the Council under the Public Health (London) Act, 1891, as to insanitary conditions or failures in sanitary administration. Of these complaints 259 were anonymous.

The practice adopted is, in the case of signed complaints, to forward the complaint to the sanitary authority and to take no further action unless the complainant appeals again to the Council. In the case of anonymous complaints, the purport of the complaint is sent to the medical officer of the district, and, unless an intimation is received that action has been taken, an inspection is subsequently made, and, if then found necessary, a further communication is sent to the sanitary authority concerned.

Offensive businesses—knackers' yards, slaughter-houses, cow-houses and dairies.

In pursuance of the authority conferred upon the Council by section 19 of the Public Health (London) Act, 1801, in three cases certain premises were removed from the register, the right to carry on (1) fat-melting, (2) tallow melting, and (3) tripe boiling thereat having lapsed.

The number of slaughterhouses, cowhouses and knackers' yards licensed during the year was 242 slaughterhouses, 189 cowhouses, and 4 knackers' yards. There was one appeal against the decision of the Committee not to grant renewal of licence in respect of a cowhouse; one appeal in respect of a slaughterhouse; and one in respect of a knacker's yard. In each case the Committee's decision was confirmed.

Draft by-laws relating to the businesses of a vendor of fried fish, fish curer and rag and bone dealer have been approved provisionally by the Local Government Board, and the observations of the Secretary of State for the Home Department are now awaited.

Drainage by-laws.

The Hampstead Metropolitan Borough Council called attention to an appeal (Kershaw v. Brooks) by the borough council, which came before the Divisional Court by way of special case from the decision of a metropolitan police magistrate, dismissing certain summonses issued under the by-laws as to drainage and as to deposit of plans made under section 202 of the Metropolis Management Act, 1855, and the Metropolis Management Acts Amendment (By-laws) Act, 1899. The question for decision was as to the person liable for an infringement of the by-laws. The Borough Council summoned the responsible person actually carrying out the work, and the summonses were dismissed by the magistrate on the ground that they should have been issued against the person who ordered the work to be done. The divisional court sustained the decision of the magistrate.

The Hampstead Borough Council also suggested that the by-laws should be amended to provide that the builder or contractor in control of the works should be responsible in cases of breaches of the by-laws, and as most of the borough councils were in favour of the amendment, the Council made by-laws (which were duly confirmed by the Local Government Board) dealing with the point.

Diseases of animals.

The Diseases of Animals Acts, 1894 to 1910, make provision for the prevention, diminution and suppression of contagious diseases in animals, and are enforced in London partly by the Board of Agriculture and Fisheries and partly by the Council and the City Corporation. The Acts are supplemented by Orders made by the Board of Agriculture and Fisheries, dealing with infectious disease among animals and the areas in which such disease exists.

The Acts and Orders are administered in London outside the City by the Council, and in the City by the Corporation, which body is also responsible as port sanitary authority, for enforcing the provisions of the Act relating to foreign animals. The powers of the Council are exercised by the Public Control Committee.

The Council's outdoor staff for the administration of the Acts consists of four veterinary inspectors, and certain other inspectors, who devote their whole time to the work.

The prevalence of contagious disease in animals in London during the year 1911 and certain preceding years is shown by the following statement :—

Disease.	Number of animals attacked by disease.						
	1904–5.	1905–6.	1906–7.	1907–8.	1908–9.	1910.	1911.
Glanders, including farcy	1,713	1,382	1,332	1,490	1,704	597	281
Typhoid in swine	11	36	9	35	3	4*	8*
Pleuro-pneumonia	—	—	—	—	—	—	—
Sheep-scab	—	—	—	—	—	—	—
Anthrax	4	3	9	13	63	35	12
Rabies	—	—	—	—	—	—	—
(*a*) Epizootic lymphangitis	126	10	—	—	—	—	—
(*b*) Parasitic mange	—	—	—	—	—	384	978

* Outbreaks.

(*a*) This disease was scheduled in 1904.
(*b*) This disease was scheduled as regards London in 1909, the Order coming into force on 1st June, 1909.

Details were given in the last annual report† of the reasons which actuated the Council in urging the Board of Agriculture and Fisheries to amend the Glanders or Farcy Order of 1907, so as to provide :

(i.) That the local authority be empowered to collect and destroy infected or suspected nosebags or other articles not easily capable of disinfection and used in connection with glandered horses.

(ii.) That the local authority in all cases be empowered to re-test after a period of a month or six weeks from the first test, a stud of horses in which there has been disease.

(iii.) That the proprietors of horse repositories be required to disclose to the local authority the name and address of any vendor of a horse if the animal is subsequently found to be glandered, together with the names and addresses of the purchasers of any other animals then sold from the same stud.

(iv.) That the control of the local authority be maintained over any horse which has been tested with mallein so long as a definite result is not obtained from the test, provided that such control should not extend beyond a maximum period of three months.

As a result, the Board suggested that the Council should confer with the local authorities of districts adjacent to London upon the question generally, and as to the "desirability of the formation of a joint committee under section 39 of the Diseases of Animals Act, 1894, for the purposes of administering the Glanders or Farcy Order of 1897 throughout the whole of the police area and the City of London." A conference was accordingly convened with representatives of the Corporation of the City of London, the councils of the home counties and the authorities of other areas adjacent to London. The conference was not in favour of adopting the suggestion of the Board as to the establishment of a joint committee, but resolutions were passed approving the Council's proposals to amend the Order of 1907. The decisions of the conference were conveyed to the Board of Agriculture and Fisheries who subsequently intimated that it was prepared to amend the Order in accordance with the Council's proposals, with the exception of that relating to maintenance of control for a longer period over animals in whose cases the mallein test had not produced definite results.

The following table shows the number of animals attacked by glanders in London and the adjoining counties, together with the total cases for Great Britain, during each of the past ten years :—

Year.	London.	Middlesex.	Essex.	Kent.	Surrey.	Great Britain.	Percentage of London cases.
1902	1,604	58	85	36	39	2,073	77
1903	1,915	118	102	18	52	2,499	76
1904	1,869	123	132	26	77	2,658	70
1905	1,387	97	80	14	48	2,068	67
1906	1,382	84	92	47	28	2,012	68
1907	1,365	33	44	21	32	1,921	71
1908	1,730	144	97	18	36	2,421	71
1909	1,272	92	90	29	84	1,753	72
1910	597	26	64	33	24	1,014	58
1911	281	66	35	15	11	504	55
Total ...	13,402	841	821	257	431	18,923	70

† *Annual Report of the Council*, 1910, vol. iii., p. 187.

Compensation amounting to £3,358 8s. was paid by the Council in respect of horses slaughtered during the year. 19 infringements of the Order were detected, and in one case legal proceedings were taken, a penalty of £2 12s. 6d. being inflicted.

Parasitic mange.

During the year the Board of Agriculture issued the Parasitic Mange Order, 1911 (to come into force on 1st January, 1912). The Order extends to the whole of Great Britain the provisions of the several local Orders which have been in operation for dealing with this disease and revokes such Orders, including the London (Parasitic Mange) Order of 1909. The terms of the new Order are practically identical with those of the revoked Orders, but it contains certain new provisions:—(*a*) parasitic mange is included in the list of diseases to which the Animals (Notification of Disease) Order of 1910 applies, so that veterinary surgeons and practitioners will be required to give notice of the existence or suspected existence of this disease met with in their private practice, to the local authority, which is required to pay a sum of 2s. 6d. for each notification; (*b*) the cleansing and disinfection of infected places and articles, and the methods to be employed in such cleansing are provided for in the Order; (*c*) in addition to making it an offence to fail to give notice of the existence of disease, or to move an animal placed under a detention notice without the consent of the local authority, the new Order makes it illegal to expose an affected animal for sale or to move such an animal along a highway or thoroughfare, except with the written authority of an inspector of the local authority, or to cause such an animal to be conveyed by vessel or railway.

Swine fever.

The Board of Agriculture during the year also issued the Swine Fever Order, 1911, intended to give effect to certain recommendations of a departmental committee appointed by the Board to inquire into swine fever. The new Order provides, among other things, that movement licences are in future to be available for eight days instead of for six as hitherto, that pigs moved for slaughter under a licence issued under the Swine Fever (Regulation of Movement) Order need not be conveyed in a vehicle, and that vehicles, crates, etc., used for the conveyance of swine must be thoroughly cleansed and disinfected after use.

A further Order, issued by the Board in the course of the year was the Wandsworth District (Swine Fever) Order of 1911. The order, which came into force on 9th December, 1911, applied only to a small district in the south of Wandsworth, and was issued in consequence of outbreaks of swine fever in that district. Similar restrictions were placed on the movement of pigs into the district as are imposed by the Swine Fever (Regulation of Movement) Order, 1908, but it was provided that swine should only be moved out of the district for immediate slaughter if a movement licence had been issued on the owner's declaration, and if marked as provided for in the Order. Power was also given to an inspector of the Board of Agriculture or of the Council to apply the provisions of the Order to any premises in the neighbourhood by the service of a notice on the occupier.

CHAPTER XXXVI.

Main Drainage.

Powers and duties of the Council.

The Council is charged by statute with the responsibility for the provision and maintenance of an efficient main drainage system for the Administrative County of London. Its powers and duties in this respect are derived mainly from the Metropolis Management Acts, 1855, 1858 and 1862, and under these Acts the Council is specifically required to provide and maintain the necessary sewers and works for preventing, as far as may be practicable, the sewage of London, collected by the local sewers, from passing into the river Thames within the County. The treatment and disposal of the crude sewage also forms an important part of the Council's work.

Metropolitan main drainage area.

The area drained by the system and the resident population thereof (1911) are approximately as follows—

	Sq. miles.	Persons.
North—County of London	50	2,683,060
Out-county districts	29	773,239
South—County of London	67	1,839,901
Out-county districts	3	40,001
	149	5,336,201

The whole of the sewage of the County of London is dealt with by the Council, but power is reserved to the Council in the West Kent Main Sewerage Act, 1875, to connect any of its sewers with the West Kent sewer, which passes through the southern portion of the metropolitan boroughs of Lewisham and Woolwich. This power has not been exercised.

Treatment and disposal of sewage.

The sewage collected by the local sewers, which are vested in the metropolitan borough councils, and by main and branch sewers under the control of the Council, is conveyed by means of large intercepting sewers to the outfall works. These are situated at Barking on the north side of the Thames, and at Crossness on the south, and are respectively 11 and 13 miles below London-bridge. The sewage on its arrival at the outfalls is subjected to chemical treatment—*i.e.*, about one grain of proto-sulphate of iron and four grains of lime are added to every gallon of crude sewage. The sewage is then discharged into, and allowed to pass slowly through, large reservoirs or precipitation channels, where the solid matters in suspension subside and the liquid or effluent passes over a weir into channels leading into the river Thames. The residue in the precipitation channels, which is called sludge, is cleared out and pumped into other channels, where the solids are allowed to settle still further. The resultant sediment, which contains about 92 per cent. of moisture, is pumped into the Council's sludge steamers and conveyed to the Black Deep in the Thames Estuary.

The following table shows the quantity of crude sewage treated, chemicals used in precipitation, and sludge sent to sea, together with the quantity of refuse intercepted at the gratings at the outfall works at Barking and Crossness respectively during the year 1911 :—

	Barking.	Crossness.	Total.
	gallons.	gallons.	gallons.
Sewage treated	63,375,886,303	51,040,331,100	114,416,217,403
Sewage daily average	173,632,565	139,836,524	313,469,089
	tons.	tons.	tons.
Lime used	12,557·75	10,751	23,308·75
Proto-sulphate of iron used ..	2,751·744	2,921·2	5,672·944
Sludge sent to sea	1,686,500	893,500	2,580,000
Sludge, weekly average	32,432·7	17,182·7	49,615·4
Refuse intercepted at gratings ..	3,335	1,587	4,922

From the above figures it will be seen that at the Barking outfall one ton of sludge was extracted from an average of 37,601 gallons of sewage treated, as compared with 33,620 gallons in the preceding year; while at the Crossness outfall the average quantity of sewage treated to produce one ton of sludge was about 57,124 gallons, as compared with 51,737 gallons in the preceding year.

The total quantity of sewage treated at the outfalls was more, by 7,284,605,707 gallons, than the flow in the previous year, while the quantity of sludge sent to sea was less by 93,000 tons, or about 1,790 tons a week on an average.

At the Barking outfall there is a one-acre coke bed which has been maintained in action for over eighteen years for the bacterial treatment of the effluent produced after chemical precipitation, and the purification continues to be satisfactory, although the filtering capacity of the bed has diminished.

The refuse intercepted at the gratings of each outfall is taken away for agricultural purposes, with the exception of a small quantity, which is dug into the ground or used as manure on the garden plots attached to the workmen's cottages. In addition to this refuse, large quantities of sand and fine gravel are brought down by the sewers, in times of rain, and deposited in the precipitation channels, from which the deposits are removed from time to time.

The sludge is taken to sea by the Council's sludge vessels, which are six in number, viz., the "Barking," "Barrow," "Bazalgette," "Belvedere," "Binnie," and "Burns" and each is manned by a staff of officers and crew numbering 24. Each vessel carries a load of about 1,000 tons. During the year under review the vessels made 2,580 trips to and from the deposit area in the Black Deep; the distance travelled being about 258,000 miles. The vessels are insured for £108,000.

Main drainage extension scheme.

On 5th December, 1899, the Council approved in principle a scheme of main drainage extension works necessitated by the increasing strain imposed upon the existing system owing to the growth of the population. This scheme, the estimated cost of which is roughly £3,772,550, comprises the undermentioned works:—

North of the Thames.

Barking to Old Ford—Two new sewers (Northern outfall sewer enlargement) and extra works at Barking.

New sewer between high-level and mddle-level sewers (Middle-level sewer No. 2).

New sewer between middle-level and low-level sewers (Northern low-level sewer No. 2).

Extension of middle-level sewer No. 1 to Scrubbs-lane.

Enlargement of the Abbey-mills Pumping Station.

South of the Thames.

New sewer from Crossness to Deptford (Southern outfall sewer No. 2) and extra works at both stations.

New sewer from Crossness to Catford (Southern high-level sewer No. 2).

New sewer from Deptford to Battersea (Southern low-level sewer No. 2).

Practically all these works are now completed with the exception of the enlargement of the Abbey-mills pumping station and the construction of the southern low-level sewer No. 2, and sections 3, 4 and 5 of the northern low-level sewer No. 2, and these are in course of execution.

There are certain works which, while not specifically provided for in the scheme, are so closely connected therewith as practically to form part of it, and although their cost was not included when the rough estimate of £3,772,500 was prepared, it is anticipated that their inclusion in the scheme will not cause this estimate to be exceeded. They are (i.) the enlargement of the Crossness pumping station, roughly estimated to cost £120,000; and (ii.) the extension of the southern high-level sewer No. 2 from Catford to Nunhead.

The necessity for increasing the pumping power at Crossness arises from the fact that in connection with the main drainage extension scheme, the discharging capacity of the outfall sewers has been doubled, and when, in times of storm, these sewers are full, the pumping power at the outfall is quite inadequate. A new engine-house is to be erected, and the tender, amounting to £63,690, submitted by Dick, Kerr and Co., Ltd., has been accepted for the work. The new engine-house will be constructed to accommodate eight main driving steam engines and centrifugal pumps, but, in the first instance, only one half of the machinery, roughly estimated to cost £22,000, will be installed.

The southern high-level sewer No. 2, which was constructed as part of the extension scheme above mentioned, extends from Catford to Crossness, and its gradient is such that the contents of the sewer do not have to be pumped. It is now proposed to extend the sewer from Catford to Nunhead and thus intercept the Effra branch sewer and convey to Crossness sewage from West Norwood, Dulwich, Peckham Rye, which, under existing conditions, has to be pumped on arrival at the outfall. The construction of the new length of sewer is being carried out by Messrs. Wm. Underwood and Bros., at the contract price of £88,398 14s. 9d.

Storm relief

There is no separate system of sewers in London for dealing with the surface water apart from the sewage, but large storm-water sewers have been constructed to relieve the main and intercepting sewers in times of heavy rainfall, and at various points on both banks of the Thames there are storm overflows which can be utilised at certain states of the tide. Pumping stations have also been erected for the sole purpose of pumping storm water into the river and, in addition, arrangements are made for discharging storm water by means of auxiliary engines at the Western and North Woolwich sewage pumping stations. The disposal of storm water is a matter to which the Council has given most careful consideration, and on 16th February, 1904, the Council decided that the time had arrived when large additional flood-relief works should be undertaken. The undermentioned works are included in the scheme, and the estimated expenditure involved is £795,000.

North of the Thames.

Storm-relief sewer from Holloway-road to the Thames.

Storm-relief sewer along Stroud-green-road and Tollington-park (Stroud Green and Hornsey relief sewer).

Extension of the Hackney-wick to Abbey-mills relief sewer.

New sewer from the middle-level sewer No. 1 to the Counter's-creek sewer (North Kensington relief sewer).

South of the Thames.

New pumping stations, and sewers in connection therewith, in or near Wandsworth and Southwark. (Falcon Brook pumping station in connection with the Wandsworth and Battersea relief sewer, and the Shad Thames pumping station in connection with the Bermondsey and Southwark relief sewer.)

All works specifically referred to above have been completed with the exception of the sewer from Holloway-road to the Thames. Further borings and other preliminary work in connection with the proposal that the outlet of this sewer should be at Shadwell instead of the Tower were carried out during the year.

Certain other works, not specifically mentioned above, were provided for in the estimate of the cost of the flood prevention scheme. One of the most important of these was the enlargement of the storm water pumping station on the Isle of Dogs. The existing plant consists of two steam-driven reciprocating pumps, and it is proposed that the station shall be extended so as to accommodate two centrifugal pumps driven by gas. The cost is roughly estimated to amount to £30,000.

The two schemes referred to above included the undermentioned works which had for their object specifically or incidentally the relief of sewers in the Metropolitan Borough of Wandsworth—(i.) the Wandsworth and Battersea relief sewer; (ii.) the Falcon-brook pumping station, and (iii.)the southern low-level sewer No. 2. Owing, however, to the very large development of building operations in the borough since the schemes were prepared, it is considered essential that other large works must be undertaken, and the Council on 7th November, 1911, agreed to the following proposals :—

	Estimated cost.
1. To construct a relief sewer from the junction of Balham High-road and Tooting Bec-road to the river Graveney	£28,000
2. To improve certain portions of the waterway of the river Graveney	5,750
	£33,750

It is also proposed to carry out extensive works for the relief of the area in the valleys of the rivers Wandle and Graveney. The details of these works have not yet been settled, but the expenditure involved will probably be considerable.

Cost of new works.

The payments on capital account up to 31st March, 1912, in connection with main drainage extension and flood relief works amounted to £3,703,358 15s. 8d.

Drainage of out-county districts

In addition to the County of London, several neighbouring districts make use of the London main drainage system; the necessary powers to enable the Council to receive and deal with the drainage of these out-county areas having been conferred by Parliament from time to time. In every case in which the sewage is received and dealt with, each out-county authority is required to make to the Council an annual payment, the amount of which varies in the several districts. The districts concerned, and the statutes dealing with the disposal of their drainage, are as follows :—

(i.) Hornsey, under the Hornsey Local Board Act, 1871, the Metropolitan Streets Improvement Act, 1872, and the London County Council (General Powers) Act, 1906.
(ii.) Tottenham } under the Tottenham and Wood Green Sewerage Act, 1891, and the
(iii.) Wood Green } London County Council (General Powers) Act, 1908.
(iv.) West Ham, under the West Ham Corporation Act, 1893.
(v.) East Ham (part of), under the London County Council (General Powers) Act, 1897.
(vi.) Willesden, under the Willesden Sewerage Act, 1896, and the London County Council (General Powers) Act, 1908.
(vii.) Acton, under the London County Council (Acton Sewage) Act 1898, and the Acton Sewage Act, 1905.
(viii.) Penge, under the Penge Scheme, 1900.
(ix.) Beckenham (part of), under the Beckenham Sewerage Act, 1873, and
(x.) Upper Norwood, under the London County Council (General Powers) Act, 1903.

Small parts of Ealing, Chiswick, and Mitcham also drain into the London system.

A joint application from the Urban District Councils of Edmonton, Enfield, Leyton, Southgate and Walthamstow, that the sewage of those districts may be received into the London main drainage system, has been under consideration for some time, but there are so many important details requiring to be settled, that it has not been possible up to the present to arrive at an agreement in the matter.

Under the provisions of the Willesden Sewerage Act, 1896, the sewage and drainage of the portion of the district of Willesden draining naturally towards London are received into the London main drainage system, and in the London County Council (General Powers) Act, 1908, authority was obtained for dealing in the same manner with the sewage and drainage of the remaining portion of the Willesden district which drains towards the river Brent. The Act, in addition to restricting the quantity of sewage and rainfall which might be discharged into the London sewers, provided—

(1) That the Willesden Council should construct all sewers and works necessary to convey the sewage and drainage to the county boundary.

(2) That the Council should construct, at the expense of the Willesden Council, a sewer from the county boundary to the middle-level sewer No. 2.

(3) That the Willesden Council should pay (*a*) a differential rate of 1½d. in the £, calculated on the rateable value of the Brent area, in addition to the proportion of the county rate levied by the Council each year which is applied for main drainage purposes; and (*b*) a capital sum of £40,000 in respect of discharged capital outlay on main drainage works.

The works referred to in (1) and (2) were completed during the year under review and the discharge of sewage and drainage from the Brent area into the London main drainage system commenced on 30th September, 1911. From the date of the first discharge, there became due from the Willesden Council, the above-mentioned sum of £40,000, and this sum, together with interest thereon at the rate of 3½ per cent. per annum, is to be paid to the Council in one hundred half-yearly instalments of principal and interest combined. The rate referred to in (3) also became due as from 30th September, 1911.

The sewer from the county boundary to the Council's middle-level sewer No. 2 was constructed of larger dimensions than would have been necessary had it been intended to use the sewer solely for the conveyance of Willesden sewage, the reason being that it was considered desirable that the sewer should be utilised as a means of relief in times of storm for the district through which it passed. Instead, therefore, of the whole cost of the sewer being defrayed by the Willesden Urban District Council, it was decided to divide the cost as follows: Willesden, £18,944 2s. 2d.; London, £9,782 11s. 10d.

Illegal discharges into sewers.

Section 9 of the London County Council (General Powers) Act, 1894, prohibits the discharge into any sewer of the Council, or any sewer or drain communicating therewith, of any chemical or manufacturing or trade or other liquid refuse, or any waste steam, condensing water, heated water, or other liquid of a temperature exceeding 110 deg. Fahr., which either alone, or in combination with other matters or liquid in a sewer, may cause a nuisance, or involve danger or risk of injury to the health of persons entering the sewers, or be injurious to the structure or materials of the sewers or works of the Council. It was necessary in only one case during the year to institute legal proceedings in respect of the contravention of the above-mentioned section, and in this instance a penalty of £10 10s., with £10 10s. costs was imposed.

Unless great care be exercised at places where petrol or similar liquids are used, there is a possibility of matter of a dangerous nature finding its way into drains and sewers, and it was thought desirable to issue a warning as to the danger of allowing this to happen, and the liability attaching thereto. Copies of an Order made by the Council on 20th December, 1898, under section 10 of the Act above referred to, prohibiting the discharge of dangerous substances into sewers, were therefore served during the year upon a number of persons licensed under the Petroleum Acts, and carrying on businesses such as might produce residues which would be dangerous if discharged into sewers.

Building over sewers.

By Sections 204 and 68 of the Metropolis Management Acts of 1855 and 1862 respectively, the erection in, on, over, or under any sewer of a building, wall, bridge, fence, etc., without the previous consent of the Council is prohibited. During the year 13 licences to build over sewers were granted.

Repairs, etc.

The principal works of repair, etc., undertaken during the year, and the expenditure sanctioned therefor in each case were as follows:—

Barking Outfall.—Alterations to effluent discharging channel and provision of sewage recording gauges, £1,000 (continuation of work for which expenditure of £2,000 was sanctioned in 1910); new dolphin to pier, £1,000; cleansing old reservoir, £500; alterations to sludge delivery pipe, £450; repairs to river wall, £440.

Deptford Pumping Station.—Repairs to condensing water pipe, £500; painting buildings and engines, £500.

Repairs to sewers.—Ravensbourne and Sydenham, £1,250; Fleet (Guildford-street branch), £1,000; Fleet (St. John-street branch), £1,000; Smith-street, £1,000; Ratcliff-highway, £1,000; Northern outfall, £700; Northern low-level No. 1 (new penstock at Harwood-terrace, Fulham), £500; Countess-creek (flap valve for storm-water outlet,) £500.

Repairs to sludge vessels.—£3,250.

Works completed or in progress.

The following is a statement of works or contracts connected with the main drainage and flood relief schemes which have been completed, or are in progress.

North of the Thames.	£	s.	d.
Main Drainage Extension Scheme.			
Northern outfall sewer enlargement—Completed at cost of	569,465	15	4
Northern low-level sewer, No. 2—			
Section 1—Completed at cost of	78,785	0	3
„ 2 „ „	82,775	13	11
„ 3—Contract price	261,599	0	0
„ 4 (and extension)—Contract price	85,158	0	0
„ 5—Contract price	172,630	12	6
Middle-level sewer, No. 2—Completed at cost of	315,045	5	9
Extension of middle-level sewer, No. 1, to Scrubs-lane—Completed at cost of ..	13,126	11	6
Abbey Mills pumping station enlargement—Erection of engine-house—Contract price	58,362	3	4
Flood Relief Scheme.			
Stroud Green and Hornsey relief sewer—Completed at cost of	21,254	14	
Hackney Wick to Abbey Mills relief sewer extension—Completed at cost of ..	62,751	15	4
North Kensington relief sewer—Completed at cost of	27,727	5	1

South of the Thames.

Main Drainage Extension Scheme and additional works in connection therewith.

	£	s.	d.
Southern outfall sewer enlargement and Southern high-level sewer, No. 2—			
Sections A-D—Completed at cost of	723,309	17	10
Greenwich-road branch—			
Section 1—Completed at cost of	12,808	10	1
,, 2—Contract price	22,796	6	3
Southern high-level sewer, No. 2—			
Section E—Completed at cost of	361,223	5	4
,, (extension)—Contract price	88,398	14	9
Deptford pumping station—			
Erection of additional engine house (exclusive of machinery)—Completed at cost of	46,330	0	0
Machinery, etc.	29,380	10	0
Crossness pumping station—			
Erection of additional engine house—Contract price	63,689	18	5
Machinery—Estimated cost	22,000	0	0

Flood Relief Scheme.

Wandsworth and Battersea relief sewer—Completed at cost of	38,452	19	11
Falcon Brook pumping station—Completed at cost of	20,695	5	0
Bermondsey and Southwark relief sewer—Completed at cost of	99,330	17	6
Shad Thames pumping station—Completed at cost of	39,740	7	10

The figures quoted above do not include the cost of purchasing property required, of settling claims for compensation payable by the Council of purchasing and fixing machinery, etc., or of employing the necessary supervising staff, etc.

Local sewers.

Section 69 of the Metropolis Management Act, 1855, provides that no new local sewer shall be made without the previous approval of the Council.

The subjoined table shows the total length and sizes of the local sewers, the construction of which was sanctioned by the Council during the year.

Size.	North of Thames.	South of Thames.	Total length.
	feet.	feet.	feet.
4 ft. by 2 ft. 8 in.	1,605	—	1,605
4 ft. by 2 ft. 6 in.	150	—	150
3 ft. 3 in. by 2 ft. 2 in.	—	260	260
1 ft. 6 in.	1,013	462	1,475
1 ft. 3 in.	2,545(1)	3,193(2)(3)	5,738
1 ft.	2,675(3)	6,976(6)	9,651
9 in.	7,026(4)(7)	8,970(8)	15,996
6 in.	167	665(9)	832
Total	16,181	20,526	36,707

(1) Including 495 feet in lieu of existing sewers.
(2) ,, 18 feet ,, ,, ,,
(3) ,, 578 feet ,, ,, ,,
(4) ,, 1,250 feet ,, ,, ,,
(5) ,, 1,560 feet reconstruction.
(6) ,, 820 feet ,,
(7) ,, 365 feet ,,
(8) ,, 185 feet ,,
(9) ,, 205 feet surface water sewer.

CHAPTER XXXVII.

Housing of the Working Classes.

Powers and duties of the Council.

The powers of the Council with respect to the housing of the working classes are derived from the Housing of the Working Classes Acts, 1890 to 1909, and questions relating thereto are considered by the Housing of the Working Classes Committee.

Part I. of the Housing of the Working Classes Act, 1890, as amended by the Acts of 1903 and 1909, places upon the Council the duty of preparing and carrying into effect (after confirmation by the Local Government Board) schemes for the re-arrangement and reconstruction of the streets and houses within insanitary areas which are of such size as to be of general importance to the whole County of London. Any scheme for dealing with such an area must provide for the demolition of the old houses, and the re-arrangement, so far as is necessary for purposes of health, of the streets and alleys comprised therein, and must also provide for the accommodation of at least half the number of persons of the working-classes displaced, in suitable dwellings, which, unless there are any special reasons to the contrary, must be situated either on the particular area of displacement or within its immediate vicinity.

Part II. of the Act empowers the Council and the metropolitan borough councils, either jointly or separately, to undertake schemes for the re-arrangement and reconstruction of insanitary areas which are too small to be of general importance to the whole County. In any such schemes it is not essential that new accommodation for the persons displaced should be provided, but the Local Government Board may order such provision to be made as may appear to be required by the circumstances. Provision is also made in this Part of the Act for the removal of buildings which obstruct the access of light and air to other houses. The Housing, Town Planning, etc., Act, 1909, empowers the metropolitan borough councils to order the closing and demolition of individual insanitary houses, a right of appeal to the Local Government Board being reserved to the owner of the property. The Council has power to take action in default of a borough council, both as regards obstructive buildings and closing and demolition orders.

Part III. of the Act of 1890, as extended by the Acts of 1900 and 1909, empowers the Council to acquire land, either within or without the County, and to provide thereon accommodation for persons of the working classes, apart altogether from any displacements that may have taken place.

The Act of 1903 provides that where dwellings occupied by 30 or more persons of the working classes are acquired under statutory powers other than the Housing Acts, *e.g.*, in connection with the carrying out of public improvements, the dwellings shall not be entered on until the Local Government Board has approved a scheme for rehousing the persons to be displaced, or has decided that such scheme is unnecessary.

Action taken under Parts I. and II. of the Act of 1890.

Under Parts I. and II. of the Housing of the Working Classes Act, 1890, the Council has completed 13 schemes involving the displacement of 16,639 persons of the working classes, and in lieu of the old houses which it has caused to be demolished, has provided new dwellings capable of accommodating 15,010 persons.

Tabard-street, etc., scheme.

In the last Annual Report* details were given of the scheme under Part I. of the Act of 1890 with regard to the Tabard-street and Grotto-place areas, Southwark, and the Crosby-row area, Bermondsey, about 17 acres in all, involving the displacement of 4,552 persons of the working class and entailing an expenditure of £473,300 gross, £387,700 net.

The inspector appointed by the Local Government Board for the purpose held a local inquiry into the scheme on 26th, 27th and 28th April and 3rd and 4th May, 1911, and subsequently made a detailed inspection of the areas in company with representatives of various parties interested.

Arising out of the inquiry, a communication was received from the Board stating that, subject to certain observations contained in the letter, it proposed to make an Order confirming the scheme.

The Board was satisfied as to the correctness of the official representations in respect of all the properties comprised therein with only three exceptions, and the Board proposed to modify the scheme by excluding these three plots from the unhealthy area, and including them as neighbouring lands, the inclusion of which was necessary for making the scheme efficient. The result was very satisfactory from the Council's point of view.

The Board decided to accede to an application made by the Council to modify the scheme by the exclusion of St. Stephen's vicarage, which was erected only a few years ago.

As regards the rehousing accommodation to be provided, the Board expressed the opinion that in addition to the block dwellings for 2,450 persons proposed to be erected round the open space which is to be laid out on the Tabard-street area, the Council should provide as many cottages as could conveniently be erected on the detached portion of the area between Law-street and Little Hunter-street. In the event of this land being ear-marked for the erection of cottages, the estimate of the net cost of the scheme would be increased by £8,500, making a net total of £396,200. Although the Council was still of opinion that its original proposals for rehousing were sufficient, it was recognised that the question was a debatable one, and in all the circumstances the Council thought it should not raise any objection to the proposal of the Local Government Board to require a small increase in the amount of the rehousing accommodation to be provided.

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* *Annual Report of the Council*, 1911, vol. iii., pp. 191-2

Among the persons to be displaced by the scheme are a number of street traders (costermongers and the like), who at present keep their barrows, etc., in the *cul-de-sac* roads, courts and alleys opposite their dwellings. A suggestion being made by the Board that provision for the storage of barrows and carts should be made, the Council replied that it saw no difficulty in providing sheds on the Tabard-street area for the convenience of street traders, but that stabling accommodation did not appear to be required.

With regard to the proposed open space, which is to be about 5½ acres in extent, the Board considered that the cost of acquiring the land was properly part of the cost of the improvement scheme, and that the retention and use of the land in question as an open space was an essential part of a scheme for rehousing in tenement blocks. The Board was of opinion, therefore, that the cost of acquiring the land proposed to be used for the open space should be borne as part of the cost of the improvement scheme, *i.e.*, charged to the Dwelling House Improvement Fund and constituted a special county expense to which the City would not contribute. The Board, however, agreed that the cost of laying out and maintaining the open space should be charged to the general county account out of which expenditure on parks is met.

The order of the Local Government Board confirming the scheme had not been received by the end of the year under review.

Closing and demolition orders.

Particulars are now available of the action taken by the metropolitan borough councils under sections 17 and 18 of the Housing, Town Planning, etc., Act, 1909, for dealing, by way of closing and demolition orders, with those dwelling houses which have been represented to them as being "in a state so dangerous or injurious to health as to be unfit for human habitation." Closing and demolition orders were a part of the procedure authorised by the Housing of the Working Classes Act, 1890, but whereas under that Act a closing order could only be made by a Court of Summary Jurisdiction on the application of a local authority, the power to make such an order is by the Act of 1909 entrusted to the local authorities, subject to a right of appeal to the Local Government Board by any owner of the dwelling house in respect of which the order is made.

The figures given in the following table, which are taken from a memorandum dated 9th November, 1911, issued by the Local Government Board, indicate the action taken during the year ended 31st March, 1911, so far as the information could be obtained, and for comparison the corresponding figures are also given for the year ended 31st March, 1910, during which the new procedure was in force for about four months, and for the year ended 31st March, 1909, during the whole of which the old procedure was in force—

	Year.		
	1910-11.	1909-10.	1908-9.
Number of houses in respect of which representations were made to the metropolitan borough councils	1,388	82	21
Number of houses made fit for human habitation or closed or demolished voluntarily without the issue of a closing order	83	19	8
Number of houses in respect of which closing orders were made	223	35	5
Number of houses in respect of which closing orders were determined	3	—	Information not available
Number of houses in respect of which orders for demolition were made	2	—	—

Capital expenditure on clearance.

The amount expended on capital account by the late Metropolitan Board of Works and the Council up to 31st March, 1912, in respect of the clearance of insanitary areas (exclusive of the cost of erecting new buildings), amounted to £3,422,677 18s. 6d., while the receipts derived from rents and sales of land, including the amounts charged against the accounts of the dwellings for the housing values of sites appropriated for that purpose, together with the contributions from local authorities towards the cost of carrying out Part II. schemes, amounted to £906,740 1s. 1d., thus leaving the net expenditure at £2,515,937 17s. 5d.

Rehousing in connection with improvements, etc.

In carrying out public improvements other than schemes under the Housing Acts, involving a statutory obligation to rehouse, the Council has displaced 12,244 persons of the working classes, and has provided accommodation in new dwellings for 12,902 persons in lieu of that destroyed.

During the year the Local Government Board approved modification schemes releasing the Council from the obligation, under the approved schemes for rehousing persons displaced by the construction of Rotherhithe-tunnel, to erect dwellings on the Albion-street and Clarence-street sites, Rotherhithe, and the second portion of the London-street site, Ratcliff. Re-housing accommodation for 1,990 persons had already been provided, as against accommodation required to be provided under the approved rehousing schemes for 2,842 persons, leaving an obligation outstanding to erect further dwellings on the three sites mentioned. Having regard to the large number of empty tenements in the vicinity, the Council contended that adequate accommodation for those persons of the working class not already provided for in the dwellings erected by the Council was available in the districts affected, and the Board concurred in this view.

During the year the Local Government Board released the Council from rehousing obligations as regards 176 persons of the working classes displaced from properties over which com-

pulsory powers of acquisition had been obtained for purposes of the education service; and the Council also decided that special rehousing schemes were not necessary in respect of the displacement of 333 persons from certain other properties acquired for similar purposes, there being no statutory obligation to rehouse these people.

On 12th December, 1911, the Council considered as to the course to be pursued with regard to the impending displacement of 1,529 persons of the working class from properties, in various parts of the County, over which compulsory powers of purchase for purposes of the education service were obtained in the parliamentary session of 1911. By section 3 of the Housing of the Working Classes Act, 1903, and the schedule thereto, the Council was under obligation, before it could enter into possession of these premises, to submit to the Local Government Board a scheme for rehousing the persons of the working classes to be displaced unless the Board should decide that such a scheme was not necessary. The displacements which called for special consideration were those from the sites at Nicholas-street, Hoxton (526 persons); Scawfell-street, Haggerston (172 persons); and Ranelagh-road, Westminster (265 persons). Inquiries were made as to the amount of accommodation suitable for occupation by persons of the working classes and publicly advertised as to-let in the neighbourhood of the several sites and, as a result, it was found that in almost every instance the number of vacant rooms in the vicinity was many times greater than the number of rooms to be demolished on the respective sites. The Council thought there was little doubt that the families who were to be displaced would experience little difficulty in finding fresh accommodation within a short distance, and in all the circumstances, having particular regard to the large amount of accommodation which has been, and is being, voluntarily provided by the Council under Part III. of the Housing of the Working Classes Act, 1890, it was decided to ask the Local Government Board to release the Council from the rehousing obligation.

Common lodging-houses.

The Council has provided three model lodging-houses for men containing altogether 1,856 cubicles, viz.: Parker-street House and Bruce House, Drury-lane, and Carrington House, Deptford.

Action taken under Part III. of the Act of 1890.

Although committed to the policy of itself undertaking the erection and management of dwellings when under specific obligation to secure rehousing accommodation for persons displaced by clearance and improvement schemes, the Council hesitated for some time to embark on undertakings involving the provision of accommodation for persons of the working-classes apart from such obligations. However, on account of the deficiency of such accommodation existing at the time, the Council decided, on 6th December, 1898, to extend its housing operations by taking action under Part III. of the Housing of the Working Classes Act, 1890. Since that date the Council has voluntarily provided in various parts of the County a number of tenement dwellings capable of accommodating 4,068 persons; and, in addition, it has acquired four suburban estates at Tottenham, Tooting, Norbury and Hammersmith, comprising nearly 340 acres, upon which cottages are being erected. Up to 31st December, 1911, 2,405 cottages, with accommodation for 17,831 persons, had been completed on these estates, making a total accommodation for 21,899 persons provided under Part III. of the Act, exclusive of certain dwellings and lodging houses, which, although erected under Part III., were provided to fulfil statutory rehousing obligations.

White Hart-lane estate.

During 1909 and 1910 the Council reconsidered its policy in regard to the land which it had acquired under Part III. The Council having formed the opinion that it held more land for housing purposes than it was likely to require for some time to come decided on 26th July, 1910, to take steps with a view to the disposal of a substantial proportion of the White Hart-lane Estate, Tottenham.

This estate consists of two detached sections, of which the northern contains about 49 acres and is about 440 yards distant from the southern portion which is now in course of development. The development of the estate has not proceeded so rapidly as was anticipated, and it is evident that it would not be possible for the Council to build upon the northern portion for many years. For this reason, and in view of the fact that, meanwhile the rates have to bear the interest and sinking fund charges on the capital cost of the land, the Council thought it would be well advised to dispose of the freehold of this portion of the estate with the least possible delay. The main (southern) section of the estate is about 177 acres in extent, and the Council thought that it should also endeavour to sell the western portion of the estate, consisting of about 44 acres and situated almost entirely in the urban district of Wood Green.

In accordance with the resolution passed by the Council on the date mentioned, application was made to the Local Government Board for its consent to the sale of these two portions of the estate, and to the proceeds of any such sale being utilised in or towards the development of other lands under Part III. of the Act of 1890.

In the result the Board, after a public inquiry had been held, gave its consent to the sale of the northern (detached) section, but the Board considered that sufficient grounds had not been adduced for the sale of any part of the southern portion of the estate and declined, therefore, to comply with the Council's application in this respect.

Notwithstanding this decision, the Council was still of opinion that the White Hart-lane estate was too large for development exclusively for the purposes of Part III. of the Act, The estate is situated in a district where the working-class population already largely predominates; and the Council felt that it would be impolitic to cover such a large area with cheap-rented dwellings, and that it would be to the advantage of the district generally if a substantial proportion of better-class property could be erected on the land. The estate is suitable for development on the lines of a garden suburb, which would comprise many different types of houses, including small cottages at a moderate rental and houses suitable for middle-class occupation. The provisions of the Housing Acts, however, do not

permit of the erection of dwellings for any other than the working classes on land which the Council holds under Part III. of the Act of 1890, and the Council decided, therefore, to promote legislation in the session of Parliament of 1912 to enable it to develop any part of the estate on the lines of a garden suburb, and not solely for the accommodation of the working classes, and further to authorise the leasing of separate plots of land on the estate for the erection of better-class houses on the condition that the plans of the houses to be erected should be subject to the approval of the Council.

The development of the other portion of the estate was proceeded with during the year. Roads and sewers have been constructed on a part of the estate adjoining Lordship-lane, sufficient to enable about 48¾ acres to be developed. Cottages have been erected on about 29 acres, and 3⅕ acres have been laid out as an estate garden. About 28 acres have been laid out as allotments for the benefit of the tenants of the cottages. On sections A and B (10½ acres), 304 cottages, containing accommodation for 2,454 persons, have been erected.

Preliminary arrangements have been made for the provision of a row of 14 shops along the frontage to Lordship-lane, between Waltheof-avenue and Kevelioc-road; but it is proposed in the first instance to erect five shops only at the end of the plot next Waltheof-avenue. If this experiment proves successful no time will be lost in arranging for the erection of the remaining nine shops to complete the block.

Administrative buildings are about to be erected on the estate, and it is proposed to provide in connection therewith a small meeting hall for the convenience of the tenants. There is at present no public building in the immediate vicinity which the inhabitants can hire on reasonable terms, and the Council feels that in an estate of this size, occupying a somewhat isolated position, some provision should be made to afford the tenants an opportunity of enjoying the ordinary social amenities of suburban life.

Lord Swaythling's gift.

In 1903 the late Lord Swaythling (then Sir Samuel Montagu, Bt.), gave to the Council £10,000 to be applied towards the development of about 25 acres of the White Hart-lane estate. After taking into account the interest which had accrued, the gift amounted to £11,970 10s. 2d. on 31st March, 1912, up to which date a sum of £9,788 3s. 8d. had been applied to the purposes of the gift. The portion of the estate to which the gift has been allocated is known as the Tower-gardens section. The construction of roads and sewers on the whole of this section has been completed and most of the roads have been finished and the footways paved, the remainder of the work being carried out as the cottages are completed. About 3½ acres have, by arrangement with the donor, been laid out as an estate garden, the cost being defrayed out of the gift. On 31st December, 1911, 410 cottages, capable of accommodating 3,276 persons, had been completed on this section, and others were in course of erection.

Totterdown Fields estate.

The development of the Totterdown-fields estate, Tooting (38¾ acres) has now been completed, with the exception of a small amount of work of finishing certain roads. The total number of cottages erected on the estate is 1,229, in addition to four shops, providing accommodation for 8,788 persons. Particulars of the cottages and the rents charged are given in Appendix XIX. The capital expenditure upon the estate has been as follows:—Land, £44,934; fencing, £638; roads, sewers and development, £33,119; buildings, £315,756; estimated outstanding liabilities, £1,484; total, £395,931. The annual gross rent receivable is £29,341, and the actual surplus for 1911–12 as shown in the accounts is £843.

Norbury estate.

Further progress has been made with the development of the Norbury estate, Croydon (28½ acres). Roads and sewers have been constructed on about 16½ acres of the estate, and the cottages already built cover about 15 acres. The work of finishing the roads on this estate is being carried out by the Croydon Corporation. Up to 31st December, 1911, accommodation for 3,207 persons had been provided in 430 cottages. Further cottages are in course of erection on the portion of the estate on which roads have been formed, and plans for the development of the remainder of the estate are in course of preparation.

Old Oak estate.

The Old Oak estate, Hammersmith, was purchased by the Council in 1905, and then comprised about 54¼ acres, but about 8 acres have been acquired by the Great Western Railway Company for the construction of a branch line. A scheme for the development of the western section of the estate, comprising about 14 acres, has been approved by the Council. The scheme provides for the erection of 333 cottages and cottage flats, and 5 shops. Roads and sewers have been constructed on the western section, and Ducane-road has been widened to 50 feet in front of Wormwood-scrubs prison and extended along the southern boundary of the estate to Old Oak Common-lane. The total estimated cost of the work, including incidental expenses is £8,671. During the year contracts were let for the erection of 121 cottages, 26 cottage flats and 5 shops, the total of the contract sums, added to the cost of articles to be bought direct and other incidental expenses, being estimated at £30,860. Plans of additional cottages for erection on the western section were in course of preparation at the end of the year. The irregular boundary where the estate adjoins Wormwood-scrubs has been adjusted by a mutual exchange of land, and a 40-feet road will be constructed along the new boundary line, half the land required for the purpose being taken from the open space and half from the housing estate. A temporary school is about to be erected on the estate and the question of allocating a site for the provision of permanent school accommodation is under consideration. Two additions to the estate were made during the year. Five cottages, some stabling and vacant land of a total area of about half an acre, situated in Old Oak Common-lane, adjoining the estate, were purchased by the Council for the sum of £700, with the object of facilitating the development of the estate, and the widening of Old Oak Common-lane. The Council also acquired about an acre and a quarter of vacant land abutting on the housing estate

and Wormwood-scrubs, for the purpose of constructing an outlet from the eastern section of the estate in the north-west corner. The purchase price amounted to £1,500, in addition to certain expenses incurred by the vendor, which the Council agreed to pay. The portion of this land not required for the proposed new road will, owing to its shape and position, probably be found more suitable for addition to the open space than for a building site, and the land has accordingly been conveyed partly for housing purposes and partly for an open space.

Leasing of cottages to tenants.

During the year the Council considered a suggestion that a scheme should be introduced to enable working men to buy their own houses on easy terms. The only power which the Council has at present of advancing money to enable persons to acquire the ownership of the houses in which they reside is conferred by the Small Dwellings Acquisition Act of 1899. The number of loans granted by the Council under this Act has been very few, and this is probably due to the fact that the cost of property in London may almost be said to prohibit working-class people from acquiring houses under the terms of the Act, whereby a considerable sum of money has to be found by the applicant, the advance by the local authority being limited to four-fifths of the amount which, in the opinion of the local authority, is the market value of the ownership. The Council felt, therefore, that in order to make a successful scheme which would appeal to the working classes it would be necessary to advance practically the whole of the sum required for the purchase of the house. The Council would, of course, require to be fully safeguarded against financial loss, and it was thought that this object could best be secured and the most advantageous terms offered to the prospective purchaser by applying the proposal to some of the estates which the Council had purchased under Part III. of the Act of 1890. As regards the nature and extent of the interest in the property to be acquired by the purchaser, the Council thought that, in preference to disposing of the freehold, a lease should be granted for a term of years. Parliamentary sanction to this course was necessary, and the Council therefore on 7th November, 1911, resolved to apply to Parliament in the session of 1912 for powers to enable it to grant on such terms as should it think fit to persons of the working classes, leases for any period not exceeding 99 years of houses provided by the Council in pursuance of the provisions of the Housing Acts.

The scheme which has been provisionally approved by the Council provides for payment of a ground rent to be made by the lessee throughout the term of the lease, and for the cost to the Council of erecting the buildings to be repaid by the lessee during the first 15, 20 or 25 years, at his option, in the form of a weekly rent covering principal and interest. The rate of interest to be charged under the scheme is to be, as nearly as possible, the rate, either estimated or actual, at which the Council can raise money by the issue of stock after allowing for the expenses in connection therewith and all other charges, that is to say, such rate of interest as will entail no loss to the Council.

In order to bring the scheme within the reach of the working classes it was essential that the initial payment should be made as small as possible, and as the Council would retain the freehold of the property and a considerable amount of control, it was thought to be sufficient if the lessee were required to pay a sum of £5 as deposit and in part payment, on taking up the lease. The legal costs and other expenses are, in the first instance, to be paid by the Council, and the ground rent is to include an amount sufficient to cover these and other incidental expenses.

The prospective lessee will have to satisfy the Council that he has a *bona-fide* intention of residing in the house; but the scheme provides that he may, with the Council's consent, subsequently let the house to an approved tenant, the necessity for such consent and approval to apply only during the repayment period. The lessee is to be allowed to transfer the lease at any time subject, during the repayment period, to the Council's consent, which is not to be unreasonably withheld. As, however, it might not always be possible for the lessee to find a suitable assignee, the Council felt it essential that it should have power to accept a surrender of the lease and to make a payment to the lessee in consideration of such surrender. The charges to the lessee will be fixed as low as possible without involving a charge upon the rates.

The task of managing the Council's dwellings, which on 31st December, 1911, contained accommodation for 53,811 persons, is one of considerable magnitude, and a special department has been established for the purpose.

Dwellings provided by the Council.

Dwellings capable of accommodating 2,468 persons were completed during the year 1911 at an approximate cost for buildings and plans of £74,790. The erection of new cottages designed to accommodate 2,328 persons and other works incidental to the development of the various estates were undertaken during the year, and the total cost thereof is estimated at £81,469.

The standing orders of the Council require that all dwellings shall be so designed that the cost of erection may not exceed a sum which will enable all outgoings, interest, and sinking fund charges, to be paid without placing a charge upon the county rate, and the rents to be charged are not to exceed those ruling in the neighbourhood. Some of the dwellings erected by the Council do not fulfil these requirements; but this is mainly due to the fact that the Council was obliged to build on sites which were so unsuitable as to be unsaleable for the purpose.

New working class accommodation.

With a view to the Council being kept informed as to the provision of working-class accommodation in London and the adjoining districts, a return * is prepared each year showing the amount of new accommodation provided and old accommodation destroyed. The return, which has been prepared for the years 1902 to 1910 inclusive, gives the number of working-class tenements and rooms provided in each borough or district and the average rents at which they are let or to be let; and particulars of the demolitions which have taken place in each district are also given separately. The return for

* *working-class accommodation.*

1910 shows that the number of rooms in new dwellings provided during the year in the County of London was 6,950, the number of rooms in dwellings demolished 3,992, and that the net addition to the number of rooms was therefore 2,958. The figures in respect of the adjoining districts were 25,179, 4,268 and 20,911 respectively. The average rents for each room at which the new dwellings were let or to be let were during 1910, 3s. 1d. in the central districts of London, 2s. 7¼d. in the outer districts of London and 2s. 1½d. in the extra-London districts.

History of housing question.

The Council has published a history of the housing question in London up to the year 1900*, and an account of the Council's housing work since that date is in course of preparation.

* *The Housing Question in London*, 1855-1900 (No. 503.)

CHAPTER XXXVIII.

Housing Accounts and Statistics.

Housing Accounts—Memorandum by the Comptroller (Mr. H. E. Haward).

These accounts (see Appendix XVI.) relate to all the dwellings and lodging houses erected or owned by the Council. The dwellings are provided either (*a*) under the Housing of the Working Classes Act, 1890 (Parts I., II. and III.), or (*b*) under Improvement Acts.

The results of the year 1911-12, after interest and sinking fund charges have been met, are shown by the Revenue Accounts (details on pages 24 and 25) to be as follows— Summary of results of year

		£	s.	d.
Dwellings—				
Housing of the Working Classes Act, 1890	Surplus	5,472	16	3
Improvement Acts	Surplus	2,859	18	9
Surplus on dwellings		8,332	15	–
Estates in Course of Development	Deficiency	*4,949*	*6*	*5*
Net surplus on all dwellings a d estates ...		3,383	8	7

For the year 1910-11 there was a net deficiency on all dwellings and estates of £1,398 0s. 1d., made up of a surplus on dwellings of £4,428 2s. 5d., and a deficiency on estates in course of development of £5,826 2s. 6d.

Housing of the Working Classes Act, 1890.

The Council's operations under the Housing Act comprise (*a*) dwellings erected under Parts I. and II. of the Act to provide rehousing accommodation for persons displaced by schemes for the clearance of insanitary areas, and (*b*) dwellings erected under Part III. of the Act to provide accommodation for persons of the working classes, apart from any displacements. Dwellings erected under Parts I. and II. represent, therefore, compulsory provision for *rehousing* under statutory obligations, whereas dwellings under Part III. represent *housing* accommodation voluntarily provided by the Council. In certain instances of compulsory rehousing it has been necessary to erect dwellings on sites, on the working of which, owing to their character or situation, an unfavourable financial result was anticipated from the first. These cases are separately shown in the accounts. Housing Act, 1890.

The account under Part III. is sub-divided to show the results of the dwellings apart from the debt charges on estates in course of development, which are referred to in a subsequent paragraph.

The results of the year's working under the Housing of the Working Classes Act, 1890, are as follows :— Results of year.

		£	s.	d.
art I.	Surplus	5,278	8	2
„ II.	Surplus	264	12	11
		5,543	1	1
„ III.—Dwellings	Deficiency	*70*	*4*	*10*
Net surplus on dwellings		5,472	16	3
Part III.—Estates in course of development	Deficiency	*4,949*	*6*	*5*
Net Surplus for Housing Act		523	9	10

The deficiency on dwellings under Part III. includes £1,567 12s. 3d. in respect of Carrington House, a lodging-house erected under Part III. but in fulfilment of rehousing obligations in connection with the Mill-lane, Deptford, scheme under Part II.

The gross rental for the year from dwellings under the Housing Act was £159,037 0s. 2d. Deducting therefrom allowances for empties, caretakers' quarters and amounts irrecoverable, the net rental amounted to £143,929 4s. 7d., exclusive of £450 8s. 3d. for interest on cash balances. The amount of rent irrecoverable was £149 9s. 4d., or only 0·10 per cent. of the gross rental. The total loss of income due to "empties" was £13,888 6s. 6d., or 8·73 per cent. of the gross rental, as against 10·32 per cent. in 1910-11. Of this loss £5,575 occurred on four estates, viz.: Carrington House (£3,323, or 43·13 per cent. of gross rental), Hughes Fields Dwellings (£398, or 31·07 per cent.), Hughes Fields Cottages (£579, or 28·10 per cent.), and Preston's-road Estate (£1,275, or 31·84 per cent.). On two other estates the loss from empties was more than 10 per cent. of the gross rental. Income.

Expenditure.

The total expenditure on dwellings was £138,907.

1910-11.	Per cent. of gross rental.			1911-12.	Per cent. of gross rental.
£		Working Expenses—		£	
8,984	6·12	Supervision and collection of rent		9,543	6·00
21,689	14·78	Rates and taxes (less tax on interest on debt recovered)..		25,984	16·34
7,972	5·43	Lighting, heating, water and insurance		8,044	5·06
246	0·17	Stores and incidentals		322	0·20
14,125	9·63	Repairs and renewals (transfers to fund)		14,711	9·25
53,016	36·13			58,604	36·85
		Debt Charges—			
		Interest (gross)			
		Land	£11,683		
		Buildings	55,506		
63,618	43·35			67,189	42·25
		Sinking Fund—			
		Land	£2,252		
		Buildings	10,862		
12,450	8·48			13,114	8·25
129,084	87·96	Total Expenditure		138,907	87·35
16,388	11·17	Net deductions from gross rental (empties, etc.)		15,108	9·50
1,279	0·87	Surplus on dwellings (excluding interest on cash balances)		5,022	3·15
146,751	100·00	Gross rental		159,037	100·00

A statement is appended (pages xliv. and xlv.) showing the percentages on gross rental of the several items of income and expenditure for each estate.

Repairs and Renewals Fund.

The repairs and renewals fund has been established with the view of equalising the charges against revenue under this head between one year and another, as the expenditure in future years will naturally be larger than at present, when many of the buildings are new. The sums charged to revenue account and carried to this fund are based on the estimated cost of all repairs and renewals during the loan period, after deducting interest earned on the accumulations of the fund. The credits to this fund during the year exceeded the expenditure thereout by £2,374 2s. 11d. The amount standing to the credit of the fund on 31st March, 1912, was £41,969 6s. 9d, of which £38,899 5s. 10d. was invested.

Estates in course of development.

The interest and sinking fund charges, less receipts in aid, in respect of the capital outlay on lands acquired under Part III. of the Housing of the Working Classes Act, 1890, and still in course of development, are included in a separate account. The charge on the rates in respect of the deficiency under this head for the year 1911-12 was £4,949 6s. 5d., and the aggregate amount raised in the rates to 31st March, 1912, is £74,895 14s. 2d. This amount includes the annual instalments of sinking fund to redeem debt.

Sir Samuel Montagu (Lord Swaythling) Gift Fund.

The gift of £10,000 received from Sir Samuel Montagu on 5th August, 1903, for improving the White Hart-lane estate, amounted, with the interest thereon, on 31st March, 1912, to £11,970 10s. 2d., of which £1,938 7s. 1d. was invested in India Bills, maturing 1st December, 1912. A sum of £9,788 3s. 8d. had, up to 31st March, 1912, been applied to the purposes of the gift.

Special Fund for Acquisition of Lands under Part III. of Housing Act, 1890.

The Council purchased Millbank Prison site under Part III. of the Act, and when the Council decided, with the sanction of the Home Secretary, to utilise a portion of this land for the purpose of rehousing persons displaced in connection with the Thames Embankment Extension and Improvements at Westminster, carried out under the London County Council (Improvements) Act, 1900, it was arranged that the Westminster Improvement Account should be charged, and the Part III. Account credited with a sum of £50,000, which has under the Statute to be applied towards "the cost of the acquisition by the Council of other lands for the purposes of Part III. of the Housing of the Working Classes Act, 1890." After defraying certain expenditure on the Millbank Site Account, the fund amounted, with interest, on 31st March, 1912, to £54,041 19s. 6d. The London County Council (General Powers) Act, 1908, empowers the Council to apply this money in the "improvement and development of estates already acquired by them under and for the purposes of Part III." The Council has decided to utilise the fund in connection with the development of the Old Oak estate, and £23,014 13s. 6d. has been applied to meet expenditure on this estate. The balance available on 31st March, 1912, for future expenditure on this estate is thus £31,027 6s., of which £20,250 is invested.

Capital expenditure on Dwellings and Estates.

The total expenditure on capital account on the dwellings and estates up to the 31st March, 1912, amounted to £2,191,630 12s. 1d. The Summary of Financial Results shows the apportionment of this figure as between land and buildings. The capital expenditure during the year 1911-12 amounted to £55,554 19s.

With regard to dwellings erected to rehouse persons displaced by clearance schemes under Parts I. and II. of the Act, the Council's practice is to charge the capital account of the dwellings with the value of the site as earmarked for housing purposes, the account of the clearance scheme being credited with this value. The latter account, which is charged with the cost of clearance and laying out (less sales), is thus placed in the same position as it would have been if the Council had disposed of the land for the erection of dwellings. In the case of dwellings erected under Part III. of the Act the total cost of the land and of its development for building is chargeable against the dwellings.

Appendix XVIII. shows the estimated commercial value and housing value in respect of all sites utilised for the erection of working class dwellings under Parts I. and II. of the Act, whether the dwellings have been erected by Dwellings Companies or by the Council. As regards sites sold to Dwellings Companies, the aggregate commercial value at the time of disposal is estimated at £472,100, and the aggregate housing value as represented by cash received from Dwellings Companies is £198,915, the difference of £273,185 being charged against the clearance schemes. The aggregate commercial value on the same basis of sites acquired or appropriated by the Council is estimated at £465,803, and the housing value charged to dwellings accounts to £163,361, the difference of £302,442 being charged against the clearance schemes.

Capital Expenditure on Clearance Schemes.

The statement on page xlix. shows the capital expenditure on the clearance of insanitary areas under Parts I. and II. of the Housing of the Working Classes Act, 1890, as distinct from the expenditure on dwellings. The net capital expenditure to 31st March, 1912, under both parts of the Act for clearance schemes, amounted to £2,515,937 17s. 5d. The capital expenditure during the year 1911-12 amounted to £2,422 11s. 1d.

Dwellings under Improvement Acts.

These dwellings were erected in pursuance of statutory obligations to provide rehousing accommodation for persons displaced by improvements, etc., under various Acts of Parliament. Certain dwellings were erected on sites on which, owing to their character or situation, an unfavourable financial result was from the first anticipated; these are shown under a separate head.

Results of year.

The result of the year's working of Dwellings under Improvement Acts is a net surplus of £2,859 18s. 9d., as compared with £2,551 19s. 11d., in 1910-11.

Income.

The gross rental for the year from dwellings was £56,256 12s. 8d. Deducting therefrom allowances for empties, caretakers' quarters, and amounts irrecoverable, the net rental amounted to £52,863 19s. 11d., exclusive of £183 6s. 1d. for interest on cash balances. The amount of rent irrecoverable was £72 17s. 11d., or only 0·13 per cent. of the gross rental. The total loss of income due to "empties" was £2,753 3s. 1d., or 4·89 per cent. of the gross rental, as against 5·19 per cent. in 1910-11. The greater part of this loss occurred on three estates, viz.: Hughes Fields Dwellings (£199, or 31·07 per cent. of gross rental), Brightlingsea Buildings (£220, or 20·21 per cent.), and Swan-lane Dwellings (£952, or 23·05 per cent.), which account for £1,371. On two other dwellings the loss from empties was more than 10 per cent. of the gross rental.

Expenditure.

The total expenditure on dwellings was £50,187.

1910-11. £	Per cent. of gross rental.		1911-12. £	Per cent. of gross rental.
		Working Expenses—		
4,254	7·56	Supervision and collection of rent	4,371	7·77
8,857	15·75	Rates and taxes (less tax on interest on debt recovered)	8,643	15·36
2,584	4·60	Lighting, heating, water and insurance	2,544	4·52
78	·14	Stores and incidentals	86	0·15
5,428	9·65	Repairs and renewals (transfers to fund)	5,253	9·34
21,201	37·70		20,897	37·14
		Debt Charges—		
		Interest (gross)—		
		Land £3,515		
		Buildings 21,010		
24,517	43·60		24,525	43·60
		Sinking Fund—		
		Land 657		
		Buildings 4,108		
4,758	8·46		4,765	8·47
50,476	89·76	Total Expenditure	50,187	89·21
3,523	6·26	Net deductions from gross rental (empties, etc.) ..	3,393	6·03
2,236	3·98	Surplus on dwellings (excluding interest on cash balances)	2,677	4·76
56,235	100·00	Gross rental	56,257	100·00

Repairs and Renewals Fund.

The amount standing to the credit of this fund on 31st March, 1912, was £19,880 16s. 7d., of which £19,103 4s. 2d. was invested. The credits to this fund during the year exceeded the expenditure thereout by £438 8s. 9d.

Capital expenditure on Dwellings.

The total expenditure on capital account up to the 31st March, 1912, in respect of Dwellings under Improvement Acts amounted to £743,306 0s. 2d. The Summary of Financial Results shows the apportionment of this figure as between land and buildings. The capital receipts exceeded the expenditure during the year 1911-12 by £340 0s. 4d.

The practice with regard to the charge to the capital account of the dwellings in respect of the value of the site is the same as for dwellings erected to rehouse persons displaced by clearance schemes under Parts I. and II. of the Housing Act.

Appendix XVIII. shows the estimated commercial value and housing value in respect of all sites utilised for the erection of working class dwellings under Improvement Acts, whether the dwellings have been erected by Dwellings Companies or by the Council. As regards sites sold to Dwellings Companies, the aggregate commercial value at the time of disposal

is estimated at £255,435, and the aggregate housing value as mainly represented by cash received from Dwellings Companies is £131,007, the difference of £124,428 being charged against the accounts of the improvements. The aggregate commercial value on the same basis of sites acquired or appropriated by the Council is estimated at £416,277, and the housing value charged to Dwellings accounts at £108,213 the difference of £308,064 being charged against the accounts of the improvements.

Financial Results of all Dwellings and Estates to 31st March, 1912.

The total financial results on all dwellings and estates from April, 1894 (the date of the opening of the first block) to the 31st March, 1912, apart from contributions from or to rates, are as follows—

		£ s. d.
Dwellings—		
Housing of the Working Classes Act, 1890—		
Part I.	surplus	34,060 13 2
Part II.	surplus	2,967 9 3
Part III.	deficiency	*27,757 18 7*
	surplus	9,270 3 10
Estates in course of development	deficiency	*74,895 14 2*
Total under Housing Act	deficiency	*65,625 10 4*
Dwellings—		
Improvement Acts	surplus	8,653 7 7
Net aggregate deficiency...		*56,972 2 9*
Contributions from Tramways Account		1,054 14 2
Net contributions from Rates		55,917 8 7
		56,972 2

These results are arrived at after (*a*) charging interest on capital outlay, (*b*) making full provision for repairs and renewals, and (*c*) setting aside a sinking fund sufficient to replace the capital outlay on land and buildings and estates in course of development within a period of 60 years. The accumulations of the sinking fund on 31st March, 1912, amounted to £201,828 19s. 2d. (exclusive of £13,684 16s. 3d., proceeds of sales).

Housing Statistics—Memorandum by the Housing Manager (Mr. S. G. Burgess).

Accommodation.

The new buildings completed and opened between 1st April, 1911, and 31st March, 1912, comprise 325 cottages, providing accommodation for 2,280 persons. 7 cubicles and 10 sheds were also provided. Up to 31st March, 1912, a total of 6,428 tenements in block dwellings, and 2,844 cottages, or a total of 9,272 lettings, containing 26,291 rooms; and 1,856 cubicles in lodging houses, affording accommodation altogether for 54,141 persons, had been provided and opened by the Council. The gross rent receivable for the year 1910–11 was £202,986 0s. 0d., and for the year 1911–12, £215,294 0s. 0d., being an increase of £12,308 0s. 0d.

Financial results.

The financial result of the year's working of all dwellings in occupation, after providing for interest and sinking fund charges on the capital expended, is a surplus of £7,699 0s. 8d., which, after adding interest on cash balances (£663 14s. 4d.) gives a total net surplus of £8,332 15s. 0d., or 3·87 per cent. of £215,294 0s. 0d., the gross rent receivable for the year. The interest and sinking fund charges amount to 50·90 per cent. of the gross rental. The sinking fund, which will redeem the capital expended on land and buildings within a period of 60 years, has been increased during the year by £25,638 5s. 1d., and the total sum now set aside in this fund in respect of dwellings in occupation amounts to £192,276 0s. 10d. The expenditure for the management of the estates, including repairs, rates and taxes, water, lighting, etc., amounts to 36·93 per cent. of the gross rental. During the year the sum of £19,964 has been transferred to the repairs and renewals account, the unspent accumulations on which, with the interest earned during the year (£1,919 5s. 4d.), now amount to £61,850 3s. 4d. The total addition to the fund was 9·97 of the gross rental.

Empties; transfers; rents irrecoverable, &c.

The loss of rent by empties (including the amounts lost at the opening of the new buildings —325 lettings) is equivalent to 7·73 per cent. of the gross rental.

During the year 3,026 tenants left the dwellings. This is equivalent to 32·63 per cent. of the total number of tenements, as compared with 35·0 per cent in 1910-11. Of the 3,026 tenants who removed, 327 tenants, or 10·8 per cent. of the number, were given notice to quit by the Council, either for non-payment of rent, disorderly conduct, or some other cause. The remaining 2,699 tenants, or 89·2 per cent., gave notice to the Council and left to suit their own convenience.

A total of 6,223 applications for accommodation on the Council's estates (excluding lodging houses) were dealt with, and 681 transfers were effected. These transfers are sometimes to a different estate, owing to the tenant having changed his place of work, and sometimes to a larger or smaller tenement on the same estate, owing to the increase or decrease of the tenant's family. Of the 6,223 applications received, 3,350 or 53·8 per cent. were suited with accommodation.

A number of tenants who removed from the dwellings were in arrear with their rent, and left without paying the amounts owing. Every effort has been made to recover these arrears on

vacation, but the amount of £222 7s. 3d. or ·10 per cent. (2s. 0d. per £100) of the gross rental has been included in the accounts as irrecoverable.

Rehousing. During the year the Council did not rehouse any persons who had been displaced by the Council's improvement and clearance schemes. The total number of displaced persons rehoused to 31st March, 1912, is 1,756.

Census of tenants. The usual annual enumeration of tenants of the Council's dwellings was taken in March, 1912, and showed that the rooms (excluding lodging houses), available for letting, were actually occupied by 32,610 persons, or an average of 1·24 persons per room. The birth rate for the year amounted to 27·5 per 1,000, and the death rate (exclusive of the three men's lodging houses) to 8·5 per 1,000. As in previous years, a careful examination of the enumeration returns was made with a view to the detection of cases of overcrowding. The maximum number of persons to be allowed in any tenement in the Council's dwellings has been fixed by the Committee at two persons per room, children up to the age of 5 being for this purpose reckoned as *nil*, and children between the ages of 5 and 10 as half an adult. This year the number of cases not complying with this standard was 12, or ·13 per cent. of the total number of tenements. The overcrowding is usually found to be due to one or more children in the tenement having reached the age of 5 or 10 years, and so being counted in accordance with the Council's scale. This overcrowding is usually remedied by the removal of the family to a larger tenement in the dwellings.

Repairs. A sum of £19,071 3s. 8d. (8·86 per cent. of the gross rental) has been spent in repairs to the buildings during the year. These repairs include external painting at 26 blocks of tenements, 32 blocks of cottage flats and 379 cottages, whitening the soffits and cleaning or painting walls of 152 staircases, comb graining and varnishing the woodwork of 652 tenements, and cleansing repairs at 6,771 tenements. The whole of these repairs have been executed by direct labour employed in the housing department.

Fires. During the year 36 small fires occurred in the dwellings. The damage was in every case slight, and the total cost of reinstatement, amounting to £21 14s. –d., was covered by the Council's insurance fund.

APPENDIXES.

Premises, Particulars, Class, &c.	City of London.	Battersea.	Bermondsey.	Bethnal Green.	Camberwell.	Chelsea.	Deptford.	Finsbury.	Fulham.	Greenwich.	Hackney.
1. Inspections.											
Factories (including factory laundries)	4,329	579	218	261	321	3	148	1,190	132	87	28
Workshops (including workshop laundries)	5,547	1,314	132	3,568	2,414	875	379	1,932	470	352	2,058
Workplaces (other than outworkers' premises)	1,122	1,716	164	881	700	—a	283	320a	342	53a	—a
Total (Inspections) ..	10,998	3,609	514	4,710	3,435	878a	810	3,442a	944	492a	2,086a
2. Defects Found.											
Nuisances under the Public Health Acts.											
Want of cleanliness	1,080	51	38	415	46	12	167	225	63	88	120
Want of ventilation	79	4	1	37	—	6	2	31	—	2	42
Overcrowding	16	1	1	2	5	5	—	13	2	—	13
Want of drainage of floors	—	2	4	4	5	—	—	11	—	1	1
Other nuisances	1,503	71	128	426	47	36	181	587	—	36	96
Sanitary accommodation — Insufficient	32	10	4	7	5	—	3	18	—	21	1
Sanitary accommodation — Unsuitable	3,166	87	5	203	35	—	77	247	15	16	62
Sanitary accommodation — Not separate for sexes	91	4	—	—	1	—	—	40	—	—	1
Offences under the Factory & Workshop Act.											
Illegal occupation of underground bakehouse (s. 101)	—	—	—	1	—	—	—	—	—	—	—
Breach of special sanitary requirements for bakehouses (ss. 97–100)	—	32	3	18	—	7	—	—b	4	53	—
Other offences (excluding offences relating to outwork)	2	—	—	5	—	—	—	86	—	—	—
Total (defects found) ..	5,969	262	184	1,118	144	66	430	1,258	84	217	336
3. Homework.											
Outworkers' Lists (s. 107).											
Received twice in the year from employers — Number of Lists	1,440	76	86	178	148	56	71	246	26	24	406
Received twice in the year from employers — Outworkers, Contractors	2,882	48	12	—	62	277	16	456	8	165	33
Received twice in the year from employers — Outworkers, Workmen	13,542	332	770	3,318	1,739	486	506	4,709	78		4,575
Received once in the year from employers — Number of Lists	75	8	10	12	21	2	5	61	2	5	59
Received once in the year from employers — Outworkers, Contractors	74	4	—	—	8	1	—	38	—	57	—
Received once in the year from employers — Outworkers, Workmen	341	31	86	155	95	4	13	525	4		622
Number of addresses of outworkers received from other Councils	686	334		3,351		133	663			240	3,507
Number of addresses of outworkers forwarded to other Councils	16,405	160		1,822		590	331			89	2,477
Prosecutions — Failing to keep lists or permit inspection thereof	—	—	—	—	—	—	—	—	—	—	—
Prosecutions — Failing to send lists ...	—	—	—	—	—	—	—	—	—	—	1
Outworkers' Premises.											
Number of inspections of outworkers' premises	—	610		3,487	1,202	112	194	585	290	320	1,853
Outwork in unwholesome premises (s. 108) — Instances ...	—	5	101	—	41	—	—	—	16	5	720
Outwork in unwholesome premises (s. 108) — Notices served	—	5	101	—	13	—	—	—	16	5	452
Outwork in unwholesome premises (s. 108) — Prosecutions...	—	—	—	—	—	—	—	—	—	—	—
Outwork in infected premises (ss. 109, 110) — Instances ...	—	—	—	—	—	—	—	—	—	—	—
Outwork in infected premises (ss. 109, 110) — Orders made (s. 110)	—	—	—	—	—	—	4	6	—	—	—
Outwork in infected premises (ss. 109, 110) — Prosecutions (ss. 109, 110)	—	—	—	—	—	—	—	—	—	—	—
4. Workshops.											
Workshops on the Register at the end of 1911.											
Bakehouses (c)	28	74	76	92	167	33	70	60	70	61	27
Laundries...	3,802	48	40	2,121	57	22	9	1,900	43	22	98
Other workshops		442	653		1,676d	667	194	e	357	195d	944
Total (number of workshops on the Register)	3,830	564	769	2,213	1,903d	722	273	1,960e	470	278d	1,069
5. Other Matters.											
Matters notified to H.M. Inspector of Factories.											
Failure to affix abstract of the Factory and Workshop Act (s. 133)	113	28	—	20	24	—	20	66	—	15	60
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts but not under the Factory and Workshop Act (s. 5). — Notified by H.M. Inspector	38	2	—	20	10	8	3	45	3	1	31
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts but not under the Factory and Workshop Act (s. 5). — Reports (of action taken) sent to H.M. Inspector	38	—	—	53	3	8	4	45	3	1	31
Other	37	—	—	4	11	—	20	50	—	—	—
Underground Bakehouses (s. 101).											
Certificates granted during 1911 ..	—	—	—	—	—	—	—	—	—	—	—
In use at the end of 1911	22	31	—	26	66	28	23	34	49	16	52

(a) Excluding inspections of restaurant kitchens, etc. (b) Including defects in homeworkers' premises.
(c) Including bakehouses not in use during the year.

Premises, Particulars, Class, &c.	Hammersmith.	Hampstead.	Holborn.	Islington.	Kensington.	Lambeth.	Lewisham.	Paddington.	Poplar.	St. Marylebone.	St. Pancras.	Shoreditch.	Southwark.	Stepney.	Stoke Newington.	Wandsworth.	City of Westminster.	Woolwich.
1. Inspections.																		
Factories (including factory laundries)	904	103	148	460	140	10	87	130	83	33	122	298	124	114	37	708	237	80
Workshops (including workshop laundries)	1,614	922	746	1,772	2,378	400	1,490	2,313	817	3,788	1,016	2,862	992	5,108	172	3,059	4,246	322
Workplaces (other than outworkers' premises)	704	2,190	2,486	838	244	13	316	40a	1,523	952	236	558	3,629	231a	16a	1,875	4,304	83
Total (Inspections) ..	3,222	3,215	3,380	3,070	2,762	423	1,893	2,483a	2,423	4,773	1,374	3,718	4,745	5,453a	225a	5,646	8,789	485
2. Defects Found.																		
Nuisances under the Public Health Acts.																		
Want of cleanliness	75	93	65	465	155	64	146	18	506	116	64	193	726	627	16	219	807	65
Want of ventilation	1	8	6	21	31	1	—	—	4	6	2	1	33	79	—	9	257	18
Overcrowding	—	3	6	18	12	12	5	5	2	8	—	7	12	48	—	3	44	10
Want of drainage of floors	24	3	—	50	7	—	1	—	—	1	—	—	7	5	2	—	31	—
Other nuisances	173	51	81	399	43	226	47	5	175	—	4	52	875	316	16	253	754	41
Sanitary accommodation — Insufficient	2	2	2	9	15	—	2	—	—	5	7	5	16	24	4	10	89	—
Sanitary accommodation — Unsuitable	48	11	53	437	52	146	40	16	—	20	5	56	37	115	36	104	410	17
Sanitary accommodation — Not separate for sexes	—	3	15	4	9	7	—	3	—	12	5	8	2	29	—	3	37	3
Offences under the Factory & Workshop Act.																		
Illegal occupation of underground bakehouse (s. 101)	—	1	—	—	2	—	—	—	—	—	—	—	—	1	—	—	—	—
Breach of special sanitary requirements for bakehouses (ss. 97–100)	95	—	—	—	37	—	40	—	—	8	32	—	—	44	—	13	—	—
Other offences (excluding offences relating to outwork)	—	—	—	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—
Total (defects found) ..	418	175	228	1,403	363	456	281	47	687b	176	122	322	1,708b	1,288	74	614	2,429	154
3. Homework.																		
Outworkers' Lists (s. 107).																		
Received twice in the year from employers — Number of Lists	56	128	128	260	110	28	70	116	140	120	42	88	146	322	47	124	264	52
Received twice in the year from employers — Outworkers, Contractors	70	101	178	302	117	8	—	16	91	246	176	74	—	—	—	52	—	—
Received twice in the year from employers — Outworkers, Workmen	88	234	603	5,202	890	304	171	501	2,749	1,426	8	1,239	1,178	4,531	371	320	6,708	1,066
Received once in the year from employers — Number of Lists	12	6	7	138	18	28	16	9	5	11	9	16	13	18	—	6	75	3
Received once in the year from employers — Outworkers, Contractors	6	3	9	4	—	—	—	3	—	8	8	—	—	—	—	—	—	—
Received once in the year from employers — Outworkers, Workmen	22	13	24	220	65	171	49	21	30	136	18	257	80	97	—	10	1,107	86
Number of addresses of outworkers received from other Councils	284			2,932	306	964		297	2,000			2,755	1,135		696	408	550	67
Number of addresses of outworkers forwarded to other Councils	118			1,219	788	251		354	1,635			1,348	851		169	251	3,357	171
Prosecutions — Failing to keep lists or permit inspection thereof	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Prosecutions — Failing to send lists ...	—	—	—	—	11	—	—	—	—	—	—	—	—	—	—	—	—	—
Outworkers' Premises.																		
Number of inspections of outworkers' premises	128	—	170	1,633	152	133			1,410		2	2,735	677	4,443	—	404	975	405
Outwork in unwholesome premises (s. 108) — Instances ...	5	—	—	139	2	—	16	—	—	—	—	107	—	698	—	57	323	24
Outwork in unwholesome premises (s. 108) — Notices served	5	—	—	75	2	—	16	—	—	—	—	107	—	698	—	29	657	24
Outwork in unwholesome premises (s. 108) — Prosecutions...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
Outwork in infected premises (ss. 109, 110) — Instances ...	—	—	—	47	9	12	—	—	17	—	—	—	12	47	—	15	55	—
Outwork in infected premises (ss. 109, 110) — Orders made (s. 110)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Outwork in infected premises (ss. 109, 110) — Prosecutions (ss. 109, 110)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4. Workshops.																		
Workshops on the Register at the end of 1911.																		
Bakehouses (c)	61	34	32	249	93	214	89	60	89	76	175	70	107	175	24	128	85	56
Laundries...	1,000	7	12	106	168	112	66	1,381	29	3,010	74	27	63	27	188	144	34	14
Other workshops	d	417	1,130	2,090	1,445	885d	821		801a	d	1,686	1,109	2,951d	3,136		1,418	2,729	149e
Total (number of workshops on the Register)	1,070d	458	1,174	2,445	1,706	1,211c	975	1,441	919	3,086d	1,935	1,206	3,121d	3,338	212	1,690	2,848	199e
5. Other Matters.																		
Matters notified to H.M. Inspector of Factories.																		
Failure to affix abstract of the Factory and Workshop Act (s. 133)	—	35	13	168	47	—	24	46	23	29	—	—	8	67	6	28	91	1
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts but not under the Factory and Workshop Act (s. 5). — Notified by H.M. Inspector	14	1	26	19	17	9	3	23	5	25	18	29	34	168	—	5	100	1
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts but not under the Factory and Workshop Act (s. 5). — Reports (of action taken) sent to H.M. Inspector	14	1	26	15	16	9	3	17	5	18	18	9	8	132	—	5	100	1
Other	33	7	—	—	—	—	3	—	4	—	—	2	1	36	2	—	9	—
Underground Bakehouses (s. 101).	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Certificates granted during 1911 ..	32	21	21	94	75	72	20	55	25	68	132	40	40	59	19	46	69	15
In use at the end of 1911																		

(b) Includes workplaces other than places where food is prepared. (c) Including workplaces.

APPENDIX II.

CASES OF TYPHOID FEVER OCCURRING IN OR ASSOCIATED WITH AN AREA IN FINSBURY, AUGUST AND SEPTEMBER, 1911.

No.	Date of onset of illness.	Date of notification.	Sex.	Age.	Milk—Whether obtained from Z or not.	Ice-cream.	Fried fish.	Remarks.
1	Aug. 19th.	Aug. 31st	F	14	No	From stalls, not from Y. The girl is said to have washed up glasses at one of these stalls	Occasionally from X.	
2	End of Aug.	Sept. 2nd	M	11	„	From Y	From X	The onset in these three cases may have been earlier. When seen September 15th they had been ill 3 or 4 weeks. Case 3 belonged to same family as cases 8 and 9
3	„	„ 5th	M	16	Yes	From Y	From X	
4	„	„ 5th	M	12	No	From Y	From X	
5	Aug. 27th	„ 5th	F	16	„	Very doubtful if from Y within incubation period	From X	
6	„ 30th	„ 5th	M	9	Yes	Not from Y for some months prior to illness	From X (habitually)	Brothers
7	„ 29th	„ 6th	M	13	„	Not from Y for some months prior to illness	From X (habitually)	
8	End of Aug.	„ 6th	F	21	„	No ice cream	From X	Sister of No. 3.
9	„	„ 6th	F	42	„	No ice cream	From X	Mother of Nos. 3 and 8
10	Aug. 28th.	„ 7th	F	11	No	From stalls—wafers, but not ice cream	From X	
11	Sept. 3rd	„ 7th	M	15	„	From Y	From X	It is doubtful if this boy had typhoid fever. Member of same family as cases 13, 23, 38, 49.
12	Aug. 28th	„ 7th	M	10	„	Same history as that given by his brother. See No. 14	From X	Brother of No. 14
13	Sept. 2nd	„ 7th	F	12	„	From Y	From X	Member of same family as cases 11, 23, 38, 39
14	End of Aug.	„ 7th	M	13	„	From stalls, not known to buy from Y	From X	Brother of No. 12.
15	Sept. 3rd.	„ 8th	M	11	Yes	Possibly from Y, but doubtful if within incubation period.	From X	At Whitstable July 27—Aug. 10th. Does not think he had ice cream after this.
16	Aug. 31st	„ 8th	F	8	„	No. (Not from Y within incubation period.)	From X	Sister of No. 42
17	Sept. 5th	„ 8th	M	17	„	Not from Y	From X (frequently)	
18	Aug. 28th	„ 8th	F	12	No	From Y	From X	
19	„ 29th	„ 8th	F	13	„	From stalls and from Y	From X	
20	„ 31st	„ 8th	M	10	„	From stalls. Sometimes from Y	From X (frequently)	
21	„ 27th	„ 8th	M	13	„	From Y on Sundays. "A long time ago." "All the family had it." Doubtful if in incubation period.	From X about once a week	
22	Sept. 3rd	„ 9th	F	15	„	Occasionally from Y	About 4 times a week from X. Last time during latter part of Aug., when she and her sister had penny bits of plaice	Sister of No. 50

23	„ 7th	„ 9th	M	9	„	From Y	From X	Member of same family as cases 11, 13, 38, 49
24	Aug. 26th	„ 9th	F	24	„	From Y	From various sources; but not, it is said, from X	Sister of No. 44. Away from London during a part of month preceding onset.
25	„ 15 or earlier	„ 9th	F	7	„	Very doubtful if from Y. Doubtful if any ice cream within the incubation period	Father says from X occasionally	Doubtful case. Tuberculosis. Returned from Brighton 3 weeks before illness.
26	„ 30th	„ 9th	F	21	„	No ice cream	From X	
27	Sept. 4th	„ 9th	F	9	„	From Y	From. X; Mother sends her to buy for sisters and self and sometimes for the rest of the family.	Sister of No. 35
28	Aug. 28th	„ 9th	F	5	„	Possibly	From X	Patients are sisters.
29	„ 29th	„ 9th	M	25	Yes	From Y. Two half-pint glasses full purchased every Sunday he was at home. Wife and children all ate it as well as patient himself	From U and V, not from X	Probably not typhoid fever
30	„ 19th	„ 9th	M	7	No	Possibly from Y	From X	Mother buys for family once a week. Patients are brothers
31	„ 30th	„ 9th	M	14	„	From Y, just after Bank Holiday	From X	
32	End of Aug.	„ 10th	F	5	„	Not from Y. Father is an ice-cream vendor	From X	
33	Sept. 2nd	„ 10th	M	26	„	From a stall. Not from Y	From X (once or twice a week)	Knew No. 47. Also No. 17 and No. 3. No. 11 does not know them. Fish from X 3 times between Aug. 10th and 31st, generally in middle of week. Last time one week after Bank Holiday.
34	„ 3rd	„ 11th	M	19	„	From Y (2 or 3 times weekly)	From X	
35	Aug. 29th	„ 11th	M	13	„	From Y.	From X (2 or 3 times weekly until a week before he became ill)	Brother of No. 26
36	Sept. 7th	„ 11th	M	16	„	From Y	From X 3 or 4 times a week for supper	
37	„ 2nd	„ 11th	M	8	„	From stalls. Not from Y for some months	Probably from X	
38	„ 8th	„ 11th	M	7	„	From Y	From X	Doubtful case. Member of same family as cases 11, 13, 23 and 49.
39	Beginning Sept.	„ 11th	F	17	Yes	From Hampstead-heath. From Y some months ago, but not since July	From X (habitually)	
40	Sept. 4th	„ 12th	M	5	„	From Y	From X	
41	„ 10th	„ 12th	F	8	No	On Saturdays and Sundays from Y	From X (twice a week). She or her brother fetches it.	
42	„ 4th	„ 12th	M	18	Yes	No ice cream	From X	Brother of No. 16.
43	Early in Sept.	„ 12th	F	16	?	From Y 3 months ago—not since	From X. Frequently, last time 4 weeks before Sept. 15th.	
44	Aug. 30th	„ 12th	M	14	No	Doubtful if in incubation period	From various sources; but not, it is said, from X	Brother of No. 24. Away from London during a part of month preceding onset.
45	Sept. 4th	„ 13th	M	25	Yes	Not from Y	From X. Some plaice about a fortnight before he was taken ill	
46	„ 10th	„ 15th	F	15	No	From stalls; not from Y	From X	
47	„ 5th	„ 16th	M	20	„	From Y	From X	
48	„ 4th	„ 18th	M	16	„	No ice cream	From X (once a week)	
49	„ 10th	„ 19th	F	42	„	No ice cream	From X	Member of same family as cases 11, 13, 23 and 38

No.	Date of onset of illness.	Date of notification.	Sex.	Age.	Milk—Whether obtained from Z. or not.	Ice-cream.	Fried fish.	Remarks.
50	Sept. 5th	Sept. 19th	F	13	No	From Y (occasionally)	From X about 4 times a week	Sister of No. 22
51	„ 10th	„ 20th	F	24	„	Not from Y	Has fried fish at work but not at home unless her mother gets it.	
52	„ 4th	„ 21st	F	19	„	No—not within incubation period	From X frequently	Ice cream on August 7th from Y, not since.
53	„ 17th	„ 25th	M	3	„	From a stall; not from Y	None	Not typhoid fever—Pneumonia.
54	„ 26th		F	4		None	None	„ „ „ „
55	Aug. 23rd	Sept. 5th	F	9		From stalls—wafers but not ice cream	From X	
56	„ 26th	„ 6th	F	12		Not from Y	Probably from X	Usually bought a ½d. worth of potatoes only, without fish
57	Latter part of Aug.	„ 7th or a day or two later	M	23		No ice cream	Occasionally from X	
58	Sept. 2nd	„ 9th	M	15		From Y frequently	From X	Occasionally from X. The "big ones" (*i.e.*, Nos. 17, 3, 47) "mostly went there." No. 34 confirms this.
59	Latter part of Aug.	„ 11th	F	17		Yes	Probably from X	
60	Sept. 1st	„ 21st	F	16		No ice cream	... ...	In Ramsgate Aug. 8-15, about. Ate cockles there. Bought apples in London but no fish or ice-cream.
61	Sept. 3rd.		M	31		From Y on one occasion only, about 3 weeks before Sept. 3rd	Occasionally from X	At Margate during last week in August.
62	Sept. 6th or 7th		F	18		Never from Y	Generally from W, but possibly also from X., as she passes the shop on her way from work.	

APPENDIX III.

SUMMARY OF REPORTS ON 638 SCHOOL BUILDINGS INSPECTED BY SCHOOL DOCTORS, 1911.

Departments.	Sanitation.			Lighting.						Heating.			Ventilation.			Furniture.		
				Artificial.			Natural.											
	Good.	Fair.	Bad.	Good.	Fair.	Bad.	Good.	Fair.	Bad.	Good.	Fair.	Bad.	Good.	Fair.	Bad.	Good.	Fair.	Bad.
448 Boys' departments ..	387	56	5	417	30	1	351	87	10	392	53	3	382	64	2	401	46	1
466 Girls' ,, ..	411	52	3	433	31	2	364	92	10	404	57	5	407	58	1	419	47	—
575 Infants' ,, ..	513	55	7	529	41	5	440	119	16	507	63	5	508	63	4	522	53	—
150 Mixed ,, ..	131	17	2	137	12	1	120	29	1	137	13	—	138	12	—	137	13	—
1,639 Departments in 1911	**1,442**	**180**	**17**	**1,516**	**114**	**9**	**1,275**	**327**	**37**	**1,440**	**186**	**13**	**1,435**	**197**	**7**	**1,479**	**159**	**1**
	88%	*11%*	*1%*	*92%*	*7%*	*1%*	*78%*	*20%*	*2%*	*88%*	*11%*	*1%*	*88%*	*12%*	*0%*	*90%*	*10%*	*0%*
1,019 Departments in 1910 ..	906	85	28	952	52	15	785	221	13	890	122	7	849	162	8	868	145	6
	89%	*8%*	*3%*	*93%*	*5%*	*2%*	*77%*	*22%*	*1%*	*87%*	*12%*	*1%*	*83%*	*16%*	*1%*	*85%*	*14%*	*1%*

APPENDIX IV.

MEDICAL EXAMINATION OF SCHOOL CHILDREN, 1911. SUMMARY OF DEFECTIVE CONDITIONS REPORTED BY SCHOOL DOCTORS.

CHILDREN AGED 8-9 YEARS.

Divisional Superintendent's area. (Constituent boroughs).		Number of children examined.	Cleanliness.			Clothing.			Nutrition.			Teeth.			Eyes.	
			Good.	Average.	Bad.	Good.	Average.	Bad.	Good.	Average.	Bad.	Good.	Average.	Bad.	Defective vision and squint.	Disease.
1. Chelsea (*Chelsea, Fulham, Hammersmith, Kensington*)	Boys	3,684	1,955	1,334	393	1,464	1,824	396	1,332	1,914	438	1,715	1,170	799	257	66
			53%	36%	11%	40%	49%	11%	36%	52%	12%	46%	32%	22%	7·0%	1·8%
	Girls	3,513	1,946	1,177	390	1,548	1,627	338	1,286	1,850	377	1,638	1,100	775	273	53
			55%	34%	11%	44%	46%	10%	36%	53%	11%	47%	31%	22%	7·8%	1·5%
2. Paddington ... (*Paddington, St. Marylebone, City of Westminster*)	Boys	2,162	1,119	857	186	1,013	1,005	144	641	1,220	301	778	996	388	159	27
			52%	40%	8%	47%	46%	7%	30%	56%	14%	36%	46%	18%	7·4%	1·2%
	Girls	1,955	1,056	637	262	991	837	127	705	1,018	232	779	838	338	150	17
			54%	33%	13%	51%	43%	6%	36%	52%	12%	40%	43%	17%	7·7%	·9%
3. St. Pancras ... (*Hampstead, Holborn, St. Pancras*)	Boys	2,383	1,361	785	237	1,094	1,011	278	936	1,132	315	1,155	840	388	133	26
			57%	33%	10%	46%	42%	12%	39%	48%	13%	49%	35%	16%	5·6%	1·1%
	Girls	2,440	1,428	780	223	1,211	1,025	204	1,054	1,127	259	1,172	937	331	144	16
			59%	32%	9%	50%	42%	8%	43%	46%	11%	48%	38%	14%	5·9%	·7%
4. Islington ... (*Islington, Finsbury*)	Boys	3,576	1,702	1,556	318	1,279	1,884	413	779	2,202	595	1,458	1,433	687	310	59
			48%	43%	9%	36%	53%	11%	22%	61%	17%	41%	40%	19%	8·7%	1·6%
	Girls	3,159	1,554	1,259	346	1,247	1,671	241	922	1,831	406	1,329	1,251	579	276	48
			49%	40%	11%	39%	53%	8%	29%	58%	13%	42%	40%	18%	8·6%	1·5%
5. Hackney ... (*Hackney, Stoke Newington, Shoreditch*)	Boys	3,415	1,809	1,282	324	1,493	1,537	385	1,010	1,971	434	1,744	1,281	390	206	71
			53%	38%	9%	44%	45%	11%	29%	58%	13%	51%	38%	11%	9·0%	2·1%
	Girls	3,196	1,625	1,202	369	1,466	1,470	260	1,077	1,779	340	1,807	1,063	326	292	65
			51%	38%	11%	46%	46%	8%	34%	56%	10%	57%	33%	10%	9·1%	2·0%
6. City and Stepney (*City of London Stepney*)	Boys	3,179	854	1,810	515	638	2,015	526	673	2,122	384	1,200	1,339	540	492	91
			27%	57%	16%	20%	63%	17%	21%	67%	12%	41%	42%	17%	15·0%	2·9%
	Girls	3,021	866	1,591	564	674	1,969	378	765	2,009	247	1,258	1,270	493	489	65
			29%	53%	18%	23%	65%	13%	25%	67%	8%	42%	42%	16%	16·0%	2·0%
7. Poplar ... (*Poplar, Bethnal Green*)	Boys	2,849	1,001	1,516	332	797	1,698	354	815	1,685	349	1,533	976	340	475	81
			35%	53%	12%	28%	60%	12%	29%	59%	12%	54%	34%	12%	17·0%	2·8%
	Girls	2,762	922	1,389	451	873	1,626	263	804	1,555	313	1,532	937	293	479	91
			34%	50%	16%	32%	59%	9%	33%	56%	11%	55%	34%	11%	17·3%	3·3%
8. Greenwich ... (*Greenwich, Lewisham, Woolwich*)	Boys	3,081	1,450	1,471	160	1,154	1,733	194	1,145	1,684	252	1,220	1,318	513	197	63
			47%	48%	6%	38%	56%	6%	37%	55%	8%	40%	43%	17%	6·4%	2·0%
	Girls	3,048	1,631	1,215	202	1,253	1,637	158	1,283	1,522	243	1,302	1,248	498	222	69
			53%	40%	7%	41%	54%	5%	42%	50%	8%	43%	41%	16%	7·3%	2·3%
9. Camberwell ... (*Camberwell, Deptford*)	Boys	2,979	1,436	1,361	182	1,167	1,541	271	1,040	1,733	206	1,198	1,273	508	263	53
			48%	46%	6%	39%	52%	9%	35%	58%	7%	40%	43%	17%	9·0%	1·7%
	Girls	3,003	1 474	1,293	236	1,371	1,427	205	1,185	1,645	173	1,179	1,393	431	338	57
			49%	43%	8%	46%	47%	7%	39%	55%	6%	39%	47%	14%	11·3%	1·9%
10. Walworth ... (*Bermondsey, Southwark*)	Boys	3,082	1,149	1,656	277	854	1,879	349	845	1,951	286	1,244	1,280	558	367	64
			37%	54%	9%	28%	61%	11%	28%	63%	9%	40%	42%	18%	12·0%	2·1%
	Girls	3,011	1,258	1,375	378	961	1,745	305	925	1,799	287	1,296	1,208	507	434	64
			42%	46%	12%	32%	58%	10%	31%	60%	9%	43%	40%	17%	14·4%	2·1%
11. Lambeth ... (*Lambeth*)	Boys	2,036	1,236	690	110	1,146	774	122	825	1,049	162	959	739	338	169	41
			61%	34%	5%	56%	38%	6%	40%	52%	8%	47%	36%	17%	8·6%	2·0%
	Girls	1,963	1,242	591	130	1,227	669	67	980	860	123	992	706	265	162	37
			63%	30%	7%	62%	34%	4%	50%	44%	6%	51%	36%	13%	9·8%	1·9%
12. Wandsworth ... (*Wandsworth, Battersea*)	Boys	4,073	2,336	1,463	274	2,095	1,686	292	1,183	2,460	450	1,549	1,827	697	265	46
			57%	36%	7%	52%	41%	7%	29%	60%	11%	38%	45%	17%	6·5%	1·1%
	Girls	3,893	2,289	1,288	316	2,149	1,496	248	1,431	2,070	392	1,523	1,692	678	275	38
			59%	33%	8%	55%	39%	6%	37%	53%	10%	39%	44%	17%	7·1%	1·0%
London County ...	Boys	36,426	17,388	15,781	3,330	14,188	18,587	3,724	11,224	21,123	4,132	15,881	14,472	6,146	3,393	68
			48%	43%	9%	39%	51%	10%	31%	58%	11%	43%	40%	17%	9·3%	1·9%
	Girls	34,964	17,291	13,806	3,867	14,971	17,199	2,794	12,507	19,065	3,392	15,807	13,643	5,514	3,564	69
			49%	40%	11%	43%	49%	8%	36%	54%	10%	45%	39%	16%	10·2%	1·9%

Divisional Superintendent's area. (Constituent boroughs).		Throat and nose.			Ears.			Speech.		Heart.		Lungs.		Skin.		Chest.	Rickets.	Deformities.	Nervous complaints.	Anæmia.	Tuberculous (not pulmonary).	Other defects.
		Adenoids.	Tonsils.	Diseases of nose.	Deafness.	Discharging.	Other defects.	Stammering and lisping.	Other defects.	Valvular lesion.	Other defects.	Phthisis.	Other defects.	Ringworm.	Other defects.							
1. Chelsea ... (*Chelsea, Fulham, Hammersmith, Kensington*)	Boys	321	372	34	23	55	66	13	17	6	49	66	46	104	17	78	136	56	62	26	67	10	116
		8·7%	10·1%	·9%	·6%	1·5%	1·8%	·4%	·5%	·2%	1·3%	1·8%	1·2%	2·8%	·5%	2·1%	3·7%	1·5%	1·8%	·7%	1·8%	·3%	3·0%
	Girls	270	379	28	17	55	67	11	5	5	59	69	34	66	12	50	160	33	74	31	85	18	116
		7·7%	10·8%	·8%	·5%	1·6%	1·9	·3%	·1%	·1%	1·7%	2·0%	1·0%	1·9%	·3%	1·4%	4·6%	·9%	2·1%	·9%	2·4%	·3%	3·3%
2. Paddington ... (*Paddington, St. Marylebone, City of Westminster*)	Boys	82	136	22	9	39	26	2	5	6	13	17	5	27	3	24	78	15	22	11	40	1	51
		3·8%	6·3%	1·0%	·4%	1·8%	1·2%	·1%	·2%	·3%	·6%	·8%	·2%	1·2%	·1%	1·1%	3·6%	·7%	1·0%	·5%	1·9%	—	2·4%
	Girls	64	150	9	4	31	26	1	3	7	15	31	9	17	12	19	62	11	20	5	26	3	46
		3·3%	7·7%	·5%	·2%	1·6%	1·3%	·1%	·2%	·4%	·8%	1·6%	·5%	·9%	·6%	1·0%	3·2%	·6%	1·0%	·3%	1·3%	·2%	2·4%
3. St. Pancras ... (*Hampstead, Holborn, St. Pancras*)	Boys	49	115	21	21	43	34	3	4	2	21	4	7	31	4	19	44	17	14	4	34	5	59
		2·1%	4·8%	·9%	·9%	1·8%	1·4%	·1%	·2%	·1%	·9%	·2%	·3%	1·3%	·2%	·8%	1·8%	·7%	·6%	·2%	1·4%	·2%	2·5%
	Girls	32	120	12	5	25	37	3	1	3	21	7	11	30	7	11	16	1	15	3	44	2	36
		1·3%	4·9%	·5%	·2%	1·0%	1·5%	·1%	—	·1%	·9%	·3%	·5%	1·2%	·3%	·5%	·7%	—	·6%	·1%	1·8%	·1%	1·5%
4. Islington ... (*Islington, Finsbury*)	Boys	271	385	12	12	96	72	—	20	9	50	53	25	79	20	54	428	118	86	20	110	4	59
		7·6%	10·8%	·3%	·3%	2·7%	2·0%	—	·6%	·3%	1·4%	1·5%	·7%	2·2%	·6%	1·5%	12·0%	3·3%	2·4%	·6%	3·1%	·1%	1·6%
	Girls	203	285	9	8	80	61	6	6	10	54	61	25	55	10	36	318	44	82	22	80	2	50
		6·4%	8·9%	·3%	·3%	2·5%	1·9%	·2%	·2%	·3%	1·7%	1·9%	·8%	1·7%	·3%	1·1%	10·0%	1·4%	2·6%	·7%	2·8%	·1%	1·6%
5. Hackney ... (*Hackney, Stoke Newington, Shoreditch*)	Boys	258	316	31	33	98	86	8	7	8	38	33	5	76	22	86	198	95	39	21	117	9	100
		7·6%	9·1%	·9%	1·0%	2·9%	2·5%	·2%	·2%	·2%	1·1%	1·0%	·1%	2·2%	·6%	2·5%	5·8%	2·8%	1·1%	·6%	3·4%	·3%	2·9%
	Girls	179	303	13	28	82	73	8	5	3	33	36	4	52	14	85	158	35	30	32	124	7	74
		5·6%	9·5%	·4%	·9%	2·6%	2·3%	·3%	·2%	·1%	1·0%	1·1%	·1%	1·6%	·4%	2·7%	4·9%	1·1%	1·0%	1·0%	3·9%	·2%	2·3%
6. City and Stepney (*City of London Stepney*)	Boys	186	282	28	10	40	33	3	13	6	25	11	7	46	14	52	81	16	24	13	46	5	43
		5·9%	8·9%	·9%	·3%	1·3%	1·0%	·1%	·4%	·2%	·8%	·3%	·2%	1·4%	·4%	1·6%	2·5%	·5%	·8%	·4%	1·4%	·2%	1·4%
	Girls	164	260	23	4	40	44	4	4	4	26	6	13	41	5	74	50	2	23	22	42	4	49
		5·4%	8·6%	·8%	·1%	1·3%	1·5%	·1%	·1%	·1%	·9%	·2%	·4%	1·4%	·2%	2·4%	1·7%	—	·8%	·7%	1·4%	·1%	1·6%
7. Poplar ... (*Poplar, Bethnal Green*)	Boys	219	245	17	40	71	63	14	11	32	45	17	17	64	10	71	126	31	45	23	43	5	82
		7·7%	8·6%	·6%	1·4%	2·5%	2·2%	·5%	·4%	1·1%	1·6%	·6%	·6%	2·2%	·4%	2·5%	4·4%	1·1%	1·6%	·8%	1·5%	·2%	2·9%
	Girls	224	260	15	25	93	74	12	5	19	50	30	14	65	4	118	106	37	49	23	60	4	67
		8·1%	9·4%	·5%	·9%	3·4%	2·7%	·4%	·2%	·7%	1·8%	1·1%	·5%	2·4%	·1%	4·3%	3·8%	1·3%	1·8%	·8%	2·2%	·1%	2·4%
8. Greenwich ... (*Greenwich, Lewisham, Woolwich*)	Boys	221	277	29	18	89	44	15	9	4	21	8	3	18	4	44	55	5	34	19	46	7	71
		7·2%	9·0%	·9%	·6%	2·9%	1·4%	·5%	·3%	·1%	·7%	·3%	·1%	·6%	·1%	1·4%	1·8%	·2%	1·1%	·6%	1·5%	·2%	2·3%
	Girls	188	280	33	6	80	51	9	6	4	20	5	9	8	5	50	37	7	26	29	46	6	62
		6·2%	9·2%	1·1%	·2%	2·6%	1·7%	·3%	·2%	·1%	·7%	·2%	·3%	·3%	·2%	1·6%	1·2%	·2%	·9%	1·0%	1·5%	·2%	2·0%
9. Camberwell ... (*Camberwell, Deptford*)	Boys	190	252	19	47	48	47	9	9	15	28	18	12	44	6	43	131	29	57	16	51	6	102
		6·4%	8·5%	·6%	1·6%	1·6%	1·6%	·3%	·3%	·5%	·9%	·6%	·4%	1·5%	·2%	1·4%	4·4%	1·0%	1·9%	·5%	1·7%	·2%	3·4%
	Girls	153	262	19	24	48	49	11	2	7	29	30	11	29	7	37	123	16	44	14	62	5	56
		5·1%	8·7%	·6%	·8%	1·6%	1·6%	·4%	—	·2%	1·0%	1·0%	·4%	1·0%	·2%	1·2%	4·1%	·5%	1·5%	·5%	2·1%	·2%	1·9%
10. Walworth ... (*Bermondsey, Southwark*)	Boys	237	282	27	53	59	76	14	7	13	36	75	14	88	10	91	233	22	40	19	109	3	158
		7·7%	9·1%	·9%	1·7%	1·9%	2·5%	·5%	·2%	·4%	1·2%	2·4%	·5%	2·9%	·3%	3·0%	7·6%	·7%	1·3%	·6%	3·5%	·1%	5·1%
	Girls	233	315	15	40	66	69	18	6	7	58	64	8	90	4	96	234	34	46	18	124	7	196
		7·7%	10·5%	·5%	1·3%	2·2%	2·3%	·6%	·2%	·2%	1·9%	2·1%	·3%	3·0%	·1%	3·2%	7·8%	1·1%	1·5%	·6%	4·1%	·2%	6·5%
11. Lambeth ... (*Lambeth*)	Boys	159	191	36	17	38	34	6	2	3	16	13	5	27	4	26	42	39	12	13	66	4	67
		8·0%	9·6%	1·8%	·8%	1·9%	1·7%	·3%	·1%	·1%	·8%	·6%	·2%	1·3%	·2%	1·3%	2·1%	1·9%	·6%	·6%	3·2%	·2%	3·3%
	Girls	141	220	26	6	49	33	5	—	4	22	25	6	15	5	28	44	15	19	16	54	2	51
		7·2%	11·2%	1·3%	·3%	2·5%	1·8%	·3%	—	·2%	1·1%	1·3%	·3%	·8%	·3%	1·4%	2·2%	·8%	1·0%	·8%	2·7%	·2%	2·6%
12. Wandsworth ... (*Wandsworth, Battersea*)	Boys	220	365	18	14	146	33	8	14	6	39	7	14	37	9	58	140	34	10	15	17	1	52
		5·4%	9·0%	·4%	·3%	3·6%	·8%	·2%	·3%	·1%	1·0%	·2%	·3%	·9%	·2%	1·4%	3·4%	·8%	·2%	·4%	·4%	—	1·3%
	Girls	194	370	24	13	107	65	6	2	2	36	12	12	23	8	80	121	15	29	13	12	5	55
		5·0%	9·5%	·6%	·3%	2·7%	1·7%	·2%	·1%	·1%	·9%	·3%	·3%	·6%	·2%	2·1%	3·1%	·4%	·7%	·3%	·3%	·1%	1·4%
London County ...	Boys	2,413	3,212	294	297	822	614	95	118	110	381	322	160	641	123	646	1,692	477	445	200	746	60	960
		6·6%	8·8%	·8%	·8%	2·2%	1·7%	·3%	·3%	·3%	1·0%	·9%	·4%	1·8%	·3%	1·8%	4·6%	1·3%	1·2%	·5%	2·0%	·2%	2·6%
	Girls	2,045	3,206	226	180	756	651	94	45	75	423	376	156	491	93	684	1,429	250	457	228	759	66	858
		5·9%	9·2%	·6%	·5%	2·2%	1·9%	·3%	·1%	·2%	1·2%	1·1%	·4%	1·4%	·3%	2·0%	4·1%	·7%	1·3%	·7%	2·2%	·2%	2·5%

APPENDIX V.

MEDICAL EXAMINATION OF SCHOOL CHILDREN, 1911. SUMMARY OF DEFECTIVE CONDITIONS REPORTED BY SCHOOL DOCTORS.

CHILDREN AGED 12—13 YEARS. ("LEAVERS.")

Divisional Superintendent's area. (*Constituent boroughs*).		Number of children examined.	Cleanliness.			Clothing.			Nutrition.			Teeth.			Eyes.	
			Good.	Average.	Bad.	Good.	Average.	Bad.	Good.	Average.	Bad.	Good.	Average.	Bad.	Defective vision (not squint).	Disease.
1. Chelsea ... ... (*Chelsea, Fulham, Hammersmith, Kensington*)	Boys	3,693	2,210	1,154	329	1,678	1,670	345	1,686	1,677	330	1,931	1,247	515	373	42
			60%	31%	9%	45%	45%	9%	46%	45%	9%	52%	34%	14%	10·1%	1·1%
	Girls	3,447	1,962	1,124	361	1,526	1,630	291	1,588	1,514	343	1,902	1,127	418	341	49
			57%	33%	10%	44%	47%	9%	46%	44%	10%	55%	33%	12%	9·9%	1·4%
2. Paddington ... (*Paddington, St. Marylebone, City of Westminster*)	Boys	2,386	1,234	901	251	1,105	1,047	234	940	1,165	281	1,133	917	336	154	15
			52%	38%	10%	46%	44%	10%	39%	49%	12%	48%	38%	14%	6·5%	·6%
	Girls	2,173	1,127	719	327	1,115	885	173	1,015	984	174	1,112	807	254	170	22
			52%	33%	15%	51%	41%	8%	47%	45%	8%	51%	37%	12%	7·8%	1·0%
3. St. Pancras ... (*Hampstead, Holborn, St. Pancras*)	Boys	2,391	1,462	683	246	1,198	911	282	1,078	995	318	1,281	774	336	249	36
			61%	29%	10%	50%	38%	12%	45%	42%	13%	54%	32%	14%	10·4%	1·1%
	Girls	2,314	1,313	829	172	1,104	1,052	158	1,023	1,055	236	1,198	873	243	232	18
			57%	36%	7%	48%	45%	7%	44%	46%	10%	52%	38%	10%	10·9%	·8%
4. Islington ... ... (*Islington, Finsbury*)	Boys	3,328	1,598	1,435	295	1,065	1,857	406	893	1,985	450	1,445	1,418	465	426	49
			48%	43%	9%	32%	56%	12%	27%	60%	13%	43%	43%	14%	12·8%	1·5%
	Girls	3,303	1,654	1,270	379	1,344	1,713	246	1,153	1,801	349	1,584	1,301	418	441	26
			50%	38%	12%	41%	52%	7%	35%	55%	10%	48%	39%	13%	13·6%	·8%
5. Hackney ... ... (*Hackney, Stoke Newington, Shoreditch*)	Boys	3,298	1,616	1,234	448	1,333	1,573	392	1,201	1,751	346	1,836	1,134	328	396	34
			49%	37%	14%	40%	48%	12%	36%	53%	11%	56%	34%	10%	12·0%	1·0%
	Girls	3,246	1,572	1,174	500	1,464	1,503	279	1,371	1,571	304	1,998	1,017	231	413	51
			49%	36%	15%	45%	46%	9%	42%	49%	9%	62%	31%	7%	12·7%	1·6%
6. City and Stepney (*City of London, Stepney*)	Boys	3,269	888	1,868	513	625	2,083	561	904	2,046	319	1,634	1,257	378	650	70
			27%	57%	16%	19%	64%	17%	28%	62%	10%	50%	38%	12%	19·9%	2·1%
	Girls	2,913	983	1,578	352	792	1,880	241	1,052	1,710	151	1,537	1,094	282	600	47
			34%	54%	12%	27%	65%	8%	36%	59%	5%	53%	38%	9%	20·6%	1·6%
7. Poplar ... ... (*Poplar, Bethnal Green*)	Boys	2,974	996	1,536	442	836	1,680	458	1,009	1,683	282	1,493	1,133	348	445	58
			33%	52%	15%	28%	57%	15%	34%	57%	9%	50%	38%	12%	15·0%	2·0%
	Girls	2,892	981	1,357	554	972	1,625	295	1,204	1,441	247	1,579	1,030	283	472	80
			34%	47%	19%	34%	56%	10%	42%	50%	8%	55%	36%	9%	16·3%	2·8%
8. Greenwich ... (*Greenwich, Lewisham, Woolwich*)	Boys	3,232	1,575	1,466	191	1,210	1,766	256	1,441	1,612	179	1,481	1,309	442	357	37
			49%	45%	6%	37%	55%	8%	45%	50%	5%	46%	40%	14%	11·0%	1·1%
	Girls	3,119	1,648	1,291	180	1,578	1,613	128	1,541	1,411	167	1,586	1,159	374	384	46
			53%	41%	6%	44%	52%	4%	50%	45%	5%	51%	37%	12%	12·3%	1·5%
9. Camberwell ... (*Camberwell, Deptford*)	Boys	3,191	1,623	1,366	202	1,249	1,653	289	1,217	1,822	152	1,607	1,192	392	393	45
			51%	43%	6%	39%	52%	9%	38%	57%	5%	51%	37%	12%	12·4%	1·4%
	Girls	3,161	1,594	1,317	250	1,485	1,519	157	1,390	1,622	149	1,744	1,142	275	491	49
			50%	42%	8%	47%	48%	5%	44%	51%	5%	55%	36%	9%	15·5%	1·6%
10. Walworth ... (*Bermondsey, Southwark*)	Boys	3,129	1,185	1,657	278	857	1,897	366	1,003	1,813	304	1,456	1,214	450	436	55
			38%	53%	9%	27%	61%	12%	32%	58%	10%	47%	39%	14%	14·0%	1·8%
	Girls	3,171	1,440	1,391	340	1,121	1,798	252	1,199	1,763	209	1,751	1,115	305	562	55
			45%	44%	11%	35%	57%	8%	38%	56%	6%	55%	35%	10%	17·7%	1·7%
11. Lambeth ... ... (*Lambeth*)	Boys	2,164	1,459	604	101	1,343	712	109	970	993	199	1,094	756	314	272	27
			67%	28%	5%	62%	33%	5%	45%	46%	9%	51%	35%	14%	12·6%	1·2%
	Girls	2,090	1,377	575	138	1,374	610	106	1,169	792	129	1,217	630	243	245	30
			66%	28%	6%	66%	29%	5%	56%	38%	6%	58%	30%	12%	11·7%	1·4%
12. Wandsworth ... (*Wandsworth, Battersea*)	Boys	3,908	2,241	1,394	273	2,017	1,567	324	1,501	1,969	438	1,821	1,447	640	356	28
			57%	36%	7%	52%	40%	8%	39%	50%	11%	47%	37%	16%	9·1%	1·9%
	Girls	3,736	2,305	1,132	299	2,078	1,406	252	1,491	1,924	321	1,861	1,346	529	338	27
			62%	30%	8%	55%	38%	7%	40%	51%	9%	50%	36%	14%	9·0%	·7%
London County ...	Boys	36,954	18,087	15,298	3,569	14,516	18,416	4,022	13,843	19,513	3,598	18,212	13,798	4,944	4,509	496
			49%	41%	10%	39%	50%	11%	37%	53%	10%	49%	37%	14%	12·2%	1·3%
	Girls	35,565	17,956	13,757	3,852	15,753	17,234	2,578	15,196	17,588	2,781	19,069	12,641	3,855	4,709	500
			50%	39%	11%	44%	49%	7%	43%	49%	8%	54%	35%	11%	13·3%	1·4%

Throat and Nose.				Ears.			Speech.		Heart.		Lungs.		Skin.		Glands.	Rickets.	Deformities.	Nervous complaints.	Anæmia.	Tuberculosis (not pulmonary).	Other defects.
Adenoids.	Tonsils.	Disease of Nose.	Other defects.	Deafness.	Discharging.	Other defects.	Stammering stuttering.	Other defects.	Valvular lesion.	Other defects.	Phthisis.	Other defects.	Ringworm.	Other defects.							
173	321	37	17	68	51	6	26	9	52	26	26	42	8	49	70	46	117	18	73	8	86
4·7%	8·7%	1·0%	·5%	1·8%	1·4%	·2%	·7%	·2%	1·4%	·7%	·7%	1·1%	·2%	1·3%	1·9%	1·2%	3·2%	·5%	2·0%	·2%	2·3%
152	281	18	23	70	66	2	11	7	61	40	40	53	11	47	56	39	124	29	74	7	61
4·4%	8·2%	·5%	·7%	2·0%	1·9%	·1%	·3%	·2%	1·8%	1·2%	1·2%	1·5%	·3%	1·4%	1·6%	1·1%	3·6%	·8%	2·1%	·2%	1·8%
82	202	15	15	51	41	3	16	3	36	16	7	14	1	33	64	8	36	9	47	2	99
3·4%	8·5%	·6%	·6%	2·1%	1·7%	·1%	·7%	·1%	1·5%	·7%	·3%	·6%	—	1·4%	2·7%	·3%	1·5%	·4%	2·0%	·1%	4·1%
70	165	5	10	40	37	3	6	1	30	32	6	14	2	20	28	10	53	10	42	—	55
3·2%	7·6%	·2%	·5%	1·8%	1·7%	·1%	·3%	—	1·4%	1·5%	·3%	·6%	·1%	·9%	1·3%	·5%	2·4%	·5%	1·9%	—	2·5%
38	128	24	20	54	46	1	6	2	25	8	22	15	3	23	14	6	12	4	35	1	52
1·6%	5·4%	1·0%	·8%	2·3%	1·9%	—	·2%	·1%	1·0%	·3%	·9%	·6%	·1%	1·0%	·6%	·3%	·5%	·2%	1·5%	—	2·2%
29	138	9	3	46	38	1	—	3	43	10	14	15	4	16	22	2	21	7	41	6	32
1·3%	6·0%	·4%	·1%	2·0%	1·6%	—	—	·1%	1·9%	·4%	·6%	·6%	·2%	·7%	1·0%	·1%	·9%	·3%	1·8%	·3%	1·4%
187	383	23	20	88	53	2	11	4	42	64	21	65	12	52	354	73	78	13	52	3	52
5·6%	11·5%	·7%	·6%	2·6%	1·6%	·1%	·3%	·1%	1·3%	1·9%	·6%	2·0%	·4%	1·6%	10·6	2·2%	2·3%	·4%	1·6%	·1%	1·6%
188	362	13	6	90	37	4	7	5	106	104	24	42	11	30	283	51	161	9	70	—	71
5·7%	11·0%	·4%	·2%	2·7%	1·1%	·1%	·2%	·2%	3·2%	3·1%	·7%	1·3%	·3%	1·2%	8·6%	1·5%	4·9%	·3%	2·1%	—	2·1%
209	297	11	26	125	77	7	19	2	46	44	8	51	8	57	54	15	27	14	117	5	56
6·3%	9·0%	·3%	·8%	3·8%	2·3%	·2%	·6%	·1%	1·4%	1·3%	·2%	1·3%	·2%	1·7%	1·6%	·5%	·8%	·4%	3·5%	·2%	1·7%
188	303	5	15	141	87	6	3	—	55	39	2	51	4	42	56	12	39	24	134	3	48
5·8%	9·3%	·2%	·5%	4·3%	2·7%	·2%	·1%	—	1·7%	1·2%	·1%	1·6%	·1%	1·3%	1·7%	·4%	1·2%	·7%	4·1%	·1%	1·5%
152	289	25	23	51	64	1	19	—	43	15	9	30	10	43	22	12	16	19	20	6	43
4·7%	8·8%	·8%	·7%	1·6%	2·0%	—	·6%	—	1·3%	·5%	·3%	·9%	·3%	1·3%	·7%	·4%	·5%	·6%	·6%	·2%	1·3%
142	270	14	8	41	46	4	5	2	37	19	6	13	4	34	15	11	33	13	45	7	26
4·9%	9·3%	·5%	·3%	1·4%	1·6%	·1%	·2%	·1%	1·3%	·7%	·2%	·4%	·1%	1·2%	·5%	·4%	1·1%	·4%	1·5%	·2%	·9%
152	219	36	31	59	73	3	14	13	55	32	18	28	4	51	36	3	50	16	42	4	63
5·1%	7·4%	1·2%	1·0%	2·0%	2·5%	·1%	·5%	·4%	1·8%	1·1%	·6%	·9%	·1%	1·7%	1·2%	·1%	1·7%	·5%	1·4%	·1%	2·1%
142	259	33	31	75	62	11	3	6	55	29	15	28	1	55	32	4	49	13	71	3	58
4·9%	9·0%	1·2%	1·1%	2·6%	2·1%	·4%	·1%	·2%	1·9%	1·0%	·5%	1·0%	—	1·9%	1·1%	·1%	1·7%	·4%	2·5%	·1%	2·0%
120	264	16	13	80	50	3	17	1	29	11	4	6	3	23	17	8	20	13	20	5	45
3·7%	8·2%	·5%	·4%	2·5%	1·6%	·1%	·5%	—	·9%	·3%	·1%	·2%	·1%	·7%	·5%	·2%	·6%	·4%	·6%	·2%	1·4%
136	274	5	12	82	53	16	5	4	15	9	1	6	—	36	13	3	49	16	25	4	27
4·4%	8·8%	·2%	·4%	2·6%	1·7%	·5%	·2%	·1%	·5%	·3%	—	·2%	—	1·2%	·4%	·1%	1·6%	·5%	·8%	·1%	·9%
199	285	41	67	58	47	4	13	7	47	25	14	14	5	40	32	24	55	14	54	3	91
6·2%	8·9%	1·3%	2·1%	1·8%	1·5%	·1%	·4%	·2%	1·5%	·8%	·4%	·4%	·2%	1·3%	1·0%	·8%	1·7%	·4%	1·7%	·1%	2·9%
163	289	34	34	51	39	2	6	7	34	27	18	22	9	29	43	19	62	28	56	4	58
5·2%	9·1%	1·1%	1·1%	1·6%	1·2%	·1%	·2%	·2%	1·1%	·9%	·6%	·7%	·3%	·9%	1·4%	·6%	2·0%	·9%	1·8%	·1%	1·8%
287	368	51	74	103	87	12	13	6	35	52	22	61	6	65	84	36	57	21	68	10	131
9·2%	11·8%	1·6%	2·4%	3·3%	2·8%	·4%	·4%	·2%	1·1%	1·7%	·7%	2·0%	·2%	2·1%	2·7%	1·2%	1·8%	·7%	2·2%	·3%	4·2%
281	406	21	65	92	75	10	2	6	41	72	8	36	7	52	115	24	43	24	126	7	171
8·9%	12·8%	·7%	2·0%	2·9%	2·4%	·3%	·1%	·2%	1·3%	2·3%	·3%	1·1%	·2%	1·6%	3·6%	·8%	1·4%	·8%	4·0%	·2%	5·4%
121	237	47	20	64	43	7	8	5	27	17	15	26	3	29	55	7	36	18	64	7	48
5·6%	11·0%	2·2%	·9%	3·0%	2·0%	·3%	·4%	·2%	1·2%	·8%	·7%	1·2%	·1%	1·3%	2·5%	·3%	1·7%	·8%	3·0%	·3%	·2%
118	247	31	10	45	51	1	2	2	33	28	9	13	2	17	37	6	46	38	67	2	45
5·6%	11·6%	1·5%	·5%	2·2%	2·4%	—	·1%	·1%	1·6%	1·3%	·4%	·6%	·1%	·8%	1·8%	·3%	2·2%	1·8%	3·2%	·1%	2·2%
166	289	14	12	100	47	4	12	5	46	22	10	29	7	64	92	11	22	14	13	3	58
4·2%	7·4%	·4%	·3%	2·6%	1·2%	·1%	·3%	·1%	1·2%	·6%	·3%	·7%	·2%	1·6%	2·4%	·3%	·6%	·4%	·3%	·1%	1·5%
154	330	18	10	90	42	4	5	2	62	30	15	8	3	47	61	9	21	10	14	6	39
4·1%	8·8%	·5%	·3%	2·4%	1·1%	·1%	·1%	·1%	1·7%	·8%	·4%	·2%	·1%	1·3%	1·6%	·2%	·6%	·3%	·4%	·2%	1·0%
1,886	3,282	340	338	901	679	53	174	57	483	332	176	381	70	529	894	249	536	173	615	57	824
5·1%	8·9%	·9%	·9%	2·4%	1·8%	·1%	·5%	·2%	1·3%	·9%	·5%	1·0%	·2%	1·4%	2·4%	·7%	1·5%	·5%	1·7%	·2%	2·2%
1,763	3,320	208	227	863	633	64	55	45	572	439	158	201	58	434	761	190	701	221	765	49	691
5·0%	9·3%	·6%	·6%	2·4%	1·8%	·2%	·2%	·1%	1·6%	1·2%	·4%	·8%	·2%	1·2%	2·1%	·5%	2·0%	·6%	2·2%	·1%	1·9%

APPENDIX VI.

MEDICAL EXAMINATION OF SCHOOL CHILDREN, 1911. SUMMARY OF DEFECTIVE CONDITIONS REPORTED BY SCHOOL DOCTORS.

INFANTS ("ENTRANTS.")

Divisional superintendent's area. (Constituent boroughs.)	Number of children examined (boys and girls).	Cleanliness.			Clothing.			Nutrition.			Teeth.			Eyes.	
		Good.	Average.	Bad.	Good.	Average.	Bad.	Good.	Average.	Bad.	Good.	Average.	Bad.	Defective vision and squint.	Disease.
1. Chelsea ... ... (*Chelsea, Fulham, Hammersmith, Kensington*)	4,092	2,204 *54%*	1,528 *37%*	360 *9%*	1,749 *43%*	1,969 *48%*	374 *9%*	1,486 *36%*	2,167 *53%*	439 *11%*	2,527 *62%*	932 *23%*	633 *15%*	176 *4·3%*	156 *3·8%*
2. Paddington ... ... (*St. Marylebone, Paddington, City of Westminster*)	3,093	1,768 *57%*	1,071 *35%*	254 *8%*	1,632 *53%*	1,290 *42%*	171 *5%*	1,229 *40%*	1,614 *52%*	250 *8%*	1,755 *57%*	910 *29%*	428 *14%*	135 *4·4%*	73 *2·4%*
3. St. Pancras ... ... (*St Pancras, Hampstead, Holborn*)	2,680	1,609 *60%*	880 *33%*	191 *7%*	1,289 *48%*	1,187 *44%*	213 *8%*	1,210 *45%*	1,156 *43%*	323 *12%*	1,493 *56%*	872 *32%*	324 *12%*	111 *4·1%*	91 *3·4%*
4. Islington ... ... (*Islington, Finsbury*)	3,583	1,874 *52%*	1,446 *41%*	263 *7%*	1,387 *39%*	1,845 *51%*	351 *10%*	1,290 *36%*	1,862 *52%*	431 *12%*	2,104 *59%*	1,034 *29%*	445 *12%*	168 *4·7%*	159 *4·4%*
5. Hackney ... ... (*Hackney, Stoke Newington, Shoreditch*)	3,442	1,688 *49%*	1,473 *43%*	281 *8%*	1,550 *45%*	1,638 *48%*	254 *7%*	1,201 *35%*	1,868 *54%*	373 *11%*	2,336 *68%*	785 *23%*	321 *9%*	178 *5·2%*	143 *4·2%*
6. City and Stepney ... (*City of London, Stepney*)	2,926	998 *34%*	1,529 *52%*	399 *14%*	827 *28%*	1,697 *58%*	402 *14%*	992 *34%*	1,659 *57%*	275 *9%*	1,631 *56%*	877 *30%*	418 *14%*	196 *6·7%*	155 *5·3%*
7. Poplar ... ... (*Poplar, Bethnal Green*)	3,289	1,238 *38%*	1,606 *49%*	445 *13%*	1,029 *31%*	1,882 *57%*	378 *12%*	1,278 *39%*	1,693 *51%*	318 *10%*	2,193 *67%*	835 *25%*	261 *8%*	245 *7·5%*	200 *6·1%*
8. Greenwich ... ... (*Greenwich, Lewisham, Woolwich*)	3,657	1,931 *53%*	1,517 *41%*	209 *6%*	1,513 *41%*	1,940 *53%*	204 *6%*	1,490 *41%*	1,903 *52%*	264 *7%*	2,118 *58%*	1,120 *31%*	419 *11%*	121 *3·3%*	123 *3·4%*
9. Camberwell ... ... (*Camberwell, Deptford*)	3,787	1,890 *50%*	1,627 *43%*	270 *7%*	1,663 *44%*	1,838 *49%*	286 *7%*	1,677 *44%*	1,873 *50%*	237 *6%*	2,118 *56%*	1,275 *34%*	394 *10%*	240 *6·3%*	123 *3·2%*
10. Walworth ... ... (*Bermondsey, Southwark*)	4,066	1,521 *37%*	2,090 *52%*	453 *11%*	1,202 *29%*	2,386 *59%*	478 *12%*	1,369 *34%*	2,279 *56%*	418 *10%*	2,357 *58%*	1,173 *29%*	536 *13%*	234 *5·8%*	218 *5·4%*
11. Lambeth ... ... (*Lambeth*)	2,377	1,515 *64%*	733 *31%*	129 *5%*	1,364 *57%*	901 *38%*	112 *5%*	1,286 *54%*	957 *40%*	134 *6%*	1,505 *63%*	608 *26%*	264 *11%*	95 *4·0%*	96 *4·0%*
12. Wandsworth ... ... (*Wandsworth, Battersea*)	3,879	2,477 *64%*	1,205 *31%*	197 *5%*	2,314 *60%*	1,371 *35%*	194 *5%*	1,284 *33%*	2,255 *58%*	340 *9%*	1,718 *44%*	1,614 *42%*	547 *14%*	121 *3·1%*	69 *1·8%*
London County ...	40,880	20,713 *51%*	16,714 *41%*	3,453 *8%*	17,519 *43%*	19,944 *49%*	3,417 *8%*	15,792 *39%*	21,286 *52%*	3,802 *9%*	23,855 *58%*	12,035 *30%*	4,990 *12%*	2,020 *4·9%*	1,606 *3·9%*

Throat and Nose.				Ears.			Speech.		Heart.		Lungs.		Skin.		Glands.	Rickets.	Deformities.	Nervous complaints.	Anæmia.	Tuberculosis (not pulmonary).	Other defects.
Adenoids.	Tonsils.	Disease of both.	Other defects.	Deafness.	Discharge.	Other defects.	Stammering and stuttering.	Other defects.	Valvular disease.	Other defects.	Phthisis.	Other defects.	Ringworm.	Other defects.							
496 *12·1%*	542 *13·2%*	41 *1·0%*	23 *·6%*	65 *1·6%*	140 *3·4%*	4 *·1%*	16 *·4%*	13 *·3%*	51 *1·2%*	48 *1·2%*	42 *1·0%*	154 *3·8%*	13 *·3%*	113 *2·8%*	326 *8·0%*	123 *3·0%*	56 *1·4%*	29 *·7%*	178 *4·3%*	12 *·3%*	151 *3·7%*
231 *7·5%*	396 *12·8%*	22 *·7%*	19 *·6%*	50 *1·6%*	90 *2·9%*	7 *·2%*	7 *·2%*	7 *·2%*	26 *·8%*	26 *·8%*	17 *·5%*	94 *3%*	6 *·2%*	55 *1·8%*	325 *10·5%*	39 *1·3%*	38 *1·2%*	19 *·6%*	68 *2·2%*	6 *·2%*	110 *3·6%*
96 *3·6%*	160 *6·0%*	28 *1·0%*	19 *·7%*	46 *1·7%*	78 *2·9%*	6 *·2%*	9 *·3%*	6 *·2%*	10 *·4%*	16 *·6%*	23 *·9%*	77 *2·9%*	4 *·1%*	54 *2·0%*	70 *2·6%*	38 *1·4%*	30 *1·1%*	29 *1·1%*	101 *3·8%*	6 *·2%*	62 *2·3%*
397 *11·1%*	528 *14·7%*	17 *·5%*	21 *·6%*	68 *1·9%*	132 *3·7%*	7 *·2%*	16 *·4%*	36 *1·0%*	31 *·9%*	72 *2·0%*	33 *·9%*	155 *4·3%*	13 *·3%*	101 *2·8%*	517 *14·4%*	179 *5·0%*	87 *2·4%*	23 *·6%*	142 *4·0%*	13 *·3%*	75 *2·1%*
456 *13·2%*	450 *13·1%*	80 *2·3%*	33 *1·0%*	82 *2·4%*	192 *5·6%*	21 *·6%*	8 *·2%*	19 *·6%*	45 *1·3%*	40 *1·2%*	6 *·2%*	151 *4·4%*	14 *·4%*	154 *4·5%*	309 *9·0%*	129 *3·7%*	42 *1·2%*	35 *1·0%*	181 *5·3%*	7 *·2%*	128 *3·7%*
266 *9·1%*	342 *11·7%*	34 *1·2%*	14 *·5%*	40 *1·4%*	103 *3·5%*	7 *·2%*	11 *·4%*	13 *·4%*	13 *·4%*	9 *·3%*	9 *·3%*	82 *2·8%*	11 *·4%*	147 *5·0%*	120 *4·1%*	44 *1·5%*	29 *1·0%*	27 *·9%*	46 *1·6%*	14 *·5%*	47 *1·6%*
346 *10·5%*	313 *9·5%*	34 *1·0%*	75 *2·3%*	69 *2·1%*	166 *5·0%*	24 *·7%*	10 *·3%*	39 *1·2%*	64 *1·9%*	20 *·6%*	22 *·7%*	120 *3·6%*	13 *·4%*	170 *5·2%*	253 *7·7%*	104 *3·2%*	46 *1·4%*	32 *1·0%*	81 *2·5%*	7 *·2%*	119 *3·6%*
363 *9·9%*	392 *10·7%*	34 *·9%*	12 *·3%*	78 *2·1%*	94 *2·6%*	8 *·2%*	14 *·4%*	11 *·3%*	21 *·6%*	12 *·3%*	7 *·2%*	52 *1·4%*	14 *·4%*	96 *2·6%*	84 *2·3%*	25 *·7%*	51 *1·4%*	39 *1·1%*	61 *1·7%*	3 *·1%*	87 *2·4%*
357 *9·4%*	450 *11·9%*	52 *1·4%*	79 *2·1%*	46 *1·2%*	137 *3·6%*	17 *·4%*	6 *·2%*	18 *·5%*	36 *1·0%*	21 *·6%*	7 *·2%*	107 *2·8%*	7 *·2%*	107 *2·8%*	196 *5·2%*	49 *1·3%*	86 *2·3%*	22 *·6%*	110 *2·9%*	8 *·2%*	126 *3·3%*
708 *17·4%*	633 *15·6%*	72 *1·8%*	74 *1·8%*	100 *2·5%*	209 *5·1%*	26 *·6%*	15 *·4%*	32 *·8%*	43 *1·1%*	83 *2·0%*	17 *·4%*	232 *5·7%*	16 *·4%*	175 *4·3%*	469 *11·5%*	121 *3·0%*	60 *1·5%*	33 *·8%*	180 *4·4%*	22 *·5%*	281 *6·9%*
229 *9·6%*	293 *12·3%*	43 *1·8%*	27 *1·1%*	49 *2·1%*	77 *3·2%*	12 *·5%*	1 *—*	8 *·3%*	18 *·8%*	19 *·8%*	9 *·4%*	83 *3·5%*	5 *·2%*	48 *2·0%*	132 *5·6%*	29 *1·2%*	21 *·9%*	25 *1·1%*	86 *3·6%*	6 *·3%*	72 *3·0%*
353 *9·1%*	465 *12·0%*	19 *·5%*	22 *·6%*	45 *1·2%*	92 *2·4%*	16 *·4%*	7 *·2%*	14 *·4%*	29 *·7%*	11 *·3%*	14 *·4%*	49 *1·3%*	18 *·5%*	73 *1·9%*	158 *4·1%*	33 *·9%*	20 *·5%*	12 *·3%*	29 *·7%*	4 *·1%*	47 *1·2%*
4,298 *10·5%*	4,964 *12·1%*	476 *1·2%*	418 *1·0%*	738 *1·8%*	1,510 *3·7%*	155 *·4%*	120 *·3%*	216 *·5%*	387 *·9%*	377 *·9%*	206 *·5%*	1,356 *3·3%*	134 *·3%*	1,293 *3·2%*	2,959 *7·2%*	913 *2·2%*	566 *1·4%*	325 *·8%*	1,263 *3·1%*	108 *·3%*	1,305 *3·2%*

APPENDIX VII.

A.—CHILDREN PRESENTED BY SCHOOL TEACHERS FOR SPECIAL EXAMINATION ("SPECIAL AND URGENT CASES") AND "ENTRANTS" INSPECTED.

Department.	Number examined or inspected.	Eyes.		Throat and nose.				Ears.			Speech.		Heart.		Lungs.		Skin.		Glands.	Rickets.	Deformities.	Nervous complaints.	Anæmia.	Tuberculosis (not pulmonary).	Other defects.
		Defective vision and squint.	Disease.	Adenoids.	Tonsils.	Disease of nose.	Other defects.	Deafness.	Discharging.	Other defects.	Stammering and Stuttering.	Other Defects.	Valvular lesion.	Other defects.	Phthisis.	Other defects.	Ringworm.	Other defects.							
Boys'	5,840	1,315	298	581	569	88	69	401	481	27	57	51	111	60	73	108	46	238	192	44	111	112	154	24	328
Girls'	7,260	1,749	368	801	879	103	81	494	492	36	25	42	178	126	113	137	34	288	238	64	182	179	292	43	450
Infants': Examined	6,151	1,066	704	1,161	1,191	154	89	341	610	58	36	71	67	46	52	174	56	394	565	118	130	97	329	50	34
"Entrants" inspected	96,791																								
Total, Examined	19,251	4,130	1,370	2,543	2,639	345	239	1,236	1,583	121	118	164	356	232	238	419	136	920	995	226	423	388	775	117	1,119
"Entrants" inspected	96,791																								

B.—ADMINISTRATION OF MEDICAL INSPECTION, 1911.

Department.	Number of children examined (inspected).	Parents present.		Total defects found (excluding dental).		Advice cards issued.		Examination sessions held.		Time given to examination and inspection.							
										Doctors.		Nurses.		Teacher.		Total.	Per child.
		Number.	Per 100 children examined.	Number.	Per 100 children examined in detail exclusive of urgent and special cases.	Number.	Per 100 children examined.	Number.	Average number examined.	Total.	Per child.	Total.	Per child.	Total.	Per child.		
										hours.	minutes.	hours.	minutes.	hours.	minutes.	hours.	minutes.
Boys'	79,293	45,364	57%	42,461	50%	28,746	36%	9,785	(a)	23,047	4.6	28,760	5.7	22,854	4.6	74,661	14.9
Girls'	77,789	47,314	61%	42,853	50%	28,482	37%										
Infants' ...	47,031 (96,791)	32,920	70%	35,613	68%	20,888	44%										
Total ...	204,113 (96,791)	125,598	62%	120,927	54%	78,116	38%	9,785	(a)	23,047	4.6	28,760	5.7	22,854	4.6	74,661	14.9

(a) During the spring and summer terms 96,791 "Entrants" were inspected in addition to those examined in detail. In the autumn term all Entrants were examined. The average number of children dealt with in each session including children merely inspected was 30.7; but in 225 sessions in which all were examined in detail, the average number dealt with in each session was 22.6.

APPENDIX VIII.

DEFECTS FOUND AND REFERRED FOR TREATMENT UNDER COUNCIL'S SCHEME, 1911.

(Including cases from special schools.)

Area.	Average number on roll, year ended 31.3.1911.	Defects.			
		Ears, throat, nose, adenoids.	Eyes.	Ringworm.	Total.
Battersea	19,176	1,044	488	16	1,548
Bermondsey	17,134	996	534	8	1,538
Bethnal Green, N.E.	14,648	1,004	655	4	1,663
Bethnal Green, S.W.	13,428	454	724	13	1,191
Bow and Bromley ...	16,362	870	604	4	1,478
Brixton	8,742	485	271	22	778
Camberwell	19,931	1,062	794	24	1,880
Chelsea	8,712	462	313	23	798
City of London ...	2,982	139	204	—	343
Clapham	21,144	899	482	21	1,402
Deptford	17,014	1,042	631	26	1,699
Dulwich	11,037	323	275	31	629
Finsbury, C.	9,927	531	391	6	928
Finsbury, E.	6,050	334	172	3	509
Fulham	27,957	1,292	732	48	2,072
Greenwich	19,023	996	539	44	1,579
Hackney, C.	9,360	373	263	5	641
Hackney, N.	11,836	409	282	21	712
Hackney, S.	20,909	870	662	20	1,552
Haggerston	10,875	707	491	10	1,208
Hammersmith ...	16,727	832	448	59	1,339
Hampstead	6,938	180	70	41	291
Holborn	6,938	240	179	10	429
Hoxton	11,350	542	392	16	950
Islington, E.	13,005	612	496	41	1,149
Islington, N.	13,501	614	424	30	1,068
Islington, S.	11,682	686	409	29	1,124
Islington, W.... ...	11,350	662	352	27	1,041
Kennington	12,625	547	370	20	937
Kensington, N. ...	13,762	738	399	38	1,175
Kensington, S. ...	4,215	144	91	7	242
Lambeth, N. ...	8,778	657	289	35	981
Lewisham	22,666	1,147	681	28	1,856
Limehouse	11,069	440	464	9	913
Marylebone, E. ...	4,127	167	100	23	290
Marylebone, W. ...	9,649	489	351	30	870
Mile End	7,218	459	451	4	914
Newington, W. ...	9,920	535	296	10	841
Norwood	10,837	1,029	597	53	1,679
Paddington, N. ...	13,427	526	331	43	900
Paddington, S. ...	4,662	236	112	8	356
Peckham	15,616	541	551	40	1,132
Poplar	14,541	736	724	5	1,465
Rotherhithe	14,498	1,135	691	4	1,830
St. George, Hanover-square	4,112	142	75	11	228
St. George-in-the-East	11,680	356	618	5	979
St. Pancras, E. ...	10,227	532	362	11	905
St. Pancras, N. ...	9,210	148	229	25	402
St. Pancras, S. ...	5,050	206	183	7	396
St. Pancras, W ...	8,333	312	235	30	577
Southwark, W. ...	11,145	738	373	10	1,121
Stepney	15,256	679	627	3	1,309
Strand...	3,395	121	52	3	176
Walworth	12,609	565	481	46	1,092
Wandsworth	36,872	1,686	965	155	2,806
Westminster	6,378	179	73	4	256
Whitechapel	16,120	690	853	10	1,553
Woolwich	23,717	1,074	661	62	1,797
Total ...	729,452	35,614	24,562	1,341	61,517

APPENDIX IX.

RE-INSPECTION, 1911.

Electoral area.	Total number of children re-inspected.	Abstract of re-inspection returns relating to two selected schools in each electoral area.														
		Children on rolls Dec., 1911.	Total number of defects found in 1911.	Number of children re-inspected.	Total defects re-inspected.	Defects referred for treatment.			Defects in children not traced.	Defects not treated.		Defects treated.		Results of treatment.		
						Under Council's scheme.	Teeth.	Not under Council's scheme.		Still requiring treatment.	Not requiring treatment.	At hospital, dispensary, or Centre.	Privately.	Satisfactory.	Unsatisfactory.	Still under treatment.
Battersea	2,870	2,904	242	168	200	119	57	24	12	51	7	67	63	98	21	11
Bermondsey	1,098	2,174	546	127	144	92	20	32	7	26	8	97	6	71	15	17
Bethnal Green, N.E.	939	1,611	310	99	144	82	42	20	—	106	6	25	7	23	2	7
Bethnal Green, S.W.	574	2,703	389	86	92	49	36	7	5	60	1	26	—	16	4	6
Bow and Bromley ...	594	2,637	535	163	182	96	80	6	10	118	3	49	2	26	15	10
Brixton	813	1,943	367	82	106	53	28	25	2	50	5	24	25	16	1	32
Camberwell	430	2,428	280	90	106	49	30	27	12	35	1	46	12	37	8	13
Chelsea	760	909	175	90	126	49	46	31	20	36	4	40	26	33	15	18
City of London ...	530	1,001	78	122	142	46	93	3	7	98	5	18	14	19	1	12
Clapham	2,329	1,686	158	112	131	66	54	11	8	32	1	65	25	66	18	6
Deptford	1,364	2,296	389	117	141	83	58	—	—	63	4	72	2	46	20	8
Dulwich	847	2,327	225	132	153	95	44	14	23	71	3	35	21	41	7	8
Finsbury, Central ...	1,143	1,965	141	121	141	84	30	27	8	52	3	69	9	46	14	18
Finsbury, East ...	728	2,150	1,230	158	185	114	31	40	38	61	5	67	14	32	13	36
Fulham	2,882	2,275	326	157	173	115	41	17	36	89	4	37	7	19	4	21
Greenwich	1,663	2,023	289	149	168	140	3	25	22	41	1	100	4	49	16	39
Hackney, Central ...	1,060	2,119	462	132	148	101	33	14	21	58	3	60	6	47	9	10
Hackney, North ...	708	2,135	265	118	129	117	3	9	12	73	7	32	5	18	10	9
Hackney, South ...	1,398	2,465	442	135	169	101	39	29	3	93	8	56	9	40	8	17
Haggerston	670	2,681	385	101	107	86	12	9	15	50	2	36	4	24	—	16
Hammersmith ...	1,747	1,735	291	133	145	130	4	11	10	87	9	36	3	25	3	11
Hampstead	562	1,903	238	113	120	76	28	16	5	59	2	38	16	31	2	21
Holborn	870	1,284	139	85	101	75	15	11	4	34	5	53	5	40	11	7
Hoxton	374	2,107	378	103	110	59	29	22	12	52	3	40	3	33	2	8
Islington, East ...	1,448	2,330	250	118	133	107	16	10	19	70	3	34	7	30	5	6
Islington, North ...	1,166	3,281	340	105	114	93	8	13	—	55	8	45	6	36	5	10
Islington, South ...	1,029	1,992	269	82	98	76	10	12	7	33	5	45	8	37	3	13
Islington, West ...	1,540	2,472	218	114	133	70	35	28	26	57	4	32	14	34	4	8
Kennington	1,173	1,689	360	128	171	104	27	40	24	65	7	73	2	50	4	21
Kensington, North ...	1,461	2,462	429	161	174	142	25	7	19	95	—	53	7	39	9	12
Kensington, South ...	651	1,247	294	113	118	76	23	19	21	19	12	60	6	53	10	3
Lambeth	1,349	1,231	225	125	149	86	51	12	21	63	2	50	13	46	3	14
Lewisham	1,103	1,917	296	86	107	61	29	17	4	49	3	39	12	39	1	11
Limehouse	1,023	2,118	490	110	125	49	41	35	16	44	—	60	5	44	13	8
Marylebone, East ...	448	1,856	214	79	95	54	31	10	—	69	—	24	2	13	7	6
Marylebone, West ...	1,050	1,997	273	131	138	106	17	15	4	79	5	42	8	32	9	9
Mile End	266	2,258	373	89	105	85	14	6	15	64	3	20	3	7	4	12
Newington	474	2,334	529	121	142	106	19	17	14	49	—	69	10	49	6	24
Norwood	987	2,491	651	142	191	149	24	18	12	52	3	97	27	109	9	6
Paddington, North ...	1,302	2,739	246	86	96	64	9	23	8	24	4	52	8	43	2	15
Paddington, South ...	545	2,216	397	87	96	66	11	19	11	26	1	49	9	28	8	22
Peckham	894	2,096	319	86	101	46	49	6	3	55	6	32	5	18	4	15
Poplar	1,268	1,797	464	110	162	126	18	18	31	102	—	21	8	7	4	18
Rotherhithe	959	2,183	363	118	132	102	12	18	15	51	—	63	3	38	13	15
St. George, Hanover-square	402	1,239	187	91	125	46	37	42	12	44	—	48	21	35	8	26
St. George-in-the-East	1,269	2,006	384	100	117	91	13	13	27	23	5	56	6	24	20	18
St. Pancras, East ...	990	2,032	272	88	109	84	—	25	22	35	5	41	6	26	7	14
St. Pancras, North ...	516	3,442	254	103	114	88	12	14	24	48	1	35	6	26	3	12
St. Pancras, South ...	543	1,755	198	94	107	41	25	41	13	45	1	36	12	15	3	30
St. Pancras, West ...	1,056	2,218	225	101	122	56	46	20	37	54	3	23	5	16	2	10
Southwark	997	2,032	409	113	143	67	37	39	13	65	4	54	7	32	3	26
Stepney	1,408	2,073	325	97	129	82	42	5	3	84	3	33	6	24	3	12
Strand...	520	682	82	90	94	59	10	25	2	35	6	43	8	23	9	19
Walworth	1,193	2,010	295	155	179	110	41	28	10	107	3	53	6	30	11	18
Wandsworth	3,244	2,720	226	81	91	65	18	8	9	65	—	7	10	4	7	6
Westminster	902	1,695	87	90	96	40	44	12	1	62	6	20	7	19	4	4
Whitechapel	1,888	2,320	276	104	125	68	48	9	5	71	8	32	9	21	5	15
Woolwich	1,735	2,143	231	131	145	100	25	20	13	68	7	39	18	36	7	14
Total ...	63,752	120,534	18,731	6,522	7,639	4,842	1,723	1,074	753	3,422	218	2,668	578	1,979	434	833

APPENDIX X.

TRAINING COLLEGES, PUPIL TEACHER CENTRES, SECONDARY AND TRADE SCHOOLS—DEFECTS NOTED ON MEDICAL EXAMINATION.

Institutions.	Number of Pupils.		Defects.																	
				Vision.					Ears.								Back.			
	Roll.	Returns analysed.	Two or more defective teeth	Defective	Suitable glasses.	Unsuitable glasses.	Strain.	Throat and Nose.	Hearing.	Discharge.	Heart.	Lungs.	Anæmia.	Nutrition.	Cleanliness.	Round.	Curvature.	General physique.	Various.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
TRAINING COLLEGES.																				
Avery-hill	280	100	—	—	17	—	2	2	—	—	—	—	7	—	—	12	1	—	2
Clapham	240	100	7	—	19	3	1	1	—	2	—	—	13	3	—	5	1	—	3
Fulham	157	100	5	10	17	3	2	—	—	—	—	—	21	8	—	18	10	—	—
Graystoke-place ..	144	100	7	1	10	7	4	1	—	—	—	—	14	5	—	19	2	—	2
Islington	233	100	24	—	26	2	—	—	—	1	—	—	—	—	—	1	3	—	—
London Day	294	200	13	39	67	10	2	9	1	—	—	1	14	5	3	8	8	5	—
Moorfields	159	100	14	28	18	2	3	2	—	—	2	—	18	—	1	14	7	4	7
PUPIL TEACHER CENTRES.																				
Mile End	128	54	10	13	8	4	1	1	—	—	—	—	6	—	5	2	4	2	4
SECONDARY SCHOOLS.																				
Bermondsey	138	100	14	1	11	5	—	3	—	—	1	2	18	13	1	22	6	—	1
Brockley	133	67	8	8	—	1	—	1	—	—	3	—	—	—	—	—	—	—	—
Chelsea	200	100	11	5	12	—	2	2	—	4	3	—	5	3	—	10	—	—	2
Clapham	470	100	12	1	11	3	2	4	—	1	2	—	2	4	2	4	2	—	2
Dalston	242	100	18	23	14	2	1	5	—	1	5	2	5	2	12	19	16	3	8
Eltham	230	100	15	9	6	3	1	5	1	1	4	—	5	1	1	6	1	—	2
Forest-hill	120	100	12	5	15	2	5	4	2	—	6	—	6	6	2	8	3	—	5
Fulham	300	100	22	5	8	11	7	1	—	—	1	2	12	10	4	31	11	—	1
George Green's ..	354	188	48	20	8	3	2	11	2	1	4	—	11	6	3	14	1	—	1
Hackney	250	100	12	21	20	—	—	3	1	1	2	—	5	4	16	11	5	5	3
Hackney Downs ..	440	100	13	3	7	5	1	7	3	2	1	—	—	—	—	1	6	—	5
Holloway	215	101	9	—	5	—	—	4	—	—	—	—	—	—	2	—	1	—	—
Kentish Town ..	212	100	13	27	15	2	1	13	2	—	2	—	12	12	7	11	13	15	6
Paddington	197	190	21	18	14	5	2	—	3	—	—	—	18	8	3	19	2	1	—
Peckham	187	100	12	3	5	5	3	2	1	—	—	—	15	11	—	30	8	—	2
Putney	320	100	12	5	6	4	3	—	1	2	2	—	3	2	—	3	1	—	—
St. Marylebone Grammar School	122	100	29	5	10	4	1	2	—	1	—	—	1	—	—	—	8	—	4
St. Pancras	94	94	10	17	9	4	—	3	1	1	1	1	13	2	27	9	4	—	3
Stockwell	200	100	5	1	21	2	—	1	—	—	3	—	4	5	2	6	1	—	—
Sydenham	120	100	11	1	16	—	1	1	—	—	1	—	6	4	—	5	—	—	1
TRADE SCHOOLS.																				
Beaufoy Institute ..	85	84	7	6	4	—	—	1	—	1	—	—	—	—	1	—	—	—	—
Central School of Arts and Crafts	47	47	6	—	2	—	—	1	3	—	—	—	—	—	—	—	2	—	1
Hammersmith School of Arts and Crafts	70	66	8	3	8	2	2	—	1	—	1	—	4	2	—	2	—	—	—
Norwood	29	29	4	—	2	2	—	2	1	1	1	—	7	4	—	9	4	—	—
Paddington	111	103	10	6	3	2	5	2	2	—	—	—	7	4	2	20	9	—	3
Queen-square, Bloomsbury	160	100	10	7	4	5	—	1	3	—	1	1	25	4	—	15	11	—	—
School of Building ..	51	51	1	8	6	4	1	2	—	1	1	3	2	1	—	—	1	—	—
School of Engineering	88	84	22	7	1	1	—	6	4	1	—	—	—	—	1	—	1	—	—
Shoreditch	230	200	53	28	21	6	1	13	5	5	3	—	6	3	39	15	11	10	6
School of Photo Engraving and Lithography	14	14	2	2	1	—	—	1	1	—	1	—	—	1	—	—	2	—	—
Hackney Institute ...	82	67	15	4	4	2	—	1	4	2	1	—	—	—	—	—	2	—	2

APPENDIX XI.

NUMBER OF CANDIDATES EXAMINED FOR THE PERMANENT SERVICE AND THE CONDITIONS FOUND.

Status.	No. Examined	No. of Examinations.	Fit.	Vaccination.		Referred Back.								Rejected.	Withdrawn prior to examination or not yet reported.
				Not vaccinated.	No marks.	Want of cleanliness.	Teeth.	Vision.	Heart.	Vaccination.	Sundry.	For one defect.	For two or more defects.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.
Head and assistant teachers and instructors... ...	306 663	413* 815*	307* 661*	5 1	...	— 1	77 95	21 56	1 —	4 1	3 6	92 135	7 12	99 147	2 3	20 11
Nurses, matrons, etc.	— 8	— 9	— 7	...	...	...	— 1	— 1	...	...	...	— 2	...	— 2	...	— 1
Schoolkeepers, caretakers, etc. ...	42 —	66† —	44† —	...	...	..	14 —	2 —	...	...	4 —	18 —	1 —	19 —	1 —	3 —
Total	348 671	479*† 824*	351*† 668*	5 1	...	— 1	91 96	23 57	1 —	4 1	7 6	110 137	8 12	118 149	3 3	23 12

* In the case of 23 males and 12 females the figures for the first examination were included in the report for the 12 months ended 31st December, 1910.
† In 6 cases the figures of the first examination were included in the report for the 12 months ended 31st December, 1910.

APPENDIX XII.

NUMBER OF COUNTY SCHOLARSHIP CANDIDATES EXAMINED AND THE CONDITIONS FOUND.

Scholarships.	Number examined.		Number of examinations.		Fit.		Vaccination.				Referred back.																Rejected.		Withdrawn before re-examination or not yet reported.	
							Not vaccinated.		No marks.		Want of cleanliness.		Throat.		Teeth.		Vision.		Heart.		Sundry.		For one defect.		For two or more defects.		Total.					
1	2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Junior County	863	837	1,295	1,423	859	809	98	116	17	25	34	237	50	53	195	161	144	125	1	1	36	22	276	340	89 (4 for 3) (1 for 4)	120 (17 for 3) (1 for 4)	365	460	4	24	...	4
Supplementary Junior County	122	146	166	200	121	142	18	13	...	3	5	23	4	1	25	26	14	22	...	...	4	1	36	34	8	19	44	53	..	2	1	2
Intermediate County ...	92	83	122	92	92	83	...	2	...	...	...	1	3	1	16	5	10	3	1	..	1	1	27	7	2	2 (1 for 3	29	9	...	...	...	...
Senior County	35	13	44	16	33	13	1	1	...	...	...	1	...	...	8	1	3	1	...	...	1	...	10	3	1	...	11	3	...	...	2	...
Totals	1,112	1,079	1,627	1,731	1,105	1,047	117	132	17	28	39	262	57	55	244	193	171	151	2	1	42	24	349	384	100 (4 for 3) (1 for 4)	141 (18 for 3) (1 for 4)	449	525	4	26	3	6

APPENDIX XIII.

NUMBER OF TRADE SCHOLARSHIP CANDIDATES EXAMINED AND THE CONDITIONS FOUND.

Designation of scholarship.	Number examined.		Number of examinations.		Fit.		Vaccination.				Referred back.																Rejected		Withdrawn prior to re-examination or not yet reported.	
							Not vaccinated.		No marks.		Want of cleanliness.		Throat.		Teeth.		Vision.		Sundry.		For one defect.		For two or more defects.		Total.					
1	2		3		4		5		6		7		8		9		10		11		12		13		14		15			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Apprenticeships, dressmaking	...	10	...	13	...	10	...	...	...	2	...	...	...	...	...	3	...	...	...	...	...	3	...	...	...	3	...	...	...	...
Artificers, Boy	12	...	12	...	7	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	3	...	...	...	3	...	2	...	3	...
Beaufoy Institute	30	...	38	...	28	...	2	...	2	...	1	...	...	...	7	...	2	...	1	...	9	...	1	...	10	...	...	...	2	...
Borough Polytechnic ...	22	...	29	...	23*	...	3	...	4	...	1	...	1	...	4	...	...	...	2	...	3	...	2 (1 for 3)	...	5	...	...	...	...	...
Book production	7	...	8	...	7	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
Building and allied trades ...	24	...	35	...	23	...	1	...	...	...	5	...	...	...	8	...	...	...	2	...	7	...	4	...	11	...	1	...	...	...
Cookery	13	10	15	14	10	10	...	...	...	...	...	...	...	1	3	1	1	1	...	...	4	1	...	1	4	2	1	...	2	..
Corset-making	...	10	...	19	...	9	...	3	...	...	...	5	...	...	...	4	...	2	...	...	...	5	...	3	...	8	...	...	...	1
Dressmaking	...	60	...	89	...	60	...	10	...	...	...	8	...	4	...	15	...	2	...	2	...	24	...	(1 for 3) 3	...	27	...	...	...	...
Engineering	41	...	50	...	41	...	4	...	...	...	...	...	2	...	5	...	4	...	...	...	7	...	2	...	9	..	...	...	...	...
Free place	1	4	1	5	1	4	...	...	...	...	..	...	...	...	...	1	...	...	...	...	1	...	...	...	...	1	...	...	...	...
Furniture	22	...	29	...	20	...	1	...	...	...	2	..	1	...	1	...	4	...	...	...	8	...	...	...	8	...	1	...	1	...
Laundry work	...	15	...	31	...	15	...	1	...	...	...	5	...	...	...	5	...	1	...	...	...	11	...	...	...	11	...	...	...	...
Mercantile marine	5	...	7	...	3	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2	...	...	...	2	...	2	...	...	...	...
Millinery	...	17	...	27	...	17	...	2	...	...	...	1	...	1	...	7	...	1	...	...	...	6	...	2	...	8	...	...	...	...
Photography	...	9	...	13	...	9	...	2	...	...	...	1	...	1	...	2	...	1	...	1	...	2	...	2	...	4	...	...	...	...
Ready-made clothing, designing and making of	...	30	...	54	...	28	...	7	...	1	...	12	...	2	...	9	...	6	..	...	...	13	...	(2 for 3) 7	...	20	...	1	..	1
Shoreditch Technical Institute	3	...	5	...	3	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	...	2	...	...	...	...	...
Silversmithing	6	...	6	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tailoring, ladies'	...	29	...	45	...	27	...	1	...	...	...	3	...	2	...	11	...	4	...	1	...	10	...	(1 for 3) 5	...	15	...	1	..	1
Upholstery	...	27	...	45	...	26	...	3	...	...	...	9	...	...	...	10	...	5	...	...	...	10	...	(2 for 3) 6	...	16	...	...	...	1
Waistcoat making ...	...	10	...	17	...	10	...	3	..	..	...	3	...	...	...	3	...	1	...	...	...	5	...	1	...	6	...	...	...	...
Woodcarving	7	...	7	...	6	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...
Total	193	231	242*	372	178*	225	11	32	6	3	10	47	4	11	36	71	11	24	5	4	47	91	9 (1 for 3) 30 (6 for 3)		56	121	7	2	9	4

* In the case of 1 male the figures for the first examination were included in the report for the 12 months ended 31st December, 1910.

APPENDIX XIV.

NUMBER OF SPECIAL SCHOLARSHIP CANDIDATES EXAMINED AND THE CONDITIONS FOUND.

Designation of scholarship.	Number examined.		Number of examinations.		Fit.		Vaccination.				Referred back.																Rejected.		Withdrawn prior to re-examination or not yet reported.	
							Not vaccinated.		No marks.		Want of cleanliness.		Throat.		Teeth.		Vision.		Sundry.		For one defect.		For two or more defects.		Total.					
1	2		3		4		5		6		7		8		9		10		11		12		13		14		15		16	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Art	10	10	11	15	9	10	...	...	...	...	...	...	...	...	...	3	1	...	...	2	1	5	...	...	1	5	1	...	...	...
Blind	4	3	4	3	4	3	...	...	...		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cripple	8	8	8	8	7	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Deaf	1	9	1	9	1	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Junior Domestic Economy...	...	580	..	948	...	513	...	56	...	7	...	178	...	23	...	130	...	63	...	21	...	231	...	84 (12 for 3) (2 for 4)	...	315	...	41	...	26
Science	16	...	19	...	16	...	...	...	...	...	...	...	...	...	2	...	1	...	...	...	3	...	...	...	3	...	...	...	...	...
Trust Fund	5	4	6	5	5	4	...	...	...	...	...	1	...	...	1	...	...	...	...	...	1	1	...	...	1	1	...	...	...	...
Totals	44	614	49	988	42	547	...	56	...	7	...	179	..	23	3	133	2	63	...	23	5	237	...	84 (12 for 3) (2 for 4)	5	321	2	41	..	26

APPENDIX XV.

NUMBER OF CANDIDATES EXAMINED FOR THE TEACHING PROFESSION AND THE CONDITIONS FOUND.

Awards.	Number examined.	Number of examinations.	Fit.	Vaccination.		Referred back.									Rejected.	Withdrawn prior to re-examination or not yet reported.
				Not vaccinated.	No marks.	Want of cleanliness.	Throat.	Teeth.	Vision.	Vaccination.	Sundry.	For one defect.	For two or more defects.	Total.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.	M. F.
Bursars	56 328	80 459	54 320	2 17	... ...	2 17	1 2	11 59	11 43	1 15	2 16	22 93	3 28 (3 for 3)	25 121	... 6	2 2
Domestic economy training	...	... 11	... 9	... ...	... ...	... ...	... ...	... 1	... 1	.. ...	... ...	... 2	... ...	... 2	... ...	... ...
Pupil teachers ...	59 132	71 185	59 132	... 3	... ...	... 10	... 1	7 28	6 11	... 2	1 4	10 39	2 8 (1 for 3)	12 47	... ...	... ...
Pupil teachers, handicraft	9 ...	16* ...	10* ...	2 ...	... ...	... ...	... ...	... ...	1 ...	2 ...	1 ...	4 ...	... ...	4 ...	... ...	... ...
Student teachers ...	60 315	59 390	59 311	... 1	... ...	... 22	1 ...	16 33	3 13	... 2	1 3	21 63	... 5	21 68	1 2	... 2
Training college students	214 501	277 598*	206 492*	3 15	2 2	1 8	... 4	55 53	13 32	2 4	3 9	59 81	7 (1 for 3) 14 (1 for 3)	66 95	5 5	3 6
Totals	398 1,285	503* 1,643*	388* 1,264*	7 36	2 2	3 57	2 7	89 174	34 100	5 23	8 32	116 278	12 (1 for 3) 55 (5 for 3)	128 333	6 13	5 10

* In the case of 1 male and 2 females the figures for the first examination were included in the report for the 12 months ended 31st December, 1910.

APPENDIX XVI.

WORKING CLASS DWELLINGS ACCOUNTS.

APPENDIX

WORKING CLASS DWELLINGS

A.—HOUSING OF THE WORKING

Dr. EXPENDITURE. **REVENUE**

PART I.

	£	s.	d.
WORKING EXPENSES AND DEBT CHARGES—			
Boundary-street Estate (Bethnal Green and Shoreditch)—			
Tenements (including laundry) ... £21,015 19 3			
Automatic gas supply ... 2,601 12 5			
	23,617	11	8
Cable-street Dwellings (Stepney)	2,708	3	5
Shelton-street Dwellings (Holborn)	1,441	16	–
Millbank Estate (Westminster)—Proportion	5,320	–	5
Churchway Dwellings (St. Pancras)	3,188	5	10
Hardy Cottages, Trafalgar-road, Greenwich	838	13	5
Duke's-court Dwellings (Westminster)—Proportion	1,525	19	5
York-street Dwellings (Westminster)—Proportion	990	18	1
Preston's-road Estate (Poplar)—Proportion	813	10	–
St. Luke's Dwellings (Finsbury)—			
Wenlake Buildings	1,671	19	5
Chadworth Buildings	2,868	12	4
Clerkenwell and Holborn Dwellings—			
Mallory Buildings (Finsbury)	772	4	1
Nigel Buildings, etc. (Holborn)	5,590	–	4
Webber-row Dwellings (Southwark)	3,959	19	8
Dwellings on sites compulsorily appropriated for rehousing, on the working of which a			
Brock-street Dwellings (Stepney)	1,053	4	10
Goldsmith's-row Cottages (Shoreditch)	478	17	6
Hughes-fields Cottages (Greenwich)	2,128	3	2
	58,967	19	7
SURPLUS carried to Appropriation Account	5,278	8	2
	64,246	7	9

PART II.

	£	s.	d.
WORKING EXPENSES AND DEBT CHARGES—			
Cranley Buildings, Brooke's-market (Holborn)	242	5	9
Borough-road Dwellings (Southwark)	1,748	12	8
Cobham Buildings, Green-street and Pocock-street (Southwark)	1,027	4	2
Ann-street Dwellings (Poplar)	1,879	1	6
Sylva Cottages, Mill-lane (Deptford)	406	14	7
	5,303	18	8
SURPLUS carried to Appropriation Account	264	12	11
	5,568	11	7

PART III.

(*a*) DWELLINGS.

	£	s.	d.
WORKING EXPENSES AND DEBT CHARGES—			
Parker-street House (Holborn)	3,092	9	5
Carrington House (Deptford)	5,862	11	2
Dufferin-street Dwellings (Finsbury)	574	1	1
Green-street and Boyfield-street Dwellings (Southwark)	1,613	14	5
Millbank Estate (Westminster)—Proportion	818	14	10
Holmwood Buildings, 97, Southwark-street (Southwark)	346	14	1
Totterdown-fields Estate (Wandsworth)	24,106	13	9
Preston's-road Estate (Poplar)—Proportion	2,723	4	1
Hughes-fields Dwellings (Deptford and Greenwich)—Proportion	1,124	16	9
White Hart-lane Estate (Tottenham, Wood Green and Edmonton)	14,693	17	3
Wessex Buildings, Wedmore-street (Islington)	3,825	9	4
Norbury Estate (Croydon)	8,451	8	3
Caledonian Estate (Islington)	4,954	13	5
Briscoe Buildings (Lambeth)	2,433	13	4
Old Oak Estate	12	17	2
	74,634	18	4

XVI.

ACCOUNTS, YEAR ENDED 31st MARCH, 1912.

CLASSES ACT, 1890.

Cr. INCOME. **ACCOUNT.**

PART I.

	£	s.	d.
INCOME—			
Boundary-street Estate (Bethnal Green and Shoreditch)—			
Tenements (including laundry) ... £22,905 17 2			
Automatic gas supply ... 2,962 15 –			
	25,868	12	2
Cable-street Dwellings (Stepney)	2,921	3	6
Shelton-street Dwellings (Holborn)	1,522	19	3
Millbank Estate (Westminster)—Proportion	6,535	11	5
Churchway Dwellings (St. Pancras)	3,869	7	6
Hardy Cottages, Trafalgar-road (Greenwich)	794	8	–
Duke's-court Dwellings (Westminster)—Proportion	1,804	10	11
York-street Dwellings (Westminster)—Proportion	1,128	11	3
Preston's-road Estate (Poplar)—Proportion	550	2	4
St. Luke's Dwellings (Finsbury)—			
Wenlake Buildings	1,893	15	6
Chadworth Buildings	3,077	12	–
Clerkenwell and Holborn Dwellings—			
Mallory Buildings (Finsbury)	889	19	11
Nigel Buildings, etc. (Holborn)	5,656	16	5
Webber-row Dwellings (Southwark)	4,005	11	–
deficiency was anticipated owing to the character or situation of the site.			
Brock-street Dwellings (Stepney)	957	19	6
Goldsmith's-row Cottages (Shoreditch)	452	11	6
Hughes-fields Cottages (Greenwich)	1,451	18	7
	63,981	19	9
Interest on cash balances	264	17	–
	64,246	7	9

PART II.

	£	s.	d.
INCOME—			
Cranley Buildings, Brooke's-market (Holborn)	289	16	6
Borough-road Dwellings (Southwark)	1,788	8	6
Cobham Buildings, Green-street and Pocock-street (Southwark)	1,113	15	–
Ann-street Dwellings (Poplar)	1,901	5	6
Sylva Cottages, Mill-lane (Deptford)	455	10	–
	5,549	15	6
Interest on cash balances	18	16	1
	5,568	11	7

PART III.

(*a*) DWELLINGS.

	£	s.	d.
INCOME—			
Parker-street House (Holborn)	3,211	1	1
Carrington House (Deptford)	4,294	18	11
Dufferin-street Dwellings (Finsbury)	595	2	6
Green-street and Boyfield-street Dwellings (Southwark)	1,741	1	–
Millbank Estate (Westminster)—Proportion	978	12	9
Holmwood Buildings, 97, Southwark-street (Southwark)	333	10	–
Totterdown-fields Estate (Wandsworth)	24,949	17	6
Preston's-road Estate (Poplar)—Proportion	2,116	12	4
Hughes-fields Dwellings (Deptford and Greenwich)—Proportion	861	4	10
White Hart-lane Estate (Tottenham, Wood Green and Edmonton)	14,804	13	10
Wessex Buildings, Wedmore-street (Islington)	3,972	–	6
Norbury Estate (Croydon)	8,871	3	1
Caledonian Estate (Islington)	5,281	6	6
Briscoe Buildings (Lambeth)	2,386	13	6
	74,397	18	4
Interest on cash balances	166	15	2
	74,564	13	6
DEFICIENCY carried to Appropriation Account	70	4	10
	74,634	18	4

HOUSING OF THE WORKING CLASSES ACT, 1890—*continued.*

Dr. EXPENDITURE. **Cr.**

REVENUE ACCOUNT—*continued.*

PART III.—*continued.*

(*b*) ESTATES IN COURSE OF DEVELOPMENT.

	£ s. d.	£ s. d.
EXPENSES AND DEBT CHARGES—		
Totterdown-fields (Wandsworth)	265 11 7	
White Hart-lane (Tottenham, Wood Green and Edmonton)	3,018 7 7	
Norbury (Croydon)	488 1 4	
Old Oak (Hammersmith)	945 – 5	
	4,717 – 11	
Supervision	500 – –	
	5,217 – 11	

APPROPRIATION ACCOUNT.

	£ s. d.	£ s. d.
SPECIAL COUNTY ACCOUNT for contribution to Rates, as contra	523 9 10	
	523 9 10	

REPAIRS AND RENEWALS FUND

	£ s. d.	£ s. d.
ACTUAL EXPENDITURE—		
Part I.	6,716 19 –	
Part II.	444 3 –	
Part III.	6,466 15 5	
		13,627 17 5
EXPENSES of Investment—		
Part I.	5 4 9	
Part II.	2 12 3	
Part III.	2 12 3	
		10 9 3
BALANCE—31st March, 1912 (of which £38,809 5s. 10d. is invested) carried to Balance Sheet—		
Part I.—Including £20,494 9s. 1d. invested	20,615 3 3	
Part II.—Including £2,400 10s. invested	2,944 15 6	
Part III.—Including £16,004 6s. 9d. invested	18,409 8 –	
		41,969 6 9
		55,607 13 5

CAPITAL ACCOUNT.

PART I.

	£ s. d.
ERECTION OF DWELLINGS—	
Clerkenwell and Holborn Dwellings—Nigel (late Union) Buildings	66 8 3
St. Luke's Dwellings—Chadworth Buildings	1 8 –
Webber-row Dwellings	2 – 9
	69 17 –

HOUSING OF THE WORKING CLASSES ACT, 1890—*continued.*

Cr. INCOME.

REVENUE ACCOUNT—*continued.*

PART III.—*continued.*

(*b*) ESTATES IN COURSE OF DEVELOPMENT.

	£ s. d.	£ s. d.
INCOME—		
White Hart-lane (Tottenham, Wood Green and Edmonton)	318 10 9	
Old Oak (Hammersmith)	46 8 4	
	364 19 1	
Less—Interest on overdrawn cash balances	97 4 7	
	267 14 6	
DEFICIENCY carried to Appropriation Account (below)	4,949 6 5	
	5,217 – 11	

APPROPRIATION ACCOUNT.

	£ s. d.	£ s. d.	£ s. d.
AMOUNT brought from Revenue Account—			
Surplus—			
Part I.	5,278 8 2		
Part II.	264 12 11		
	5,543 1 1		
Less—Deficiency—Part III.—			
Dwellings £70 4 10			
Estates in course of development (above) 4,949 6 5			
	5,019 11 3		
			523 9 10
			523 9 10

RENEWALS FUND ACCOUNT.

	£ s. d.	£ s. d.
BALANCE—1st April, 1911—		
Part I.	20,699 13 9	
Part II.	2,698 8 4	
Part III.	16,197 1 9	
		39,595 3 10
TRANSFERS from Revenue Account		14,710 13 1
DIVIDENDS on investments and interest on cash balances—		
Part I.	615 19 4	
Part II.	90 2 5	
Part III.	595 14 9	
		1,301 16 6
		55,607 13 5

CAPITAL ACCOUNT.

PART I.

	£ s. d.
BALANCE carried to Capital (Aggregate) Account	69 17 –
	69 17 –

HOUSING OF THE WORKING CLASSES ACT. 1890—*continued.*

Dr.

EXPENDITURE.

PART III.

CAPITAL ACCOUNT—*continued.*

Schemes for the erection of lodging houses for the working classes.

(A) Acquisition and Laying-out of Sites.

	£ s. d.	£ s. d.
White Hart-lane, Tottenham, Wood Green and Edmonton		2,009 1 1
Norbury, Croydon		2,249 9 5
Old Oak, Hammersmith		7,010 6 –
Totterdown-fields, Wandsworth		2,108 3 2
		13,376 19 8
Consolidated Loans Fund for proceeds of sales, contra—		
Old materials	43 10 –	
Less—Expenses of sales	9 – –	
		34 10 –
Balance carried to Capital (Aggregate) Account (below)		696 7 11
		14,107 17 7

(B) Working Class Dwellings.

	£ s. d.	£ s. d.
Totterdown-fields Estate, Wandsworth	13,111 14 8	
Add—Value of site appropriated for dwellings	2,108 3 2	
		15,219 17 10
White Hart-lane Estate, Tottenham, Wood Green and Edmonton	18,963 7 2	
Add—Value of site appropriated for dwellings	4,621 – –	
		23,584 7 2
Norbury Estate, Croydon	19,199 9 11	
Add—Value of site appropriated for dwellings	333 – –	
		19,532 9 11
Old Oak Estate, Hammersmith	11,690 13 11	
Add—Value of site appropriated for dwellings	1,950 – –	
		13,640 13 11
Briscoe-buildings, Brixton-hill, Lambeth		42 10 5
Caledonian Estate, Islington		2 4 7
		72,022 3 10
Consolidated Loans Fund for proceeds of sale, contra—Land		8 6 3
		72,030 10 1

CAPITAL (AGGREGATE) ACCOUNT.

	£ s. d.	£ s. d.
Balance—1st April, 1911—		
Part I.	883,598 3 7	
Part II.	80,014 6 7	
Part III.—		
Estates in course of development	120,242 12 4	
Dwellings	1,052,220 10 7	
		2,136,075 13 1
Expenditure in 1911-12—		
Part I.	69 17 –	
Part III.—Dwellings	56,181 9 11	
	56,251 6 11	
Less—Part III.—Estates in course of development (above)	696 7 11	
		55,554 19 –
		2,191,630 12 1

LOAN CONSOLIDATED STOCK (Moneys raised.)

	£ s. d.
Balance—31st March, 1912, carried to Balance Sheet	2,023,311 5 8

HOUSING OF THE WORKING CLASSES ACT. 1890—*continued.*

Cr

INCOME.

PART III.

CAPITAL ACCOUNT—*continued.*

Schemes for the erection of lodging houses for the working classes.

Laying-out of Sites.

	£ s. d.	£ s. d.
White Hart-lane, Tottenham, Wood Green and Edmonton—Sir Samuel Montagu (Lord Swaythling) Gift Fund Account to meet expenditure during year on public garden		– 18 5
Old Oak Estate—Acquisition of Lands Fund Account to meet expenditure during year		5,060 6 –
Working Class Dwellings Account for value of sites appropriated for dwellings—		
Totterdown-Fields Estate, Wandsworth	2,108 3 2	
White Hart-lane Estate, Tottenham, Wood Green and Edmonton	4,621 – –	
Norbury Estate, Croydon	333 – –	
Old Oak Estate, Hammersmith	1,950 – –	
		9,012 3 2
		14,073 7 7
Sales of old materials—		
White Hart-lane Estate	26 – –	
Old Oak Estate	17 10 –	
	43 10 –	
Less—Expenses of sales—Old Oak Estate	9 – –	
		34 10 –
		14,107 17 7

Dwellings.

	£ s. d.
Old Oak Estate—Acquisition of Lands Fund to meet expenditure during year	13,640 13 11
White Hart-lane Estate, Tottenham, Wood Green and Edmonton—Sir Samuel Montagu (Lord Swaythling) Gift Fund Account to meet additional expenditure on cottages erected on the Tower-gardens section	2,200 – –
	15,840 13 11
Sale of land—Parker-street House—Moiety of cost of party wall	8 6 3
Balance carried to Capital (Aggregate) Account	56,181 9 11
	72,030 10 1

CAPITAL (AGGREGATE) ACCOUNT.

	£ s. d.
Balance—31st March, 1912, carried to Balance Sheet	2,191,630 12 1
	2,191,630 12 1

LOAN CONSOLIDATED STOCK (Moneys raised.) ACCOUNT.

	£ s. d.
Balance—1st April, 1911	2,023,311 5 8

HOUSING OF THE WORKING CLASSES ACT, 1890—*continued.*

Dr. EXPENDITURE.

SINKING FUND

[Transactions of the Consolidated Loans Fund

	£ s. d.
Balance—31st March, 1912, carried to Balance Sheet	135,897 – 1
	135,897 – 1

SIR SAMUEL MONTAGU

[Contribution of £10,000 from Sir Samuel Montagu (Lord Swaythling)

CONTRIBUTION

	£ s. d.
Balance—31st March, 1912 (including £1,938 7s. 1d. invested in India Bills), carried to Balance Sheet	11,970 10 2
	11,970 10 2

OUTLAY

	£ s. d.	£ s. d.
Balance—1st April, 1911		7,587 5 3
Capital Account for amount transferred to meet expenditure during year on the White Hart-lane Estate—		
Laying out public garden	– 18 5	
Erection of Cottages—Tower Garden section	2,200 – –	
		2,200 18 5
		9,788 3 8

ACQUISITION OF

[Transfer of £50,000 from the Thames Embankment Extension and Improvements at Westminster Account, under sec. 66 of the amount has been charged a sum of £6,441 1s. 6d. in respect of the proportion of expenditure on the Millbank site relating

CONTRIBUTION

	£ s. d.	£ s. d.
Expenses of investment		30 14 3
Balance—31st March, 1912 (including *£20,250 invested), carried to Balance Sheet		54,041 19 6
*Victoria Government 4 per cent. Loan, 1883, Inscribed Stock (1919) – £10,125		
Dominion of Canada 4 per cent. Debentures (1st October, 1912) 10,125		
	20,250	
		54,072 13 9

OUTLAY

	£ s. d.	£ s. d.
Balance—1st April, 1911		4,313 13 7
Capital Account for amount transferred to meet expenditure during year on Old Oak Estate—		
Acquisition and laying-out of site	5,060 6 –	
Erection of Dwellings	13,640 13 11	
		18,700 19 11
		23,014 13 6

HOUSING OF THE WORKING CLASSES ACT, 1890—*continued.*

Cr. INCOME.

ACCOUNT (Accumulating).

in respect of Dwellings under the Housing Act, 1890.]

	£ s. d.	£ s. d.
Balance—1st April, 1911		118,147 16 9
Amount provided during year for redemption—		
Sinking Fund instalments provided out of Revenue in 1911–12	13,770 11 3	
Interest on accumulations of Sinking Fund	3,935 15 10	
		17,706 7 1
Proceeds of sales		42 16 3
		135,897 – 1

(LORD SWAYTHLING) GIFT FUND.

to be utilised in connection with the White Hart Lane Estate.]

ACCOUNT.

	£ s. d.	£ s. d.
Balance—1st April, 1911		11,841 – 3
Dividends on investment	93 15 –	
Interest on uninvested portion	35 14 11	
		129 9 11
		11,970 10 2

ACCOUNT.

	£ s. d.
Balance—31st March, 1912, carried to Balance Sheet	9,788 3 8
	9,788 3 8

LANDS FUND (PART III).

L.C.C. (General Powers) Act, 1903, in respect of rehousing accommodation provided on the Millbank Estate. Against this to the improvement. The balance of £45,558 18s. 6d. with interest thereon is available for the purposes of the fund.]

ACCOUNT.

	£ s. d.	£ s. d.
Balance—1st April, 1911		51,798 17 9
Dividends on investment	2,217 6 9	
Interest on uninvested portion	56 9 3	
		2,273 16 –
		54,072 13 9

ACCOUNT.

	£ s. d.
Balance—31st March, 1912, carried to Balance Sheet	23,014 13 6
	23,014 13 6

HOUSING OF THE WORKING CLASSES ACT, 1890—*continued.*

Dr. **BALANCE SHEET.** **Cr.**

31ST MARCH, 1912.

Liabilities.	£ s. d.	£ s. d.
Loans raised and outstanding—Consolidated Stock—Cash—		
Metropolitan—		
2½ per cent.	239,315 1 3	
London County—		
2½ per cent.	191,232 3 1	
3 per cent.	1,155,903 7 –	
3½ per cent.	436,860 14 4	
	2,023,311 5 8	
London County Bills (proportion)	142,033 12 7	
		*2,165,344 18 3
Sundry Creditors		1,536 19 9
Special Accounts—		
Sir Samuel Montagu (Lord Swaythling) Gift Fund—Contribution Account	11,970 10 2	
Acquisition of Lands Fund (Part III.)—Contribution Account	54,041 19 6	
		66,012 9 8
Repairs and Renewals Fund—		
Part I.	20,615 3 3	
Part II.	2,944 15 6	
Part III.	18,409 8 –	
		41,969 6 9
Appropriation Account (after taking into account net contributions from Rates amounting to £65,625 19s. 4d.		– – –
Excess of Assets and Capital Outlay over Liabilities—		
Stock cancelled—Cost	26,285 13 10	
Sinking Fund balance £135,897 – 1		
Less—Proceeds of sales, deducted from capital outlay (contra) 12,684 16 3		
	123,212 3 10	
		149,497 17 8
		2,424,361 12 1

*Loans raised and outstanding	£2,165,344 18 3
Less—Sinking Fund balances	135,897 – 1
Net Debt	2,029,447 18 2

Assets and Capital Outlay.	£ s. d.	£ s. d.
Capital Outlay—		
Part I.	883,668 – 7	
Part II.	80,014 6 7	
Part III.—Dwellings	1,108,402 – 6	
Estates in course of development	119,546 4 5	
	2,191,630 12 1	
Less—Proceeds of sales (Part III.—Dwellings and estates in course of development)	12,684 16 3	
	2,178,945 15 10	
Sir Samuel Montagu (Lord Swaythling) Gift Fund—Outlay Account	9,788 3 8	
	2,188,733 19 6	
Acquisition of Lands Fund—Outlay Account	23,014 13 6	
	2,211,748 13 –	
Sinking Fund Assets—Loans to local authorities and other investments		135,897 – 1
Sundry Debtors		1,597 18 4
Norbury Estate—Ballast, etc.		300 9 –
Investments on Special Accounts at Cost Price—		
Repairs and Renewals Fund [Market value at 31st March 1912, £35,337]	£38,899 5 10	
Sir Samuel Montagu (Lord Swaythling) Gift Fund—£2,000 India Bills	1,938 7 1	
Acquisition of Lands Fund (Part III.) [Market value at 31st March, 1912, £20,175]	20,250 – –	
		61,087 12 11
Cash in Hand—		
Revenue Account	2,885 4 7	
Special Accounts—		
Sir Samuel Montagu (Lord Swaythling) Gift Fund £243 19 5		
Acquisition of Lands Fund (Part III.) 10,600 14 9		
	10,844 14 2	
		13,729 18 9
		2,424,361 12 1

B.—DWELLINGS UNDER

Dr.

NOTE.—*For statutes under which these*

EXPENDITURE.

REVENUE

	£ s. d.
WORKING EXPENSES AND DEBT CHARGES—	
Battersea Bridge Dwellings (Battersea)	985 7 10
Cotton-street Dwellings (Poplar)	1,023 11 2
Durham Buildings, York-road (Battersea)	1,554 8 4
Duke's-court Dwellings (Westminster)—Proportion	508 13 1
York-street Dwellings (Westminster)—Proportion	330 6 2
Herbrand-street Dwellings (Holborn)	2,322 9 5
Bruce House, Kemble-street (Westminster)	6,823 3 –
Millbank Estate (Westminster)—Proportion	9,226 18 –
Bourne Estate (Holborn)	11,753 17 10
Swan-lane Dwellings (Bermondsey)	3,944 8 5
Valette Buildings (Hackney)	1,433 16 8
Hughes-fields Dwellings (Deptford and Greenwich)—Proportion	562 8 5
Bearcroft Buildings (Fulham)	745 2 8
Dwellings on sites compulsorily appropriated for rehousing, on the working of which a deficiency was anticipated owing to the character or situation of the site.	
Council Buildings (Poplar)	983 9 5
Westview, Armitage and Collerston Cottages (Greenwich)	1,705 6 9
Idenden Cottages (Greenwich)	1,090 7 5
Barnaby Buildings, Leroy-street (Bermondsey)	1,364 12 10
Brightlingsea Buildings, Ropemaker's-fields (Stepney)	1,000 10 10
Bekesbourne Buildings (Stepney)	1,278 – 11
Darcy Buildings, London Fields (Hackney)	706 8 8
Wandsworth-road Dwellings (Lambeth)	843 19 5
	50,187 7 3
SURPLUS carried to Appropriation Account	2,859 18 9
	53,047 6 –

APPROPRIATION

	£ s. d.
GENERAL COUNTY ACCOUNT for contribution to Rates	2,991 14 9
	2,991 14 9

REPAIRS AND

	£ s. d.
ACTUAL EXPENDITURE	5,443 6 3
EXPENSES of investment	2 12 3
BALANCE—31st March, 1912 (of which £19,103 4s. 2d. is invested), carried to Balance Sheet	19,880 16 7
	25,326 15 1

IMPROVEMENT ACTS.

dwellings have been erected, see Appendix XX., page lxviii.

Cr.

INCOME.

ACCOUNT.

	£ s. d.
INCOME—	
Battersea Bridge Dwellings (Battersea)	1,093 7 3
Cotton-street Dwellings (Poplar)	1,091 10 6
Durham Buildings, York-road (Battersea)	1,217 18 3
Duke's-court Dwellings (Westminster)—Proportion	691 10 4
York-street Dwellings (Westminster)—Proportion	376 3 9
Herbrand-street Dwellings (Holborn)	2,758 17 3
Bruce House, Kemble-street (Westminster)	7,473 5 8
Millbank Estate (Westminster)—Proportion	11,335 2 6
Bourne Estate (Holborn)	13,015 8 11
Swan-lane Dwellings (Bermondsey)	3,142 13 8
Valette Buildings (Hackney)	1,518 19 6
Hughes-fields Dwellings (Deptford and Greenwich)—Proportion	430 12 5
Bearcroft Buildings (Fulham)	834 6 6
a deficiency was anticipated owing to the character or situation of the site.	
Council Buildings (Poplar)	758 13 –
Westview, Armitage and Collerston Cottages (Greenwich)	1,291 6 –
Idenden Cottages (Greenwich)	1,108 15 –
Barnaby Buildings, Leroy-street (Bermondsey)	1,336 3 8
Brightlingsea Buildings, Ropemaker's-fields (Stepney)	847 8 6
Bekesbourne Buildings (Stepney)	1,216 5 9
Darcy Buildings, London-fields (Hackney)	702 4 –
Wandsworth-road Dwellings (Lambeth)	893 7 6
	52,863 19 11
Interest on cash balances	183 6 1
	53,047 6 –

ACCOUNT.

	£ s. d.
AMOUNT brought from Revenue Account—Surplus	2,859 18 9
TRAMWAYS ACCOUNT for contribution to meet one-third of deficiency for year on Hughes-fields (Deptford) Dwellings, in respect of the rehousing of persons displaced by the Greenwich generating station	131 16 –
	2,991 14 9

RENEWALS FUND.

	£ s. d.
BALANCE—1st April, 1911	19,442 7 10
TRANSFERS from Revenue Account	5,253 6 11
DIVIDENDS on investments and interest on cash balances	631 – 4
	25,326 15 1

DWELLINGS UNDER IMPROVEMENT ACTS—*continued.*

Dr.

EXPENDITURE.

CAPITAL ACCOUNT.

	£ s. d.	£ s. d.
Erection of Dwellings—		
Southampton-row improvement—		
Bourne Estate—proportion		14 13 2
St. John-street, Clerkenwell, improvement—		
Bourne Estate—proportion		3 10 5
Goswell-road widening—		
Bourne Estate—proportion		3 9 6
Central-street, St. Luke, widening—		
Bourne Estate—proportion		9 18 7
Holborn to Strand improvement—		
Bourne Estate—proportion	86 2 7	
Bruce House	136 2 –	
		222 4 7
		253 16 3
Balance—31st March, 1912, carried to Capital (Aggregate) Account (below)		340 – 4
		593 16 7

CAPITAL (AGGREGATE) ACCOUNT.

	£ s. d.
Balance—1st April, 1911	743,646 – 6
Deduct—Year 1911-12—Capital receipts in excess of expenditure (above)	340 – 4
	743,306 – 2

LOAN ACCOUNT. CONSOLIDATED STOCK (Moneys raised.)

	£ s. d.
Balance—31st March, 1912, carried to Balance Sheet	736,127 13 9

SINKING FUND ACCOUNT. [*Transactions of the Consolidated Loans*

	£ s. d.
Balance—31st March, 1912, carried to Balance Sheet	46,200 10 3
	46,200 10 3

IMPROVEMENT ACTS—*continued.*

Cr.

INCOME.

ACCOUNT.

	£ s. d.
Erection of Dwellings—	
Rotherhithe Tunnel—	
Bekesbourne Buildings—General County Account for preliminary expenditure incurred in previous years on the proposed second part of site, not proceeded with	593 16 7
	593 16 7

ACCOUNT.

	£ s. d.
Balance—31st March, 1912, carried to Balance Sheet	743,306 – 2
	743,306 – 2

ACCOUNT. STOCK (Moneys raised.)

	£ s. d.
Balance—1st April, 1911	736,127 13 9

ACCOUNT (Accumulating), *Fund in respect of Dwellings under Improvement Acts.*]

	£ s. d.	£ s. d.
Balance—1st April, 1911		40,051 12 5
Amount provided during year for redemption—		
Sinking Fund instalments provided out of Revenue in 1911-12	4,765 5 –	
Interest on Accumulations of Sinking Fund	1,383 12 10	
		6,148 17 10
		46,200 10 3

DWELLINGS UNDER

Dr.

BALANCE SHEET.

Liabilities.	£ s. d.	£ s. d.
Loans raised and outstanding—Consolidated Stock—Cash		
Metropolitan—		
2½ per cent.	61,838 16 2	
London County—		
2½ per cent.	31,695 8 5	
3 per cent.	592,960 5 –	
3½ per cent.	50,563 4 2	
	736,127 13 9	
London County Bills (proportion)	47 15 2	
		*736,175 8 11
Sundry Creditors		421 17 3
Repairs and Renewals Fund		19,880 16 7
Appropriation Account (after taking into account net contributions to Rates and from Tramways Account, amounting to £8,653 7s. 7d.)		– – –
Excess of Assets and Capital Outlay over Liabilities—		
Stock cancelled (cost)	7,130 11 3	
Sinking Fund balance	£46,200 10 3	
Less—Proceeds of sales, deducted from capital outlay (contra)	1,000 – –	
	45,200 10 3	
		52,331 1 6
		808,809 4 3

* Loans raised and outstanding ... 736,175 8 11
Less—Sinking Fund balances ... 46,200 10 3
Net Debt ... 689,974 18 8

IMPROVEMENT ACTS—*continued.*

Cr.

31st MARCH, 1912.

Assets and Capital Outlay.	£ s. d.
Capital Outlay, including £8,614 19s. 8d. for Drake Buildings, Hughes Fields (rehousing in connection with Tramways)	743,306 – 2
Less—Proceeds of sales—Disposal of right of light (Bourne Estate)	1,000 – –
	742,306 – 2
Sinking Fund Assets—Loans to Local Authorities and other investments	46,200 10 3
Sundry Debtors	536 4 1
Repairs and Renewals Fund Investment Account (Market value at 31st March, 1912, £17,755.)	19,103 4 2
Cash in Hand	663 5 7
	808,809 4 3

C.—DWELLINGS UNDER THE HOUSING OF THE WORKING CLASSES ACT, 1890, AND IMPROVEMENT ACTS COMBINED.

Dr. REVENUE ACCOUNT. **Cr.**

EXPENDITURE.

(Apportionment calculated on basis of accommodation).

	£ s. d.	£ s. d.
Millbank Estate (Westminster)—		
Working expenses and debt charges		15,365 13 3
Less—Charged to the following accounts—		
Housing of the Working Classes Act, 1890—		
Part I. (page 6)	5,320 – 5	
Part III. (page 6)	818 14 10	
Dwellings under Improvement Acts	9,226 18 –	
		15,365 13 3
		– – –
Duke's-court Dwellings (Westminster)—		£ s. d.
Working expenses and debt charges		2,034 12 6
Less—Charged to the following accounts—		
Housing of the Working Classes Act, 1890—Part I.	1,525 19 5	
Dwellings under Improvement Acts	508 13 1	
		2,034 12 6
		– – –
York-street Dwellings (Westminster)—		£ s. d.
Working expenses and debt charges		1,321 4 3
Less—Charged to the following accounts—		
Housing of the Working Classes Act, 1890—Part I.	990 18 1	
Dwellings under Improvement Acts	330 6 2	
		1,321 4 3
		– – –
Preston's-road Estate (Poplar)—		£ s. d.
Working expenses and debt charges		3,536 14 1
Less—Charged to the following accounts—		
Housing of the Working Classes Act, 1890—		
Part I.	813 10 –	
Part III.	2,723 4 1	
		3,536 14 1
		– – –
Hughes-fields Dwellings (Deptford)—		£ s. d.
Working expenses and debt charges		1,687 5 2
Less—Charged to the following accounts—		
Housing of the Working Classes Act, 1890—Part III.	1,124 16 9	
Dwellings under Improvement Acts	562 8 5	
		1,687 5 2
		– – –

INCOME.

(Apportionment calculated on basis of accommodation).

	£ s. d.	£ s. d.
Millbank Estate (Westminster)—		
Income		18,849 6 8
Less—Credited to the following accounts—		
Housing of the Working Classes Act, 1890—		
Part I.	6,535 11 5	
Part III.	978 12 9	
Dwellings under Improvement Acts	11,335 2 6	
		18,849 6 8
		– – –
Duke's-court Dwellings (Westminster)—		£ s. d.
Income		2,406 1 3
Less—Credited to the following accounts—		
Housing of the Working Classes Act, 1890—Part I.	1,804 10 11	
Dwellings under Improvement Acts	601 10 4	
		2,406 1 3
		– – –
York-street Dwellings (Westminster)—		£ s. d.
Income		1,504 15 –
Less—Credited to the following accounts—		
Housing of the Working Classes Act, 1890—Part I.	1,128 11 3	
Dwellings under Improvement Acts	376 3 9	
		1,504 15 –
		– – –
Preston's-road Estate (Poplar)—		£ s. d.
Income		2,666 14 8
Less—Credited to the following accounts—		
Housing of the Working Classes Act, 1890—		
Part I.	550 2 4	
Part III.	2,116 12 4	
		2,666 14 8
		– – –
Hughes-fields Dwellings (Deptford)—		£ s. d.
Income		1,291 17 3
Less—Credited to the following accounts—		
Housing of the Working Classes Act, 1890—Part III.	861 4 10	
Dwellings under Improvement Acts	430 12 5	
		1,291 17 3
		– – –

H. E. Haward,
Comptroller.

D.—DETAILS OF WORKING CLASS DWELLINGS ACCOUNTS

Dwellings.	Income. Gross Rental.	Deductions. Empties	Caretakers' Quarters.	Amounts irrecoverable.	Total.	Net Rental.	Maintenance Supervision and Collection of Rent.	Rates and Taxes. (j)
1	2	3	4	5	6	7	8	9
I.—Housing of the Working Classes Act, 1890.								
PART I.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Boundary-street (including laundry)	23,432 19 9	161 – 6	141 16 –	24 6 1	327 2 7	22,905 17 2	1,547 – 7	4,040 4 10
Do. Automatic Gas Supply	2,962 15 –	— —	— —	— —	— —	2,962 15 –	107 – –	—
Cable-street	2,971 6 6	24 8 –	25 – –	– 15 –	50 3 –	2,921 3 6	113 14 11	599 1 3
Shelton-street	1,568 8 –	21 2 3	24 16 6	– 19 –	45 8 9	1,522 19 3	63 2 11	393 12 5
Millbank (proportion)	6,000 4 9	33 5 1	39 6 7	1 1 8	64 13 4	6,335 11 5	311 1 9	1,112 12 9
Churchway	3,915 19 –	17 12 6	27 9 –	1 10 –	46 11 6	3,869 7 6	206 6 1	696 9 3
Hardy	881 – –	63 3 –	17 – –	6 11 –	86 12 –	794 8 –	33 – –	149 8 2
Duke's-court (proportion)	1,823 8 9	2 8 5	16 13 4	– 5 11	18 17 10	1,804 10 11	87 8 11	296 4 9
York-street (proportion)	1,146 4 6	1 12 8	16 13 4	– 17 9	17 13 9	1,128 11 8	53 11 5	171 19 4
Preston's-road (proportion)	826 3 5	265 1 5	10 4 11	2 14 11	276 1 1	550 2 4	40 6 6	122 14 6
St. Luke's—								
Weinlake	1,934 18 6	16 6 6	24 16 6	—	41 3 –	1,893 15 6	98 2 11	332 3 10
Chadworth	3,468 11 –	325 4 6	32 4 6	10 10 –	330 19 –	3,077 12 –	150 8 4	477 19 7
Clerkenwell and Holborn—								
Mallory	914 9 11	– 19 –	23 11 –	—	24 10 –	889 19 11	37 – –	103 17 10
Nigel, etc.	6,050 2 –	324 3 7	54 18 –	14 4 –	393 5 7	5,656 16 5	271 4 8	919 15 9
Webber-row	4,397 8 –	271 7 6	61 8 6	5 10 –	338 17 –	4,058 11 –	246 13 11	903 5 7
	63,372 19 1	1,729 12 9	498 18 2	78 1 –	2,254 17 11	61,119 1 2	3,440 2 11	10,164 7 8
Dwellings on sites compulsorily appropriated for rehousing, on the working of which a deficiency was anticipated owing to the character or situation of the site.								
Brook-street	1,019 11 9	39 13 9	19 12 –	2 6 6	61 12 3	957 19 6	46 3 9	184 19 –
Goldsmith's-row	486 2 3	12 9 9	19 12 –	1 9 –	33 10 9	452 11 6	19 – –	87 1 10
Hughes-fields (cottages)	2,058 18 2	578 13 1	17 – –	11 6 6	606 19 7	1,451 18 7	60 – –	316 17 3
	3,564 12 2	630 16 7	56 4 –	15 2 –	702 3 7	2,862 9 7	125 3 9	588 18 1
Interest on cash balances	—	—	—	—	—	—	—	—
	66,938 11 3	2,360 9 4	553 2 2	93 9 –	2,957 – 6	63,981 10 9	3,559 6 8	10,753 5 9
PART II.								
Cranley	290 4 6	9 8 –	—	—	9 8 –	280 16 6	13 2 3	50 13 9
Borough-road	1,674 9 –	59 17 6	26 3 –	—	86 – –	1,588 9 6	68 16 7	251 19 10
Cobham	1,134 12 –	20 8 –	—	– 9 –	20 17 –	1,113 15 –	80 1 2	221 4 10
Ann-street	2,141 2 6	215 14 6	19 12 –	6 10 6	239 17 –	1,901 5 6	113 18 7	456 6 2
Sylva	470 11 6	4 1 6	—	1 – –	5 1 6	465 10 –	19 – 7	90 19 3
Interest on cash balances	—	—	—	—	—	—	—	—
	5,910 19 6	307 9 6	45 15 –	7 19 6	361 4 –	5,549 15 6	295 18 7	1,170 4 11
PART III.								
DWELLINGS.								
Parker-street House (a)	3,856 1 7	43 15 6	13 5 –	—	57 – 6	3,211 1 1	867 11 8	345 14 11
Carrington House	817,704 15 5	(a)3,321 17 6	86 5 –	– 12 –	3,409 14 6	4,294 18 11	1,478 15 9	589 7 11
Dufferin-street	632 13 –	9 15 6	22 17 9	4 17 3	37 10 6	595 2 6	60 19 1	122 16 6
Green-st. and Boydell-street	1,794 5 –	30 6 –	22 4 6	– 11 6	53 2 –	1,741 1 –	109 15 –	348 2 11
Millbank (proportion)	868 6 5	4 19 7	4 10 10	– 3 3	9 13 8	978 12 9	46 11 8	165 9 6
Holmwood	388 5 3	34 9 3	18 6 –	—	54 15 3	333 10 –	13 – –	68 16 –
Totterdown-fields	28,854 19 9	(c)3,594 17 –	65 4 6	45 – 9	3,705 2 3	24,949 17 6	1,075 17 3	4,544 5 1
Preston's-road (proportion)	3,178 15 3	1,012 3 3	39 8 7	10 11 1	1,062 2 11	2,116 15 4	155 3 2	493 0 9
Hughes-fields (dwellings) (proportion)	1,982 9 –	598 8 8	31 – 6	8 11 10	671 4 2	1,311 4 10	47 5 4	180 1 3
White Hart-lane	16,636 2 –	(c)1,767 5 9	54 15 9	9 6 8	1,831 8 2	14,804 13 10	755 1 8	3,355 3 2
Wessex	4,161 3 6	168 7 6	23 10 6	1 5 –	193 3 –	3,972 – 6	217 1 2	749 19 7
Norbury	9,265 – –	(f) 439 4 11	51 17 –	2 15 –	493 16 11	8,871 3 1	398 8 4	1,427 16 6
Caledonian	5,189 16 6	272 19 –	30 1 6	5 9 6	308 10 –	4,881 6 6	230 14 2	1,043 12 7
Bracor	2,539 – 9	118 18 3	27 3 –	6 – –	152 7 3	2,386 13 6	135 18 1	455 13 4
Old Oak	—	—	—	—	—	—	1 5 –	—
Interest on cash balances	—	—	—	—	—	—	—	—
	80,187 9 5	11,220 7 8	471 2 7	98 – 10	11,789 11 1	74,397 18 4	5,612 7 –	14,686 5 8
Total for dwellings	150,037 – 2	13,888 6 6	1,069 19 9	149 9 4	15,107 15 7	143,929 4 7	9,542 12 3	25,893 16 4
PART III.								
ESTATES IN COURSE OF DEVELOPMENT.								
Totterdown-fields	—	—	—	—	—	—	—	—
White Hart-lane	319 16 –	—	—	—	1 5 3	318 10 9	—	—
Norbury	—	—	—	—	—	—	—	—
Old Oak	(g) 49 18 4	—	—	—	3 10 –	(g) 46 8 4	—	—
Supervision	—	—	—	—	—	—	500 – –	—
Interest on cash balances	—	—	—	—	—	—	—	—
	369 14 4	—	—	—	4 15 3	364 19 1	500 – –	—
Total—Housing of the Working Classes Act, 1890	150,406 14 6	13,888 6 6	1,069 19 9	154 4 7	15,112 10 10	144,294 3 8	10,042 12 3 (h)	25,826 8 11
II.—Improvement								
Battersea bridge	1,105 8 –	80 15 3	20 19 –	– 6 6	102 – 9	1,003 7 3	41 1 –	114 – –
Cotton-street	1,190 15 6	166 1 6	20 18 6	1 17 –	189 5 –	1,001 10 6	60 1 9	244 18 5
Durham	1,134 12 –	29 8 –	16 7 –	2 – –	47 15 –	1,086 17 –	64 19 8	138 5 5
Duke's-court (proportion)	607 16 3	– 16 1	5 11 2	– 1 1	6 5 11	601 10 4	30 3 –	98 14 11
York-street (proportion)	382 1 6	– 10 10	5 11 2	– 1 3	4 – 7	378 – 11	19 – 1	57 6 2
Herbrand-street	2,782 18 6	2 14 6	22 4 6	– 19 9	24 1 3	2,758 17 3	146 8 8	482 12 –
House House	7,647,701 14 (g)	(g) 130 8 6	154 – –	—	284 8 6	7,473 5 8	2,132 1 11	744 5 2
Millbank (proportion)	11,447 5 7	57 13 7	57 12 1	1 17 5	112 3 1	11,335 2 6	539 19 11	1,929 14 7
Bourne	13,468 9 2	395 17 3	114 13 6	26 9 6	551 – 3	12,913 8 11	648 18 –	2,054 19 –
Swan-lane	4,130 1 –	952 2 6	19 12 –	15 12 10	987 7 4	3,142 13 8	178 11 2	712 6 3
Valette	1,684 18 6	159 1 6	23 10 6	3 7 –	185 19 –	1,518 19 6	76 8 10	287 8 8
Hughes-fields (dwellings) (proportion)	641 4 6	190 4 4	5 13 4	5 14 5	209 12 1	430 15 5	25 12 8	90 – 8
Bearcroft	879 17 –	22 – –	23 10 6	—	45 10 6	834 6 6	34 – –	154 11 4
	47,559 16 2	2,352 17 1	437 3 3	59 19 4	2,849 19 8	44,709 16 6	1,978 14 3	7,059 2 11
Dwellings on sites compulsorily appropriated for rehousing, on the working of which a deficiency was anticipated owing to the character or situation of the site.								
Council	801 6 6	40 7 –	—	2 6 6	42 13 6	758 13 –	33 16 10	167 17 6
Westview, etc.	1,314 19 6	22 13 6	—	2 13 6	25 7 –	1,289 12 6	55 2 –	265 14 4
Idenden	1,138 16 6	6 7 –	22 4 6	1 10 –	30 1 6	1,108 15 –	46 – –	187 10 9
Barnaby	1,435 5 –	74 7 –	20 18 6	2 15 10	99 1 4	1,336 3 8	71 2 7	314 12 3
Brightlingsea	1,089 18 –	270 4 6	19 12 –	2 13 –	242 9 6	847 8 6	39 1 2	196 16 6
Bakersbourne	1,247 – 6	7 2 –	22 4 6	1 8 3	30 14 9	1,216 5 9	63 12 7	223 – 10
Darcy	745 6 6	20 13 –	22 4 6	– 5 –	43 2 6	702 4 –	*20 – –	120 1 –
Wandsworth-road	924 4 –	8 12 –	22 4 6	—	30 16 6	893 7 6	37 – –	166 3 5
	8,696 16 6	400 6 –	129 8 6	12 18 7	542 13 1	8,154 3 5	366 15 2	1,584 – 7
Interest on cash balances	—	—	—	—	—	—	—	—
	56,256 12 8	2,753 3 1	566 11 9	72 17 11	3,392 12 9	52,863 19 11	4,371 9 5 (i)	8,643 2 6

(a) Including £39 18s. 10d. miscellaneous receipts for baths, storage of parcels, etc. (b) Including £35 7s. 9d., as in note (a). (c) Including cottages handed over on completion. (d) Excluding £514 6s. 6d., as in note (c). (e) Including £1,295 2s. 7d.; central recovered, the interest, hitherto shown net, being the gross figures this year (see note 4). (f) Local wages of caretakers, etc., £4,295 2s. 7d.; central (g) Legal expenses in respect of appeal against assessment (h) Including £35 7s. 9d., as in note (a). (i) Including £39 18s. 10d. miscellaneous receipts for baths, storage of parcels, etc. (j) Exclusive of £1,295 2s. 7d.; central office, £4,295 2s. 7d.; central (k) Local wages of caretakers, etc., £4,295 2s. 7d.; central (l) Legal expenses in respect of appeal against assessment

REVENUE ACCOUNT.

YEAR ENDING 31st MARCH, 1912.

Dwellings.	Expenditure. and Management. Lighting, Heating, Water and Insurance.	Stores and Incidentals	Transfer to Repairs and Renewals Fund.	Total.	Debt Charges, transferred to Consolidated Loans Fund. (j) Interest (gross). Land.	Buildings.	Sinking Fund. Land.	Buildings.	Total.	Total. (Columns 13 and 18.)	Result of Year's Working, 1911-12. Surplus (+). Deficiency (–).
1	10	11	12	13	14	15	16	17	18	19	20
Classes Act, 1890.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Boundary-street (including laundry)	1,285 7 11	9 9 5	2,105 – –	8,897 2 9	1,899 9 6	7,919 13 5	405 4 7	1,804 9 –	12,028 16 6	21,015 19 3	+ 1,889 17 11
Do. Automatic Gas Supply	2,008 13 4	– 14 –	150 – –	2,326 7 4	—	222 9 –	— 52 16	1	275 5 1	2,601 12 5	+ 361 2 7
Cable-street	185 19 5	—	315 – –	1,144 15 7	112 14 –	1,158 16 7	35 14 9	266 2 6	1,453 7 10	2,598 3 5	+ 313 – 1
Shelton-street	59 7 –	– 10 –	144 – –	532 5 9	153 – –	578 15 5	36 11 4	141 3 6	909 10 3	1,441 15 –	+ 81 3 9
Millbank (proportion)	208 16 5	—	609 10 11	2,242 1 10	335 3 6	2,229 16 4	62 15 5	450 3 4	3,077 18 7	5,320 – 5	+ 1,215 11 –
Churchway	120 3 11	—	345 – –	1,361 19 3	277 17 6	1,248 17 5	53 3 4	246 8 4	1,826 6 7	3,188 5 10	+ 681 1 8
Hardy	25 12 6	—	126 – –	321 – 9	52 10 –	398 4 9	6 4 4	76 13 8	533 12 9	858 13 5	— 44 5 5
Duke's-court (proportion)	54 19 11	—	188 5 –	634 18 7	136 10 –	613 9 7	26 2 5	122 18 10	899 – 10	1,533 19 5	+ 274 11 6
York-street (proportion)	35 18 7	—	101 5 –	362 14 4	101 5 –	424 – 2	19 12 1	83 5 6	628 3 9	990 18 1	+ 137 13 2
Preston's-road (proportion)	25 5 6	—	104 13 –	294 19 6	47 12 4	389 15 4	8 19 2	77 3 8	518 10 6	813 10 –	— 263 7 8
St. Luke's—											
Weinlake	92 8 1	—	126 – –	667 – 3	175 – –	672 10 5	31 15 7	125 13 2	1,004 19 2	1,671 19 5	+ 221 16 1
Chadworth		—	271 – –	991 16 –	280 – –	1,338 1 9	50 16 11	237 17 8	1,876 16 4	2,868 12 4	+ 308 19 8
Mallory	22 1 7	—	61 – –	225 19 5	60 15 –	402 14 9	10 5 11	72 9 –	546 4 8	772 4 1	+ 117 15 10
Nigel, etc.	128 2 5	—	473 – –	1,858 2 10	545 12 6	2,648 14 10	92 9 7	455 – 7	3,756 17 6	5,590 – 4	+ 66 16 1
Webber-row	142 – –	1 – –	424 – –	1,716 17 6	316 17 6	1,591 18 1	61 19 5	272 7 2	2,243 2 2	3,959 19 8	+ 445 11 4
	4,445 3 8	11 13 3	5,597 13 11	23,659 1 7	4,454 6 10	21,832 17 10	891 15 10	4,469 12 –	31,648 12 6	55,307 14 1	+ 5,811 7 1
Brook-street	41 11 2	—	135 – –	411 13 11	95 10 –	470 3 2	12 4 5	103 13 4	681 10 11	1,053 4 10	— 95 5 4
Goldsmith's-row	15 8 1	—	54 – –	175 9 11	39 – –	213 14 11	7 1 11	52 10 9	312 7 7	478 17 6	— 36 6 –
Hughes-fields (cottages)	58 – 11	—	225 – –	619 18 2	111 12 –	1,072 4 11	26 8 –	238 – 1	1,448 5 –	2,128 3 2	— 676 4 7
	115 – 2	—	424 – –	1,247 2 –	197 2 –	1,756 3 –	45 14 4	414 4 2	2,413 3 6	3,660 5 6	— 797 15 11
Interest on cash balances	—	—	—	—	—	—	—	—	—	—	+ 294 17 –
	4,560 3 10	11 13 3	6,031 13 11	24,906 3 7	4,851 8 10	23,389 – 10	937 10 2	4,883 16 2	34,061 16 –	58,967 19 7	+ 5,278 8 2
Cranley	9 8 5	—	29 – –	109 3 5	22 10 –	88 13 2	4 10 5	18 8 9	134 2 4	242 5 9	+ 48 10 9
Borough-road	59 18 7	—	168 – –	678 6 –	162 10 –	725 7 6	32 3 11	130 5 3	1,070 6 8	1,748 12 8	+ 39 15 10
Cobham	35 1 5	—	106 – –	442 7 5	68 5 –	432 14 7	12 19 2	80 18 –	594 16 9	1,027 4 2	+ 86 10 10
Ann-street	61 2 4	—	251 – –	882 7 3	205 – –	856 15 4	14 1 1	102 10 11	1,178 1 4	1,979 1 6	+ 22 4 –
Sylva	12 17 3	—	49 – –	171 7 6	29 15 –	162 18 10	6 11 –	32 2 3	235 7 1	406 14 7	+ 58 15 5
Interest on cash balances	—	—	—	—	—	—	—	—	—	—	+ 18 16 1
	178 8 –	—	603 – –	2,282 11 6	486 9 –	2,136 7 5	70 5 7	434 5 2	3,021 7 2	5,303 18 8	+ 264 12 11
Parker-street House	432 11 10	64 5 2	376 – –	2,086 3 7	119 9 10	704 17 4	24 19 1	165 19 7	1,006 5 10	3,092 9 5	+ 118 11 8
Carrington House	772 8 2	111 13 2	657 – –	2,600 5 7	74 5 –	1,811 15 10	14 8 3	332 16 6	2,233 5 7	5,862 11 2	— 1,567 12 3
Dufferin-street	24 7 4	—	127 – –	335 2 11	55 19 8	138 18 2	12 12 10	31 7 6	238 18 2	574 1 1	+ 21 1 5
Green-st. and Boydell-street	60 19 9	—	188 – –	706 8 8	115 16 –	623 10 10	30 – 8	137 18 3	907 5 9	1,613 14 5	+ 127 6 7
Millbank (proportion)	31 5 4	—	91 5 6	324 12 –	67 17 9	335 11 4	12 14 3	67 19 6	484 2 10	808 14 10	+ 159 17 11
Holmwood	12 19 3	1 10 –	41 – –	156 5 3	12 18 9	144 15 11	2 15 1	29 19 1	190 8 10	346 14 1	— 15 4 1
Totterdown-fields	621 11 6	– 12 –	2,500 – –	8,742 12 10	2,464 6 4	10,479 12 10	457 – 1	1,963 1 8	15,364 – 11	24,106 12 9	+ 845 5 9
Preston's-road (proportion)	97 4 11	—	410 7 –	1,156 1 10	183 5 11	1,137 10 9	34 9 6	231 – 1	1,587 6 3	2,723 4 1	— 606 12 –
Hughes-fields (dwellings) (proportion)	42 17 6	—	147 6 8	417 10 9	28 17 1	340 1 4	5 7 11	103 19 8	707 6 –	1,124 16 9	— 383 11 11
White Hart-lane	416 11 7	2 9 2	1,502 – –	6,201 5 3	1,501 18 1	5,713 8 9	285 16 3	1,931 8 11	8,432 12 –	14,693 17 3	+ 110 16 7
Wessex	136 16 4	—	394 – –	1,497 17 1	314 5 4	1,574 6 2	73 11 7	295 9 2	2,257 12 3	3,825 9 4	+ 146 11 2
Norbury	380 19 7	—	852 – –	3,059 4 2	926 19 2	3,640 2 4	166 14 2	646 16 1	5,392 3 10	8,451 8 3	+ 419 14 10
Caledonian	183 4 8	2117 18 10	526 – –	2,161 7 11	491 6 –	1,865 3 7	98 15 2	316 – 9	2,771 5 6	4,954 5 5	+ 88 13 1
Bracor	92 10 –	—	234 – –	938 1 5	241 9 2	1,022 5 9	45 3 –	186 14 –	1,495 11 11	2,433 13 4	— 46 19 10
Old Oak	—	11 12 2	—	12 17 2	—	—	—	—	—	12 17 2	— 12 17 2
Interest on cash balances	—	—	—	—	—	—	—	—	—	—	+ 186 15 2
	3,305 16 9	330 8 1	8,085 19 2	31,414 16 8	6,681 2 2	29,761 – 11	1,244 8 10	5,543 8 9	43,229 1 8	74,634 18 4	— 70 4 10
Total for dwellings	8,044 8 7	325 1 6	14,710 13 1	58,803 11 9	11,693 1 –	55,306 9 2	2,252 4 7	10,861 10 1	80,393 4 10	138,906 16 7	+ 5,472 16 3
					67,189 10 2				13,113 14 8		
Norbury	—	— 9 11	—	11 8 5	230 – –	—	—	—	230 – –	265 11 7	— 265 11 7
White Hart-lane	—	51 10 1	—	53 5 5	2,581 9 8	—	—	470 2 2	3,051 11 10	5,018 7 7	— 2,499 16 10
Old Oak	—	— 10	—	26 5 –	462 8 2	—	—	51 14 2	514 2 4	488 1 4	+ 488 1 4
Supervision	—	121 10 –	—	89 17 1	720 3 1	—	—	135 – 3	855 3 4	945 – 5	— 898 12 1
Interest on cash balances	—	—	—	500 – –	—	—	—	—	—	500 – –	— 500 – –
	—	173 10 10	—	516 5 5	4,044 – 11	—	—	656 16 7	—	4,700 17 6	5,217 – 11 — 4,949 6 5
Total—Housing of the Working Classes Act, 1890	8,044 8 7	495 12 4	14,710 13 1	59,319 15 2	15,727 1 11	55,306 9 2	2,909 1 2	10,861 10 1	85,094 2 4	144,123 17 6	+ 523 9 10
					471,235 11 1				£13,770 11 3		
Acts.											
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
	62 19 1	—	125 – –	437 – 1	43 17 6	508 – 8	8 7 11	81 1 8	638 7 9	985 5 10	+ 17 19 5
	34 10 9	—	142 – –	481 10 11	40 5 –	412 8 3	8 4 –	81 3 –	542 – 3	1,023 11 2	— 22 – 8
	56 18 –	—	195 – –	655 3 1	80 6 6	843 16 –	15 11 10	159 10 11	1,099 5 3	1,754 8 4	— 338 10 1
	18 5 8	—	62 15 –	208 19 2	73 9 –	704 19 10	8 14 1	140 19 7	927 13 6	1,508 15 6	+ 92 17 2
	11 19 6	—	33 15 –	129 18 1	33 15 –	141 6 10	6 11 –	27 15 3	209 8 1	390 6 2	+ 45 17 7
	90 6 6	—	266 – –	961 6 9	236 5 –	906 3 7	45 17 2	172 16 11	1,361 2 8	2,322 9 5	+ 430 7 10
	954 16 11	85 14 3	577 – –	4,483 18 3	331 2 6	1,652 – 8	56 2 5	298 19 2	2,339 4 9	6,823 3 –	+ 650 2 8
	347,709 14	(g) 130 8 6	1,037 3 7	3,888 12 6	581 6 4	3,867 6 9	108 17 5	780 15 –	5,338 5 6	9,226 18 –	+ 2,108 4 6
	411,447 5 7	57 13 7	1,056 – –	4,166 5 5	1,439 – –	4,841 13 7	271 17 8	944 1 2	7,567 12 5	11,733 17 10	+ 1,201 11 1
	13,468 9 2	395 17 3	114 13 6	26 9 6	451 – 3	12,913 8 11	648 18 –	2,054 19 –	15,068 – 2	27,981 17 5	+ 943 14 9
	4,130 1 –	952 2 6	19 12 –	15 12 10	987 7 4	3,142 13 8	178 11 2	712 6 3	4,832 11 1	8,819 14 9	— 801 14 9
	56 5 6	—	151 – –	571 3 –	112 10 –	615 12 3	19 1 4	115 10 1	862 13 8	1,433 16 8	+ 85 2 10
	21 8 9	—	73 13 4	298 15 5	14 8 6	284 10 9	2 14 –	51 19 9	353 13 –	562 8 5	— 131 16 –
	26 13 6	—	80 – –	295 6 10	28 5 –	356 – 4	4 9 –	63 1 6	449 15 10	745 2 8	+ 89 3 10
	3,152 15 10	85 14 3	4,240 6 11	17,675 18 11	3,152 15 10	16,026 4 11	585 4 7	3,194 6 9	23,538 12 1	41,514 11 –	+ 2,495 5 6
	30 14 4	—	100 – –	352 8 8	18 12 7	492 4 9	4 4 7	115 18 10	631 – 9	983 9 5	— 224 16 5
	18 15 5	—	177 – –	654 15 9	24 9 1	968 17 2	7 4 3	230 – 7	1,240 11 –	1,705 6 9	— 416 – 9
	32 18 11	—	124 – –	390 9 8	45 – –	513 17 –	11 13 5	129 7 4	699 17 9	1,090 7 5	+ 18 7 7
	45 6 7	—	142 – –	571 1 5	97 – 7	579 9 4	18 4 2	104 17 4	799 11 5	1,364 12 10	— 28 9 2
	38 18 7	—	124 – –	398 16 3	39 1 2	474 17 5	6 7 1	88 15 1	608 14 7	1,060 10 10	— 153 3 4
	43 18 9	—	133 – –	463 12 2	39 8 –	658 12 –	7 2 4	112 6 5	818 8 9	1,278 – 11	— 61 15 2
	26 18 7	—	71 – –	258 19 7	42 3 9	335 11 4	7 18 11	61 15 1	447 9 1	706 8 8	— 4 4 8
	29 3 5	—	89 – –	321 6 10	54 12 –	386 2 3	9 11 3	72 7 2	522 12 7	843 19 5	+ 49 8 1
	284 14 7	—	960 – –	3,221 16 4	382 1 –	4,493 11 3	72 5 10	917 7 10	5,751 5 11	9,972 16 3	— 616 12 10
Interest on cash balances	—	—	—	—	—	—	—	—	—	—	+ 183 6 1
	2,543 15 2	85 14 3	5,253 6 11	20,897 9 3	3,514 16 10	21,009 16 2	657 10 5	4,107 14 7	29,289 18 –	50,187 7 3	+ 2,859 18 9
					474,524 13 –				£4,765 5 –		

£4 11s. 6d., sale of top spit, etc. (d) Including £70 19s. 7d., as in note (a). (e) Excluding £1 10s. 6d., rebate on weekly tickets. (f) Including new office, £5,917 8s. 8d. (g) Local wages of caretakers, etc., £2,399 13s. 3d.; central office, £1,971 18s. 2d. (h) After deducting tax on interest on debt of certain tenements. (i) Tax on interest recovered is deducted from rates and taxes (col. 9). See note (j).

E.—PERCENTAGES ON GROSS RENTAL OF THE SEVERAL
IN THE DETAILED

Dwellings.	Income.						Maintenance	
		Deductions.						
	Gross Rental.	Empties.	Caretaker's Quarters.	Amounts irrecoverable.	Total.	Net Rental.	Supervision and Collection of Rent.	Rates and Taxes, (c)
1	2	3	4	5	6	7	8	9
								I.—Housing of the Work
PART I.	£	%	%	%	%	%	%	%
Boundary-street (including laundry)	23,423	1·54	·61	·10	2·25	97·75	6·69	17·24
Do. (automatic gas supply)	2,963	—	—	—	—	100·00	5·64	—
Cable-street	2,071	·83	·94	·03	1·79	98·21	4·50	19·86
Shelton-street	1,568	1·34	1·58	·02	2·90	97·10	4·03	16·94
Millbank	6,600	·59	·45	·02	·98	99·02	4·71	16·95
Churchway	3,916	·45	·70	·04	1·19	98·81	5·11	17·79
Hardy	851	7·16	1·93	·75	9·84	90·16	3·75	15·95
Duke's-court	1,824	·15	·82	·07	1·04	98·96	4·79	16·25
York-street	1,146	·14	1·45	·03	1·64	98·46	4·67	15·09
Preston's-road	826	31·84	1·24	·33	33·41	66·59	4·68	14·65
St. Luke's—								
Wenlake	1,905	·45	1·28	—	1·13	97·87	5·07	17·16
Chadworth	3,469	9·54	·65	·48	9·71	90·29	4·41	14·02
Clerkenwell and Holborn—								
Mallory	915	·10	2·58	—	2·68	97·32	4·05	11·06
Nigel, etc.	6,030	5·36	·91	·23	6·50	93·50	4·48	15·05
Webber-row	4,937	5·04	1·24	·10	6·72	93·28	5·00	18·39
Brook-street	1,820	3·89	1·92	·23	6·04	93·96	3·94	18·14
Goldsmith's-row	486	2·67	4·03	·20	6·90	93·10	3·91	17·91
Hoglane-fields Cottages	2,959	29·10	·83	·55	29·48	70·52	2·91	15·39
PART II.								
Cranley	290	3·24	—	—	3·24	96·76	6·59	17·45
Borough-road	1,874	3·20	1·40	—	4·60	95·40	5·27	18·75
Cobham	1,135	1·60	—	·04	1·64	98·16	7·05	19·50
Ann-street	2,141	9·98	·92	·30	11·20	88·80	5·32	21·31
Sylva	471	·87	—	·21	1·08	98·92	4·04	19·23
PART III.								
Parker-street House	3,268	1·34	·41	—	1·75	98·25	28·54	39·58
Carrington House	7,705	43·13	1·12	—	44·25	55·74	19·19	7·65
Dufferin-street	631	1·55	3·61	·77	5·93	94·07	9·64	19·41
Green-street and Bayfield-street	1,791	1·69	1·24	·03	2·96	97·04	6·12	19·40
Millbank	988	·50	·46	·02	·98	99·02	4·71	16·74
Holmwood	388	9·39	4·71	—	14·10	85·90	3·09	17·72
Totterdown-fields	28,555	(a)12·54	·23	·16	12·93	87·07	3·76	15·86
Preston's-road	3,179	31·84	1·24	·33	33·41	66·59	4·68	15·62
Hughes-fields Dwellings	1,282	31·07	·88	·89	32·84	67·16	3·69	14·04
Wilks Hart-lane	16,536	(a)10·62	·33	·06	11·01	88·99	4·54	21·19
Weaver	4,145	4·04	·07	·03	4·54	95·26	5·21	18·01
Norbury	9,265	(a)4·69	·55	·03	5·27	94·73	4·25	15·25
Caledonian	5,590	4·68	·54	·10	5·32	94·48	5·20	18·67
Briscoe	2,339	4·68	1·08	·24	6·00	94·00	5·35	17·85
Old Oak	—	—	—	—	—	—	—	—
Total for Housing of the Working Classes Act, 1890	150,037	8·73	·67	·10	9·50	90·50	6·00	16·34
								II.—Improve
Battersea-bridge	1,106	7·31	1·69	·03	9·23	90·77	3·71	10·31
Cotton-street	1,191	13·98	1·76	·15	15·89	84·11	5·04	20·57
Durham	1,331	19·27	1·07	·13	20·47	79·53	4·24	9·03
Duke's-court	608	·13	·02	·02	1·04	98·96	4·79	16·25
York-street	882	·14	1·45	·05	1·54	98·46	4·67	15·09
Herbrand-street	2,783	·10	·80	·04	·86	99·14	5·12	16·62
Brute	7,710	(b)1·69	1·38	—	3·07	96·93	27·53	39·65
Millbank	11,447	·09	·48	·02	·98	99·02	4·71	16·96
Bourne	13,467	2·27	·85	·23	3·35	96·65	4·82	15·04
Swan-lane	4,130	23·03	·47	·38	23·90	76·10	4·32	17·25
Valette	1,685	8·25	1·40	·20	9·85	90·15	4·54	17·06
Hughes-fields Dwellings	641	31·07	·88	·89	32·84	67·16	3·69	14·04
Beaufoy	880	2·00	2·67	—	5·17	94·83	3·87	17·57
Council	801	5·04	—	·29	5·33	94·67	6·72	20·95
Westview, Armitage and Collenston	1,315	1·72	—	·08	1·80	98·20	4·04	14·99
Camden	1,139	·56	1·05	·13	2·64	97·36	4·04	16·47
Barnaby	1,495	5·18	1·46	·26	6·90	93·10	4·06	21·02
Brightlingsea	1,000	20·21	1·60	·24	22·25	77·75	3·58	18·06
Helmsbourne	1,247	·57	1·78	·11	2·46	97·54	5·10	17·89
Darcy	745	2·77	2·99	·03	5·79	94·21	3·89	17·72
Wandsworth-road	924	·93	2·41	—	3·34	96·66	4·00	17·98
Total for Improvement Acts	56,337	4·69	1·01	·13	5·83	93·97	7·77	15·34
Total for dwellings	219,194	7·73	·76	·10	8·59	91·41	6·46	16·08

(a) See note (*f*) on page 24. (b) Excluding 6·67 for rebate on weekly tickets.
(c) After deducting income tax on interest on capital outlay, the interest hitherto shown net being now stated gross (cols. 14 and 15).

ITEMS OF INCOME AND EXPENDITURE IN RESPECT OF DWELLINGS
REVENUE ACCOUNT.

Expenditure,									Result of Year's Working (excluding interest on cash balances).	
and Management,				Debt Charges.						
Lighting, Heating, Water and Insurance.	Stores and Incidentals.	Transfer to Repairs and Renewals Fund.	Total.	(c) Interest (gross).		Sinking fund.		Total.	Total (cols. 12 and 18)	Surplus.	Deficiency.
				Land.	Buildings.	Land.	Buildings.				
10	11	12	13	14	15	16	17	18	19	20	21
ing Classes Act, 1890.											
%	%	%	%	%	%	%	%	%	%	%	%
5·49	·04	8·08	38·35	8·10	53·80	1·73	7·79	51·33	89·68	8·07	—
67·60	·02	5·66	73·32	—	7·60	—	1·78	9·28	87·60	12·20	—
3·67	—	10·60	38·03	3·79	32·60	·87	8·06	52·62	91·15	7·16	—
5·70	·03	9·18	33·94	9·73	36·90	2·33	9·01	57·99	91·93	5·17	—
5·16	—	9·24	33·07	5·08	33·78	·95	6·82	46·63	80·60	18·42	—
3·07	—	8·81	34·78	7·19	31·89	1·36	6·29	46·64	81·42	17·39	—
2·92	—	14·31	36·92	3·69	45·25	·71	8·71	58·56	95·29	—	5·03
3·02	—	10·32	34·38	7·49	32·64	1·43	6·74	49·30	83·68	13·28	—
3·14	—	8·83	31·64	8·83	26·99	1·72	7·27	54·81	86·45	12·61	—
2·05	—	12·91	35·79	5·76	47·18	1·09	8·73	62·76	98·46	—	31·87
2·14	—	9·11	34·48	9·06	34·82	1·65	6·51	52·04	86·52	12·35	—
2·71	—	7·95	29·09	7·63	39·26	1·49	6·68	55·06	84·15	6·13	—
2·41	—	6·89	34·71	6·64	44·04	1·12	7·92	59·72	94·43	12·69	—
2·25	—	7·92	30·62	9·01	43·70	1·53	7·52	61·77	92·40	1·10	—
2·97	—	8·59	34·77	6·42	33·24	1·26	7·51	48·43	83·20	13·08	—
4·08	—	14·22	40·38	5·44	46·13	1·20	10·17	62·93	103·31	—	9·35
3·17	—	11·11	36·00	6·17	49·07	1·46	10·81	67·41	98·51	—	5·41
2·62	—	10·93	32·05	5·43	52·08	1·28	12·03	71·31	103·36	—	32·64
2·25	—	9·99	37·28	7·75	39·54	1·56	6·35	55·20	83·48	13·28	—
2·20	—	8·91	36·18	8·67	38·69	1·72	8·01	57·09	93·27	2·13	—
2·09	—	9·24	38·98	6·02	37·26	1·14	7·13	51·55	90·53	7·62	—
2·86	—	11·72	41·21	3·45	35·34	·66	7·12	46·55	87·76	1·04	—
2·74	—	10·41	36·42	7·17	34·63	1·39	6·82	50·01	86·43	12·49	—
13·24	1·07	11·51	63·84	3·38	21·56	·76	5·08	30·78	94·62	3·63	—
10·03	1·45	9·53	46·55	·96	23·51	·19	4·68	29·34	75·89	—	20·85
3·85	—	20·08	55·98	8·85	21·06	2·00	4·95	37·76	93·74	5·33	—
2·07	—	10·48	39·97	6·45	34·76	1·67	7·49	50·37	89·94	7·10	—
2·10	—	9·24	33·85	6·67	33·05	1·79	6·98	48·49	82·34	16·18	—
2·94	·39	15·71	40·25	3·33	37·29	·71	7·72	49·05	89·30	—	3·49
2·17	—	8·72	30·51	8·69	36·57	1·65	6·65	53·62	84·13	2·94	—
3·06	—	12·91	36·37	5·76	35·78	1·09	6·67	49·30	85·67	—	19·08
3·34	—	11·49	33·56	9·25	44·27	·43	8·11	55·15	87·71	—	20·55
2·60	·01	9·05	37·37	9·03	34·34	1·69	6·68	51·05	88·32	·67	—
3·28	—	9·48	35·06	9·23	37·60	1·77	7·03	55·63	91·24	3·52	—
4·07	—	9·10	32·87	10·02	38·87	1·78	6·91	57·58	90·25	4·48	—
3·27	2·11	9·41	30·66	8·79	33·37	1·77	6·65	49·98	83·64	3·04	—
2·64	—	10·01	36·65	9·51	40·28	1·78	7·35	58·90	95·55	—	1·85
—	—	—	—	—	—	—	—	—	—	—	—
5·06	·29	9·25	36·85	7·35	34·60	1·42	6·63	50·00	87·85	3·15	—
ment Acts.											
3·69	—	11·67	29·58	3·07	45·96	·26	8·87	58·16	89·14	1·83	—
2·90	—	11·03	40·44	3·38	34·63	·69	6·62	45·32	85·96	—	1·65
3·72	—	12·73	29·72	5·24	55·10	1·02	10·42	71·78	101·50	—	21·97
3·02	—	10·32	34·38	7·49	31·64	1·43	6·74	49·30	83·68	15·28	—
3·14	—	8·83	31·64	8·83	26·99	1·72	7·27	54·81	86·45	12·01	—
3·25	—	9·58	34·55	8·49	32·56	1·65	6·21	48·91	83·46	15·68	—
12·09	1·11	7·48	58·16	4·29	21·44	·73	3·89	30·34	88·50	9·43	—
3·16	—	9·24	33·97	5·08	33·78	·95	6·82	46·63	80·60	18·42	—
3·24	—	7·84	30·94	10·62	38·69	2·02	7·01	56·34	87·28	9·97	—
3·54	—	11·38	38·49	4·29	41·32	·70	8·71	59·02	97·51	—	19·41
3·24	—	8·96	33·60	6·68	36·53	1·13	6·86	51·20	85·10	5·05	—
3·34	—	11·49	32·16	2·25	44·27	·42	8·11	55·15	87·71	—	29·55
3·04	—	9·09	33·57	2·98	40·46	·51	7·77	51·72	84·69	10·14	—
3·83	—	12·48	43·08	2·32	61·43	·53	14·47	78·75	122·73	—	28·06
2·95	—	13·46	35·35	2·62	73·68	·55	17·49	94·34	129·69	—	31·49
2·69	—	10·89	34·29	3·95	45·12	1·03	11·08	61·48	95·77	1·43	—
2·92	—	9·89	39·79	6·76	39·96	1·26	7·31	55·29	95·08	—	1·98
3·57	—	11·38	36·59	3·10	43·57	·58	7·96	55·21	91·80	—	14·65
3·52	—	10·67	37·18	2·92	52·91	·57	9·01	65·31	102·49	—	4·95
3·61	—	9·53	34·75	5·66	45·02	1·07	8·23	60·03	94·78	—	·57
3·18	—	9·63	34·77	5·91	41·76	1·03	7·83	56·55	91·32	3·54	—
4·52	·15	9·34	37·14	6·25	37·35	1·17	7·30	52·07	89·21	4·76	—
4·93	·19	9·37	36·93	7·06	35·54	1·35	6·95	50·90	87·83	(d)3·18	—

(d) Percentage on surplus of £7,499 0s. 8d., which excludes interest on cash balances amounting to £633 14s. 4d.
(e) See Note (e)

F—SUMMARY OF

Dwellings.	Borough.	Accommodation (persons).	Persons in occupation 31st March, 1912.	Date of opening.	Aggregate Capital Expenditure to 31st March, 1912. Land.	Buildings.	Total.
1	2	3	4	5	6	7	8
I.—Housing of the							
Part I.					£ s. d.	£ s. d.	£ s. d.
Boundary-street	Bethnal Green and Shoreditch	5,280	4,555	1895–1900	62,019 – –	275,526 6 –	337,536 6 –
Cable-street	Stepney	798	813	1896, 1901	5,660 – –	37,592 8 7	41,252 8 7
Shelton-street	Holborn	284	222	1896	5,150 – –	19,292 7 5	24,192 7 5
Millbank (proportion)	Westminster (City)	1,536	1,244	1899–1902	11,906 12 –	70,290 13 1	82,197 5 1
Churchway	St. Pancras	832	592	1901–2	8,550 – –	39,126 14 –	47,676 14 –
Hardy	Greenwich	306	226	1901	1,000 – –	12,598 9 –	13,598 9 –
Duke's-court (proportion)	Westminster (City)	456	363	1902	4,200 – –	19,193 16 1	23,393 16 1
York-street (proportion)	Westminster (City)	293	219	1903	3,000 – –	12,950 6 7	15,950 6 7
Preston's-road (proportion)	Poplar	269	136	1904	1,433 14 1	11,412 17 5	12,846 11 6
St. Luke's—							
Wenlake	Finsbury	496	348	1905	5,000 – –	19,774 2 7	24,774 2 7
Chadworth	Finsbury	720	551	1907	8,000 – –	35,813 10 6	43,813 10 6
Clerkenwell and Holborn—							
Mallory	Finsbury	164	118	1906	1,020 – –	11,479 2 3	12,499 2 3
Nigel, etc.	Holborn	1,300	872	1908	14,550 – –	71,277 2 2	85,827 2 2
Webber-row	Southwark	1,143	764	1906–7	9,750 – –	43,041 8 1	52,791 8 1
Dwellings on sites compulsorily appropriated for rehousing, on the working of which a							
Brook-street	Stepney	308	235	1894, 1900	1,800 – –	15,314 – 9	17,114 – 9
Goldsmith's-row	Shoreditch	144	100	1895	1,000 – –	7,128 8 11	8,128 8 11
Hughes-fields cottages	Greenwich	666	574	1895	3,720 – –	35,756 1 1	39,476 1 1
Part II.							
Cranley	Holborn	60	46	1897	720 – –	3,017 8 10	3,737 8 10
Borough-road	Southwark	400	291	1900	5,000 – –	24,014 4 1	29,014 4 1
Cobham	Southwark	279	214	1900	2,100 – –	13,007 1 5	15,107 1 5
Ann-street	Poplar	630	459	1901–2	2,250 – –	23,812 4 8	26,062 4 8
Sylva	Deptford	144	101	1903	1,000 – –	5,053 7 7	6,053 7 7
Part III. Dwellings.							
Parker-street House	Holborn	345	244	1893	3,750 – –	23,139 9 –	26,889 9 –
Carrington House	Deptford	803	459	1903	2,200 – –	54,936 17 7	57,136 17 7
Dufferin-street	Finsbury	174	147	1892	1,900 – –	4,714 10 11	6,614 10 11
Green-street and Boyfield-street	Southwark	418	236	1897	3,960 – –	21,074 18 4	24,034 18 4
Millbank (proportion)	Westminster (City)	230	156	1899–1902	2,411 14 5	10,540 5 3	12,951 19 8
Holmwood	Southwark	72	39	1900	450 – –	4,777 13 6	5,227 13 6
Totterdown-fields	Wandsworth	8,788	4,329	1903–11	76,772 4 3	316,015 5 9	392,787 10 –
Preston's-road (proportion)	Poplar	1,035	524	1904	5,516 5 11	33,552 19 10	39,069 5 9
Hughes-fields-dwellings (proportion)	Deptford and Greenwich	440	293	1904	855 6 8	16,374 12 9	17,229 19 5
White Hart-lane	Tottenham, Wood Green and Edmonton (U.D.C.)	5,889	2,541	1904–12	44,754 – –	169,145 14 –	213,899 14 –
Wesley	Islington	1,050	720	1904–5	11,818 13 2	46,060 9 11	57,879 3 1
Norbury	Croydon	3,325	1,558	1906–12	28,476 – –	123,174 2 8	149,650 2 8
Caledonian-road	Islington	1,384	984	1906	15,763 12 7	53,192 – 8	68,955 15 3
Briscoe	Lambeth	718	342	1906	7,154 7 2	27,968 2 7	35,122 9 9
Old Oak	Hammersmith	—	—	—	† —	122 13 7	122 13 7
Total—Dwellings		—	25,205	—	361,092 19 3	1,710,991 17 5	2,072,084 7 8
Interest on cash balances					—	—	—
Dwellings in course of erection—							
Part I.					—	—	—
Part III.					—	—	—
					—	—	—
Dividends (less expenses of investment) and interest (Repairs and Renewals Fund)					361,092 19 3	1,710,991 17 5	2,072,084 7 8
					—	—	—
Part III.							
Estates in course of development					‡§119,546 4 5	—	‡§ 119,546 4 5
					480,638 14 8	1,710,991 17 5	2,191,630 12 1

Add—Net contributions from rates to 31st March, 1912 (page xlviii)

II.—Improvement							
Battersea Bridge	Battersea	286	265	1901	1,350 – –	15,704 7 8	17,054 7 8
Cotton-street	Poplar	360	220	1901	1,400 – –	12,768 12 5	14,168 12 5
Durham	Battersea	536	265	1904	2,300 – –	24,884 13 –	27,184 13 –
Duke's-court (proportion)	Westminster (City)	152	120	1902	1,400 – –	6,397 18 9	7,797 18 9
York-street (proportion)	Westminster (City)	97	73	1903	1,000 – –	4,316 15 5	5,316 15 5
Herbrand-street	Holborn	680	502	1904	7,000 – –	26,659 2 2	33,659 2 2
Bruce House	Westminster (City)	708	708	1906	8,830 – –	47,105 4 5	55,935 4 5
Millbank (proportion)	Westminster (City)	2,664	1,810	1899–1902	20,650 10 2	122,085 15 11	142,736 6 1
Bourne	Holborn	2,643	1,854	1902–4	44,000 – –	149,345 17 7	193,345 17 7
Swan-lane	Bermondsey	1,220	597	1902–4	5,000 – –	55,870 5 –	60,870 5 –
Valette	Hackney	416	276	1905	3,000 – –	18,172 11 1	21,172 11 1
Hughes-fields (dwellings) (proportion)	Deptford and Greenwich	220	146	1904	427 13 4	8,187 6 4	8,614 19 8
Bescroft	Fulham	220	121	1906	700 – –	9,562 19 –	10,262 19 –
Dwellings on sites compulsorily appropriated for rehousing, on the working of which a							
Council	Poplar	240	150	1894	621 – –	16,429 7 –	17,041 7 –
Westview, etc.	Greenwich	464	316	1894	1,148 9 3	27,207 14 11	28,356 4 2
Idealth	Greenwich	460	354	1896	1,500 – –	17,156 10 6	18,656 10 6
Barnaby	Bermondsey	400	303	1904	2,875 – –	16,316 17 1	19,191 17 1
Brightlingsea	Stepney	340	200	1904	1,000 – –	13,671 5 10	14,671 5 10
Bekesbourne	Stepney	280	250	1907	1,120 – –	17,078 9 10	18,198 9 10
Darcy	Hackney	100	128	1904	1,250 – –	9,741 12 3	10,991 12 3
Wandsworth-road	Lambeth	236	148	1905	1,560 – –	11,343 1 3	12,903 1 3
Total—Dwellings in occupation		—	9,016	—	108,212 12 9	635,093 7 5	743,306 – 2
Interest on cash balances					—	—	—
Dwellings in course of erection					—	—	—
Dividends (less expenses of investment) (Repairs and Renewals Fund)					—	—	—
					108,212 12 9	635,093 7 5	743,306 – 2

Deduct—Net contributions to rates, after deducting contributions from Tramways Account, to 31st March,

* The accommodation is arrived at generally by calculating two persons to a room. The census taken in March, 1912, showed an average of 1·22 persons per room.

† After deducting expenditure of £16,373 8s. 4d. met out of the Acquisition of Lands Fund—Land, £1,916; Buildings, £12,423 8s. 4d.

‡ After deducting expenditure of £8,141 5s. 6d. as is noted.

§ White Hart-lane, £32,254 14s. 6d.; Norbury, £5,219 12s. 2d.; Old Oak, £21,991 17s. 9d.

FINANCIAL RESULTS.

Aggregate Balance on Revenue Account, 1st April, 1911. Surplus (+) Deficiency (—).	Result of Year's Working. Surplus (+) Deficiency (—) (page 75, col. 20).	Aggregate Balance on Revenue Account, 31st March, 1912. Surplus (+) Deficiency (—).	Accumulations of Sinking Fund to 31st March, 1912, (excluding proceeds of Sales).	Repairs and Renewals Fund. 1911–12. Unspent Accumulation on 1st April, 1911.	Transfers from Revenue Account (page 75, col. 12).	Actual Expenditure.	(difference, being further amount set aside.	Unspent Accumulations on 31st March, 1912
9	10	11	12	13	14	15	16	17
Working Classes Act, 1890.								
£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
+ 19,611 12 5	+ 2,251 – 6	+ 21,902 12 9	41,857 10 11					
+ 1,509 19 8	+ 213 – 1	+ 1,722 19 9	5,677 14 5					
+ 241 19 9	+ 81 3 5	+ 323 14 –	3,813 13 8					
+ 11,820 12 5	+ 1,215 11 –	+ 13,036 3 5	6,913 3 4					
+ 6,714 13 3	+ 581 1 8	+ 7,295 14 11	3,571 11 4					
— 966 15 8	— 44 5 5	— 1,011 1 1	1,012 11 1					
+ 2,435 6 1	+ 278 11 6	+ 2,713 17 7	1,696 6 6					
+ 1,018 19 7	+ 137 13 2	+ 1,156 2 9	963 – 1					
— 2,169 13 8	+ 263 7 8	— 2,424 5 4	687 14 7					
+ 1,305 19 –	+ 221 16 1	+ 1,527 15 1	1,146 13 –					
+ 484 13 7	+ 204 19 8	+ 689 12 3	1,510 2 9					
+ 551 12 4	+ 117 15 10	+ 669 8 2	505 2 2					
+ 29 7 8	+ 66 10 1	+ 96 7 9	2,187 13 6					
+ 2,775 18 4	+ 645 11 4	+ 3,421 9 8	1,850 15 4					
deficiency was anticipated owing to the character or situation of the site								
— 1,055 2 7	— 95 5 4	— 1,950 7 11	5,960 7 5					
— 517 10 1	— 76 6 –	— 593 16 1	1,403 3 8					
— 9,357 15 –	— 676 4 7	— 10,043 19 7	6,919 19 4					
+ 578 11 5	+ 38 10 9	+ 617 2 2	433 8 –					
+ 883 13 6	+ 39 15 10	+ 923 9 4	5,666 – 9					
+ 1,216 11 5	+ 86 10 10	+ 1,303 2 3	1,284 8 7	2,277 8 11	603 – –	444 3 –	158 17 –	2,436 5 11
— 650 4 10	+ 22 4 –	— 628 – 10	1,871 18 2					
+ 495 6 9	+ 58 15 5	+ 554 2 2	380 4 4					
+ 454 17 4	+ 118 11 8	+ 575 9 –	4,810 17 4					
— 10,581 2 11	— 1,567 12 3	— 12,148 15 2	3,450 9 1					
— 127 10 2	+ 21 1 5	— 106 8 9	1,218 11 1					
+ 1,859 11 5	+ 177 6 7	+ 1,036 18 –	3,308 9 5					
+ 1,650 9 5	+ 159 17 11	+ 1,810 7 4	1,100 11 9					
— 278 13 3	— 13 4 1	— 291 16 4	484 11 6					
+ 518 19 7	+ 193 7 9	+ 1,382 7 4	15,865 14 2					
— 5,404 14 3	— 606 11 9	— 6,011 6 –	2,138 6 9					
— 1,611 16 3	— 263 11 11	— 1,875 8 2	854 – 6					
— 5,008 19 10	+ 110 16 7	— 4,898 3 3	5,428 7 4					
— 1,221 15 9	+ 146 11 2	— 1,175 4 7	3,121 3 7					
— 1,317 11 9	+ 419 14 10	— 897 16 11	2,601 3 9					
+ 348 19 9	+ 326 13 1	+ 675 12 10	3,040 18 5					
— 1,501 15 1	— 46 19 10	— 1,548 14 11	1,409 6 9					
— —	— 12 17 2	— 12 17 2	—					
+ 13,474 12 5	+ 5,022 8 –	+ 18,497 – 5	139,944 19 4	23,979 15 2	14,710 13 1	13,627 17 5	1,082 15 8	25,062 10 10
+ 2,528 9 6	+ 450 8 3	+ 2,988 17 9	—	—	—	—	—	—
+ 16,013 1 11	+ 5,472 16 3	+ 21,485 18 2	—	—	—	—	—	—
— 6,615 17 1	—	— 6,615 17 1	—	—	—	—	—	—
— 5,691 17 3	—	— 5,691 17 3	—	—	—	—	—	—
— 12,315 14 4	—	— 12,315 14 4	—	—	—	—	—	—
+ 3,797 7 7	+ 5,472 16 3	+ 9,270 3 10	—	—	—	5,615 8 8	—	— 1,291 7 3	1,291 7 3	6,906 15 11
— 69,946 7 9	— 4,949 6 5	— 74,895 14 2	9,352 18 4	—	—	—	—	—
— 66,149 – 2	+ 523 9 10	— 65,625 10 4	149,297 17 8	23,979 15 2	14,710 13 1	13,627 17 5	1,082 15 8	25,062 10 10
		— 65,625 10 4						
		—						

Acts.								
£ s. d.	£ s. d.	£ s. d.	£ s. d.					
+ 489 19 8	+ 17 19 9	+ 507 19 1	1,310 12 11					
— 455 7 11	— 32 – 8	— 487 8 7	1,160 17 3					
— 3,301 2 5	— 336 10 1	— 3,637 12 6	1,493 12 6					
+ 811 13 6	+ 92 17 1	+ 904 10 7	503 8 1					
+ 339 10 –	+ 45 17 7	+ 385 7 7	321 13 11					
+ 2,964 7 10	+ 436 7 10	+ 3,400 15 8	1,927 4 1					
+ 3,593 9 10	+ 650 2 8	+ 4,243 12 6	2,019 7 8					
+ 20,543 17 9	+ 2,109 6 6	+ 22,652 2 3	10,871 6 2					
+ 9,920 15 5	+ 1,261 11 –	+ 11,182 6 5	12,559 7 8					
— 8,044 7 6	— 801 14 9	— 8,846 2 3	3,403 19 –					
+ 741 2 7	+ 85 2 10	+ 826 5 5	923 2 3					
— 805 18 2	— 131 16 –	— 937 14 2	426 19 10	16,998 6 3	5,253 6 11	5,443 6 3	*189 19 4*	16,808 6 11
— 200 18 5	+ 89 3 10	— 211 14 7	350 – –					
deficiency was anticipated owing to the character or situation of the site								
— 4,977 3 10	— 224 16 5	— 4,632 – 3	3,045 14 7					
— 8,092 11 7	— 424 – 9	— 8,500 12 4	5,956 12 13					
— 874 – 8	+ 18 7 –	— 855 13 1	2,976 11 –					
— 159 3 8	— 28 9 2	— 187 12 10	982 – 9					
— 1,397 5 9	— 151 2 4	— 1,549 8 1	748 – 1					
— 241 4 –	— 51 15 2	— 292 19 2	699 8 7					
— 169 17 1	— 4 4 8	— 174 1 9	573 19 2					
+ 230 1 11	+ 49 8 1	+ 279 10 –	611 9 1					
+ 8,415 18 6	+ 2,676 12 8	+ 11,092 11 2	32,331 1 6	16,998 6 3	5,253 6 11	5,443 6 3	*189 19 4*	16,808 6 11
+ 1,374 18 1	+ 183 6 1	+ 1,558 4 2	—	—	—	—	—	—
+ 9,790 16 7	+ 2,859 18 9	+ 12,650 15 4	—	—	—	—	—	—
— 3,897 7 9	—	— 3,897 7 9	—	—	—	—	—	—
+ 5,793 8 10	+ 2,859 18 9	+ 8,653 7 7	—	—	—	—	—	—
—	—	—	—	—	—	— 628 8 1	628 8 1	3,072 9 8
+ 5,793 8 10	+ 2,859 18 9	+ 8,653 7 7	32,331 1 6	16,442 7 10	5,253 6 11	4,814 18 2	438 8 9	19,880 16 7
1912 (page xlviii.)		8,653 7 7						
		—						

G.—REPAIRS AND RENEWALS ACCOUNT—DETAILS OF INVESTMENTS.

Name of Stock.	Amount of Stock.	Cost Price.						Market Value on 31st March, 1912.
		Housing of the Working Classes Act, 1890.				Dwellings (Improvement Acts).	* Total.	
		Part. I.	Part II.	Part III.	Total.			
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£
London County Consolidated—								
2½ per cent.	24,570 14 9	12,693 9 1	1,000 – –	1,603 16 9	15,297 5 10	5,702 14 2	21,000 – –	17,261
3 per cent.	12,246 9 8	1,000 – –	500 – –	4,500 – –	6,000 – –	5,000 – –	11,000 – –	10,379
New South Wales Government—								
3½ per cent. Inscribed (1918)	11,148 17 2	3,000 – –	500 – –	4,000 – –	7,500 – –	3,500 – –	11,000 – –	10,954
Dominion of Canada—								
3½ per cent. Registered (1930–50)	13,026 4 1	3,000 – –	—	5,500 – –	8,500 – –	4,500 – –	13,000 – –	12,587
London, Brighton and South Coast Railway Company—								
5 per cent. Consolidated Guaranteed	1,500 – –	801 – –	400 10 –	400 10 –	1,602 – –	400 10 –	‖ 2,002 10 –	1,911
		20,494 9 1	2,400 10 –	16,004 6 9	38,899 5 10	19,103 4 2	58,002 10 –	*53,092

*Housing Act, 1890 .. £35,337
Improvement Acts .. 17,755
53,092

H.—STATEMENT AS TO CONTRIBUTIONS FROM AND TO RATES.

Year.	Housing of the Working Classes Act, 1890.				Dwellings (Improvement Acts).	Total.
	Part I.	Part II.	Part III.			
			Dwellings.	Estates in Course of Development.		
	CONTRIBUTIONS FROM RATES.					
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1894–5—1910–11 ..	3,167 17 6	—	30,509 9 9	71,336 16 3	5,097 5 4	110,111 8 10
1911–12..	—	—	70 4 10	4,949 6 5	—	5,019 11 3
	3,167 17 6	—	30,579 14 7	76,286 2 8	5,097 5 4	115,131 – 1
	CONTRIBUTIONS TO RATES.					
1894–5—1910–11 ..	31,950 2 6	2,702 16 4	2,821 16 –	†1,390 8 6	11,813 12 4	50,678 15 8
1911–12..	5,278 8 2	264 12 11	—	—	2,991 14 9	8,534 15 10
	37,228 10 8	2,967 9 3	2,821 16 –	†1,390 8 6	14,805 7 1	59,213 11 6
NET CONTRIBUTIONS—						
From rates ..	—	—	27,757 18 7	74,895 14 2	—	55,917 8 7
To rates	34,060 13 2	2,967 9 3	—	—	9,708 1 9	
	CONTRIBUTIONS FROM TRAMWAYS ACCOUNT.					
Proportion of deficiency on Hughes-fields (Deptford) Dwellings, Drake Buildings, allocated for rehousing persons displaced by the Generating Station, Greenwich—						
To 31st March, 1911					922 18 2	
1911–12					131 16 –	
						1,054 14 2
NET CONTRIBUTIONS from Rates and Tramways Account—						
Housing of the Working Classes Act, 1890..					65,625 10 4	
Less—Dwellings under Improvement Acts					8,653 7 7	
						56,972 2 9

† In respect of Norbury Brickfield.

APPENDIX XVII.

STATEMENT OF CAPITAL EXPENDITURE ON CLEARANCE SCHEMES UNDER THE HOUSING OF THE WORKING CLASSES ACT, 1890.

NOTE.—The receipts are derived from sales of land and rents and include amounts transferred from the accounts of the dwellings for the housing values of the sites appropriated for that purpose. Under Part II. they include contributions from Local Authorities.

Clearance Scheme.	Date of Act sanctioning Scheme	Capital Expenditure to 31st March, 1912.		
		Gross.	Receipts applied to Capital Expenditure.	Net. (a)
HOUSING OF THE WORKING CLASSES ACT, 1890.		£ s. d.	£ s. d.	£ s. d.
PART I.				
Whitechapel and Limehouse	1876	187,557 18 6	35,795 1 4	151,762 17 2
Holborn	—	1,728 14 7	—	1,728 14 7
Goulston-street and Flower and Dean-street, Whitechapel	1877	371,607 5 5	87,635 15 7	283,971 9 10
Elizabeth-place, King-street and Mint-street, St. George-the-Martyr, Southwark	,,	66,785 10 8	14,342 5 9	52,443 4 11
Bedfordbury, St. Martin-in-the-Fields	,,	87,212 8 4	11,701 14 4	75,510 14 –
Great Wild-street, St. Giles-in-the-Fields	,,	124,278 7 10	18,627 15 9	105,650 12 1
Pear Tree-court, Clerkenwell	,,	27,426 6 5	6,556 11 6	20,869 14 11
Whitecross-street, St. Luke	,,	391,302 19 2	76,360 5 3	314,942 13 11
High-street, Islington	,,	44,775 11 3	6,588 16 7	38,186 14 8
Old Pye-street, Westminster	,,	79,389 4 10	29,493 – 4	49,896 4 6
Bowman's-buildings, St. Marylebone	1878	52,348 6 6	15,889 15 6	36,458 11 –
Essex-road, Islington	,,	115,108 – –	17,209 6 2	97,898 13 10
Little Coram-street, Bloomsbury	1879	14,358 19 3	871 8 8	13,487 10 7
Wells-street, Poplar	,,	75,771 8 7	11,651 19 8	64,119 8 11
Great Peter-street, Westminster	,,	235 5 3	22 12 7	212 12 8
Tench-street, St. George-in-the-East	1883	52,636 16 4	645 17 9	51,990 18 7
Brook-street, Limehouse	,,	23,794 14 11	3,988 2 6	19,806 12 5
Windmill-row, Lambeth	,,	13,212 5 8	3,433 12 11	9,778 12 9
Trafalgar-road, Greenwich	,,	20,700 4 –	3,023 12 8	17,676 11 4
Tabard-street, Newington	1885	18,629 13 7	10,400 7 8	8,229 5 11
Hughes-fields, Deptford	,,	91,978 3 5	8,083 5 10	83,894 17 7
Cable-street, Shadwell	1887	46,390 10 6	5,155 8 2	41,235 2 4
Shelton-street, St. Giles	,,	79,553 13 6	11,134 12 9	68,419 – 9
Boundary-street, Bethnal Green	1891	353,439 8 5	74,442 7 10	278,997 – 7
Goldsmith's-row, Shoreditch	,,	4,885 7 10	1,090 17 6	3,794 10 4
Churchway, Somers Town, St. Pancras	1897	43,200 11 7	8,699 – –	34,501 11 7
Clare-market, Strand	,,	413,988 18 2	353,850 – 2	60,138 18 –
Aylesbury-place, Clerkenwell, and Union-buildings, Holborn	1900	194,100 15 –	18,948 4 6	175,152 10 6
Burford's-court, Tucker's-court and Favonia-street, Poplar	,,	16,829 7 3	5,530 10 –	11,298 17 3
Garden-row, Roby-street, Baltic-street and Honduras-street, St. Luke	,,	120,719 7 10	13,860 11 6	106,858 16 4
Webber-row, Wellington-place and King's Bench-walk, Southwark	,,	106,742 14 –	10,293 9 –	96,449 5 –
Nightingale-street, St. Marylebone	,,	702 1 –	702 1 –	—
Providence-place, Poplar	1902	12,752 3 6	145 7 1	12,606 16 5
Tabard-street and Grotto-place, Southwark, and Crosby-row, Bermondsey	—	659 11 4	—	659 11 4
General	—	449 3 7	—	449 3 7
Total for Part I.		3,255,251 18 –	866,173 17 10	(a)2,389,078 – 2
PART II.				
(i.) Schemes carried out by the Council—				
Brooke's-market, Holborn	1892	8,929 15 6	3,857 14 10	5,072 – 8
Mill-lane, Deptford	1894	23,341 1 11	14,174 16 4	9,166 5 7
Ann-street, Poplar	,,	11,089 10 5	6,735 2 –	4,354 8 5
Falcon-court, Borough	1898	50,951 6 10	15,798 10 1	35,152 16 9
(ii.) Contributions to schemes carried out by the Local Authorities—				
Green-street and Gun-street, Southwark	1893	1,568 14 10	—	1,568 14 10
Moira-place and Plumber's-place, Shoreditch	1894	27,500 – –	—	27,500 – –
Queen Catherine-court, Ratcliff	1895	2,787 2 8	—	2,787 2 8
London-terrace, St. George-in-the-East	,,	682 8 –	—	682 8 –
King John's-court, Limehouse	1899	6,429 – 8	—	6,429 – 8
Fulford-street and Braddon-street, Rotherhithe	1900	14,560 – –	—	14,560 – –
Brantome-place and Prospect-terrace, St. Pancras	1904	15,600 – –	—	15,600 – –
Norfolk-square, Islington	,,	3,986 19 8	—	3,986 19 8
Total for Part II.		167,426 – 6	40,566 3 3	(a)126,859 17 3
Total for Parts I. and II.		3,422,677 18 6	906,740 1 1	2,515,937 17 5

(a) Before deducting proceeds of sales carried to Consolidated Loans Fund.

APPENDIX XVIII.

STATEMENT AS TO THE COMMERCIAL AND HOUSING VALUES OF SITES UTILISED FOR THE ERECTION OF WORKING CLASS DWELLINGS.

Statement showing difference between the commercial value and the housing value of sites (*a*) sold by the Metropolitan Board of Works to Dwellings Companies and others, with the obligation to erect dwellings for the working classes thereon, or (*b*) acquired or appropriated by the Council for the erection of working class dwellings.

NOTE.—The figures in the column headed "Commercial value," except in the few instances where actual cost is given, represent the estimate of the Council's Valuer of the amount which would have been obtained in the open market at the time of the disposal of the re-housing site for the site as cleared land free from all restrictions. The figures in the column headed "Housing value" represent in statement (*a*) the sums actually received from Dwellings Companies and others for the sites restricted to the erection of working class dwellings and in statement (*b*) the estimated housing value as determined by the Council on the advice of the Valuer, and charged to the capital accounts of the dwellings.

(*a*) Sites sold by the Metropolitan Board of Works to Dwelling Companies and others, with the obligation to erect dwellings for the working classes thereon.

Clearance scheme or street improvement	Commercial value (estimated).	Housing value. (Cash received from Dwellings Companies.	Difference charged to clearance scheme or improvement (cost of writing down value of cleared site).
HOUSING OF THE WORKING CLASSES ACT, 1890.	£	£	£
PART I.—CLEARANCE SCHEMES.			
Whitechapel and Limehouse	73,000	24,900	48,100
Goulston-street and Flower and Dean-street, Whitechapel	80,000	32,106	47,894
Elizabeth-place, King-street and Mint-street, St. George-the-Martyr, Southwark	27,000	12,300	14,700
Bedfordbury, St. Martin-in-the-Fields	15,000	7,886	7,114
Great Wild-street, St. Giles-in-the-Fields	35,000	15,840	19,160
Pear Tree-court, Clerkenwell	12,000	5,925	6,075
Whitecross-street, St. Luke	105,000	36,882	68,118
High-street, Islington	11,000	5,650	5,350
Old Pye-street, Westminster	40,000	20,410	19,590
Bowman's-buildings, St. Marylebone	16,500	10,000	6,500
Essex-road, Islington	30,000	13,306	16,694
Wells-street, Poplar	12,000	5,000	7,000
Windmill-row, Lambeth	6,000	3,050	2,950
Tabard-street, Newington	7,000	4,200	2,800
Hughes-fields, Deptford	2,600	1,460	1,140
Total for Clearance schemes	472,100	198,915	273,185
STREET IMPROVEMENTS.			
Metropolitan Street Improvements Act, 1872—			
Bethnal Green-road	11,500	*7,220	4,280
Old-street to Oxford-street (Clerkenwell-road and Theobald's-road)	38,400	10,860	27,540
Willow-walk, Great Eastern-street	26,305	14,272	12,033
Metropolitan Board of Works (Various Powers) Act, 1876—			
Appold-street (Sun-street), Shoreditch	2,100	1,250	850
Metropolitan Street Improvements Act, 1877—			
Camberwell and Peckham	1,500	600	900
Charing-cross-road and Shaftesbury-avenue	77,000	*33,715	43,285
Gray's Inn-road (including Elm-street, Acts of 1884 and 1887)	22,730	14,335	8,395
Jamaica-road and Union-road	10,700	5,300	5,400
Kentish Town-road	2,500	2,300	200
Marshalsea-road (Southwark Bridge-road)	4,200	1,900	2,300
Tooley-street	20,000	*10,000	10,000
Metropolitan Street Improvements Act, 1883—			
Green-street, Bethnal Green	3,500	2,030	1,470
Upper-street, Islington	2,500	950	1,550
Hampstead, High-street	2,500	1,500	1,000
Metropolitan Board of Works (Various Powers) Act, 1885—			
Rosebery-avenue	30,000	24,775	5,225
Total for Street Improvements	255,435	131,007	124,428
Total	727,535	329,922	397,613

* Wholly or partly based on the capitalisation of annual ground rents.

(*b*) Sites acquired or appropriated by the Council for the erection of working class dwellings.

Dwellings.	Commercial value. (Estimated.)	Housing value. (Estimated.) [Amounts charged to Dwellings Accounts, page 28, col. 6.]	Difference charged to clearance scheme or improvement (cost of writing down value of cleared site).
HOUSING OF THE WORKING CLASSES ACT, 1890. PART I.	£	£	£
Boundary-street	131,670	62,010	69,660
Cable-street	8,500	3,660	4,840
Shelton-street	24,465	5,100	19,365
Millbank	*16,302	11,907	4,295
Churchway	25,000	8,550	16,450
Hardy	4,000	1,000	3,000
Duke's-court	*61,181	4,200	53,981
York-street		3,000	
Preston's-road	1,434	1,434	Nil.
St. Luke's—Wenlake	25,900	5,000	20,900
Do. Chadworth	20,800	8,000	12,800
Clerkenwell and Holborn — Mallory	10,000	1,620	8,380
Do. Nigel, etc.	53,000	14,550	38,450
Webber-row	28,500	9,750	18,750
Parker-street†	14,035	3,750	10,285
Brook-street	3,600	1,800	1,800
Goldsmith's-row	*4,794	1,000	3,794
Hughes-fields	7,760	3,720	4,040
PART II.			
Cranley	1,500	750	750
Borough	8,146	5,000	3,146
Cobham	6,466	2,100	4,366
Ann-street	2,850	2,260	590
Sylva	2,166	1,000	1,166
‡Carrington House	3,834	2,200	1,634
	465,803	163,361	302,442
§DWELLINGS UNDER IMPROVEMENT ACTS.			
Battersea-bridge	4,000	1,350	2,650
Cotton-street	2,500	1,400	1,100
Durham	5,000	2,380	2,620
Duke's-court		1,400	
York-street	*20,668	1,000	18,268
Herbrand-street	41,836	7,000	34,836
Bruce House	63,000	8,830	54,170
Bourne	*201,469	44,000	157,469
Millbank	*27,901	20,651	7,250
Swan-lane	6,850	5,000	1,850
Valette	8,600	3,000	5,600
Hughes-fields	*428	428	—
Bearcroft	2,229	700	1,529
Council	3,000	621	2,379
Westview, Armitage and Collerston	4,900	1,148	3,752
Idenden	4,400	1,500	2,900
Barnaby	6,100	2,875	3,225
Brightlingsea	4,100	1,000	3,100
Bekesbourne	2,350	1,120	1,230
Darcy	2,350	1,250	1,100
Wandsworth-road	*4,596	1,560	3,036
	416,277	108,213	308,064
	882,080	271,574	610,506

* Actual cost of site purchased for re-housing purposes.
† Erected as a lodging house under Part III., but provides accommodation in connection with Shelton-street Scheme.
‡ Erected as a lodging house under Part III., but provides accommodation in connection with Mill-lane, Deptford, Scheme.
§ For Statutes under which these dwellings are erected, see page 28.

APPENDIX XIX.

A.—Number of Tenements Comprised in the Dwellings in Occupation on 31st March, 1911, together with Particulars of the Dwellings Opened between that date and 31st March, 1912.

Dwellings.	Metropolitan Borough.	Date opened.	Number of tenements of							Total tenements.	Total rooms.	Cubicles.	Number of persons provided for.	Shops.	Workshops.	Stables	Sheds.	Cupboards.
			1 room.	2 rooms.	3 rooms	3 rooms with additional small bedroom.	4 rooms	5 rooms	6 rooms									
Total number of tenements, etc. in occupation on 31st March, 1911	..	..	191(a)	3,459	3,634	273(b)	915	472(c)	3	8,947	25,141	1,848	51,856	102	97	12	192	17
Dwellings opened during the year 1st April, 1911, to 31st March, 1912—																		
Norbury Estate—	Croydon																	
Newlands-road		Dec., 1911 & Mar. 1912	..	..	25	..	3	..	..	28	87	..	174	2	..	..	..	..
Northborough-road		July & Aug., 1911	..	..	4	..	26	..	..	30	116	..	232	..	..	..	..	..
Norton-gardens		Sept., 1911	..	..	4	..	18	..	..	22	84	..	168	..	..	..	..	..
Tylecroft-road		June, 1911	..	..	16	..	4	..	..	20	64	..	128	..	..	..	..	..
					49		*51*			*100*	*351*		*702*	*2*				
Totterdown Fields—	Wandsworth																	
Church-lane		Aug., 1911	..	..	..	..	11	..	..	11	44	..	88	..	..	..	..	..
Coteford-street		June to Aug., 1911	..	..	48	12	1	..	..	61	196	..	380	..	..	..	..	..
Cowick-road		June & Aug., 1911	..	..	48	8	1	..	..	57	180	..	352	..	..	..	..	..
Lessingham-avenue		May & Aug., 1911	..	..	..	..	27	..	..	27	108	..	216	..	..	..	..	..
					96	*20(b)*	*40*			*156*	*528*		*1,036*					

(b) These cottages are reckoned as containing 4 rooms, accommodating 7 persons.
(c) Five of these tenements contain 1 small room, reckoned as accommodating 1 person only.

A.—Number of Tenements Comprised in the Dwellings in Occupation on 31st March, 1911, together with Particulars of the Dwellings Opened between that date and 31st March, 1912—(*continued*).

Dwellings.	Metropolitan Borough.	Date opened.	Number of tenements of							Total tenements.	Total rooms.	Cubicles.	Number of persons provided for.	Shops.	Workshops.	Stables	Sheds.	Cupboards.
			1 room	2 rooms.	3 rooms	3 rooms with additional small bedroom.	4 rooms	5 rooms	6 rooms									
White Hart-lane—	Tottenham																	
Benington-road	..	April, 1911	..	..	..	..	20	..	..	20	80	..	160	..	..	..	..	..
Risley-avenue	..	Nov., 1911 to Feb., 1912	..	..	6	..	41	2(*d*)	..	49	192	..	382	..	..	..	..	..
					6		*61*	*2*(*d*)		*69*	*272*		*542*					
Total number of cottages, opened during year to 31st March, 1912.	..	..	..	..	151	20(*b*)	152	2(*d*)	..	325	1,151	..	2,280	2	..	..	..	..
Alteration to cottage flats at Totterdown Fields Estate.	..	..	..	+ 1	—1	..	..	..	..	..	—1	..	—2	..	..	..	..	..
Additional cubicles and sheds brought into charge :—																		
Bruce House	..	Nov., 1911	..	..	..	..	..	..	..	..	..	7	7	..	..	..	..	..
Briscoe-buildings ..	..	April & Sept., 1911	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	..
	..	..	..	1	150	20(*b*)	152	2(*d*)	..	325	1,150	7	2,285	2	..	..	10	..
Total number of tenements, etc, open on 31st March, 1912..			191(*a*)	3,460	3,784	293(*b*)	1,067	474(*e*)	3	9,272	26,291	1,856	54,141	104	97	12	202	17

(*a*) Three of these tenements also contain a bed recess and each is reckoned as accommodating three persons.
(*b*) These cottages are reckoned as containing 4 rooms, accommodating 7 persons.
(*c*) Five of these tenements contain 1 small room, reckoned as accommodating 1 person only.
(*d*) These cottages contain 4 rooms with a small additional bedroom, each reckoned as containing 5 rooms accommodating 9 persons.
(*e*) Seven of these lettings contain 1 small room and each is reckoned as accommodating one person only.

B.—Accommodation Provided in all the Council's Dwellings open on 31st March, 1912.

Dwellings.	Metropolitan Borough.	Date opened.	Number of tenements of							Total tenements	Total rooms.	Cubicles.	Number of persons provided for.	Shops.	Workshops.	Stables.	Sheds.	Cupboards
			1 room.	2 rooms.	3 rooms.	3 rooms with small additional bedroom.	4 rooms	5 rooms	6 rooms									
Ann-street-dwellings—	Poplar																	
Adelaide-buildings ..		Sept., 1901	..	25	15	..	..	..	..	40	95	..	190					
Melbourne-buildings ..		Nov., 1902	..	30	10	..	..	..	..	40	90	..	180					
Sydney-buildings ..		Dec., 1902..	..	35	20	..	..	..	..	55	130	..	260					
				90	*45*					*135*	*315*		*630*					
Barnaby-buildings	Bermondsey	Sept., 1904	..	40	40	..	..	..	..	80	200	..	400					
Battersea-bridge-buildings ..	Battersea ..	Oct., 1901	10	44	15	..	..	..	..	69	143	..	286	..	..	..	12	
Bearcroft buildings	Fulham ..	Sept., 1906	..	10	30	..	..	..	..	40	110	..	220					
Bekesbourne-buildings ..	Stepney ..	July, 1907	..	45	20	..	10	..	..	75	190	..	380					
Borough-road-dwellings—	Southwark ..																	
Gardiner-buildings ..		May, 1900	..	8	..	..	..	..	..	8	16	..	32					
Hunter-buildings ..		May, 1900	..	20	20	..	..	..	..	40	100	..	200					
Murphy-buildings ..		Oct., 1900	..	24	12	..	..	..	..	36	84	..	168					
				52	*32*					*84*	*200*		*400*					
Boundary-street estate—																		
Streatley-buildings ..	Bethnal-green	April, 1895	..	32	24	..	..	..	..	56	136	..	272	..	12	..	..	4
Cleeve-buildings ..	Shoreditch ..	July, 1896	..	7	12	..	12	1	..	32	103	..	206	8	16	..	8	
Culham-buildings ..	Bethnal-green	Nov., 1896	15	20	..	..	..	..	..	35	55	..	110					
Sonning-buildings ..	,,	Nov., 1896	..	10	15	..	15	..	..	40	125	..	250					
Hurley-buildings ..	,,	Jan., 1897	..	5	5	..	..	..	..	10	25	..	50					
Sandford-buildings ..	,,	Jan., 1897	..	5	5	..	..	..	..	10	25	..	50					
Henley-buildings ..	,,	March, 1897	..	45	25	..	..	..	..	70	165	..	330	..	..	..	..	5
Walton-buildings ..	,,	March, 1897	..	40	35	..	..	..	..	75	185	..	370	..	..	..	..	6
Marlow-buildings ..	,,	March, 1897	..	..	12	..	17	5	..	34	129	..	258	6	17			
Shiplake-buildings ..	,,	March, 1897	..	..	..	..	25	..	1	26	106	..	212	4				
Taplow-buildings ..	,,	May, 1897	..	25	25	..	..	..	..	50	125	..	250					
Chertsey-buildings ..	,,	July, 1897	..	6	14	..	..	..	..	20	54	..	108					
Sunbury-buildings ..	,,	Aug., 1897	..	50	25	..	5	..	..	80	195	..	390	..	32	..	..	2
Iffley-buildings	,,	March, 1898	..	5	5	..	5	..	..	15	45	..	90					
Clifton-buildings ..	,,	Jan., 1899	..	27	36	..	7	..	2	72	202	..	404					
Molesey-buildings ..	,,	March, 1899	..	..	18	..	2	..	..	20	62	..	124					
Wargrave-buildings ..	,,	May, 1899	..	45	15	..	..	..	..	60	135	..	270					
Cookham-buildings ..	,,	July, 1899	..	21	22	..	10	1	..	54	153	..	306					
Benson-buildings ..	,,	April, 1900	..	30	10	..	..	..	..	40	90	..	180					
Hedsor-buildings ..	,,	April, 1900	..	50	35	..	..	..	..	85	205	..	410					
Abingdon-buildings ..	,,	May, 1900	..	75	10	..	..	..	..	85	180	..	360					
Laleham-buildings ..	,,	May, 1900	..	35	40	..	..	..	..	75	190	..	380					
			15	*533*	*388*	..	*98*	*7*	*3*	*1044*	*2690*	..	*5380*	*18*	*77*	..	*8*	*17*

B.—Accommodation Provided in all the Council's Dwellings open on 31st March, 1912—(*continued*).

Dwellings.	Metropolitan Borough.	Date opened.	Number of tenements of							Total tenements	Total rooms.	Cubicles.	Number of persons provided for.	Shops.	Workshops.	Stables	Sheds.	Cupboards
			1 room.	2 rooms.	3 rooms.	3 rooms with small additional bedroom.	4 rooms	5 rooms	6 rooms									
Bourne-estate—	Holborn																	
Denys-buildings ..		Oct., 1902	..	40	15	..	..	..	..	55	125	..	250					
Frewell-buildings ..		Jan., 1903	..	40	15	..	..	..	..	55	125	..	250					
Scrope-buildings ..		Jan., 1903	..	50	5	..	..	..	..	55	115	..	230					
Skipwith-buildings ..		Feb., 1903	..	40	15	..	..	..	..	55	125	..	250					
Ledam-buildings ..		March, 1903	..	50	5	..	..	..	..	55	115	..	230				25	
Shene-buildings ..		May, 1903	..	30	..	..	..	..	..	30	60	..	120				25	
Redman-buildings ..		Oct., 1904	11	31	58	..	27	..	..	127	355	..	710					
Radcliff-buildings ..		June, 1904	5	25	54	..	21	..	..	105	301	..	602	23	..	..		
			16	*306*	*167*		*48*			*537*	*1521*		*2642*	*23*			*50*	
Union-buildings area—	Holborn																	
Buckridge-buildings ..		Oct., 1908	..	10	20	..	10	..	..	40	120	..	240					
Kirkeby-buildings ..		Aug., 1908	..	10	15	..	20	..	..	45	145	..	290					
Laney-buildings ..		April, 1908	4	29	32	..	5	1	..	71	183	..	366	15			14	
Nigel-buildings		Dec., 1907	11	20	29	..	11	..	..	71	182	..	364					
			15	*69*	*96*		*46*	*1*		*227*	*630*		*1290*	*15*				
Brightlingsea-buildings ..	Stepney ..	Sept., 1904	5	20	35	..	5	..	..	65	170	..	340					
Briscoe-buildings	Lambeth ..	Oct., 1906 ..	..	10	73	..	30	..	..	113	359	..	718				10	
Brook-street-dwellings—	Stepney																	
Beachcroft-buildings ..		Sept., 1894	..	20	20	..	..	..	..	40	100	..	200					
Cranford-cottages ..		July, 1900	..	..	18	..	..	..	..	18	54	..	108					
				20	*38*				..	*58*	*154*		*308*					
Cable-street dwellings—	Stepney								..									
Bewley-buildings ..		March, 1896	..	20	30	..	..	..	..	50	130	..	260					
Dellow-buildings ..		March, 1896	..	20	30	..	..	..	..	50	130	..	260					
Lowood-buildings ..		May, 1901	(*a*)11	29	..	..	..	..	..	40	69	..	139					
Chancery-buildings ..		May, 1901	(*a*)11	29	..	..	..	..	..	40	69	..	139					
			22	*98*	*60*				..	*180*	*398*		*798*					
Caledonian-estate—	Islington																	
Burns-buildings ..		July, 1906 ..	..	..	30	..	..	..	..	30	90	..	180					
Scott-buildings		July, 1906 ..	..	..	30	..	..	..	..	30	90	..	180					
Wallace-buildings ..		July, 1906 ..	..	40	30	..	..	..	..	70	170	..	340					
Knox-buildings		July, 1906 ..	..	36	26	..	4	..	..	66	166	..	332					
Bruce-buildings		Oct., 1906 ..	6	40	30	..	..	..	..	76	176	..	352					
			6	*116*	*146*		*4*			*272*	*692*		*1384*					

Chadworth-buildings	Finsbury ..	April, 1907	..	58	68	..	10			136	360		720	19				
Churchway-dwellings—	St. Pancras																	
Wellesley-buildings ..		March, 1901	..	60	20	..	..	..	..	80	180	..	360					
Seymour-buildings ..		July, 1902	2	48	10	..	..	..	..	60	128	..	256					
Somerset-buildings ..		Aug., 1902	..	16	20	..	4	..	..	40	108	..	216					
			2	*124*	*50*		*4*			*180*	*416*		*832*					
Cobham-buildings	Southwark ..	Oct., 1900	(*a*)1	39	20	..	..	..	..	60	139	..	279					
Cotton-street-dwellings—	Poplar																	
Montreal-buildings ..		Sept., 1901	..	25	25	..	..	..	..	50	125	..	250					
Toronto-buildings ..		Sept., 1901	..	5	15	..	..	..	..	20	55	..	110					
				30	*40*					*70*	*180*		*360*					
Council-buildings, Poplar ..	Poplar ..	April, 1894	..	30	20	..	..	..	..	50	120	..	240					
Cranley-buildings	Holborn ..	Oct., 1897	..	6	6	..	..	..	..	12	30	..	60					
Darcy-buildings	Hackney ..	July, 1904	..	25	15	..	..	..	..	40	95	..	190					
Dufferin-street dwellings ..	Finsbury ..	April, 1892	29	23	4	..	..	..	..	56	87	..	174	..	..	12	12	
Duke's-court-dwellings—	Westminster																	
Fletcher-buildings ..		April, 1902	..	35	15	..	..	..	..	50	115	..	230					
Beaumont-buildings ..		May, 1902	10	15	5	..	10	..	..	40	95	..	190					
Sheridan-buildings ..		Aug., 1902	..	25	15	..	..	..	..	40	95	..	190					
			10	*75*	*35*		*10*			*130*	*305*		*610*					
Durham-buildings	Battersea ..	July, 1904	..	56	52	..	..	..	..	108	268	..	536					
East Greenwich cottages—	Greenwich																	
Colleraton-cottages ..		May, 1894	..	12	8	..	4	..	..	24	64	..	128					
Armitage-cottages ..		June, 1894	..	12	8	..	16	..	..	36	112	..	224					
Westview-cottages ..		Aug., 1894	..	6	4	..	8	..	..	18	56	..	112					
				30	*20*		*28*			*78*	*232*		*464*					
Goldsmith's-row-cottages ..	Shoreditch ..	Sept., 1895	..	8	12	..	5	..	..	25	72	..	144					
Green-street and Boyfield-street (late Gun-street) dwellings—	Southwark																	
Albury-buildings ..		June, 1897	6	24	6	..	..	..	..	36	72	..	144					
Clandon-buildings ..		June, 1897	6	18	6	..	..	..	..	30	60	..	120					
Merrow-buildings ..		Aug., 1897	..	12	6	..	..	..	..	18	42	..	84					
Ripley-buildings ..		Aug., 1897	1	17	..	..	..	..	..	18	35	..	70	..	..	..	8	
			13	*71*	*18*					*102*	*209*		*418*				*8*	
Hardy-cottages	Greenwich ..	July, 1901	..	..	51	..	..	..	..	51	153	..	306					
Herbrand-street-dwellings—	Holborn																	
Coram-buildings ..		Feb., 1904	..	50	..	..	..	..	..	50	100	..	200					
Dickens-buildings ..		March, 1904	20	30	10	..	..	..	..	60	110	..	220					
Thackeray-buildings ..		March, 1904	..	20	30	..	..	..	..	50	130	..	260	..	..	..	28	
			20	*100*	*40*					*160*	*340*		*680*				*28*	

(*a*) One of the one-roomed tenements in each of these buildings contains a bed recess, and is reckoned as accommodating three persons.

B.—Accommodation Provided in all the Council's Dwellings open on 31st March, 1912—(*continued*).

Dwellings.	Metropolitan Borough.	Date opened.	Number of tenements of							Total tenements.	Total rooms.	Cubicles.	Number of persons provided for.	Shops.	Workshops.	Stables	Sheds.	Cupboards.
			1 room.	2 rooms.	3 rooms.	3 rooms with small additional bedroom.	4 rooms.	5 rooms.	6 rooms.									
Holmwood-buildings	Southwark	April, 1900	..	12	4	..	..	..	..	16	36	..	72					
Hughes-fields-cottages	Greenwich	Jan., 1895	..	71	61	..	2	..	..	134	333	..	666					
Hughes-fields-dwellings—																		
Drake-buildings	Deptford	Sept., 1904	..	10	30	..	..	..	..	40	110	..	220					
Raleigh-buildings	,,	Nov., 1904	..	18	24	..	8	..	..	50	140	..	280					
Benbow-buildings	Greenwich	Oct., 1904	..	10	20	..	..	..	..	30	80	..	160					
				38	*74*		*8*			*120*	*330*		*660*					
Idenden-cottages	Greenwich	Aug., 1896	..	..	..	..	50	..	..	50	200	..	400					
Mallory-buildings	Finsbury	July, 1906	1	15	17	..	..	..	..	33	82	..	164	5				
Milltank estate—	Westminster																	
Hogarth-buildings		May, 1899	..	21	22	..	10	1	..	54	153	..	306					
Millais-buildings		June, 1900	..	15	10	..	..	..	..	25	60	..	120					
Leighton-buildings		July, 1900	..	15	10	..	..	..	..	25	60	..	120					
Romney-buildings		Nov., 1900	..	35	25	..	..	..	..	60	145	..	290					
Turner-buildings		Dec., 1900	..	43	39	..	3	..	..	85	215	..	430					
Ruskin-buildings		March, 1901	..	43	39	..	3	..	..	85	215	..	430					
Rossetti-buildings		April, 1901	..	35	25	..	..	..	..	60	145	..	290					
Reynolds-buildings		Oct., 1901	..	39	40	..	..	..	..	79	198	..	396	..	..	..	12	
Mulready-buildings		Dec., 1901	..	20	25	..	..	..	..	45	115	..	230					
Maclise-buildings		Feb., 1902	..	50	16	..	..	..	..	66	148	..	296					
Landseer-buildings		March, 1902	..	20	25	..	..	..	..	45	115	..	230					
Lawrence-buildings		April, 1902	..	50	16	..	..	..	..	66	148	..	296					
Morland-buildings		May, 1902	..	30	30	..	..	..	..	60	150	..	300	..	..	..	18	
Wilkie-buildings		July, 1902	..	30	30	..	..	..	..	60	150	..	300	..	..	..	18	
Gainsborough-buildings		Aug., 1902	2	38	40	..	..	..	..	80	198	..	396	..	..	..	12	
			2	*484*	*392*		*16*	*1*		*895*	*2215*		*4430*				*60*	
Norbury estate—	Croydon																	
Bavant-road		May, 1906	..	..	8	9	16	6	..	39	154	..	299					
Bulkeley-road		Feb., 1908	..	..	..	16	..	20	..	36	164	..	312					
Newlands-road		May, 1906	..	..	55	16	8	8	..	87	301	..	586	2				
Northborough-road		April, 1906	..	..	30	..	103	12	..	145	562	..	1124					
Norton-gardens		Oct., 1910	..	..	4	..	22	..	..	26	100	..	200					
Palmers-road		Feb., 1906	..	..	..	6	8	2	..	16	6	..	126					
Tylecroft-road		June, 1910	..	..	42	38	20	..	..	100	358	..	678					
					139	*85(a)*	*177*	*48*		*449*	*1705*		*3325*					

Preston's-road estate—	Poplar																	
St. Lawrence-cottages		March, 1904	..	..	14	..	..	..	..	14	42	..	84					
Ottawa-buildings		March, 1904	..	25	25	..	..	..	..	50	125	..	250					
Baffin-buildings		March, 1904	..	20	5	..	..	..	..	25	55	..	110					
Ontario-buildings		Aug., 1904	..	25	25	..	..	..	..	50	125	..	250					
Hudson-buildings		July, 1904	..	20	5	..	..	..	..	25	55	..	110					
Winnipeg-buildings		Sept., 1904	..	25	25	..	..	..	..	50	125	..	250					
Quebec-buildings		Sept., 1904	..	25	25	..	..	..	..	50	125	..	250					
				140	*124*					*264*	*652*		*1304*					
Shelton-street-dwellings—	Holborn																	
Aldwych-buildings		Aug., 1896	..	30	..	..	..	..	..	30	60	..	120	..	7			
Cotterell-buildings		Aug., 1896	..	..	..	..	4	..	..	4	16	..	32					
Lindsey-buildings		Aug., 1896	1	5	..	..	..	..	..	6	11	..	22	..	9			
Powis-buildings		Sept., 1896	..	6	9	..	..	..	..	15	39	..	78	..	4			
Wimbledon-buildings		Oct., 1896	2	4	2	..	..	..	..	8	16	..	32					
			3	*45*	*11*		*4*			*63*	*142*		*284*		*20*			
Swan-lane-dwellings—	Bermondsey																	
Winchelsea-buildings		Oct., 1902	..	35	30	..	..	..	..	65	160	..	320					
Rye-buildings		April, 1903	..	20	20	..	..	..	..	40	100	..	200					
Sandwich-buildings		May, 1903	..	20	20	..	..	..	..	40	100	..	200					
Hythe-buildings		May, 1904	..	40	25	..	5	..	..	70	175	..	350					
Seaford-buildings		Dec., 1904	..	20	20	..	..	..	..	40	100	..	200					
				135	*115*		*5*			*255*	*635*		*1270*					
Sylva-cottages	Deptford	March, 1903	..	..	24	..	..	..	..	24	72	..	144					
Totterdown-fields estate—	Wandsworth																	
Blakenham-road		Aug., 1903	..	..	26	..	8	..	..	34	110	..	220					
Church-lane		May, 1905	..	..	..	..	11	16	..	27	124	..	248					
Coteford-street		June, 1903	..	..	165	82	1	..	..	248	827	..	1572					
Cowick-road		May, 1903	..	48	228	8	1	..	..	285	816	..	1624					
Derinton-road		Aug., 1903	..	..	159	64	67	23	..	313	1116	..	2168					
Franciscan-road		Jan., 1907	..	..	..	..	..	41	..	41	205	..	410	4				
Lessingham-avenue		May, 1903	..	..	18	..	113	95	..	226	981	..	1962					
Ruislip-street		May, 1903	..	..	29	..	4	..	..	33	103	..	206					
Okeburn-road		Oct., 1909	..	..	..	54	..		..	54	216	..	378					
				48	*625*	*208(a)*	*205*	*175*		*1261*	*4498*		*8788*	*4*				
Valette-buildings	Hackney	May, 1905	..	39	34	..	7	..	..	80	208	..	416					
Wandsworth-road-dwellings—	Lambeth																	
Lennox-buildings		May, 1905	3	17	20	..	..	..	..	40	97	..	194					
Clere-cottages		May, 1905	..	..	7	..	..	..	..	7	21	..	42					
			3	*17*	*27*					*47*	*118*		*236*					

(a) These cottages are reckoned as containing 4 rooms, accommodating seven persons.

12532 Wt. 2

B.—Accommodation Provided in all the Council's Dwellings open on 31st March, 1912—*(continued)*.

Dwellings.	Metropolitan Borough.	Date opened.	Number of tenements of							Total tenements	Total rooms.	Cubicles.	Number of persons provided for.	Shops.	Workshops.	Stables.	Sheds.	Cupboards.
			1 room.	2 rooms.	3 rooms.	3 rooms with small additional bedroom.	4 rooms	5 rooms	6 rooms									
Webber-row estate—	Southwark																	
Delarch-buildings ..		Nov., 1906	..	20	25	..	..	..	..	45	115	..	230					
Overy-buildings ..		Nov., 1906	..	20	25	..	..	..	..	45	115	..	230					
Algar-buildings		Dec., 1906 ..	..	20	25	..	..	..	..	45	115	..	230					
Dauncy-buildings ..		Jan., 1907 ..	..	20	25	..	..	..	..	45	115	..	230					
Mawdley-buildings ..		March, 1907	3	13	16	..	3	5(*c*)	..	40	114	..	223	10				
			3	*93*	*116*		*3*	*5*(*c*)		*220*	*574*		*1143*	*10*				
Wenlake-buildings ..	Finsbury ..	March, 1905		25	46	..	15	..	..	86	248	..	496					
Wessex-buildings	Islington ..	Oct., 1904	5	140	80	..	..	..	..	225	525	..	1050					
White Hart-lane estate—	Tottenham																	
Awlfield-avenue ..		May, 1909 ..	..	..	..	..	16	11	..	27	119	..	238					
Balliol-road		July, 1910	..	..	29	..	..	..	..	29	87	..	174					
Benington-road ..		Feb., 1911	..	..	..	..	32	..	..	32	128	..	256					
Chesthunte-road ..		Sept., 1904	..	..	44	..	..	..	..	44	132	..	264					
Cumberton-road ..		April, 1910	..	..	34	..	..	..	..	34	102	..	204					
Kevelioc-road		Apr., 1909 ..	..	..	..	..	18	22	..	40	182	..	364					
Risley-avenue		Sept., 1904	..	..	10	..	97	59(*d*)	..	166	713	..	1424					
Shobden-road		March, 1907	..	..	..	..	22	15	..	37	163	..	326					
Siward-road		Feb., 1907 ..	..	..	46	..	..	..	..	46	138	..	276					
Spigurnell-road ..		Oct., 1906 ..	..	..	24	..	16	4	..	44	156	..	312					
Teynton-terrace		Aug., 1904	..	..	11	..	7	..	..	18	61	..	122					
Tower-gardens-road ..		July, 1904	..	..	14	..	55	71	..	140	617	..	1234					
Waltheof-avenue ..		June, 1906	..	..	..	..	..	37	..	37	185	..	370					
Wateville-road		Oct., 1904	..	..	12	..	9	18	..	39	162	..	324					
					224		*272*	*237*(*d*)		*733*	*2945*		*5888*					
York-street dwellings—	Westminster																	
Stirling-buildings ..		June, 1903	5	20	15	..	..	..	..	40	90	..	280					
Siddons-buildings ..		June, 1903	5	10	20	..	5	..	..	40	105	..	210					
			10	*30*	*35*		*5*			*80*	*195*		*390*					
Bruce House	Westminster .	July, 1906 ..	..	..	..	..	..	..	..	..	..	708	708	3				
Carrington-house	Deptford	Nov., 1903	..	..	..	..	..	..	..	..	..	803	803	3				
Parker-street-house	Holborn	Jan., 1893	..	..	..	..	..	..	..	..	..	345	345	2				
Totals ..			191(*a*)	3,460	3,784	293(*b*)	1,067	474(*e*)	3	9,272	26,291	1,856	54,141	104	97	12	202	17

Note.—In reckoning the number of rooms in the cottages on the Totterdown-fields, White Hart-lane and Norbury estates, kitchen sculleries have been omitted.

(*a*) Three of these tenements also contain a bed recess, and each is reckoned as accommodating three persons.

(*b*) These cottages are reckoned as containing 4 rooms, accommodating seven persons.

(*c*) Five tenements in Mawdley-buildings contain 1 small room, reckoned as accommodating one person only.

(*d*) Two cottages contain 4 rooms with a small additional bedroom, each reckoned as containing 5 rooms, accommodating 9 persons.

(*e*) Seven of these lettings contain 1 small room reckoned as accommodating one person only.

C.—Rents Charged at the Council's Dwellings.

Dwellings.	Borough.	Rent per week of tenements.							Rent per night of cubicles.	Rent per week of workshops.	Rent per week of stables.	Rent per week of sheds.	Rent per week of cupboards.	Gross rent per annum on 31st March, 1912.
		1 room.	2 rooms.	3 rooms.	3 rooms with small additional bedroom.	4 rooms.	5 rooms.	6 rooms.						£ s. d.
Ann-street-dwellings ..	Poplar ..	..	5/– to 6/–	6/6 to 7/6	..	..	..	..	..	..	..	..	..	2,129 8 –
Barnaby-buildings ..	Bermondsey	..	5/6 & 6/–	7/6 & 8/–	..	..	..	..	..	..	..	..	..	1,427 8 –
*Battersea-bridge-buildings	Battersea ..	4/–	4/9 to 5/6	6/3 to 7/–	..	..	..	..	..	..	..	3d.	..	963 6 –
Bearcroft-buildings ..	Fulham ..	..	5/9 to 7/-	8/6 to 9/6	..	..	..	..	..	..	..	3d.	..	876 17 –
Bekesbourne-buildings ..	Stepney ..	..	5/– to 6/–	6/6 to 7/6	..	8/– & 8/6	..	..	..	..	..	..	..	1,240 4 –
Borough-road-dwellings	Southwark ..	..	6/6 to 8/–	9/6 & 10/–	..	..	..	..	..	..	..	..	..	1,864 4 –
Boundary-street-estate ..	Bethnal-green	3/– to 4/–	5/– to 8/–	7/– to 10/6	..	9/– to 13/–	10/6 to 14/-	12/6	..	3/6 to 6/6	..	6d.	3d.	23,024 17 –
Bourne estate (including shops)	Holborn ..	4/6 to 6/–	7/6 to 8/6	9/6 to 11/–	..	11/–to 13/–	..	..	..	..	..	3d.	..	13,384 10 –
Brightlingsea-buildings ..	Stepney ..	3/6 & 4/–	5/– & 5/6	6/6 to 7/6	..	8/– & 8/6	..	..	..	..	..	..	..	1,082 18 –
Briscoe-buildings	Lambeth ..	..	6/6 & 7/–	7/6 to 8/6	..	10/–to11/6	..	..	..	..	..	3d.	..	2,527 4 –
Brook-street-dwellings ..	Stepney ..	..	5/6	7/– to 8/–	..	..	..	..	..	..	..	..	..	1,014 – –
Bruce-house (including shops)	Westminster	..	..	..	..	..	..	..	6d., 7d., 1/–&1/2	..	..	..	..	7,709 14 2
Cable-street-dwellings ..	Stepney ..	4/6 & 5/–	5/6 to 6/6	7/6	..	..	..	..	..	..	..	..	..	2,955 4 –
Caledonian-estate ..	Islington ..	4/6 & 5/–	6/6 to 7/6	8/– to 9/6	..	11/6	..	..	..	..	..	..	..	5,569 4 –
Carrington-house (including shops)	Deptford ..	..	..	..	..	..	..	..	6d. and 1/-	..	..	..	..	7,704 13 5
Chadworth-buildings (including shops) ..	Finsbury ..	..	6/– to 7/–	8/– to 9/–	..	10/–to11/–	..	..	..	..	..	..	..	3,393 10 –
Churchway-dwellings ..	St. Pancras ..	4/6 & 5/–	7/– to 8/–	9/6 to 10/6	..	11/6	..	..	..	..	..	..	..	3,893 10 –
Cobham-buildings ..	Southwark ..	..	6/– & 6/6	8/6 & 9/–	..	..	..	..	..	..	..	..	..	1,128 8 –
Cotton-street-dwellings ..	Poplar ..	..	5/6	7/– to 8/–	..	..	..	..	..	..	..	..	..	1,184 6 –
Council-buildings, Poplar	Poplar ..	..	5/– to 5/9	7/– & 7/6	..	..	..	..	..	..	..	..	..	796 18 –
Cranley-buildings ..	Holborn ..	..	8/–	10/6	..	..	..	..	..	..	..	..	..	288 12 –
Darcy-buildings ..	Hackney ..	..	6/– & 6/6	7/6 to 8/6	..	..	..	..	..	..	..	..	..	741 – –
Dufferin-street-dwellings	Finsbury ..	2/3 to 2/9	4/6 to 5/–	6/6 & 7/–	..	..	..	..	..	..	1/6	1/–	..	629 4 –
Duke's-court-dwellings ..	Westminster ..	4/–	6/6	8/6	..	10/6	..	..	..	..	..	..	..	2,418 – –
*Durham-buildings ..	Battersea ..	..	3/6 to 4/9	4/9 to 5/6	..	..	..	..	..	..	..	..	..	1,344 4 –
East Greenwich-cottages	Greenwich ..	..	5/–	6/– & 6/6	..	8/– & 8/6	..	..	..	..	..	..	..	1,307 16 –
Goldsmith's-row-cottages	Shoreditch ..	..	5/6	7/6 to 8/6	..	10/–	..	..	..	..	..	..	..	482 19 –
Green-street and Boyfield-street (late Gun-street) dwellings	Southwark ..	4/6 & 5/–	6/6 & 7/–	8/6	..	..	..	..	..	..	..	..	..	1,783 12 –

* At these buildings the local rates are paid by the tenants.

C.—Rents Charged at the Council's Dwellings.—(*continued*).

Dwellings.	Borough.	Rent per week of tenements.							Rent per night of cubicles.	Rent per week of workshops.	Rent per week of stables.	Rent per week of sheds.	Rent per week of cupboards.	Gross rent per annum on 31st March, 1912.
		1 room.	2 rooms.	3 rooms.	3 rooms with small additional bedroom.	4 rooms.	5 rooms.	6 rooms.						£ s. d.
Hardy-cottages	Greenwich ..	..	..	6/- to 7/-	..	..	..	..	..	..	..	..	..	876 4 -
Herbrand-street-dwellings	Holborn ..	3/6 & 4/-	6/- & 6/6	8/- & 8/6	..	..	..	..	..	..	..	3d.	..	2,767 14 -
Holmwood-buildings ..	Southwark ..	..	8/- & 9/-	11/6	..	..	..	..	..	..	..	..	..	386 2 -
Hughes-fields-cottages ..	Greenwich ..	..	5/- & 5/6	6/- to 6/6	..	7/-	..	..	..	..	..	..	..	2,044 18 -
Idenden cottages ..	Greenwich ..	..	..	..	..	8/6 & 9/-	..	..	..	..	..	..	..	1,131 - -
Mallory-buildings ..	Holborn ..	5/-	6/- to 7/-	8/6 to 9/6	..	..	..	..	..	..	..	..	..	910 16 -
Millbank-estate	Westminster..	4/6 & 5/-	6/- to 8/6	8/- to 10/6	..	12/- to 13/-	12/6	..	..	..	..	3d.	3d.	18,922 16 -
Norbury-estate	Croydon ..	..	..	7/- to 8/6	8/6	8/6 to 10/6	10/6 to 11/6	..	..	..	..	..	..	10,490 14 -
Parker-street-house (including shops)	Holborn ..	..	..	..	..	..	..	..	6d.	..	..	..	..	3,268 1 7
Preston's-road-estate ..	Poplar ..	..	4/6 & 5/-	6/6 to 8/-	..	..	..	..	..	..	..	..	..	3,983 4 -
Raleigh, Drake and Benbow-buildings (Hughes-fields-dwellings) ..	Greenwich and Deptford ..	..	5/- & 5/6	6/- & 6/6	..	7/- & 7/6	..	..	..	..	..	..	..	1,913 3 4
Shelton-street-dwellings	Holborn ..	5/-	6/6 to 8/-	9/6	..	11/- & 11/6	..	..	..	4/6 to 6/-	..	..	..	1,554 16 -
Swan-lane-dwellings ..	Bermondsey	..	4/6 to 5/6	6/6 to 8/-	..	8/- to 9/-	..	..	..	..	..	..	..	4,108 - -
Sylva-cottages	Deptford ..	..	..	7/6	..	..	..	..	..	..	..	..	..	468 - -
Totterdown-fields-estate (including shops) ..	Wandsworth..	..	6/6	6/6 to 9/-	9/- & 10/-	9/- to 11/-	10/6 to 13/6	..	..	..	..	..	..	29,341 4 -
Union-buildings (including shops)	Holborn ..	4/6 & 5/-	7/- to 8/-	9/- to 10/-	..	10/6 to 11/6	12/-	..	..	..	..	4d.	..	6,013 12 8
Valette-buildings	Hackney ..	..	6/6 & 7/-	8/6 & 9/-	..	10/6	..	..	..	..	..	..	..	1,675 14 -
Wandsworth - road - dwellings	Lambeth ..	5/6	6/- & 6/6	8/- & 8/6	..	..	..	..	..	..	..	..	..	919 2 -
Webber-row estate (including shops) ..	Southwark ..	5/-	5/6 to 7/6	8/- to 10/-	..	9/-	11/6	..	..	..	..	..	..	4,906 8 -
Wenlake-buildings	Finsbury ..	..	6/6 & 7/-	8/6 & 9/-	..	10/- & 10/6	..	..	..	..	..	..	..	1,920 2 -
Wessex-buildings ..	Islington ..	4/- & 4/6	5/6 to 7/-	8/- to 9/-	..	..	..	..	..	..	..	..	..	4,141 16 -
White Hart-lane estate ..	Tottenham ..	..	..	6/6 to 8/-	..	8/3 to 9/3	9/3 to 13/-	..	..	..	..	..	..	17,461 12 -
York-street-dwellings ..	Westminster..	4/6	6/6	8/6	..	10/6	..	..	..	..	..	..	..	1,519 6 -
												Total ..		£ 213,589 16 2

D.—Accommodation Provided in the Council's Dwellings, and the Gross Rent per annum on 31st March, 1892, and each subsequent Year.

Year.	Tenements.	Rooms.	Cubicles.	Persons provided for.	Gross annual rent.
					£ s. d.
1892	56	87	—	174	629 4 –
1893	56	87	324	498	3,577 12 –
1894	56	87	324	498	3,577 12 –
1895	358	871	324	2,066	8,119 11 8
1896	602	1,485	324	3,294	12,910 1 8
1897	984	2,603	324	5,530	22,020 9 8
1898	1,263	3,261	324	6,846	27,943 5 8
1899	1,355	3,525	321	7,374	30,062 5 8
1900	1,523	3,966	324	8,256	33,832 5 8
1901	2,346	5,936	324	12,196	51,241 17 8
1902	2,951	7,368	324	15,060	62, 80 8 8
1903	3,881	9,552	324	19,428	81,087 19 8
1904	4,666	11,661	1,147	24,469	103,090 10 2
1905	5,929	15,098	1,147	31,343	129,129 12 6
1906	6,326	16,352	1,147	33,853	136,315 7 6
1907	7,474	19,879	1,845	41,648	166,949 10 10
1908	7,880	21,085	1,845	44,060	177,487 14 7
1909	8,196	22,210	1,845	46,310	186,096 13 7
1910	8,539	23,578	1,846	49,003	194,019 15 –
1911	8,947	25,006	1,849	51,856	207,340 17 4
1912	9,272	26,291	1,856	54,141	213,589 16 2

E—Number of Persons Rehoused by the Council after being Displaced by Improvement or Clearance Schemes.

Dwellings.	Metropolitan Borough.	Number of displaced persons re-housed.		
		Before 31st March, 1911.	During year 1911-12.	Total.
Ann-street-dwellings	Poplar ..	25		25
Bekesbourne-buildings	Stepney ..	37		37
Boundary-street estate	Bethnal-green	45		45
Borough-road-dwellings	Southwark ..	50		50
Bourne estate	Holborn ..	222		222
Brightlingsea-buildings	Stepney ..	4		4
Brook-street-dwellings	Stepney ..	9		9
Duke's-court-dwellings	Westminster..	516	Nil.	516
Green-street and Boyfield-street (late Gun-street) dwellings	Southwark ..	13		13
Herbrand-street-dwellings	Holborn ..	91		91
Millbank estate	Westminster..	174		174
Preston's-road-dwellings	Poplar ..	8		8
Swan-lane-dwellings	Bermondsey..	186		186
Russell-court-dwellings	Westminster..	323		323
Webber-row estate	Southwark ..	12		12
Wenlake-buildings	Finsbury ..	41		41
Totals		1,756		1,756

F.—Number of Lettings effected, the number of Tenants who Vacated their Tenements and the number of Tenants who were Transferred to other Tenements in the Council's Dwellings during the Year 1911-1912.

Dwellings.	Metropolitan Borough.	Number of tenements	Number of lettings effected.	Number of vacations, excluding transfers.				Number of Transfers (not included in number of lettings or vacations)
				Tenant's notice.	Council's notice.	Total.	Per-centage.	
Ann-street-dwellings ..	Poplar ..	135	72	70	7	77	57	11
Barnaby-buildings ..	Bermondsey	80	37	35	1	36	45	7
Battersea-bridge-buildings	Battersea ..	69	41	43	4	47	68	3
Bearcroft-buildings ..	Fulham ..	40	15	12	1	13	32	1
Bekesbourne-buildings ..	Stepney ..	75	20	14	4	18	24	2
Borough-road-dwellings ..	Southwark ..	84	32	30	2	32	38	3
Boundary-street-estate ..	Bethnal-green	1,044	305	224	78	302	29	105
Bourne-estate	Holborn ..	537	145	116	30	146	27	61
Brightlingsea-buildings ..	Stepney ..	65	29	28	3	31	48	4
Briscoe-buildings.. ..	Lambeth ..	113	64	58	4	62	55	18
Brook-street-dwellings ..	Stepney ..	58	30	30	3	33	57	2
Cable-street-dwellings ..	Stepney ..	180	43	44	2	46	26	13
Caledonian-estate ..	Islington ..	272	147	123	7	130	49	41
Chadworth-buildings ..	Finsbury ..	136	41	39	2	41	30	7
Churchway estate ..	St. Pancras ..	180	56	55	1	56	31	18
Cobham-buildings ..	Southwark ..	60	28	26	2	28	47	1
Cotton-street-dwellings ..	Poplar ..	70	46	40	7	47	69	3
Council buildings, Poplar	Poplar ..	50	30	24	4	28	56	5
Cranley-buildings.. ..	Holborn ..	12	6	8	..	8	67	1
Darcy-buildings	Hackney ..	40	14	13	1	14	35	4
Dufferin-street-dwellings	Finsbury ..	56	8	6	3	9	16	3
Duke's-court-dwellings ..	Westminster	130	11	9	2	11	9	5
Durham-buildings ..	Battersea ..	108	39	72	4	76	70	24
East Greenwich-cottages	Greenwich ..	78	26	28	1	29	37	1
Goldsmith's-row-cottages	Shoreditch ..	25	9	10	..	10	40	4
Green-street and Boyfield-street dwellings	Southwark ..	102	33	26	4	30	30	3
Hardy-cottages	Greenwich ..	51	25	25	2	27	53	2
Herbrand-street-dwellings	Holborn ..	160	9	8	1	9	6	31
Holmwood-buildings ..	Southwark ..	16	7	6	1	7	44	..
Hughes-fields-cottages ..	Greenwich ..	134	56	42	7	49	37	7
Hughes-fields-dwellings ..	Deptford ..	120	81	69	6	75	63	11
Idenden-cottages	Greenwich ..	50	9	9	1	10	20	3
Mallory-buildings	Finsbury ..	33	4	4	..	4	12	..
Millbank-estate	Westminster	895	199	187	13	200	22	41
*Norbury estate	Croydon ..	449	213	103	2	105	23	47
Preston's-road estate ..	Poplar ..	264	130	109	24	133	50	17
Shelton-street-dwellings..	Holborn ..	63	12	12	1	13	21	3
Swan-lane-dwellings ..	Bermondsey	255	102	85	16	101	39	28
Sylva-cottages	Deptford ..	24	8	7	1	8	33	..
*Totterdown-fields-estate..	Wandsworth	1,261	513	343	48	391	31	88
Union-buildings	Holborn ..	227	57	46	9	55	24	7
Valette-buildings	Hackney ..	80	41	41	1	42	52	3
Wandsworth-road-dwellings	Lambeth ..	47	11	11	..	11	23	2
Webber-row-estate ..	Southwark ..	220	78	80	2	82	37	10
Wenlake-buildings ..	Finsbury ..	86	25	24	..	24	28	1
Wessex-buildings.. ..	Islington ..	225	102	95	2	97	43	10
*White-Hart-lane estate ..	Tottenham ..	733	308	177	11	188	24	20
York-street-dwellings ..	Westminster	80	32	33	2	35	44	..
Totals ...		9,272	3,350	2,699	327	3,026	33	681

* New cottages were opened at these estates during the year.

G.—Percentage of Total Outgoings for Maintenance on the Rent Receivable for the last Five Years.

Dwellings.	Metropolitan Borough.	1907–8.	1908–9.	1909–10.	1910–11.	1911–12. (*b*)
Ann-street-dwellings	Poplar	40	42	45	45	41
Barnaby-buildings	Bermondsey	39	43	44	43	40
Battersea-bridge-buildings	Battersea	37	39	40	39	30
Bearcroft-buildings	Fulham	21	21	21	23	34
Bekesbourne-buildings	Stepney	(*a*)37	39	39	39	37
Borough-road-dwellings	Southwark	39	41	42	41	36
Boundary-street estate	Bethnal-green	41	41	42	42	38
Bourne estate	Holborn	34	35	35	35	31
Brightlingsea-buildings	Stepney	38	40	41	40	37
Bruce house	Westminster	54	55	54	58	58
Briscoe-buildings	Lambeth	27	34	41	40	39
Brook-street-dwellings	Stepney	41	43	43	44	40
Cable-street-dwellings	Stepney	42	42	41	41	39
Caledonian estate	Islington	26	36	37	37	39
Carrington house	Deptford	50	48	47	47	47
Churchway-dwellings	St. Pancras	36	37	37	37	35
Clerkenwell & Holborn-dwellings						
Mallory-buildings	Holborn	(*a*)25	(*a*)32	30	37	25
Union-buildings				34	32	31
Cobham-buildings	Southwark	39	42	43	43	39
Cotton-street-dwellings	Poplar	36	41	44	44	40
Council-buildings, Poplar	Poplar	43	41	45	47	44
Cranley-buildings	Holborn	38	39	40	41	37
Darcy-buildings	Hackney	35	38	40	38	35
Dufferin-street-dwellings	Finsbury	56	57	59	58	53
Duke's-court-dwellings	Westminster	37	38	37	36	34
Durham-buildings	Battersea	38	39	39	40	30
East Greenwich-cottages	Greenwich	40	41	41	40	35
Goldsmith's-row-cottages	Shoreditch	41	41	42	41	36
Green-street and Boyfield-street (late Gun-street) dwellings	Southwark	39	42	43	42	39
Hardy-cottages	Greenwich	39	41	40	40	37
Herbrand-street-dwellings	Holborn	36	37	37	37	35
Holmwood-buildings	Southwark	42	45	49	48	40
Hughes-fields-cottages	Greenwich	35	36	42	34	32
Hughes-fields-dwellings	Deptford	38	38	39	36	33
Idenden-cottages	Greenwich	36	37	38	37	34
Millbank estate	Westminster	36	36	36	36	34
Norbury estate	Croydon	(*a*)36	32	(*a*)34	(*a*)35	(*a*)33
Parker-street house	Holborn	69	68	67	69	64
Preston's-road-dwellings	Poplar	37	38	41	40	36
Shelton-street-dwellings	Holborn	35	37	37	37	34
St. Luke's-dwellings—						
Wenlake-buildings	Finsbury	(*a*)34	34	38	37	34
Chadworth-buildings				32	32	29
Swan-lane-dwellings	Bermondsey	36	41	43	43	36
Sylva-cottages	Deptford	37	37	40	40	36
Totterdown-fields estate	Wandsworth	(*a*)34	(*a*)33	(*a*)35	(33	(*a*)31
Valette-buildings	Hackney	35	37	38	37	34
Wandsworth-road-dwellings	Lambeth	37	38	39	38	35
Webber-row estate	Southwark	35	38	40	39	35
Wessex-buildings	Islington	26	39	39	39	36
White Hart-lane estate	Tottenham	(*a*)28	(*a*)27	(*a*)24	(*a*)25	(*a*)37
York-street-dwellings	Westminster	35	35	35	34	32

(*a*) New buildings were opened during this year.

(*b*) After deducting income tax on interest on capital outlay from maintenance outgoings. Formerly such tax was deducted from debt charges.

H.—Population of the Council's Dwellings According to the Enumeration taken in March, 1912.

Dwellings.	Metropolitan Borough.	Accommodation.		Number of persons in occupation (including children).	Number of children under 14 years of age in dwellings.	
		Tenements.	Rooms.		Boys.	Girls.
Ann-street-dwellings	Poplar	135	315	439	78	72
Barnaby-buildings	Bermondsey	80	200	303	59	56
Battersea-bridge-buildings	Battersea	69	143	205	32	41
Bearcroft-buildings	Fulham	40	110	121	24	18
Bekesbourne-buildings	Stepney	75	190	250	37	36
Borough-road-dwellings	Southwark	84	200	291	50	54
Boundary-street estate	Bethnal-green	1,044	2,690	4,555	845	808
Bourne estate	Holborn	537	1,321	1 854	291	272
Brightlingsea-buildings	Stepney	65	170	200	31	54
Briscoe-buildings	Lambeth	113	359	342	58	59
Brook-street-dwellings	Stepney	58	154	235	44	42
Bruce-house	Westminster	708	708	708	..	..
Cable-street-dwellings	Stepney	180	398	613	100	75
Caledonian estate	Islington	272	692	984	169	176
Carrington-house	Deptford	803	803	459	..	..
Chadworth-buildings	Finsbury	136	360	551	102	85
Churchway-dwellings	St. Pancras	180	416	592	79	86
Cobham-buildings	Southwark	60	139	214	33	37
Cotton-street-dwellings	Poplar	70	180	220	35	36
Council-buildings, Poplar	Poplar	50	120	150	30	27
Cranley-buildings	Holborn	12	30	46	12	4
Darcy-buildings	Hackney	40	95	138	25	20
Dufferin-street-dwellings	Finsbury	56	87	147	23	16
Duke's-court-dwellings	Westminster	130	305	483	82	60
Durham-buildings	Battersea	108	268	265	39	54
East Greenwich-cottages	Greenwich	78	232	316	74	58
Goldsmiths'-row-cottages	Shoreditch	25	72	100	10	11
Green-street and Boyfield-street (late Gun-street) dwellings	Southwark	102	209	336	58	63
Hardy-cottages	Greenwich	51	153	226	57	55
Herbrand-street-dwellings	Holborn	160	340	502	92	86
Holmwood-buildings	Southwark	16	36	39	4	4
Hughes-fields-cottages	Greenwich	134	333	374	83	75
Hughes-fields-dwellings	Deptford	120	330	439	104	87
Idenden-cottages	Greenwich	50	200	254	50	44
Mallory-buildings	Finsbury	33	82	118	13	18
Millbank estate	Westminster	895	2,215	3,010	478	494
Norbury estate	Croydon	449	1,705	1,558	284	252
Parker-street-house	Holborn	345	345	344	..	..
Preston's-road estate	Poplar	264	652	660	136	122
Shelton-street-dwellings	Holborn	63	142	222	41	32
Swan-lane-dwellings	Bermondsey	255	635	957	158	170
Sylva-cottages	Deptford	24	72	101	20	16
Totterdown-fields estate	Wandsworth	1,261	4,486	4,329	793	758
Union-buildings	Holborn	227	630	872	133	146
Valette-buildings	Hackney	80	208	276	48	42
Wandsworth-road-dwellings	Lambeth	47	118	148	26	19
Webber-row estate	Southwark	220	574	764	116	135
Wenlake-buildings	Finsbury	86	248	348	44	37
Wessex-buildings	Islington	225	525	730	116	121
White Hart-lane estate	Tottenham	733	2,945	2,541	500	477
York-street dwellings	Westminster	80	195	292	39	48
Totals	..	11,128	28,147	34,221	5,755	5,758

K.—Particulars of Cases of Infectious Diseases Reported by Superintendents and Caretakers as having been Removed from the Council's Dwellings during the Year ended 31st March, 1912.

Dwellings.	Metropolitan Borough.	Erysipelas.	Measles.	Scarlet Fever.	Typhoid.	Diphtheria.	Chickenpox.
Ann-street-dwellings	Poplar	...	...	2	...	1	...
Barnaby-buildings	Bermondsey	...	...	1	...	...	...
Battersea-bridge-buildings	Battersea	...	...	3	...	...	4
Bearcroft-buildings	Fulham	...	...	1	...	...	...
Bekesbourne-buildings	Stepney	...	...	1	...	...	...
Borough-road-dwellings	Southwark	...	...	...	2	...	...
Boundary-street estate	Bethnal-green	...	...	4	1	11	2
Bourne estate	Holborn	...	...	1	1	2	...
Brightlingsea-buildings	Stepney	...	4	...	...	...	...
Briscoe-buildings	Lambeth	...	...	...	...	1	2
Brook-street-dwellings	Stepney	...	1	...	...	...	...
Cable-street-dwellings	Stepney	...	4	2	...	1	...
Caledonian estate	Islington	...	...	1	...	...	...
Chadworth-buildings	Finsbury	...	...	1	...	2	2
Churchway-buildings	St. Pancras	...	1	1	...	4	...
Cobham-buildings	Southwark	...	...	2	...	...	...
Cotton-street-dwellings	Poplar	...	2	...	1	...	...
Council-buildings	Poplar	...	...	...	...	...	...
Cranley-buildings	Holborn	...	...	...	...	...	...
Darcy-buildings	Hackney	...	...	...	...	...	...
Dufferin-street-dwellings	Finsbury	...	...	...	...	...	...
Duke's-court-dwellings	Westminster	...	...	1	...	...	4
Durham-buildings	Battersea	...	...	2	...	...	...
East Greenwich-cottages	Greenwich	...	2	2	...	1	...
Goldsmith's-row-cottages	Shoreditch	...	1	...	...	...	...
Green-street and Boyfield-street (late Gun-street) dwellings	Southwark	...	...	...	...	1	...
Hardy-cottages	Greenwich	...	3	...	...	...	...
Herbrand-street-dwellings	Holborn	...	...	1	...	...	...
Holmwood-buildings	Southwark	...	1	...	...	...	...
Hughes-fields-cottages	Greenwich	...	2	1	...	...	...
Hughes-fields-dwellings	Deptford	...	2	1	...	...	...
Idenden-cottages	Greenwich	...	2	...	1	...	...
Mallory-buildings	Finsbury	...	...	...	...	1	1
Millbank estate	Westminster	...	...	13	...	...	...
(a) Norbury estate	Croydon	...	...	1	...	6	...
Preston's-road estate	Poplar	...	...	2	...	1	...
Shelton-street-dwellings	Holborn	...	...	2	...	2	1
Swan-lane-dwellings	Bermondsey	...	...	3	...	1	...
Sylva-cottages	Deptford	...	...	...	...	...	...
(a) Totterdown-fields estate	Wandsworth	...	...	4	...	5	...
Union-buildings	Holborn	2	...	1	...	2	...
Valette-buildings	Hackney	1	...	...	...	1	...
Wandsworth-road-dwellings	Lambeth	...	...	...	...	...	...
Webber-row estate	Southwark	...	...	...	...	3	...
Wenlake-buildings	Finsbury	...	...	1	...	1	2
Wessex-buildings	Islington	...	...	1	...	...	...
(a) White Hart-lane estate	Tottenham	...	...	4	...	3	...
York-street-dwellings	Westminster	...	...	...	...	2	...
Totals		3	25	60	6	52	18

(a) New cottages at these estates were opened during the year.

L.—Particulars of Births and Deaths in the Council's Dellings during the Year ended 31st March, 1912.(a)

Dwellings.	Borough.	Births.	Deaths.		
			Occurring in the dwellings.	Occurring in institutions.	Total.
Ann-street-dwellings	Poplar	25	6	3	9
Barnaby-buildings	Bermondsey	8	1	2	3
Battersea-bridge-buildings	Battersea	..	..	..	..
Bearcroft-buildings	Fulham	5	1	1	2
Bekesbourne-buildings	Stepney	15	1	2	3
Borough-road-dwellings	Southwark	8	..	1	1
Boundary-street estate	Bethnal-green	124	19	11	30
Bourne estate	Holborn	52	12	10	22
Brightlingsea-buildings	Stepney	8	2	2	4
Briscoe-buildings	Lambeth	5	..	..	..
Brook-street-dwellings	Stepney	10	..	6	6
Bruce-house	Westminster	..	..	35	35
Cable-street-dwellings	Stepney	24	4	2	6
Caledonian estate	Islington	29	7	3	10
Carrington house	Deptford	..	..	25	25
Chadworth-buildings	Finsbury	18	..	2	2
Churchway estate	St. Pancras	18	2	3	5
Cobham-buildings	Southwark	6	3	1	4
Cotton-street-dwellings	Poplar	8	3	..	3
Council-buildings, Poplar	Poplar	6	1	..	1
Cranley-buildings	Holborn	2	..	..	..
Darcy-buildings	Hackney	2	..	..	..
Dufferin-street-dwellings	Finsbury	6	3	1	4
Duke's-court-dwellings	Westminster	8	7	1	8
Durham-buildings	Battersea	12	1	..	1
East Greenwich-cottages	Greenwich	3	1	..	1
Goldsmith's-row-cottages	Shoreditch	..	..	..	..
Green-street and Boyfield-street (late Gun-street) dwellings	Southwark	17	4	..	4
Hardy-cottages	Greenwich	9	..	..	..
Herbrand-street-dwellings	Holborn	12	2	1	3
Holmwood-buildings	Southwark	1	1	1	2
Hughes-fields-cottages	Greenwich	..	..	..	..
Hughes-fields-dwellings	Deptford	11	1	2	3
Idenden-cottages	Greenwich	4	2	..	2
Mallory-buildings	Finsbury	2	..	..	..
Millbank estate	Westminster	71	20	15	35
Norbury estate	Croydon	64	2	3	5
Parker-street house	Holborn	..	..	9	9
Preston's-road dwellings	Poplar	24	11	1	12
Shelton-street-dwellings	Holborn	6	..	1	1
Swan-lane-dwellings	Bermondsey	38	5	..	5
Sylva-cottages	Deptford	..	..	..	..
Totterdown-fields estate	Wandsworth	94	27	4	31
Union-buildings	Holborn	21	3	2	5
Valette-buildings	Hackney	8	..	..	..
Wandsworth-road-dwellings	Lambeth	5	..	..	..
Webber-row estate	Southwark	15	8	2	10
Wenlake-buildings	Finsbury	7	1	..	1
Wessex-buildings	Islington	19	..	5	5
White Hart-lane estate	Tottenham	66	23	..	23
York-street-dwellings	Westminster	3	2	3	5
Totals		899	186	160	346

(a) The particulars comprised in this table for estates within the County have been supplied by the Medical Office of Health, and for estates outside the county by the registrars of the districts.

M.—Occupations of the Tenants.

Nature of occupation.	*No.*
Agent	84
Artist and draughtsman	25
Attendant	116
Baker and confectioner	75
Barman	30
Basket and brush maker	10
Boilermaker	15
Bookbinder	54
Bootmaker	101
Boxmaker	34
Brass finisher	27
Bricklayer, mason and plasterer	65
Butcher	65
Butler	21
Cabdriver	17
Cabinet maker	208
Carman, carrier and coachman	235
Carpenter and joiner	151
Carpet planner	18
Cellarman	18
Charwoman and cleaner	272
Checker	29
Chemist and analyst	11
Cigar and cigarette maker	128
Clergyman and churchworker	29
Clerk	495
Coachbuilder	30
Commercial traveller	118
Commissionaire	52
Compositor	124
Conductor	111
Cook	80
Costermonger	24
Crane driver	17
Cutter	25
Distemper and paperhanger	20
Domestic servant	26
Dressmaker	93
Electrician	76
Engine driver	26
Engineer	115
Engraver	13
Farrier	37
Fireman	42
Fitter and plumber	131
Florist	14
Flusher and sewerman	10
Foreman	76
Furrier	11
Gardener and park keeper	24
General dealer and hawker	48
Glazier and glassworker	22
Hairdresser	37
Hat and cap maker	32
Horsekeeper	32
Housekeeper	48
Independent	165
Inspector	47
Instrument maker	52
Jeweller	11
Journalist	16
Labourer	549
Lamplighter	17
Laundry worker	13
Leather worker	46
Machinist	71
Manager and manageress	31
Mechanic	26
Messenger	69
Metal worker	39
Milkman and dairyman	18
Miscellaneous	175
Musician and artiste	30
Newsagent	18
No occupation	171
Nurse	34
Omnibus and motor driver	204
Packer	115
Painter and decorator	139
Pensioner	73
Platelayer	20
Police constable, sergeant and detective	349
Polisher	47
Porter	339
Postman	127
Railway worker, guard and signalman	31
Salesman	286
Sawyer	17
Seaman and coastguard	145
Shipwright	19
Silversmith and goldsmith	31
Soldier	15
Sorter and Post Office Worker	72
Steward	20
Stevedore	38
Stoker	58
Storekeeper	43
Superintendent and caretaker	63
Tailor and tailoress	205
Teacher	43
Telegraphist	32
Theatre worker	21
Timekeeper	22
Tinsmith	22
Turner	28
Umbrella and stickmaker	12
Upholsterer	29
Waiter and valet	125
Waitress	11
Warehouseman	194
Watchmaker	15
Watchman	25
Waterman, boatman, and lighterman	54
Wheelwright	16
Wireman and linesman	19
Woodcarver	19

APPENDIX XX.

STATEMENT SHOWING STATUTES UNDER WHICH DWELLINGS UNDER IMPROVEMENT ACTS WERE ERECTED.

Dwellings.	Act.
Battersea-bridge Dwellings	Bridges Acts of 1881 and 1884.
Council Buildings	Blackwall Tunnel Acts, 1887 and 1888.
Westview, Armitage and Collerston Cottages	
Idenden Cottages	
Cotton-street Dwellings	
Barnaby Dwellings	L.C.C. (General Powers) Act, 1897—Long-lane and Tabard-street widening.
Durham Buildings	L.C.C. (General Powers) Act, 1898—York-road, Battersea, Improvement and L.C.C (Tramways and Improvements) Act, 1901—Red Lion-street to Tooting High-street Improvement.
Duke's-court Dwellings	L.C.C. (Improvements) Act, 1899—Holborn to Strand Improvement.
York-street Dwellings	
Herbrand-street Dwellings	
Bruce House	
Bourne Estate	L.C.C. (Improvements) Act, 1899—Holborn to Strand and Southampton-row Improvements—L.C.C. (Improvements) Act, 1900—St. John-street, Clerkenwell and Goswell-road Improvements and L.C.C. (General Powers) Act, 1901—Central-street, St. Luke, Improvement.
Millbank Estate	L.C.C. (Improvements) Act, 1899—Holborn to Strand Improvement and L.C.C. (Improvements) Act, 1900—Thames Embankment Extension and Westminster Improvements.
Swan-lane Dwellings	L.C.C. Thames Tunnel, (Rotherhithe and Ratcliff) Act, 1900.
Brightlingsea Buildings	
Bekesbourne Buildings	
Darcy Buildings	L.C.C. (Improvements) Act, 1900—Mare-street (Hackney) Improvement.
Valette Buildings	
Wandsworth-road Dwellings	L.C.C. (Improvements) Act, 1900—Nine Elms-lane widening.
Hughes-fields Dwellings	L.C.C. (Tramways and Improvements) Act, 1902—Tramways—Greenwich generating station.
Bearcroft Buildings	L.C.C. (Tramways and Improvements) Act, 1902—Fulham Palace-road and High-street widening.