

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

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London County Council.

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ANNUAL REPORT OF THE  
COUNCIL, 1924.

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Vol. III.

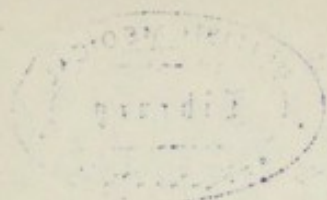
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PUBLIC HEALTH.

(Including the Reports for the year 1924 of the County Medical  
Officer of Health and School Medical Officer, Main Drainage  
and Housing.)







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# London County Council.



## ANNUAL REPORT OF THE COUNCIL, 1924.

### CHAPTER XXI.

#### REPORT OF THE COUNTY MEDICAL OFFICER OF HEALTH (SIR WILLIAM HAMER) FOR THE YEAR 1924.

##### PART I.—GENERAL.

##### *Introductory Note.*

The death-rate in 1924 was 12·2 per 1,000 and thus slightly higher than in 1923, when the lowest death-rate ever recorded (11·4) was registered. The infant mortality was 69 per 1,000 births as compared with 61 in 1923, the latter being also a record year in this respect. The small rise in the general death-rate may be attributed to prevalence of measles, early in 1924, and to a slight increase in the deaths from influenza, bronchitis and pneumonia; the mortality from diarrhoea and enteritis was lower than in 1923; an increase in the death-rate from whooping cough was apparent in the closing months of 1924 and was continued in the early months of 1925.

As was the case in 1923, contacts of cases of smallpox came to reside in or passed through London on several occasions. Only four cases, however, resulted from the disease in London. The condition of Europe as regards smallpox was more favourable than before, but the presence in the North and Midlands of this country of a mild form of smallpox was a continued and an increasing menace to London, especially in view of the exceptionally large number of persons from affected parts of the country visiting London.

Typhus and relapsing fever showed decline in Eastern Europe as compared with 1923. Typhoid fever remained at a comparatively low ebb; there was some increase of the disease in certain countries bordering upon the Baltic; in England and Wales there was a slight rise in the number of notifications; both in this country and in the United States there were outbreaks associated with eating oysters; in a circumscribed area in East London a prevalence of upwards of 70 cases occurred—much the most considerable London outbreak since 1911—which was in all probability due to the consumption of small plaice. (See pp. 38–42.)

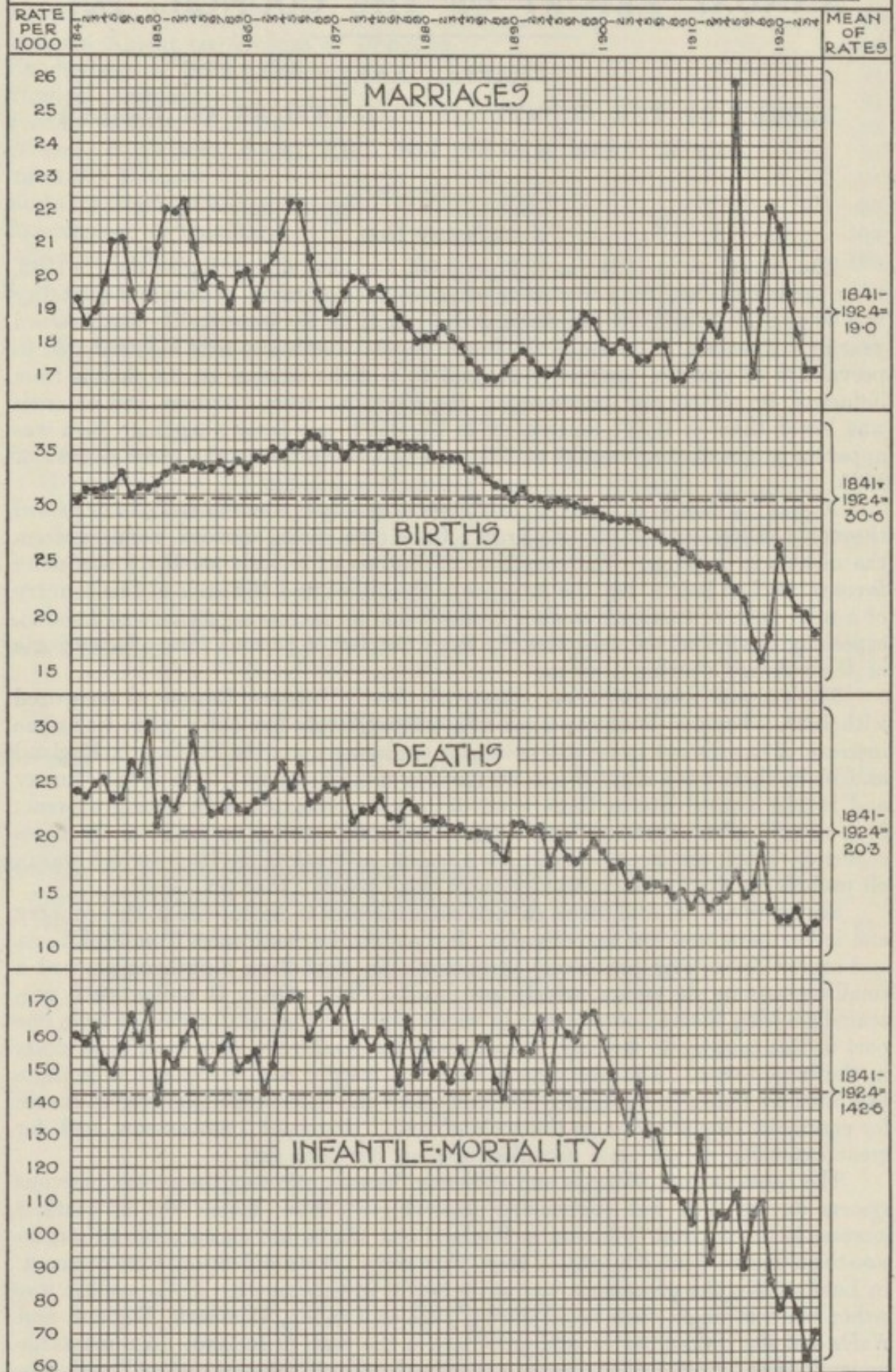
Scarlet fever and diphtheria showed some increase in prevalence in this country and in Germany and the Netherlands. In London the death rates from diphtheria and scarlet fever were practically stationary; in New York diphtheria showed a small increase on the comparatively low rate for 1923. On p. 16 a diagram is presented showing the remarkable way in which diphtheria gradually spreads from one part of this country to another, as evidenced by death-rates over a series of years in the large towns. The phenomena have not inaptly been compared with those exhibited by living protoplasm when seen under the microscope, allowing of course for enormous magnification in the scale of such "amœboid" movements, and for great extension of the time occupied in their development.

The behaviour of influenza and epidemic diseases affecting the central nervous system during 1924 was particularly deserving of note. There was no marked increase in deaths from influenza in England and Wales, but encephalitis lethargica rose to an unprecedented height, in May, when some 1,000 notifications were received. In London also the prevalence was at its height in this month. Poliomyelitis was rather more common than usual during 1924 in London, Denmark, England and Wales and the United States, and quite late in the year, in Iceland. A remarkable epidemic of an "unidentified disease involving the central nervous system," variously



# LONDON

## MARRIAGES·BIRTHS·DEATHS·AND·INFANTILE·MORTALITY





designated as encephalitis lethargica, or as epidemic cerebrospinal meningitis, was observed in Japan, and it reached its height in August and September; upwards of 6,500 cases or suspected cases were reported up to September 29th. The symptoms resembled those of encephalitis lethargica without the usual eye symptoms; moreover, persons over 50 years of age especially suffered; the fatality was about 60 per cent. The Epidemiological Report of the Health Section of the Secretariat of the League of Nations (December, 1924, p. 32) states "A number of the cases of cerebrospinal meningitis are said to have been bacteriologically verified, but many of them, especially of the suspected cases, may quite well be cases of the unidentified epidemic disease." The writer adds, "The geographical distribution of the Japanese epidemic becomes clearer when the declarations of all epidemic diseases of the nervous system . . . are combined." The important question here incidentally raised in the Secretariat's report throws an interesting sidelight on a subject discussed in the present report on pp. 22-27.

The developments in the County scheme for the treatment of tuberculosis, and in the London and Home Counties' scheme relating to venereal diseases, are referred to on p. 51 and p. 48, respectively. The annual February midnight census of homeless persons was again made in 1924. There was a reduction to a total of 82, as compared with 141 in the preceding year. The by-laws relating to houses occupied by more than one family of persons of the working class, were during the year further considered by the Ministry, the Council and the borough councils. No serious difficulty arose during 1924 with regard to transmigrants passing through London on their way to America or elsewhere.

#### A. VITAL STATISTICS.

The population of the County of London at the census of 20th June, 1921, Population. was 4,484,523, including members of the armed forces in London, but excluding Londoners on active service elsewhere. It is estimated by the Registrar-General that the population with residence in London at the date of the census was about 4,524,000, allowance being made in this estimate for persons absent on holiday when the census was taken. The Registrar-General estimates the total population in the middle of 1924 to have been 4,586,000, including 9,495 non-civilians. The estimated mid-year populations of the metropolitan boroughs in 1924 are shown in the table on p. 63.

The marriages registered in London during 1924 numbered approximately Marriages. 39,488, or 17.22 per thousand of population, as compared with 39,317 and 17.21 respectively last year.

The births in London during 1924 numbered 85,147, this being 6,515 less than Births. last year. The birth-rate was 18.6 per thousand of population, as compared with 20.1 in 1923 and 20.9 in 1922. The birth-rates for each metropolitan borough and for London as a whole will be found in the table on p. 63. The London birth-rate since 1840 is shown in the diagram on p. 6.

During the past four years the number of births in London has declined on an average by about 4,800 yearly. If the births continue to decline at the same rate until the next census, the population then under five years of age will be less by about 100,000 than in 1921, when it had already declined by over 90,000 upon the figure for 1911.

The birth-rate has fallen almost continuously in London during the past 50 years, the rate of decrease being about 1.42 per thousand of population every five years. In the same period the marriage-rate has remained much the same on the average, there being only a fractional decrease per thousand of population every five years.

In the following table the birth-rates and marriage-rates for London are shown in quinquennial periods from 1871 to 1920 and, estimated, for 1921-1925. There is also shown in the table what the rates for each period would have been if there had been an even rate of decline throughout the period 1871-1915, and the difference



between these hypothetical rates and the actual figures, also shown, indicates at what times and to what extent there has been a departure from an even fall.

Period.	Actual Birth-rate (average for period).	Hypothetical Birth-rate (on basis of even rate of decline for 1871 to 1915)	Departure of actual rate from even rate of decline (Col. 2 minus Col. 3).	Actual marriage-rate (average for period).	Hypothetical marriage rate (on basis of even rate of decline for 1871 to 1915)	Departure of actual rate from even rate of decline (Col. 5 minus Col. 6).
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1871-75 ... ..	35.3	36.5	-1.2	19.6	18.3	+1.3
1876-80 ... ..	35.5	35.0	+ .5	18.5	18.3	+ .2
1881-85 ... ..	34.3	33.6	+ .7	18.0	18.3	— .3
1886-90 ... ..	32.1	32.2	— .1	17.1	18.2	—1.1
1891-95 ... ..	30.8	30.8	+ .0	17.3	18.2	— .9
1896-1900 ... ..	29.7	29.4	+ .3	18.4	18.2	+ .2
1901-05 ... ..	28.6	27.9	+ .7	17.7	18.2	— .5
1906-10 ... ..	26.5	26.5	— .0	17.4	18.2	— .8
1911-15 ... ..	24.2	25.1	— .9	20.0	18.2	+1.8
1916-20 ... ..	20.1	23.7	—3.6	20.0	18.1	+1.9
1921-25 ... ..	20.0	22.3	—2.3	18.0	18.1	— .1

It will be seen that the deviation of the birth-rate from the even rate of decline has been greater during the last ten years than at any previous time in the period shown. The difference between the hypothetical rate of 22.3 and the estimated rate of 20.0 for the five years 1921-25 represents an increased rate of decline involving a reduction of the births by about 50,000 beyond that which would have been recorded had the even rate of decline continued.

With regard to the marriage-rate, it is clear that there would have been a considerable decrease during the past 50 years if it were not for the large increase in marriages during war years, as some of these war-time marriages would undoubtedly not have been recorded in London in normal times. It will be noted that the decline in the marriage-rate in the five years 1921-25 is too small to have played anything but a negligible part in the concurrent fall of the birth-rate.

In a presidential address to the Royal Statistical Society last November, Mr. Udny Yule discussed the growth of population and the factors which control it. He dealt mainly with the mathematical expression of the growth of population, as formulated by Verhulst, and he concludes, from the work of that writer and the more recent work of Professor Raymond Pearl and others that the growth of population is exhibited "as a biologically self-regulating process: indeed, a process of which the regulation is extraordinarily sensitive"; and further that, apart from migration, changes in the birth-rate have been the main factor in moulding the curve of growth, over long periods of time, closely to the simple logistic formula of Verhulst.

Following upon this address, Dr. Stevenson introduced a discussion on "The Laws Governing Population" at the Royal Statistical Society in December, and showed that the decline of the birth-rate was general throughout Europe from 1900 onwards. The population of the countries taken as representative of Europe amounted in 1911-14 to 239 millions. In the course of the discussion, Sir William Beveridge observed that "If fertility were being considered, and not the birth-rate per thousand of population, there was no question at all of the turning point for Europe, which was about 1880, a date differing from that suggested by either Mr. Yule or Dr. Stevenson." That the change occurred about 1880 is, however, clearly apparent also from the birth-rate movement, if regard be had to the concurrent movement of the marriage-rate. In both England and Wales and the composite population representative of Europe, the birth-rate fell in the period 1881-85, but in both areas there was a rapid slackening of the rate of fall in the nineties, followed, from 1900 onwards, by an accentuated rate of decline. The cause of this slackening of the rate of decline will be found in the movement of the marriage-rate during this period, for, following upon years of decrease, there was a definite increase of the marriage-rate throughout the nineties associated, one may suppose, with the



prosperity of trade during that time. In this change London shared, as will be seen from the table given above, but the London population was not affected to the same extent as that of Europe generally, the increase in the marriage-rate in London being only quite slight and the effect upon the movement of the birth-rate was therefore relatively small. From careful consideration of the changes in the nineties it is apparent that the decline of the birth-rate is essentially governed by economic conditions, and that the direction in which arrest of this decline is to be looked for is by lightening the burdens of parenthood, which for the past 40 years have fairly steadily increased.

The deaths in the civil population of London during 1924 numbered 55,887 Deaths. giving a death-rate of 12.2 per thousand, as compared with 11.4 in 1923 and 13.5 in 1922. The distribution of deaths by ages in 1924 is shown in the following table, with corresponding figures for post-war years :

Year.	0—	1—	2—	5—	10—	15—	20—	25—	35—	45—	55—	65 +	All ages.
1911-14 ...	11,968	3,546	2,716	1,421	846	1,088	1,299	3,525	5,292	7,142	8,328	18,221	65,392
1919 ...	7,039	1,430	1,846	1,472	909	1,255	1,440	3,763	4,501	6,640	8,393	20,426	59,114
1920 ...	9,141	1,894	1,904	1,467	845	1,159	1,291	3,058	4,223	6,216	7,786	18,248	57,232
1921 ...	8,077	1,963	1,360	1,324	808	1,160	1,218	2,732	3,984	6,146	8,083	19,404	56,259
1922 ...	7,089	3,235	2,568	1,240	851	1,126	1,322	2,860	4,242	6,656	8,799	21,233	61,221
1923 ...	5,615	1,373	1,276	860	638	1,016	1,220	2,474	3,737	5,985	8,105	19,692	51,991
1924 ...	5,904	2,164	1,863	817	709	1,015	1,225	2,514	3,770	6,265	8,582	21,059	55,887

The mortality-rate in 1923 was the lowest recorded in London, and on comparing the deaths by ages in that year with similar figures for 1924 it will be noticed that the increase in mortality is mainly among children under five years of age. This is due to the prevalence of measles in the winter, the number of deaths from this cause at ages below five years being 882 more than in 1923. The increase in deaths at ages over 45 years is chiefly due to the greater prevalence of influenza. Encephalitis lethargica was the cause of a considerable number of deaths. The cancer and phthisis deaths increased somewhat ; while a decrease occurred in the mortality from diarrhoea and enteritis.

In the 53 registration weeks of 1924 there were 593 deaths in London caused by vehicles and horses, 166 being children under 15 years of age. The corresponding figures for 1923 (52 weeks) were 453 and 146 respectively. In Great Britain motor vehicles caused on the average slightly more than eight deaths per day in 1924, this being about 24 per cent. more than in 1923. For the purpose of comparison it may be mentioned that in the United States, in 1924, motor vehicles caused on the average 52 deaths per day, the increase upon the figure for 1923 being 4 per cent.

The death-rates from all causes and from certain specified diseases for each metropolitan borough and for London as a whole will be found in the table on p. 63. The annual death-rates in London since 1840 in relation to the mean of the rates for the last 84 years are shown in the diagram on p. 6.

There were 69 deaths under one year of age per thousand births in 1924, as compared with 61 in 1923 and 75 in 1922. In the following table the deaths under one year of age, per thousand births, from the principal causes of infant mortality are shown for 1924 and preceding years :

Cause of Death.	1911 to 1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.
Measles ...	3.40	4.81	1.74	4.92	3.89	0.67	2.02	0.57	3.30	0.96	3.37
Whooping-cough	3.63	4.72	3.54	2.51	7.02	0.87	2.89	2.34	3.92	2.23	2.30
Influenza ...	0.27	0.31	0.16	0.27	3.65	1.38	0.46	0.26	1.12	0.20	0.62
Tuberculosis ...	3.40	3.48	2.81	3.88	2.65	1.66	1.52	1.45	1.43	1.21	1.20
Bronchitis ...	6.41	7.60	5.29	6.96	7.02	5.10	5.65	2.89	4.05	2.43	3.62
Pneumonia ...	12.28	16.10	11.69	15.28	16.78	10.25	12.62	11.54	16.00	9.07	14.13
Diarrhoea ...	24.28	20.82	13.89	16.03	13.67	14.75	8.98	18.63	6.26	9.07	7.89
Premature birth	18.16	17.60	16.40	17.22	18.47	20.42	15.32	16.17	16.10	14.66	15.89
Congenital defects	14.69	15.18	13.86	15.22	14.39	12.70	11.53	11.53	9.30	8.80	7.96
All causes ...	108	112	89	104	108	85	76	81	75	61	69



*Infectious diseases.*

The attack-rates and death-rates of the principal infectious diseases in London and the constituent boroughs are shown in the table on p. 63.

## Smallpox.

Whilst smallpox has been increasing in prevalence in other parts of the country, more especially in the Midlands and the North, London, during the year under review, enjoyed comparative freedom from the disease, only four notified cases and one unnotified case (presumed to have been one of smallpox) having occurred among London residents as compared with upwards of 3,700 cases in the country as a whole. Reference was made in the annual report for 1923 to London's record as regards smallpox and a table illustrating the same was given (p. 14). The chief measures upon which, in the absence of full protection by vaccination and re-vaccination, reliance must be placed in the endeavour to prevent spread of the disease, may be summed up in a few words, viz.: (1) prompt and correct diagnosis, and (2) efficient administration. The Council places at the disposal of medical officers of health and medical practitioners in London and certain areas in its near neighbourhood the services of its expert medical staff for assistance in diagnosis, and co-operates with the metropolitan borough councils as well as with the sanitary and port health services all over the country in safeguarding the interests of the metropolis against invasion by smallpox. Having regard to the special position of London and the fact that sea borne traffic is plying daily to and fro between its docks and smallpox infected countries, the need for constant vigilance is apparent, particularly as the surest protection against smallpox is gradually being stripped of its influence by the increasing unwillingness of the population to undergo vaccination and re-vaccination. If the decline in vaccination continues it is possible that the time is not far distant when a serious epidemic can no longer be prevented.

The continued prevalence of smallpox of a comparatively mild description in the provinces during the past two or three years is a constant source of danger to London and it is remarkable that, considering the duration of this prevalence, off-shoots from one or other of the outbreaks in provincial towns have not affected the metropolitan area. (See, however, cases 3 and 4 referred to later.) The fact that the type of smallpox in the provinces is a mild one renders the possibility of its introduction into London no less serious; in fact the danger of missed cases is all the greater and the need for vigilance is accentuated. These milder forms of smallpox have from time to time been referred to as "alastrim," "varioid," "para-smallpox," etc., and there has been a tendency to regard such outbreaks as of less importance than those of the more fatal type of smallpox such as occurs in the East. The special danger of taking this view, in London, lies in the fact that virulent smallpox is repeatedly introduced, and hence the danger of spread of smallpox cannot be regarded as other than a very serious one. The Ministry of Health issued a circular in 1922, entitled "Outbreaks of Smallpox of Mild Clinical Type," and made the following recommendations:

(1) That none of the customary and necessary procedures of smallpox prevention (including vaccination) should be omitted.

(2) That close enquiry should be made to ascertain whether chickenpox is prevalent at the same time as smallpox and to secure the differentiation of these two diseases.

(3) Where cases are diagnosed or reported as cases of "varioid" or "alastrim," the terms should be treated for all purposes of preventive action (including notification) as the equivalent of the term smallpox.

Having regard to the enormous cost to the community of an epidemic of smallpox and to the dislocation of the social and business life of the people entailed, it is highly important that watchfulness on the part of the London medical service as a whole should not be relaxed. No risk should be taken by the private medical practitioner in cases where the least doubt exists; the services of the metropolitan



borough medical officers of health and the Council's consultants are always available when required.

It will be of interest to sketch briefly the particulars of the five cases, including one "missed case," among London residents during the year, and of certain other cases, which though not occurring in the metropolitan area, came within the purview of the health administration of the County.

(1) *J. F. (male, aged 54 years)*—A resident of Kensington was notified to be suffering from smallpox on the 30th June, 1924. This patient was associated with a group of cases, three of which were fatal, in an extra metropolitan district just over the county boundary; all of them were infected by a missed case. The original case was that of a male child, aged three years, who developed a rash about the 12th June, 1924, diagnosed by the doctor in attendance as chickenpox. On 25th June the medical officer of health called in one of the Council's smallpox consultants, as several members of the family and other occupants of the house had fallen ill. Although the illness had not developed sufficiently to warrant a diagnosis that day, the consultant saw the patients again the following day, in addition to two others who had fallen ill, and advised their removal to hospital as genuine cases of smallpox. They included four males, aged 39, 14, 7 and 3 years respectively, and four females, aged 34, 17, 10 and 5 years respectively; one of them was the original child, aged three years, who had actually recovered from the illness though the scars of smallpox remained.

A further case developed the succeeding day (27th June), and on 1st July the remaining member of the two families of 10 persons, living in the house, of whom five were unvaccinated, had developed smallpox and three of them, including a hæmorrhagic case, died. *J. F.*, the Kensington resident already mentioned, collected the rents from the infected house, and, in common with the other cases, was infected by the child whose attack was originally mistaken for chickenpox. This outbreak illustrates the point that a mild unrecognised case of smallpox can, and frequently does, give rise to secondary cases of a virulent type. Exhaustive enquiries were made as to the origin of infection, but no satisfactory explanation was forthcoming, although a number of clues were closely followed up. A large number of vaccinations were carried out in the neighbourhood, including all possible contacts (both direct and indirect) and 112 children at the Council school, where one of the patients was in attendance.

(2) *H. B. (female, aged 73 years)*—Was notified and removed to hospital suffering from smallpox. The patient went to Brighton for a holiday from 19th July to 2nd August, 1924, when she returned to her home in Fulham. On 9th August she went to stay with her sister in Chelsea, as she had been feeling unwell, and on that day a rash appeared on her face. On 12th August she was seen by the acting medical officer of health and one of the Council's smallpox consultants, who pronounced the case to be one of smallpox in a mild form. The patient had not been vaccinated since infancy. The infection must have been contracted whilst the patient was on holiday, but after the fullest enquiry nothing definite could be ascertained. All precautions were taken and no further developments arose.

(3) and (4) *L. C. (female, aged 54 years)*—A resident of St. Pancras, was notified as a case of smallpox on 26th August, 1924, after examination by one of the Council's consultants. The patient was taken ill in church on Sunday, 10th August, and went home to bed. The rash appeared two or three days later, but smallpox was not suspected by the medical attendant until 26th August. All precautions were taken and the contacts vaccinated. During enquiry into this case it was discovered that an unvaccinated schoolgirl, *H. S. (aged 15 years)*, had suffered from what was considered to be an attack of chickenpox about five-six weeks previously. This girl stayed away from school early in July suffering from headache, giddiness and feverishness; on 5th July she had a few spots on the wrists and ankles and was seen by a doctor who diagnosed her illness as chickenpox. She resumed school attendance



on 28th July, and went to Brighton from 2nd—18th August. She spent the remainder of her holidays at Steyning, and whilst there the case of "L. C." was discovered. She was accordingly examined on 28th August by the county medical officer of health of West Sussex and the medical officer of health of the combined sanitary district, who agreed that the girl had suffered from a mild attack of smallpox, having in view the distribution of the scars and the child's description of the history of the rash. When examined she was quite free from infection. The source from which she derived her attack was not discovered, but it was significant that the apartment house in which she was living had been visited by persons from the north of England.

(5) *B. P. (male, aged 24 years)*—This case was notified and removed to hospital on 29th October, 1924. The man was a valet who had been travelling in Spain with his employer. He left Madrid where he was no doubt infected on or about 15th October, and was taken ill on 26th October when he was staying with his employer in a well-known West End hotel. He was taken to his home in Westminster from the hotel on 28th October, on which day the rash was noticed, shortly after he left the hotel. The man's employer started for America the following day, and a wireless message was sent to the ship on which he sailed with a view to any necessary precautions being taken. All possible preventive measures were carried out and no further developments arose. The occurrence of this case once again illustrates the need for guarding against the introduction of smallpox from abroad.

In addition to the aforementioned, there were four other instances in which persons sojourning in London, *en route* for other destinations, were subsequently reported as having smallpox, their onset of illness having ante-dated their departure from London. The circumstances were as follow:—

(i.) A vessel arrived at Liverpool from Bombay on 24th April, 1924, having had cases of smallpox on board. One of the patients (*J. T.*), a night watchman, was transferred to hospital at Port Said on 11th April, and was discharged as not suffering from smallpox on 24th April. He embarked in another vessel at Port Said and arrived on 4th May at the Port of London. He reported at the Board of Trade offices on 5th May, visited his brother at Canning Town on the same day and proceeded that night to Glasgow, where he was examined on his arrival and declared to be suffering from smallpox, there being evidence of "crusting on the hands and head." No further developments occurred.

(ii.) On 7th May, 1924, *F. S.*, (*male, aged 53*), an American subject, died in mid-Atlantic from smallpox during the voyage from Southampton to America. *F. S.* had been travelling in the East and on his return journey disembarked at Marseilles, travelling overland, via Paris to England. He arrived at a well-known hotel in London on 27th April, visited relatives in Essex and returned to the hotel on 30th April feeling ill. He consulted a doctor, who diagnosed "chill on the liver," and on 3rd May he left the hotel for Southampton, embarking for America the same day. He died on board a few days later. From enquiries which were made it is unlikely that the rash had appeared before he left the hotel. No secondary cases occurred in London.

(iii.) *Mrs. W. A.*—Whilst travelling in Italy in May she developed an illness associated with diarrhoea and sickness. The onset was on 16th May, and a rash appeared on 21st May. She was seen in Florence by three doctors (two English and one Italian) who agreed that the rash was due to mosquito bites. She arrived at an hotel in London on 25th May, and was seen by a doctor on 26th May, who diagnosed her condition as being due to chickenpox, to which diagnosis he subsequently adhered. The patient stated that she had been vaccinated three months previously and there were good vaccination marks. On 27th May she left London for Doncaster by car and on her arrival there her illness was diagnosed as smallpox, and she was removed to hospital. For purposes of preventive action the diagnosis of smallpox was acted upon in London and all precautions were taken. There were no developments.



(iv.) *E. W. (female, aged 15 years)*, whose home is in Nuneaton, stayed for a short time in December with some friends at an address in Fulham. About a week after her return to Nuneaton information was received that she was suffering from smallpox and that she had infected her brother and four girls in the factory in which she worked. Enquiries made by the medical officer of health of Fulham elicited the fact that the girl, during her stay in Fulham, was noticed to have some spots on the face which are said to have disappeared under ointment treatment, but it was not known whether there was a rash on any other part of the body. The girl had been travelling about during her visit to London, but fortunately no further case came to light in London as a result of her movements.

Apart from these occurrences there was a distinct menace to London at one time or another during the year from infection by vagrants, as a number of cases of smallpox occurred among persons of this class in the Home Counties. Common lodging houses, etc., were kept under close supervision.

Information was distributed, to the medical officers of health concerned, regarding the movements of passengers and crews of vessels arriving in London from smallpox infected countries, or with a history of smallpox on board.

Measles caused 1,330 deaths in London during 1924, the death-rate being  $\cdot 29$  Measles. per thousand as compared with  $\cdot 08$  in 1923 and  $\cdot 34$  in 1922. Measles is usually prevalent in London every other year and was prevalent in 1922, so that an epidemic became due in 1924: a circumstance which tended to increase the mortality was the large excess of births over the normal in 1920, resulting in a high proportion of children in 1924 of an age at which measles takes normally its greatest toll.

There were 517 deaths from whooping-cough in London during 1924, the death- Whooping rate being  $\cdot 11$  per thousand as compared with  $\cdot 09$  in 1923. Cough.

There were 743 deaths among children under two years of age from diarrhoea Diarrhoea and enteritis in London during 1924, this being  $8\cdot 73$  per thousand births; the Enteritis. corresponding rate in 1923 was  $10\cdot 3$ .

The behaviour of scarlet fever and diphtheria in London during 1924 was Scarlet fever watched with the closest attention, particularly having regard to the special measures and Diphtheria. of prophylaxis now being adopted in the case of these diseases in New York and Chicago. There were 11,610 cases of scarlet fever, an increase of 1,563 on 1923, and 10,684 cases of diphtheria, an increase of 383 on 1923. Following upon the waves of prevalence which attained their height in London in 1921 and 1922, there had been a decided fall in both scarlet fever and diphtheria in 1923, but in 1924 this decline was not continued. In the annual report for 1923 (p. 92) a diagram was exhibited comparing the death-rates from diphtheria and croup (combined) in England and Wales, London and New York. The two main lessons to be learnt from that diagram are:—

(i.) That in spite of the very differing degrees of aggregation of population, in the two areas first named, closely corresponding rates were recorded for England and Wales and London respectively throughout the greater part of the period of years under review; exception must be made, however, as regards the epidemics of the late eighties and early nineties, on the one hand, and those of the years 1916–1923, on the other, when the London rates were higher than those for England and Wales.

(ii.) That a far heavier rate, from 1859 up to nearly the end of the 19th century, was recorded in New York than in either England and Wales or London. It must of course be realised that the great extension of New York's boundary in 1897 materially affected the statistics of the City from 1898 onwards. It seemed clear, however, as was pointed out last year (*loc. cit.* p. 93) that, in old New York City, "diphtheria" deaths included deaths from "angina, quinsy and inflammation or ulceration of the throat and tonsils," and also, in all probability, many deaths from what, in this country at any rate, would at the time in question have been regarded as scarlet fever rather than as diphtheria.



In the diagram on p. 95 with a view to further study of the extent of interchange in the earlier records between scarlet fever and diphtheria, comparison has been made between the contours exhibited for London and New York when death-rates from diphtheria and scarlet fever *combined* are plotted out. This diagram clearly confirms the view that in the period, from the sixties to the nineties of the last century, there was a much greater tendency to include cases resembling scarlet fever as "diphtheria," in New York, than was the case at that time on this side of the Atlantic. Comparison of the death-rates in this country, exhibited on the one hand by London and the adjoining counties, and on the other by the Lancashire towns, further suggests that in a somewhat similar way London has in later years included certain types of cases as "diphtheria," which in some of the Lancashire towns might perhaps have been classed as "scarlet fever." Furthermore, as noted in the annual report for 1916 (p. 35), in London at an earlier period, *i.e.*, for some years after 1859, there seems to have been "a decidedly conservative tendency in the matter of describing epidemic throat diseases, croup and diphtheria being still distinguished from one another in London in the sixties and seventies, long after the new designation diphtheria had been more generally accepted in other parts of the country. Finally, "it may be taken as certain that at the crests of the major waves, in London at any rate, the epidemic type approximates more nearly to what may perhaps be styled the diphtheritic, and between the crests to what may perhaps be styled the scarlatinal, type" (*loc. cit.*).

All these observations strengthen the impression that varying fashion as regards nomenclature has played a great part in connection with these epidemic throat diseases. It is perhaps for this reason largely that, in the sixties and seventies and even into the eighties, diphtheria was regarded as a disease of the sparsely inhabited rather than of the densely inhabited areas. In London it should be noted however, as stated elsewhere (*loc. cit.* p. 35), that an epidemic wave had already swelled in the late fifties, thus leaving the metropolis comparatively immune from "diphtheria" in the two succeeding decades.

Then, from the sixties onwards, came the great increase of size of the towns, the immigration from the rural areas, the freer movement of population, the spread of compulsory schooling with closer aggregation of susceptible children, and the extension of measures of isolation, disinfection and hygienic control generally. Shortly afterwards, in 1883, the diphtheria bacillus was discovered, and its appearance upon the scene naturally led to further alterations of fashion as regards nomenclature.

In the present century bacteriological methods have been more widely used in London than in the country as a whole, and perhaps more extensively, too, in London than in some of the northern towns. The diagram on p. 16 offers a certain amount of confirmation of this view so far as London and the Lancashire towns are concerned.

Having regard to these considerations it seems now, more than ever, important to realise—

(1) That regard should be paid to the close relation existing between epidemic diseases variously described in past years as croup, laryngitis, diphtheria, scarlet fever, cynanche maligna, etc., etc.

(2) That the tendency must be recognised, when sufficiently large populations are passed under review, for epidemics of throat disease to occur in major waves at intervals of some 30 years, and for the types of disease exhibited at various stages of these epidemic waves to manifest varying phases.

(3) That study of the influence of any special preventive or prophylactic measures against diphtheria or scarlet fever, in a particular town or tract of country, during any year or series of years, needs to be very carefully conducted, and that while closely scrutinising what actually happens, a critical eye should ever be kept upon what might be expected to have happened independently of the special preventive measures newly applied.



This last-named conclusion is further confirmed by close study of the history of diphtheria in some of the great towns of this country. The diagram on p. 16 exhibits contours which illustrate the irregularity of the course of diphtheria mortality in towns of England and Wales. The towns are arranged in geographical order, and there is, it will be seen, some evidence of similarity in the contours in adjacent towns, but practically little or none in the different divisions of England and Wales represented in the diagram. The first contour relates to London, and shows prolonged incidence in the nineties, followed by fifteen or sixteen years of low prevalence. There is, it will be seen, a gradual increase from about 1912 up to 1921 and 1922, but even in the latter year, although there was epidemic prevalence, the mortality did not reach anything like the figures of the nineties. It will be noticed that most of the periods of high mortality in other towns have occurred within the period of London's high prevalence. Between 1890 and 1912, only Newcastle, Huddersfield, Liverpool, Manchester, Derby and Nottingham can claim to have escaped quite lightly.

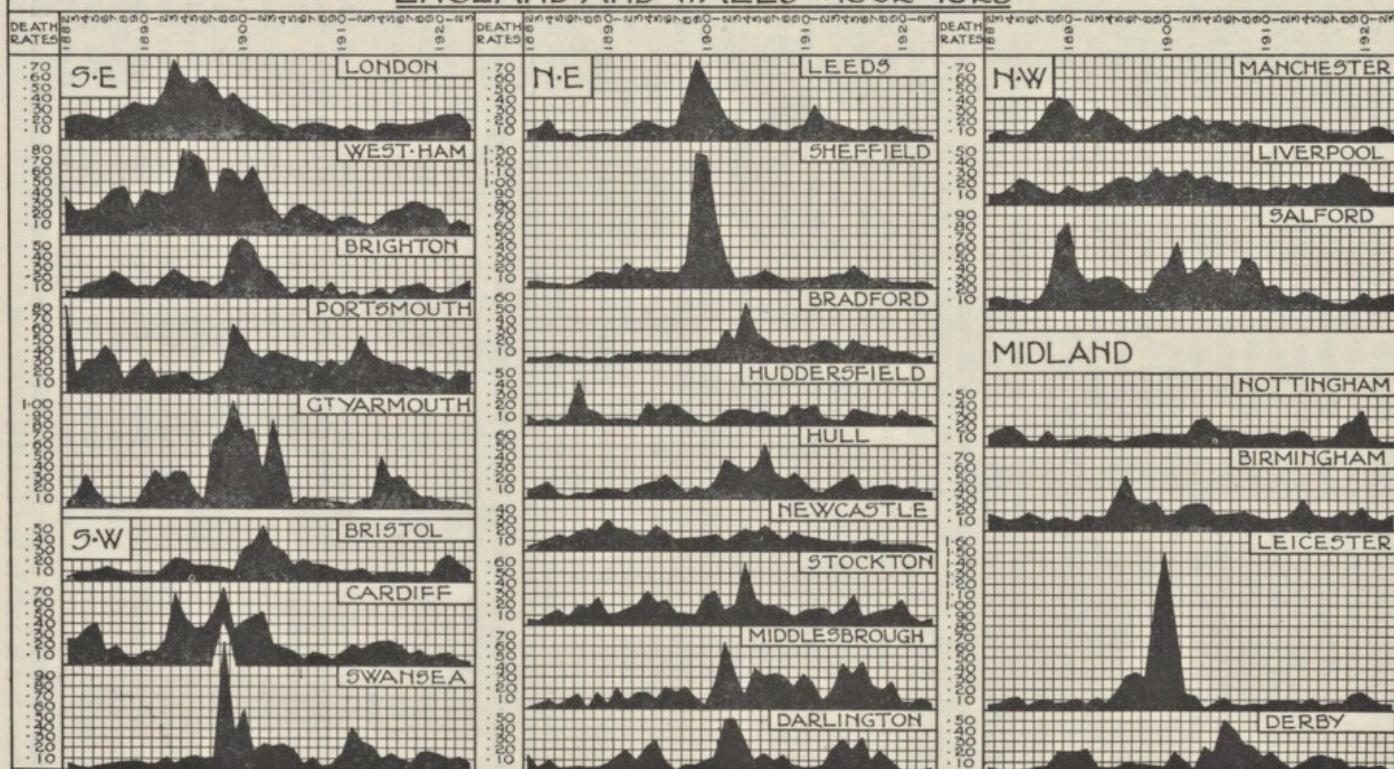
Similar phenomena to those seen in these towns were commented upon by Newsholme in his work on Diphtheria, in connection with his examination of the time relations of epidemic prevalences in countries of Europe and America; they have been illustrated, moreover, in the London annual reports, from time to time, in relation with epidemic prevalences in the individual boroughs of the County of London and also even in individual schools in particular boroughs. The impression left on the mind is one of an eminently infectious disease, but of one which spreads quite slowly from one area, town or country to another: so that, whereas in a period of 4, 5 or more years a continent or large area as a whole may suffer severely, the extent to which portions of such continent or other large area are involved varies greatly within the series of years under review.

The study, therefore, of the time and space relationships of epidemics of diphtheria and scarlet fever, while it brings into prominence the close relationship existing between these epidemic diseases and the importance of certain conditions—diminished rainfall, movement of population, operation of measures of isolation, cleansing and disinfection—in favouring or limiting spread from case to case, at the same time serves to focus attention upon the outstanding fact that widespread epidemics of throat disease have shown a tendency to occur in Europe and America at recurring intervals of some 20 or 30 years. Inasmuch as in the case of scarlet fever one attack of the disease confers almost if not complete protection against subsequent attack, and as in the case of diphtheria a large, if not so complete, degree of protection is conferred upon each sufferer, it is naturally assumed that, following upon one of the waves of widespread prevalence of throat malady, the affected population might be expected to show comparative immunity, at any rate for the time required to allow of the upgrowth of a new population susceptible to attack.

Additional factors are however, doubtless, also operative. One of these may be the influence of other forms of disease and particularly of epidemic diseases of the influenzal group. It has been observed from time to time that widespread influence upon throat epidemics has been exerted by epidemics of influenza. In the annual reports for 1920 (p. 54) and for 1921 (p. 45) comment was made upon the frequent occurrence of scarlatiniform rashes during an influenza outbreak and also on the raised case-mortality of scarlet fever during the influenza epidemics of 1918-19. This and the similar phenomenon in the influenza epidemic of 1922 are illustrated in the inset to the diagram on p. 24 and (though in less marked degree) there are also apparent there similar variations in the case-mortality of diphtheria. An interesting observation which possibly may have a bearing upon the point now under consideration is the fact noted by Dr. Middleton Hewat that in Fulham the percentage of apparently erroneous notifications of diphtheria had increased from 16.2 in 1923 to 24.3 in 1924.



# DIPHTHERIA MORTALITY IN LONDON AND OTHER TOWNS OF ENGLAND AND WALES 1882-1923





Going back to the next preceding pandemic (that of the early nineties) phenomena resembling those noted above have been observed. The prevalence of sore throat during the great epidemic of 1847 was commented upon by Thomson. Graves noted the severity of scarlet fever about 1803, and then again some thirty years later, and these two points of time correspond with pandemic prevalences of influenza. Study of the history of epidemic throat disease in the 18th century shows some similar correspondences of "influenza constitutions" and "epidemic throat-disease constitutions," though they are not so marked as in the 19th century. Even as far back as the early 16th century there was a correspondence in time, which is noted in Hecker's Table, of sweating sickness in England and of a great prevalence of malignant sore throat in Holland. It should be added, however, that the epidemic throat constitutions, generally speaking, tend rather to follow shortly after the influenza constitutions than to be precisely simultaneous with them.

There are yet other disturbing influences affecting the figures in urban districts as compared with rural districts, some of which become apparent when London is contrasted with England and Wales as a whole. The Registrar-General in his annual report for 1922 (p. 63), gives the attack-rate and fatality-rate from diphtheria in London, in the aggregate of county boroughs and of rural districts in England and Wales. With regard to the notable excess in London mortality in that year, he observes that this "has been due entirely to greater prevalence of the disease, for the fatality rate in London was slightly below that for England and Wales, indeed almost the lowest in the table." It will be seen that the case-mortality in the rural districts of England and Wales exceeds that of London, and this is not what would have been expected, in view of the fact that the age-incidence of death in rural areas is higher than in London. The disease is far more fatal at younger ages, and the mortality in an area in which the average age of attack was high on that account tends to be less—the attack rate of the rural areas should thus have been less than in the urban areas and certainly considerably less than that of London. The fact that bacteriological methods are used to a far greater extent in urban areas than in rural districts would on the other hand tend to make the urban case-mortality rates lower.

There are other considerations affecting comparisons of the different classes of area. In London, in cases of illness where diphtheria is suspected, notification and removal to hospital follow immediately in the majority of cases. Thus of the total deaths from diphtheria in the course of the year over 90 per cent. in London occur in institutions. In rural areas, on the other hand, the percentage of deaths occurring in institutions is less than 40. With the complete hospital equipment available in London, not only is there more inducement to the practitioner to notify a suspicious case, but the diagnosis and certification of cause of death in fatal cases, being mostly in the hands of the medical staff of the fever hospitals of the Metropolitan Asylums Board, is far more certain. The operation of this factor in determining more accurate diagnosis is apparent upon a consideration of the figures relating to deaths from certain assigned causes in rural districts. It is found, for example, that during the ten years 1914-1923 there were 74 deaths in London among children between 5 and 10 years of age classed as due to diseases of the larynx, or 18 per million living, while in rural areas there were 385 deaths, or 50 per million, returned as due to this cause at the same ages: a small excess in the mortality rate from diseases of the pharynx and tonsils is also found in the rural areas. For this period of years and for the same ages the deaths certified as due to diphtheria in London, per million living, considerably *exceed* those in rural districts, the mortality rates being 690 and 430 respectively.

It is difficult to explain the higher mortality in the rural districts in the years in question from diseases of the larynx and tonsils, except on the assumption that, to a large extent, they were diphtheritic in origin. On the whole the mortality



rates of England and Wales and London for the past sixty years run much the same course, except at times of exceptional prevalence (both of influenza and diphtheria) such as those of the nineties and those of the past five or six years.

In enumerating the various factors determining the form of the epidemic waves of infectious throat maladies, no reference has thus far been made to the question of possible long period changes in virulence of the causal germ, or to the possible existence of an intermediate or definitive insect host. The appeal to the operation of factors such as these has, however, been advocated partly on the ground of certain correspondences in geographical distribution and of seasonal prevalence in the case, at any rate, of the curves for fleas and scarlet fever; and partly for the reason that the resultant of all the forces previously enumerated does not seem to have such magnitude and direction as to account for the decided downward movement in the mortality from throat epidemics during the last hundred or hundred and fifty years.

Thus increased aggregation of susceptible units has to a large extent been countered by stricter employment of isolation and disinfection; the use of antitoxin, since 1894, has been followed by great reduction in case-mortality from diphtheria; but, as Sir Shirley Murphy pointed out in 1898, it has also been followed by great reduction in the case-mortality from scarlet fever; the towns with their more complete measures of bacteriological control and of general hygiene have, over a long series of years, been able to run neck and neck with the rural areas (which are so much more advantageously circumstanced than they in other respects) save at recurring intervals of some thirty years or thereabouts, when the towns have been apparently temporarily handicapped owing to pandemic prevalences of influenza. Those who have been occupied in gauging the respective chances, on one side or the other, in the tug of war between the favourable and adverse factors, must have felt doubt as to the outcome, and yet the result has been beyond all expectation. The death toll exacted by both diphtheria and scarlet fever in civilised countries has very notably diminished. This alteration, wherever manifested, has been accompanied by the devotion of a vastly greater amount of attention to personal hygiene, and there may be something more than mere coincidence in this correlation.

#### Tuberculosis.

The deaths from tuberculosis of the respiratory system in London during 1924 numbered 4,486, giving a death-rate of  $\cdot 98$  per thousand, the corresponding figures for 1923 being 4,432 and  $\cdot 97$  respectively. Deaths from other forms of tuberculosis numbered 834, as against 853 in the preceding year, the death-rate being  $\cdot 18$  per thousand of population. The deaths and death-rates from tuberculosis of the respiratory system by sexes annually since the war have been as follows:—

Year.	Deaths.			Approximate death-rates.		
	Males.	Females.	Total.	Males.	Females.	Total.
1919 ...	2,945	2,252	5,197	1·47	0·94	1·18
1920 ...	2,675	2,000	4,675	1·29	0·82	1·04
1921 ...	2,737	2,076	4,813	1·32	0·85	1·07
1922 ...	2,841	2,047	4,888	1·35	0·84	1·08
1923 ...	2,586	1,846	4,432	1·23	0·75	0·97
1924 ...	2,629	1,857	4,486	1·24	0·75	0·98

The increase in mortality in 1924 over 1923 is almost entirely confined to ages 20-25 and 45-55.

#### Notifications of tuberculosis.

The number of notifications of tuberculosis in London during 1924 (53 weeks) was 11,917, as against 12,175 in 1923 (52 weeks). Of these 9,388 were pulmonary and 2,529 other forms of tuberculosis. These figures compare with those published in these reports prior to 1921. Further correction of the figures by the exclusion of cases notified as primary, but eventually found to have been previously notified, brings the total number of pulmonary cases down to 7,406 and other cases to 2,207 the corresponding figures for last year being 7,561 and 2,221.



The following is an analysis of the corrected notifications in London during 1924 (53 weeks) :—

Form of tuberculosis notified.	Sex.	Notifications on Form A. (Total of primary notifications received in London boroughs, other than elementary school cases, <i>infra</i> .)											Total.
		0-	1-	5-	10-	15-	20-	25-	35-	45-	55-	65+	
Pulmonary tuberculosis	M.	6	52	91	117	333	519	871	834	751	387	127	4,088
	F.	5	32	93	162	425	558	909	550	346	144	65	3,289
Other tuberculosis ...	M.	28	245	326	177	104	54	83	49	45	23	12	1,146
	F.	20	196	215	155	93	88	115	48	27	17	12	986
All forms of tuberculosis	M.	34	297	417	294	437	573	154	883	796	410	139	5,234
	F.	25	228	308	317	518	646	1,024	598	373	161	77	4,275

Form of tuberculosis notified.	Sex.	Notifications on Form B. (Primary notifications of cases discovered through medical inspection in elementary schools.)				Notifications on Form C. (Secondary notifications from institutions receiving cases.)	
		0-	5-	10+	Total.	Poor Law.	Other.
Pulmonary tuberculosis	M.	—	9	7	16	1,127	3,320
	F.	---	6	7	13	768	1,822
Other tuberculosis ...	M.	3	24	19	46	162	629
	F.	3	12	14	29	112	505
All forms of tuberculosis	M.	3	33	26	62	1,289	3,949
	F.	3	18	21	42	880	2,327

The Ministry of Health made an Order on 18th December 1924 (Public Health (Tuberculosis) Regulations, 1924) supplementing the Orders of 1912 and 1921 relating to tuberculosis. The new Order requires local medical officers of health to prepare from the register of notified cases of tuberculosis a quarterly return showing the number of cases on the register at the commencement and at the end of the quarter, and the number added to and removed from registration during the same period. So far as there is uniformity in the detection and notification of cases of tuberculosis the returns made under this order will furnish a means of comparing the incidence of the disease in different localities.

There were 6,483 deaths from cancer in 1924 as compared with 6,346 in 1923, Cancer. the death-rate per thousand living being 1.42, as against 1.39 in 1923, 1.33 in 1922 and 1.21 in the ten years 1911-20.

In the course of last year the Ministry of Health published a memorandum (426, 14th August). See p. 39 of last year's report. In 1924 three further memoranda on the subject of cancer were issued. Circular ii. (476, 6th March) deals with the results obtained by radium treatment. Circular iii. (496, 19th May), gives a general survey of the literature relating to operations for cancer of the breast based upon a report prepared at the instance of the Ministry by Dr. Janet Lane-Claypon. This report was subsequently published by the Ministry (Reports on Public Health and Medical Subjects, No. 28). Circular iv. (516, 31st July) contains a memorandum by Dr. Murray, Director of the Imperial Cancer Research Fund, on cancer research.

Dr. Janet Lane-Claypon's report on operations for breast cancer summarises the records of some 20,000 operated cases, the conclusions reached being as follows:

(1) That after performance of the older or "incomplete" operation, out of a net total of 7,029 patients, 2,956 or 29.2 per cent. were alive at the end of three years after operation.

(2) That after performance of the modern or "complete" operation, out of a net total of 8,921 patients, 3,857 or 43.2 per cent. were alive at the end of three years after operation.

(3) That with the "complete" operation the prognosis is intensively affected by the stage of the disease at which the patient is operated upon.



(4) That the expectation of life after the onset of cancer of the breast where the disease runs its own course may be taken as being on an average not more than three years and six months.

(5) That in the aggregate, *i.e.*, without reference to the stage of the disease at operation, the effect of "complete" operation is to prolong life, increasing the expectation of life from the onset of the disease by two to three years.

(6) That in patients operated upon by the "complete" operation while the disease is still local, the expectation of life from the onset of the disease may be on the average as much as ten years more than in un-operated persons.

At the request of the Statistical Sub-Committee of a Departmental Committee appointed by the Ministry particulars were obtained, by the kind help and co-operation of medical officers of health of the metropolitan boroughs, of deaths from cancer of the breast in 1923, especially in regard to the interval elapsing, from the time when the growth was first noticed to seeking medical opinion, and thereafter to operation and death. The returns were analysed, and transmitted to the Ministry. They form a useful supplement to the information collected by Dr. Lane-Claypon from surgical records, but they are necessarily imperfect, since no cases of successful operation, nor cases in which, subsequently to the operation, death occurred from some other cause, are included among them.

#### Anthrax.

During 1924, six cases of human anthrax occurred in London, one of which proved fatal. In 4 cases the patients were employed in handling imported hides. Another example of indirect infection of anthrax, referred to in the Annual Report for 1923, was furnished in the case of a school girl, aged 10 years, whose father and brothers were engaged in handling bales of skins and hides at a riverside wharf in Battersea. The child was treated in one of the general hospitals and recovered. In the absence of any other ascertainable source of infection it was presumed that infection was conveyed by either her father or one of her brothers, none of whom were themselves affected. The sixth case which ended fatally was that of a man, aged 61 years, who was residing at one of the Council's lodging houses. The source of infection was deemed to have been a shaving brush, although bacteriological examination of the brush proved negative. The patient bought the brush on 29th July and cut his cheek whilst shaving the following day. He obtained medical treatment two days later when he was suffering from an acute septic sore arising from the cut and other constitutional symptoms. The man's condition was subsequently diagnosed as anthrax and he died a day or two later. It was ascertained that the brush used was of a foreign type, having a plain black wooden handle without number or letters and it was understood that it had been purchased by the retailer with others as surplus Canadian Red Cross stores, which were traced and dealt with. All precautions were taken at the lodging house and there were no developments.

#### Plague and Cholera.

No cases of plague or cholera occurred in London during the year. The Council renewed an agreement with the keeper of one of its lodging houses for the use of the premises as a quarantine shelter for contacts of cases of plague, cholera, or other dangerous infectious diseases should occasion arise.

#### Typhus fever

No cases of typhus fever occurred in London during 1924.

#### Cerebro-spinal fever.

Of the 97 cases notified, 27 were not regarded as genuine cases; on the other hand 17 cases were recorded (mainly through the Registrar-General's death returns) which were not notified under the Public Health (London) Act, 1891. The actual number of cases was therefore 87, of which 69 (79 per cent.) proved fatal, as compared with a mortality of 76.8 per cent. the previous year.

#### Poliomyelitis, and polio-encephalitis.

In 4 of the 116 cases of poliomyelitis notified the diagnosis was revised, and there were 14 deaths. Reference is made in the school medical officer's report pp. 43 and 44) to the facilities which have recently been provided for the treatment of children suffering from this disease in the second stage of the illness or after discharge from hospital following correctional operations. It has been



found that whilst the voluntary or Metropolitan Asylums Board's hospitals were admitting cases of the disease in the first stage (covering a period of about 3-6 months) there was in many instances difficulty in providing the constant and continuous treatment, under skilled supervision, in the second stage, which may extend to a further period of 18 months to two years. Accommodation for a limited number of such cases was accordingly provided by the Metropolitan Asylums Board at Queen Mary's Hospital, Carshalton. In December, 1924, the Ministry of Health issued a circular in which it was pointed out that the services of Dr. J. A. H. Brincker and Dr. J. G. Forbes, together with the resources of the Council's bacteriological laboratory, are available to medical practitioners, through the borough medical officers of health, if required. The extent to which advantage was taken during the year of the services of the Council's consultants in connection with the diagnosis of affections of the central nervous system will be found on p. 42 of this report in reference to the work of the bacteriological laboratory.

The number of cases of encephalitis lethargica notified during the year, viz., 605, far exceeded the number notified in any one year since the disease was made notifiable in 1919 (see table below). In 64 cases the diagnosis was revised, thus reducing the number to 541, of which 122 (22 per cent.) proved fatal, as compared with a fatality rate in the preceding year of 45.9 per cent. Encephalitis  
lethargica.

The disease first commenced to make headway in the early spring and during the last two to three weeks in March 42 cases were notified; the prevalence was most marked during April and May when 138 and 147 cases respectively were notified in the London boroughs, dropping to 98 in June, 50 in July, 22 in August, 28 in September and a monthly average of about 20 for the remaining three months of the year. The prevalence was more or less evenly distributed over London, with no outstanding local prevalence.

A report on enquiries into after effects of encephalitis to school children will be found on p. 109 of this volume.

In former years it had been the practice of borough medical officers to furnish the Council with detailed particulars of every notified case on an agreed schedule of enquiry, but this practice was suspended in 1922. In view of the prevalence during 1924, however, the borough medical officers agreed to resume their former practice. A card index system was accordingly established with a view to recording a complete history of the cases.

The following table shows the age incidence of actual cases of cerebro-spinal fever, poliomyelitis, polioencephalitis and encephalitis lethargica during 1924:—

Age periods.	Under 3.	3-5.	5-10.	10- 20.	20- 30.	30- 40.	40- 50.	50-60.	Over 60.	Total.
Cerebro-spinal fever...	53	8	7	8	7	3	1	—	—	87
Poliomyelitis and polioencephalitis...	50	27	19	12	3	—	1	—	—	112
Encephalitis lethargica ...	17	18	58	170	91	63	55	45	24	541

#### *Influenza and the Influenzal Group of Diseases.*

The total number of deaths attributed directly to influenza in 1924 was 1,680. The wave of prevalence attained its maximum in the 7th week of the year when the deaths numbered 178. The deaths from pneumonia reached the weekly maximum of 277 in the 6th week, and those from bronchitis, that of 258, in the 8th week. The relation of the mortality rates from pneumonia, bronchitis and influenza over a series of years was shown in the chart on page 22 of last year's report. The chart on page 24 of the present report shows the relation of the mortality rates from cerebro-spinal fever, poliomyelitis and polioencephalitis, and encephalitis lethargica to those of influenza. This chart illustrates what is described in the Ministry of Health report of 1918 as the "setting" of an influenza epidemic; it will be seen that the pandemic prevalence of influenza in 1918 was preceded by unusual



prevalence of cerebro-spinal fever in 1915 and of poliomyelitis in 1916 and was succeeded by the encephalitis prevalences of 1921 and 1924.

The yearly incidence (notification figures) of cerebro-spinal fever, poliomyelitis and polioencephalitis since 1913 and of encephalitis lethargica since 1919 are shown in the table below :—

	1913.	1914.	1915.	1916.	1917.	1918.	1919.	1920.	1921.	1922.	1923.	1924.
Cerebro-spinal fever	92	73	674	432	430	265	199	164	109	86	70	97
Poliomyelitis and polioencephalitis	145	93	97	197	53	53	96	65	59	40	112	116
Encephalitis lethargica	Not made notifiable till 1st January, 1919						86	149	243	72	101	605

The relationship of influenza to epidemic diseases affecting the central nervous system.

Some of the problems associated with these diseases were considered in a special report of 1918 and in later annual reports; they have assumed prominence during the past year owing to the persistently maintained though not very extensive prevalence of influenza, and to the fact that with comparatively little increase in the other epidemic diseases of the nervous system there was developed the quite unexpected rise in "encephalitis lethargica" which has been above referred to. This latter phenomenon must first be considered in connection with its bearing upon the general question of the relationship between the various diseases of the influenza group.

The types of epidemic disease of the central nervous system associated with influenza prevalences during the last seven years.

The disease, which is still known in this country by the (as it now appears) not altogether appropriate name given to it, in Vienna in 1917, has proved in recent years in widely separated parts of the world to differ so strikingly from the earlier descriptions, of the outbreaks in France and Vienna, as pointedly to challenge attention. When the prevalence was first spoken of as "encephalitis lethargica" seven years ago it was held to be especially characterised by lethargy and ocular palsies. Students of the history of epidemics who had so often heard of "new diseases" before, urged that this disease was not new, "*Hic morbus non est novus*," in the time-honoured phrase which Crookshank has exhumed from the middle of the eighteenth century and brought once more into the light of day. The possibility suggested itself, quite at the outset, that the prevalence constituted one of the phases of influenza; for the most unfailing clue, as has been remarked, to the discovery of "influenza in mufti" is just this fact that, revolving as they do in a cycle of twenty or thirty years, the influenzal group of diseases present phases which are new in the experience of any particular generation of sufferers.

The two striking symptoms of the "encephalitis lethargica" of 1917 have, in various places, both here and in America, in the last four years, tended to be overshadowed—lethargy by insomnia or by altered sleep rhythm, and muscular palsies by myoclonic contractions (see Ann. Rep. for 1923, p. 25). Dr. J. C. Spence stated (*Lancet*, 7th February, 1925) that "the old oculo-lethargic type of case no longer occurred, in the spring of 1924 in Newcastle, but was replaced by an acute painful myoclonic type, with difficulty diagnosed from acute rheumatism or an acute abdomen." The myoclonic cases may have been present earlier, however, at any rate in London. In the annual report for 1922 (p. 65) cases of chorea, occurring in East London between 1919 and 1923, are discussed by Dr. Chaikin, and some of these cases of "chorea" may have been due to encephalitis. Dr. Hall, speaking of Sheffield, says: "with each recurrence of the epidemic, symptoms became prominent which in previous waves had only been occasional or temporary, thus necessitating the creation of a new group into which they could be fitted" . . . After referring to the appearance of myoclonic contractions in 1920, he adds, "It thus became almost necessary to create a new type for each case, and even then a single case in its course went through so many types that its classification became almost impossible." He points out, moreover, that Pecori in Italy made out thirteen forms, "whilst a combination of any two or three of these may become a separate form in



itself." "In addition he has an atypical form, which parenthetically is by far the most fatal."

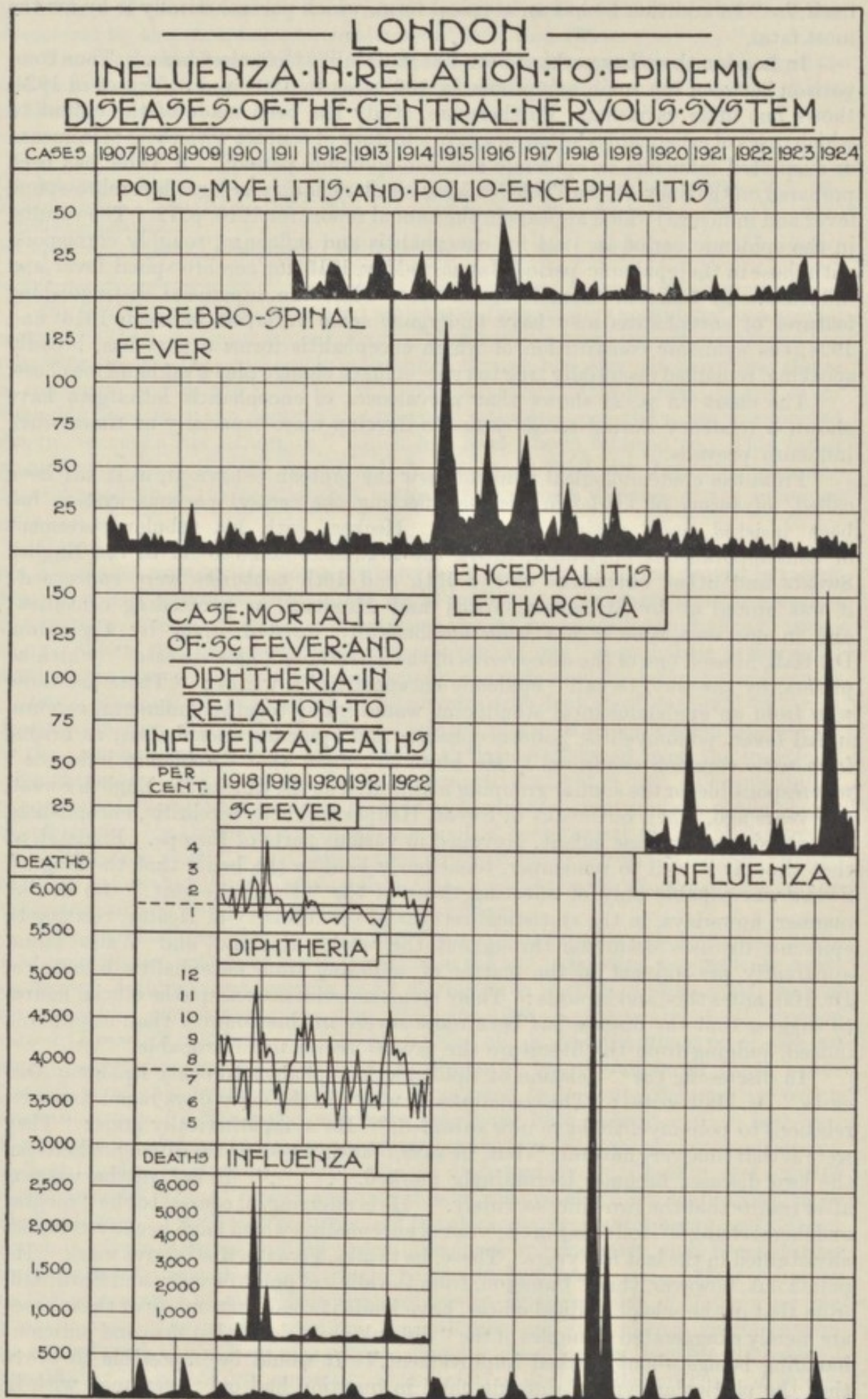
In London there has perhaps been less variability than elsewhere. Thus comparison between the main symptoms, in 166 cases in 1921 and 315 cases in 1924, shows but little variation. Furthermore, study has been made of the extent to which cases of encephalitis lethargica give a history of contact with cases of influenza or suspected influenza, in epidemic and non-epidemic periods. A Table has been prepared on the lines of the Table (making similar enquiry as regards cerebro-spinal fever and influenza) which appears in the annual report for 1916, p. 12. The results, in the epidemic period in 1924 for encephalitis and influenza, roughly correspond with those in the epidemic period, January-May, 1915, for cerebro-spinal fever and influenza. In London, then, it seems that, while the superficial distinguishing features of encephalitis may have undergone some variation between 1916 and 1924, the epidemic constitution of which encephalitis forms a part has, broadly speaking, remained essentially true to type—plus ça change plus c'est la même chose.

The chart on p. 24 shows that prevalences of encephalitis lethargica have shown a tendency during recent years to develop more especially at times when influenza prevails.

From the epidemiological point of view the protean behaviour, as it has been called, of forms of epidemic disease affecting the central nervous system has been insisted upon again and again. Hecker, with his tabular statement of contemporaneous epidemics, drove the argument home so far as the English Sweats and other outbreaks of the 15th and 16th centuries were concerned; it was hinted at by Sydenham, Willis and Huxham, in succeeding centuries; and in our own time it has been emphatically insisted upon by Creighton. Dr. Hall, himself one of the discoverers of the latter-day "new disease" (which he prefers, by the way, to call "epidemic encephalitis"), writes: "There are those who from an epidemiological standpoint would group together influenza, cerebro-spinal fever, poliomyelitis, polioencephalitis and epidemic encephalitis, as arising from some common condition." He hints elsewhere that "epidemic influence" was responsible for the similar grouping manifested at the time of the English Sweat, 400 years ago, when outbreaks of Sweat, Hauptkrankheit, cerebritis, encephalitis, Hauptwehe and trousse galant, prevailed in various parts of Europe. England, at that time, it is well to remember, tenaciously held to the belief that the English Sweat was capable only of affecting those of the "Englische sort." So in like manner, nowadays, in the statistical returns of the Ministry of Health, relating to epidemic diseases occurring throughout the world, England and Wales stand apparently pre-eminent in the matter of suffering from encephalitis lethargica. Dr. Hall notes this, and he adds: "There seems no evidence except the official figures to suggest that the disease has been more severe in this country than elsewhere; indeed, judging from the literature the reverse seems more probable."

In discussing the "Relation of Epidemic Encephalitis to other Epidemic Diseases," Dr. Hall writes: "The controversies which in the early days raged round its relations to poliomyelitis have now subsided." He sympathetically adds: "They were at that time very natural;" but, he says, "as time goes on the difference between the two diseases becomes increasingly marked. . . ." It is "in the varying after results that the two differ so widely." He is referring, of course, to the "mental and moral changes" following in the wake of encephalitis which have been systematically studied in the last few years. These, he thinks, give it a distinctive mark. He points out, however, that "Cameron, from the clinical point of view, and Shrubsall, from that of the school medical officer, have made it clear that many of these cases are merely exaggerated examples of the "difficult child," and that firm and judicious handling brings about marked improvement." It would be impossible to prove that the particular type of difficult child in question had only been met with in recent years; indeed, it is recognised that children suffering from chorea not







infrequently developed disturbances of moral behaviour, and in these considerations justification may perhaps be found for the view that "this disease is not new." It may be added that in Sydenham's "New Disease" of 1685, the mischief affected the brain in many instances; Willis associated his influenzal prevalences with outbreaks "infestuous to the brain and nervous stock"; Sir George Savage in our own day has told how increase in insanity followed upon the influenza of the nineties; even in the English Sweats of four centuries ago we read how sufferers beat their heads against walls or threw themselves into the water. All those who accept without question the fact that the primary attack in influenza is upon the cerebro-spinal nervous system, and who hold that an epidemic must be judged by its epidemiological characters, as well as by the symptoms exhibited in individual cases, will regard these recurrences of particular associations, described again and again during the last five centuries, and yet once more in the present century, as illustrations of the truth that there is an abiding unity of influenza among all its seeming diversities.

It must be realised, however, that it is not merely the association of encephalitis lethargica with influenza that is now seen to be in question, but its relationship also to poliomyelitis, polioencephalitis and cerebro-spinal meningitis, in fact to the Heine-Medin disease group of Continental writers. Dr. McNalty, who has contributed so largely to knowledge of all these diseases, made a careful analysis of the differences between encephalitis lethargica and poliomyelitis. His eighteen points of distinction amount in substance to this, that there are two allied phases of epidemic disease affecting the central nervous system, which can be more or less differentiated from one another by the fact, that in the one the stress of the mischief is apt to fall mainly upon the anterior horns of the grey matter of the spinal cord, while in the other the neighbourhood of the roots of certain cranial nerves in the mesencephalon is more particularly affected, thus offering greater opportunity for variety of symptoms. Shortly prior to, instead of as now following after, the pandemic wave of influenza of 1918, similar points of distinction between cerebro-spinal fever and poliomyelitis were made by medical officers of the Local Government Board and of local authorities. The first doubts arose in connection with a prevalence near Melton Mowbray in 1910, and in the following year cases investigated by Col. Reece in Devon and Cornwall excited considerable interest. The same difficulties were experienced in London, and this more particularly at the time when a "new disease" appeared in Mid-Herts and later again when cerebro-spinal fever was prevalent in Glasgow and Belfast. It was possible, already in 1912, to give Col. Reece the assurance that records relating to cases of cerebro-spinal fever and poliomyelitis in London "could be differentiated from one another readily, inasmuch as one set was on blue forms and the other set on white forms." . . . All this was before difficulties of diagnosis were enhanced by the advent of encephalitis lethargica.

Difficulties experienced in distinguishing epidemic encephalitis from other epidemic diseases affecting the central nervous system.

Some authorities have demurred even to including epidemic hiccough as a variant of encephalitis lethargica. Dr. Cadham of Winnipeg, however, from study of three recent epidemics of hiccough in that city (1919, 1922 and 1924) definitely concludes that there is widespread in the community "a disease suggestive of an infection of the central nervous system, with symptoms varying from those of a mild acute neuritis to those of epidemic encephalitis and including hiccough." Dr. Hall is almost persuaded to accept epidemic hiccough as a variety of epidemic encephalitis; he refers to "the simultaneous appearance of the two, the not infrequent occurrence of both in the same household, and the actual development of one from the other." He cannot agree, however, that epidemic encephalitis must be regarded as a form of Heine-Medin disease, but he is disposed to consider the possibility of some relationship between epidemic encephalitis and influenza; indeed he says: "when further experience has accumulated the exact relations in which these diseases stand to each other will be found to be more intimate than is now generally realised."



An interesting example of the difficulties recently arising is the following: In a note upon "Two cases of acute polioencephalitis," Dr. Poole, Medical Officer of Health of the Thornton Rural District (*Lancet*, January 24th, 1925), describes the perplexity experienced in deciding to which of four groups of notifiable infectious disease these two cases should be allotted. Dr. Poole says he had to turn from one to another of these groups, each of which "was presumably a separate entity." In an article on the subject of Dr. Poole's cases, the *Lancet* hints at a possibility that at some future time "a synthetic, as opposed to an analytic approach to the encephalitis problem may be rendered possible."

A remarkable instance which may be compared with these experiences, during 1924 and early 1925, is afforded by the "New Disease," in Japan, "first reported unofficially as cerebro-spinal meningitis, again as encephalitis lethargica, and still later as an hitherto unidentified disease." The first cases occurred in July, and by September "the disease spread over nearly the whole of Japan." . . . The symptoms of the disease resembled those of encephalitis lethargica, but the usual eye symptoms were absent." A later statement (Jl. Amer. Med. Assocn., 7th March, 1925, p. 764), gives the chief symptoms as "headache, faintness, dizziness, vomiting and aching of the limbs and trunk, coming on after a sudden elevation of temperature. At the same time there is a loss of consciousness which may lead to frenzy."

Another interesting case is that of the severe outbreak of poliomyelitis which occurred in Iceland and resulted in 65 deaths between January and August of last year. A still more recent instance is the outbreak of July-November 1924, in Queensland, referred to in the Ministry of Health returns for the week ended March, 18th, 1925. Similar questions are raised by Dr. A. J. Brock (*Lancet*, December 28th, 1924) who asks: "whether it is not the case that poliomyelitis and encephalitis are less distinct in nature than their names would suggest—that they tend in fact to *run into* one another, as also into the influenzas presenting cerebral and spinal complications, and so eventually into ordinary influenzas."

Nowadays, not merely from an epidemiological but also from the clinical and pathological points of view, there is discernible a disposition to study the relations of epidemic encephalitis to other epidemic diseases affecting the nervous system. Dr. Farquhar Buzzard, in opening a recent discussion on encephalitis lethargica at the Medical Society of London, observed: "There are no real characteristic or physical signs by which the disease can be recognised, and as any function of the brain may be disturbed there may be a whole series of clinical manifestations." Dr. D. E. Core (*Lancet*, 25th April, 1925) speaking in a similar sense at Manchester, said: "The idea of establishing a diagnostic scheme based upon symptoms was in his mind untenable." Dr. J. L. Halliday (*Lancet*, 11th April, 1925) comments upon difficulties which have arisen as regards diagnosis, owing to the fact that the newspapers have laid quite unjustifiably exaggerated stress on particular symptoms. He refers to the case of an anxious mother who brought up a baby a few months old for the reason as she avowed that it was "sleeping and seeing double."

The need for consideration of the epidemiological aspects of the problem.

In fact an appeal must now be made to epidemiology, and the time has come when an *influence* or *virus* must be invoked in explanation of the phenomena—a virus primarily attacking with special severity, now one and now another portion of the cerebro-spinal system, but capable also, at other times and on other occasions, of working mischief in other systems (gastro-intestinal or pulmonary) of the human body. The idea that such a virus or influence is at work is at once grasped when the great epidemics are studied, for the truth cannot fail to be recognised in connection with "posting prevalences," which sweep across the civilised world at intervals of twenty or thirty years; the mark of the blow directed at the cerebro-spinal nervous system is perhaps quite as unmistakeably set upon the "trailers," those lesser epidemics showing like ripples upon the ocean waves of the pandemic prevalences; and as is now becoming apparent, even in the sporadic cases of illness occurring in the troughs of the great waves it is possible to guess at the nature of the "influence" at work.



The diagnostician must of course always have in mind the time and space relationships of the particular sufferer under examination, and must look for such clues as may be to hand on careful consideration of symptoms and the previous disease history. This can be quite successfully accomplished, in some instances, for it is a well-known fact that particular individuals are apt to react again and again to influenza, some years after or before the occurrence of a widespread epidemic prevalence.

From the epidemiological standpoint it is clear, then, that the epidemics affecting the central nervous system which have been under consideration, all stand in close relationship to one another and to influenza. They are none of them "new diseases," though it must be agreed that in order to find parallel instances to the recently observed vagaries of encephalitis lethargica we have to hark right away back for a number of years. Dr. Crookshank has told us of the "Nona" of 1889-1890, and of the choreas and schlafsuchts of still earlier times, and my colleague Dr. C. J. Thomas recollects seeing cases with lethargy and ocular palsies in London in 1899-1900.

The question has now, therefore, to be considered whether epidemics, attacking different portions of the cerebro-spinal nervous system and therefore producing widely differing symptom complexes, may be due to related viruses, or even to some one virus, producing effects of varying character when operating upon communities exhibiting differing degrees of resistance to infection, or living under differing climatic or social conditions. Thus, at one time and in one place, the virus more particularly affects the grey matter in the cortex or the mid-brain and, at another time and in another place, the meninges, or the anterior cornua of the grey matter of the spinal cord, or poisons even the nerves themselves. It would appear, in fact, that the circle is now completed and we are back again at the starting point—at the Heine-Medin concept, of an epidemic disease affecting one or another part of the nervous system, which was roughed out in Scandinavia and Germany 40 or more years ago, though it must be remembered that under that conception, while the cases occurring in the "trailers" were grouped together, the latter were not at the same time roped in with the "pandemics" as forming part and parcel of an influenzal constitution.

It is, at any rate, plain, in the light of recent events that no clear line of demarcation can be drawn between epidemic cerebro-spinal meningitis and the posterior basic meningitis of small children; between epidemic hiccough and encephalitis lethargica; between poliomyelitis and polioencephalitis; between the form of polioencephalitis which has been described as epidemic stupor and encephalitis lethargica; between the various types of the above diseases encountered in Melton Mowbray, Devon, Cornwall, London, Sweden and America. The time seems, therefore, to be ripe for a little synthesis, now that analysis has brought matters to this impasse.

Crookshank's reminder may be quoted here. He says: "it is only with regard to cases (not epidemics or outbreaks) that the suggestion of a protean malady is entertained. Yet, as a matter of fact, always in each apparently autonomous prevalence are all 'types' represented, and for each type in each prevalence is there somewhere some prevalence represented by predominance of that type."

It is desirable to consider in the light of the foregoing considerations the present "epidemic constitution": a subject particularly deserving of study now it is realised that influenza, as is its wont, has been once again revealing itself, between 1917 and 1924, in quite unexpected forms.

The two extreme types of epidemic diseases—those of "stable type" (such as measles) and those of "unstable type" (the "mobile diseases"), of which the striking example is influenza—stand most aloof from one another in two respects: first, as regards extent of variation in clinical symptoms, and second, in the contrasts presented by the forms of their epidemic waves. In measles the rhythm of the

Instability of type in the influenzal group of diseases and its influence upon the form of the epidemic wave.



prevalences is mainly determined by recurring accumulations of susceptible children ; waves follow one another with almost unfailing regularity, in London at intervals of some eighteen months or two years. It was pointed out, however (Milroy Lectures, 1906), that the number of susceptible children in the population is by no means, as might at first sight be supposed, nearly exhausted at the end of every measles prevalence. The disease in fact is always smouldering, though it is only at ( $1\frac{1}{2}$  or 2 yearly) intervals that it bursts into flame. There has been extraordinarily little variation in the periodicity of London measles during the last 80 years ; certain small points of difference, which have been noted, are exhibited in diagram "D" in the annual report of 1912, and as stated (*loc. cit.*) there seem to be reasons for associating the phenomena with the greater measure of control over epidemics of measles which has resulted since the coming into existence of the school medical service.

Dr. Brownlee (Royal Society of Medicine, Epidem. Sec. 1918) suggested that measles periodicity is influenced by the existence of varieties of measles germs, each manifesting a cycle of activities in fixed periods, those of most common occurrence being periods of 87, 97, 114,  $109\frac{1}{2}$ ,  $105\frac{1}{2}$  and  $89\frac{1}{2}$  weeks. The arguments against this view, in so far as it might be held to imply variations in biological peculiarities of the germs, were summarised in the annual report for 1919.

Influenza stands in most striking contrast to measles, the widely spreading *pandemic* prevalences of the disease are preceded and followed in thickly populated areas by *trailing* epidemics, which present characters sharply distinguishing them from the pandemics, and furthermore, the trailers differ among themselves. The early trailers following upon the pandemic prevalence are, as a rule, attended by high mortality ; in those next succeeding the mortality tends to diminish, almost to complete extinction ; later still the trailers again grow in severity, until at length, twenty or thirty years from the last world-wide outbreak, there is again a pandemic recurrence and following upon that a fresh cycle of events is entered upon.

The salient points to be noted in connection with the pandemic prevalences are that there is rapid transference of infection from case to case ; that the main stress of the shock falls upon the nervous system ; that the percentage of recoveries is as a rule high ; and that relapses and sequelæ are not uncommon. In the trailers, on the other hand, spread is less rapid, some one special system in the body (pulmonary, gastro-intestinal or nervous) being particularly apt to suffer ; case-mortality is greater than in the pandemic ; and the illness in those who recover may be protracted. The contrasts between the phenomena of the pandemic and those of the neighbouring trailers are so striking that some authorities have questioned whether the successive epidemics occurring round about a pandemic prevalence are to be regarded as due to "influenza" at all. As Goodhart, however, put it, no one will surely deny that the epidemic of 1891 was an epidemic of influenza (*i.e.*, an epidemic *ejusdem generis* with the great pandemic of 1889-1890). If 1891, why not 1892, and so on? Where, then, can the line be drawn? Modern epidemiology, thanks to the teaching of Sydenham, Willis and Huxham, and in later times to that of Creighton and others, definitely affirms, at least, that influenza "casts a shadow before and behind," and many hold that the shadows really cover the entire 20 to 30 year intervals separating one pandemic from another.

The fact that the pandemic prevalences stand in such marked contrast with neighbouring trailer prevalences has been held of late years to imply that the germ of influenza must be peculiarly subject to variation just before and after the pandemic outbreaks. In the pandemic the infecting agent is presumably derived as a rule from early cases of illness, it multiplies rapidly, produces toxins which affect the central nervous system by "shock attack," and then leaves the individual sufferer with fairly complete immunity, so far that is as liability to experience a second "shock attack" is concerned. In the trailer, on the other hand, the infecting agent is more deliberate, possibly prone to assume "resting forms," and apt to



activate various secondary or associated organisms, pneumococci, streptococci, meningo-cocci, etc.

In the pandemic, young vigorously multiplying spores are presumably the agencies concerned in favouring the wide and rapid dissemination through the then highly susceptible community; whereas, in the trailers, following upon the immunising reaction induced in the community by the "shock attack," the epidemic influence seems constrained to ally itself with facultative parasites of the human body, and there results a less rapidly spreading, though for a time at any rate a still very fatal form of epidemic disease.

The suggestion has been made that the change from pandemic phase to trailer phase is bound up with "mutation" of the influenza germ; this change may also be attributable in part to substitution for the process of multiplication by young and vigorous spores of multiplication by "resting" spores. It may be conjectured that, in the trailers near the pandemic, the two types of spores are commonly met with in association. As the distance of time from the pandemic prevalence increases, however, spores of a "resting" type perchance assume the ascendancy, and then at a period still more remote, the characteristically pandemic type of spore formation may again begin to predominate.

On such assumptions the post-pandemic trailers might be expected gradually to become less fatal and less frequent; in the trough between two pandemics the organisms would be comparatively feeble and trailers of a mild type might be expected then to occur at prolonged intervals of time; finally, as the appointed occurrence of the pandemic phase again approached the trailers would tend to occur more frequently and gradually assume greater severity.

This scheme of things may be further illustrated as follows: The "primary influence" concerned in producing influenza, following upon biological change, which it has been assumed occurs towards the close of a pandemic period, obviously begins to contend with difficulty in spreading through the increasingly immunised community; it thus resembles a car which has been moving rapidly on high gear and now has to drop into low gear and move more slowly. After 10 or 15 years travelling along this upward ascent (during which time the extent of immunization of the population as a whole, against the various manifestations of influenza, is steadily growing) the climb gradually begins to lessen in severity; but for another 10 or 15 years (during which the susceptibility of the population slowly increases) the journey has still to continue on low gear. Then as the community, owing to the comparative infrequency of prevalence of one or other of the diseases of the influenzal group, becomes more and more susceptible the rapidity of transference of infection shows increase and, when the time for pandemic prevalence again arrives, change into high gear is once more effected and world-wide spread of influenza in pandemic phase again results.

This comparison is not so fantastic as might at first sight appear. There is good reason in fact for claiming, as has been elsewhere explained, that influenza is due to a "primary influence" and to associated "satellite influences." The bringing into operation of one and another "satellite influence" must materially affect the epidemiological manifestations of the postulated "primary influence." The appeal to satellite influences is, moreover, suggested by the need for explaining the relation of the influenzal group of diseases to pandemic influenza itself.

In the opening sentences of his great chapter on "Influenzas and Epidemic Agues," Creighton laid the foundations of the modern epidemiological theory on this subject. He says: "Epidemic agues are found in the same chapter with influenzas for the reason that they can hardly be separated in the early part of the history" . . . . . there are periods, such as 1657-59, 1678-79 and 1727-29, when short waves of epidemic catarrhs or catarrhal fevers came in the midst of longer waves of epidemic agues, 'hot agues' or intermittents, the whole being called by the people the 'new disease' or the 'new ague,' while by physicians, such as



Willis and Sydenham, they were taken to be the distinguishable constituent parts of one and the same epidemic constitution." The last period, he says, "in which epidemic agues were so recognised and named in England was from 1780 to 1785; and in the midst of that also there occurred an epidemic catarrh—the 'influenza' of the year 1782." Then he proceeds to the "influenzas or strange fevers from 1889 to 1893, in some respects the most remarkable in the whole history," which, as he says, "would have seemed an equally composite group if they had fallen in the 17th century and had been described in the terminology of the time and, according to the then doctrines or nosological methods." As a matter of fact the epidemics preceding and following the pandemic of 1889-90 were then described as dengue, pneumonia (Middlesbrough, Scotter or other), poliomyelitis, cerebrospinal meningitis and under various other designations.

And now there are the influenzas and epidemic agues of from, say, 1915 to 1924, to be reckoned with. The "doctrines and nosological methods" of to-day point to agreement, at any rate in this, that the epidemics classed as encephalitis lethargica in 1917 and succeeding years (and notably the epidemics of 1921 and 1924) were epidemics which, while they differ *inter se* in many remarkable respects, have common characteristics which render it very difficult to assume they are not related to one another. Those who have studied these epidemics most closely are more impressed with the points of agreement than with those of difference. It is but a short step further, following the synthetic method of Hippocrates and Sydenham, to accept the conclusion that the whole group of epidemic diseases primarily affecting the nervous system exhibits a close family likeness (epidemiologically speaking) and a very close relationship, too, with influenza. The clinician inclines apparently to agree up to a point and the bacteriologist, busily looking into the question of ultra-visible viruses, is becoming more and more disposed to regard with sympathy the attempt to discover a field for the operations of these new protégés of his. Perhaps no single phenomenon has been more conducive to this *rapprochement* than the behaviour in the last eight years of encephalitis lethargica, for once the fact was admitted that the prevalences of 1917, 1918, 1921 and 1924, despite the variations in type displayed, were all outbreaks of the same epidemic disease, there could no longer be any question as to the need for study of the remarkable relationship between influenza itself and the associated outbreaks of pneumonia, bronchitis, cerebrospinal fever, poliomyelitis and polioencephalitis, which have all assumed at one time or another a rôle comparable to that played during recent years by encephalitis lethargica.

Again, recognition of the close relationship between these epidemic diseases affecting the central nervous system facilitates acceptance as a working hypothesis of the view that the "mutating ultraviolet virus" of influenza is responsible for producing not merely pandemic influenza but also the "trailers" which constitute the shadows influenza casts before and behind. The marked changes which occur round about the time of a pandemic prevalence, first from a less to a more, and then again from a more to a less, pronounced power of spreading, suggest that some such change in the ultraviolet virus itself has occurred; and this view is confirmed by the altered clinical manifestations observed in the trailers as compared with the pandemics.

The observations of Brownlee upon the periodicity of influenza are of special interest here; indeed, the important question arises as to how far Brownlee's results can be held to support the contention that accumulation of susceptibles is the main factor at work; and as to how far they confirm the view that mutation of the ultraviolet virus, at any rate about the time of the pandemic prevalences, must be recognised as a possibility.

The method of periodogram analysis employed by Brownlee leads him to conclude that influenza and its trailers tend to recur during certain periods of years at intervals which are generally speaking about 33 weeks or a multiple of 33 weeks; after observing this periodicity, however, for a few years "the rhythm breaks." Moreover, it must

Study of the periodicity of influenza in its bearing upon the foregoing hypothesis relating to the form of the epidemic wave.



be understood "that the intervals between epidemics are never exact; only their average approaches exactitude. A month either way is of no moment." Again: "Epidemics seem to be of extreme rarity between the end of June and the beginning of December, so rare in fact as to be almost non-existent. . . . The great epidemic which occurred in October, 1919, falls completely out of line." Round about this epidemic the intervals between it and the two nearest epidemics are much shorter than 33 weeks, approximately about half that period. In London the period 1889-1896 contains "the most typical years." In Boston during the years 1899-1900 "the centre of the main epidemic varies very little from its theoretical placing. In only two cases is it more than a month out of place."

Dr. Brownlee finds, moreover, that in the years 1889-1896 "the deaths from pneumonia precede the deaths from influenza by a little over a week, while the deaths ascribed to bronchitis have their epidemic rise a full fortnight before the rise of influenza." Dr. Stallybrass gives further details of a like sort for Liverpool, but one of his influenza peaks, which appeared when it should not have done (December 18th, 1920), was he holds really "an outbreak of primary non-influenzal pneumonia." He adds: "A number of the outbreaks of respiratory disease, which do not correspond to the periodicity of 33 weeks of influenza, occur at intervals of 39 weeks dating from the week ending December 18th, 1920." These respiratory outbreaks sometimes appear a week or two after the influenza outbreaks, whereas Dr. Brownlee's respiratory outbreaks in London tended to occur a week or two weeks, on the average, before influenza.

Mr. Spear has pointed out that in influenza annual periodicity is of not infrequent occurrence; it is the rule, of course, in respiratory diseases (bronchitis and pneumonia). Dr. Brownlee says on this: "If a 33 week period exists with the further requirement that every third epidemic is missed, the form of the curve arising . . . is identical with that in this case." Three times 33, and 66 added to 33, are both very nearly twice 52, and thus both approximately fit in with annual periodicity.

Inspection shows that the intervals, between epidemics in London from December, 1889, onwards, approximate, *quite roughly speaking*, to two alternating periods of about four-thirds and two-thirds of a year (a brace of two such intervals makes up 2 years); after about 8 or 10 years, however, the rhythm tends to become frankly an annual one, in fact the maxima then correspond closely with those of pneumonia and bronchitis; as the next pandemic prevalence approaches the periodicity quickens up again. In 1918-19 there were three waves within one period of, roughly speaking, 33 weeks. Following upon this the recent pandemic prevalences recurred at approximately annual intervals for three years, and then, between 1922 and 1925, the alternating four-thirds and two-thirds rhythm again appears.

The impressions left upon the mind by study of the periodicities are *first* that, as Brownlee says, the period from the end of June to the beginning of December is a very unfavourable one for influenza. The early weeks of the year, particularly if the extreme rigour of winter is then experienced, constitute the chosen time for influenza, bronchitis and pneumonia; cerebro-spinal meningitis and encephalitis lethargica tend to prevail in the late winter or early spring season. Another point of time favourable to development of influenza is June, and poliomyelitis is also wont to occur then. In the *second* place loss of immunity conferred by attack, owing to lapse of time, is also a potent factor in determining periodicity; but, *thirdly*, over and above these two factors, the special phenomena noted round about the pandemic prevalences inevitably suggest the need for postulating mutation of the virus itself.

In summary, then, the normal periodicity exhibited by influenza tends to be an annual one, and this is particularly the case in the mid-period between pandemic prevalences. This rhythm is apt to be speeded up in the nearer neighbourhood of the pandemics, and quite close to the times of pandemic spread a still shorter



interval may be observed and an alternation of waves extending over something like four-thirds and two-thirds of a year commonly occurs; so that here, too, a sort of modified annual prevalence is apt to be observed. In 1918-19 shorter intervals still were recorded—the June-July epidemic was followed by an October-November epidemic, and this was succeeded by a March epidemic in 1919. A very enthusiastic advocate of the 33 weeks rhythm might perhaps claim that the October-November prevalence was an example of the intercalation of an epidemic, halfway between two epidemics separated by an interval not far removed from 33 weeks. The difficulty, however, in that case presents itself that subsequent epidemics do not appear to have followed either the June-July or March epidemics (which appeared at their anticipated times), but, in so far as the rhythm is observed at all, follow rather at intervals (which are, roughly speaking, multiples of 33 weeks) dating from the time of occurrence of the intruding or “rogue” epidemic of October-November, 1918.

The clue in fact for threading a way through the maze of the varying periodicities seems to be to recognise a normal annual interval; then alternation of intervals of about two-thirds and four-thirds of a year, making together periods of two years; while near the pandemic itself epidemics at even shorter intervals may be encountered. Study of periodogram results on the whole confirms this way of looking at the question and thus supports the theory of three predominating factors: a *climatic factor* favouring the normal annual periodicity; a *varying immunisation factor* which favours shorter intervals, on either side of the mid-period between pandemic and pandemic; and then, thirdly, a further speeding up in those years nearest to the pandemic times; this last-named phenomenon (especially when the variation of type which accompanies the merging of the trailer into the pandemic is borne in mind) may be suspected to be due to a recurring biological *change of state*. It needs to be realised that during all these variations, and throughout the years stretching from pandemic to pandemic, influenza, in one or other of its phases is ever present, perennially smouldering, “*endemic*,” but only producing epidemics at times when the conditions as regards immunisation, and as regards climate and season, are such as to permit of more or less widely spreading conflagration.

### *Typhoid Fever.*

There were 410 cases of typhoid fever notified in London in 1924 (53 weeks), as compared with 331 in 1923 (52 weeks). The deaths in the calendar year numbered 53 as against 42 in 1923. The increased numbers of cases and deaths were fully accounted for by a localised outbreak in Bethnal Green in the autumn (details of which will be found on page 35). Of the cases admitted to the Metropolitan Asylums Board hospitals, the diagnosis of typhoid fever was not confirmed in 25.7 per cent., the corresponding percentage for 1923 being 37.9 (the latter figure is erroneously given in last year's report as 60.9).

In 27 instances two or more than two cases were notified from one house, as compared with 17 in 1923. Seven of the 27 instances occurred in the area (Bethnal Green) mentioned above. The remaining 20 instances include one of a group of four cases; nine groups of three cases, including three in which the disease was thought to have been contracted away from London, of which one was a group of three servants in one household; and ten instances of two cases in a house, in two of which the disease was probably contracted abroad, while in another instance a third case was later reported, the patient sickening abroad. Two cases occurred in an hotel, both being probably contracted elsewhere.

Apart from the Bethnal Green outbreak, information was received as to probable origin of the disease in 209 instances; in 30 it was believed to have been contracted outside London; in 41 fish or shell-fish were thought to have been at fault; other foods were suspected in 15 instances; 13 nurses contracted the disease.



The question of the association of typhoid fever with consumption of oysters was, in 1924, raised once more in a striking way in this country and in the United States. The origin of 83 cases of illness among persons who attended a banquet at Portsmouth last November was traced by Dr. Mearns Fraser to consumption of oysters. Furthermore, in New York and Chicago considerable prevalences of typhoid fever, occurring late in 1924 in both cities, were as the result of most careful enquiry traced to oysters and possibly to oysters from one and the same source. In New York from November, 1924, to February 15th, 1925, a total of 798 cases had been reported, as compared with 235 during a corresponding period in the previous winter; of the 798 cases, 427 were attributable to oysters or clams. In Chicago, between 30th November, 1924, and 21st January, 1925, there were 129 verified cases of typhoid, as against the previous seven-year non-epidemic average of 33 cases. Out of the 129 cases ninety-two gave a history of having eaten one or more meals, in certain high class restaurants and hotels, within the probable period of infection, and the question as to the origin of the oysters consumed by the persons taking such meals was investigated with great thoroughness. The outbreak in Chicago started nearly a fortnight later, but began to decline about the same time as that in New York. At the time of writing (28th February, 1925) all that could be said was :—"There is a possibility that the oysters responsible for the New York outbreak are in part at least of the same kind as those believed to be the cause of the infection in Chicago."

Shellfish outbreaks in America and in this country in 1924.

The Journal of the American Medical Association (24th January, 1925) in commenting upon the outbreaks says :—"There is almost certainly much less typhoid from oysters than there was 15 years ago; but when it does occur we are able to detect it more readily." The point of view presented thus appears to be, that as water-borne and milk-borne outbreaks of typhoid fever have become less common, cases due to other and less important causes, *e.g.*, cases of carrier infection and of shellfish infection, are more often recognised. "We are simply," says the writer, "able to pursue our enquiries at a different level, so that sources of infection formerly submerged in a great wave of water-borne and milk-borne disease, can now be seen rising as hidden reefs above the surface." The writer adds that, "For some years health officers in Great Britain—where elimination of drinking water infection antedated by some years that in the United States—have been led to attach great importance to shellfish infection as a factor in their own present day typhoid. In London, in 1923, out of 173 typhoid cases in which information was obtained as to possible origin, fish or shellfish were held to have been at fault in 59 instances, or more than a third of the total."

Experience in London, however, suggests an alternative way of regarding this problem, considered from the historical point of view. Here, in London, milk infection and carrier infection have only in rare instances seriously come into question at all; water, moreover, has not been clearly proved to be at fault, at any rate during the last thirty years. Early in the nineties, shellfish, and in 1900, fish, first came under suspicion; and the resulting enquiries of Bulstrode and others concentrated attention on the special risk of infection from consuming shellfish and small flatfish from *polluted sources, estuarial or other*. Study of London typhoid, on the whole, therefore, suggests modification of the metaphor of a subsiding flood and emerging reefs. It seems more natural, proceeding from the known to the unknown, to think of the lesser hills now clearly discernible in the foreground of the retrospect, as presumably stretching away toward more distant elevations and possibly continuous with a mountain range of some altitude. There is, then, complete agreement with the American writer as to the importance of shellfish in connection with prevalences of recent years; but considerable question arises when he suggests that the heavy death rates of 30, 40, 50, or more years ago—reaching back to the time of commencement of death registration—were due mainly to quite other causes. From the London standpoint the subsiding flood and emerging



reefs afford no help. In order to meet the London facts it is necessary to picture, as aforesaid, neighbouring foothills, suggesting the possible existence of more distant mountain masses; the former presumably being continuous with the latter and their material existence helping to confirm the suspicion that the far off shapes are something more than the baseless fabric of a vision. Similar causes of typhoid prevalence, then, according to London experience, have operated throughout; but their power to cause mischief has steadily lessened as the importance of protecting certain food supplies has been increasingly appreciated. This line of argument, so far as both cholera and typhoid fever are concerned, has been pursued elsewhere ("Public Health" 1922 and 1923), and detailed reasons have been given for concluding that some of the historical water outbreaks of cholera and typhoid fever were really in all probability due to fish or shellfish; and that many of the supposed milk and most of the ice-cream outbreaks were similarly attributable.

In the annual report for 1922 a diagram exhibiting the incidence, in "four weekly" periods, of typhoid fever in London during thirty-two years (1891-1922) appears on pp. 20 and 21. This diagram shows a very heavy incidence of the disease upon the London boroughs—particularly upon the poorer boroughs—during the earlier two thirds of this series of years; the more extensive prevalences occurred in the years round about the close of the last century; and then, particularly from 1905 or 1906 onwards, there was notable decline, which became quite considerable in 1909, developed still further after 1911, and resulted almost in extinction with the outbreak of the war. This almost complete immunity from prevalences in poor areas, of the kind experienced up to 10 or 15 years ago, was substantially maintained until last year, when an outbreak of typhoid fever, affecting the type of area which suffered in former years, occurred in Bethnal Green.

The association of the outbreaks of earlier years with small plaice has been considered from time to time in these reports (see Annual Report for 1922, pp. 24-29). Reference has also been made to the efforts of the fish trade, from some 20 to 10 years ago, to obtain legislation preventing the sale of fish under a certain size. The object of such legislation was primarily to prevent injury to the plaice fishery in the North Sea.

The recently published Report on Sea Fisheries 1919-23 of the Ministry of Agriculture and Fisheries (pp. 61-73) gives the results of the scientific work carried out by the Department prior to, during, and more particularly after, the war. The statistics obtained by the Department between 1903 and 1913 "prove at least that the productive powers were not able to keep pace with the increase of fishing power, though they do not necessarily show a period of over-depletion to have been inaugurated. Lastly, the flatfish with their relatively restricted wanderings and accumulations of young stages on the Continental shallows, easily accessible to the trawl, are of all demersal fish the most vulnerable. It is precisely this intensely fished and important region in which fishing was most effectively restricted by the war, and precisely the shelving eastern portions of its bed that lay to the greatest extent under the effective protection of mines. The heavy landings made by trawlers during the later years of the war and the large size of many of the fish taken was a universal matter of comment in the trade and was commonly ascribed to the effect of restriction of fishing. There can be no reasonable doubt that this opinion was in the main correct."

This great experiment, unwittingly brought into operation by the advent of war, focused attention upon the desirability of taking steps to protect the "small plaice nursery grounds" after the termination of hostilities. The enquiries made to this end resulted in the recommendations (July, 1921) of the Plaice Fisheries Sub-Committee of the International Council on Fisheries in the North Sea. These recommendations contemplated prohibition of fishing by steam trawlers and motor vessels of more than 50 h.p., in certain areas along the eastern and southern shores of the North Sea, and limitation of use of other parts of these nursery grounds to April May and June. The recommendations were approved in September, 1922, by the



International Council, but it was recognised that such restrictions could not be enforced without the sympathetic support of the industry. In commenting upon the decisions it was pointed out in the Annual Report for 1922 that "the use of these grounds should, from a public health point of view, be carefully watched."

In the annual report for 1923 (p. 32) it was noted that while the sale of immature plaice in London practically ceased with the outbreak of war, already in 1921 and 1922 reports were being received that this particular kind of fish was again in evidence. Moreover, in 1923, there was "an approach to the development of a slight autumnal rise (in typhoid fever prevalence), a feature which had been absent for some 12 years past." The facts were submitted to the medical officer of health of the City, and an opportunity was taken of conferring with him on the question. In September 1924, a quite definite autumnal increase in London typhoid fever occurred, and this increase was practically accounted for by the prevalence in Bethnal Green which has already been referred to. The main features of this outbreak were felt, therefore, to be deserving of detailed investigation and, working throughout in co-operation with Dr. Oates, the medical officer of health of Bethnal Green, careful study of the epidemic has been made. In the course of the enquiry, in addition to the information available in Bethnal Green which has been obtained by Dr. Oates, the patients who were removed to hospitals have all been seen by Dr. Brincker, Dr. Forbes, or Dr. Chaikin of the Council's public health department. Dr. Oates, in due course, prepared a special report on the prevalence, and much assistance has been derived from this in compiling the following statement.

From the middle of September to the middle of November, 1924, a sharp autumnal prevalence of typhoid fever was developed, practically the whole of the cases occurring in Bethnal Green and within a comparatively small area in that borough.

Bethnal  
Green  
prevalence  
in the  
autumn of  
1924.

The cases were distributed on either side of the part of the Bethnal Green Road and its continuation, Green Street, lying between Vallance Road and Bonner Street, a distance of about three-quarters of a mile. The area affected was roughly rectangular in shape and could be divided into an eastern and western half, separated by the Cambridge Road running north and south. In the north-western section of this area the cases were fairly uniformly scattered; in the south-western they were more aggregated together; eastward, in the north-eastern and south-eastern sections of the area, the cases were quite closely grouped, the majority being clustered in, or just off, Globe Road which, running more or less north and south, divides the eastern half of the affected area roughly into two: it is noteworthy that there were four times as many cases in the northern as in the southern half of that part of the affected area lying to the east of Cambridge Road. The distribution of cases generally over the affected area was thus rather "patchy."

The number of cases notified in the four divisions referred to was as follows:—

Division.	No. of cases.
(a) North-westerly ... ..	13
(b) North-easterly ... ..	27
(c) South-easterly ... ..	6
(d) South-westerly ... ..	13

There were in addition 15 cases in houses fronting on Bethnal Green-road and Green-street.

The age and sex incidence is shown in the following table:—

Period.	Age.	Males.	Females.	Total.
First period ended 4th October	Under 10 years ... ..	4	4	8
	10-20 years ... ..	12	8	20
	Over 20 years ... ..	5	14	19
Second period 5th October to 7th November	Under 10 years ... ..	3	9	12
	10-20 years ... ..	1	3	4
	Over 20 years ... ..	4	7	11
Total—10th September— 7th November	Under 10 years ... ..	7	13	20
	10-20 years ... ..	13	11	24
	Over 20 years ... ..	9	21	30



Among the cases included in the first period there were 8 deaths, 2 males and 6 females; in the second period there were 3 deaths, all females.

The sudden appearance of the prevalence pointed to the probability that water or some foodstuff was at fault. Inquiries as to a possible source of infection yielded no result as regards either water or any particular kind of food—save milk, ice-cream, shellfish and fish; these four foods will be considered in turn, the two first, milk and ice-cream, being taken together, inasmuch as milk forms one of the constituents of ice-cream.

The question of milk, or milk and ice-cream, as the possible vehicle of infection.

It was apparent, from enquiries made on behalf of the health department of Bethnal-green soon after the occurrence of the early cases, that the majority of the sufferers had, either occasionally, or in some instances day by day, consumed milk supplied from a particular cowshed; suspicion naturally fell upon this milk supply, which will henceforward be referred to as source X.

Much time and attention were given to study of the business of the milk vendor in question. The milk premises themselves and the cows were examined by officers of the Council and of the borough council, and bacteriological tests (to be immediately referred to) were applied to the roundsmen and milkers at the instance of the medical officer of health of Bethnal-green. In addition to the milk from his own cows, (there were in all 45 milch cows), a small quantity of milk was obtained by the milk vendor from a neighbouring firm of wholesale dairymen. Milk from this latter source was supplied in considerable quantity outside the affected area, and no cases of illness were attributable to it; it can thus be dismissed from further consideration. The blood of 13 persons resident on or employed at the milkshop premises was examined; in the cases of a roundsman and a cowman the blood serum agglutinated *B. Typhosus* in 1/25 and 1/50 dilutions respectively. Dr. Oates reports: "After exhaustive examination of the excreta of these two men there was no evidence forthcoming that they were carriers of typhoid infection." The milk vendor himself was attacked by the disease, but as his symptoms did not commence until four cases among his customers had already occurred, it is difficult to assume that he can have infected the milk. Suspicion was directed to a son of the milk vendor who was suffering from empyema, following upon pneumonia in July; there was, however, no bacteriological evidence forthcoming, after full enquiry, to show that this boy was a typhoid carrier.

Certain considerations militated strongly against acceptance of a milk origin of the outbreak. Previous enquiries have shown that in milk outbreaks of disease women and young children are specially implicated; whereas here these phenomena were not marked so far as the cases occurring in the first four weeks, forming the main prevalence, were concerned. In milk outbreaks, moreover, multiple house attacks are common; here, in the main prevalence, they were relatively rare. Again, in milk outbreaks those who buy considerable quantities of milk suffer more than those who only purchase small quantities; in Bethnal-green this was not found to be the case.

Each case has been carefully classified according to whether—

- (a) Milk from source X was the sole supply of fresh milk.
- (b) Milk from source X was occasionally consumed.
- (c) Milk from source X had not been obtained at any time.

Of the 74 cases, constituting the special prevalence—in which the onset of illness dated from 12th September to 7th November—32 fall into class (a), 20 into class (b) and 22 into class (c). As regards those in class (a), in one instance it was specially stated that the milk was "sterilised," and in another that milk was "never taken except in tea."

In eight of the 74 cases, however, there was some question as to the correctness of the diagnosis of typhoid fever. Class (a) included four of these, class (b) one and class (c) three. Thus of the 66 cases in which the diagnosis of typhoid fever was confirmed 30 per cent. did not have milk from source X and 25 per cent. had the milk only occasionally. Dr. Oates, classifying the cases as "primary" and



"secondary," finds that of 65 "primary" cases 51 received and 14 did not receive the particular milk in question. An estimate of the probable number of sporadic cases, *i.e.*, of cases unassociated with the special cause in the affected area at the time of occurrence of the "primary cases," cannot give, having regard to the size of the population at risk and the distribution of typhoid fever in London at the time, more than 2 or 3 at the most, and will certainly not account for as many as 14. Thus a milk hypothesis of origin of the outbreak leaves 11 or 12 "primary cases," and some 30 per cent. of the 66 confirmed cases of typhoid fever, to be accounted for otherwise than by the suspected milk.

The number of those attacked who gave a history of eating ice-cream at about the time when infection presumably took place was quite small, but it was suggested that some of the 30 per cent. of cases negative as to milk may have obtained milk from source X indirectly, through the medium of ice-cream; and it was pointed out that one of these patients belonged to a family occupying premises where ice-cream was made; this patient, it should be added, was not among the very early sufferers in the outbreak, and thus could not have been the original source of infection of the milk. The enquiries made as to ice-cream consumption in the affected area showed a considerable percentage of early sufferers giving a history of consuming ice-cream at some time or other (mainly in the previous summer), but of those whose illness commenced subsequent to the 24th September (some 56) only 9 gave such a history, and these had obtained ice-cream from different sources. It is to be noted that the ice-cream consumed in the affected area consisted of frozen custard, and thus had been initially sterilised by boiling.

The percentage of milk negative cases cannot in any case be regarded as being materially lessened by including, in the category *milk*, any *ice-cream* which may have been made with milk from source X. On the other hand, it should be pointed out that the percentage given of milk negatives (30 per cent.) is almost certainly underestimated. In 20 instances, at least, the consumption of X milk was only very occasional; and inasmuch as the dates of consumption of such milk were not definitely ascertained, it is possible that in most of the 20 instances the date of consuming milk from source X did not correspond with the time when infection was contracted. On the whole, the fact that at least 30 per cent. of the sufferers denied having consumed milk from source X suggests that a milk hypothesis *per se* will not account for the special prevalence.

The main consideration, however, as regards possible milk causation, arises in connection with detailed analysis from a geographical and sociological point of view of the customers obtaining their milk from source X. As has been already mentioned, the affected area may be divided into four nearly equal sections, separated from one another by two main roads running north and south and east and west respectively. The location of source X is in the main road dividing the north-eastern and south-eastern sections of the area, the milk premises being placed, however, quite excentrically, in fact definitely to the east of the intersection of the two main cross-roads, and at some distance from the centre of gravity, so to speak, of the cases constituting the special prevalence.

The milk was supplied on three rounds and was also sold directly to customers fetching it from the milk premises. The milk vendor supplied a list of his regular customers on each of the three rounds. By use of this the following Table has been prepared.

Area.	No. of families supplied.	Number of milk round.	Total.	Number of families in which there were typhoid cases.
A. ...	14 from round	1	77	1
	63 from round	2		
B. ...	12 from round	2	107	3
	95 from round	3		
C. ...	2 from round	2	2	Nil
D. ...	97 from round	1	98	6 (9 cases).
	1 from round	2		



Thus there were only ten families (with 13 notified cases) on the list of regular customers of the milk vendor in these four divisions. There were in addition 48 houses (fronting the east and west cross roads) not on the vendor's list, in which 15 cases occurred. It should be added that one of these houses was that of the vendor himself. There were *no cases* in the nine houses receiving milk from source X and fronting on the north and south cross road.

Special enquiry was made as to general shops, coffee shops and public houses receiving milk from source X, and it was found that about a quarter of the total daily yield of X milk (100 gals.), say 25 gallons of milk, was supplied to all three kinds of shop. The small general shops alone received about one-tenth of the total yield of milk (10 gals.). Thus, among the families receiving three quarters of the daily yield of X milk only 13 cases occurred; while among those receiving the remaining quarter of the milk, or not receiving the milk at all, 61 cases occurred.

Some further facts, moreover, came to light. In Area A, 71 of the 77 houses on the vendor's list of regular customers were in *streets* from which no notified case was reported; two of these streets—one with 24 and the other with 22 names on the list of regular customers—had no case of typhoid. Again, in Area B, in two blocks of buildings with 27 households on the vendor's list, no case of typhoid occurred. It is worthy of note that Area C, which actually adjoins the milk premises escaped with only 6 cases, and thus much more lightly than the other three areas. In Area D, 12 of the 13 cases were in six streets, and the distribution of the cases does not correspond with that of houses appearing on the list of customers.

It is particularly important to observe that the streets and blocks of dwellings referred to above (in which 24, 22 and 27 households appearing on the milk vendor's list yielded no case of typhoid fever) included premises occupied by families less poor than those living in the area as a whole, and this fact strikingly bears out the general conclusion already noted that the sufferers in the outbreak were, as a rule, those whose circumstances were straitened and whose consumption of fresh milk was particularly limited.

The facts adduced make it impossible to accept the view that milk from source X was the cause of the exceptional prevalence.

Shellfish as a possible vehicle of infection.

Enquiry was made in the case of each sufferer as to consumption of shellfish. Oysters were never, and mussels were only in three or four instances, referred to. In twenty cases, however, there was a history of having partaken of cockles—but no fewer than 54 cases were negative as to cockles. Considerable interest was at an early stage aroused by the fact that of the twenty positive cases 15 had obtained cockles from Southend. Analysis of the dates on which such cockle-eating took place showed that in only two instances had Southend cockles been consumed between September 1st and 10th, within which period the date of original infection presumably occurred. In most of the other 18 cases the date of cockle-eating was July or August, and thus some weeks or at any rate days, before that of presumed infection. Enquiry was made in other parts of London as to cases of typhoid associated with eating cockles and the medical officer of health of Southend was consulted on the question. It was clear that cockles *per se* could not account for the outbreak, though the possibility cannot be entirely excluded that in two instances above referred to Southend cockles may have been at fault.

Fish as a possible cause of the outbreak.

Enquiry showed that of the 74 cases, 26 habitually consumed fried fish (*i.e.*, fish sold ready cooked at a fried fish shop) and also fish cooked at home; 23 gave a history of eating fried fish purchased at a shop only; 14 a history of eating fish cooked at home only; in 9 cases (5 of which were doubtful cases of typhoid fever) there was no information as to fish; in one case there was a direct negative as to fish—and in this case the illness was eventually found not to be typhoid fever; in another case it is stated "the girl does not like fish of any kind."

It will be seen, therefore, from the detailed examination of the statements



made by the patients or their relatives or friends—statements elicited either in the hospitals to which the patients had been removed, and (or) at the patients' homes—that fish was consumed by practically all the sufferers whose illness proved to be typhoid fever. The following further points are worthy of notice:—

(i.) *The locus in quo of the outbreak.*—This was an area of the kind which had been involved in the large majority of the London outbreaks of typhoid from the nineties up to the year 1911; indeed, much the same, though not identically the same, ground was covered in 1924 as in two fish prevalences in Bethnal Green specially reported upon in 1908 and 1910. In 1908 a fried fish shop situated within, though not at, the centre of the area involved in 1924 was at fault. The evidence in 1910 led to the conclusion that the prevalences of that particular year, which affected no fewer than 33 localities in and immediately around London, were due to ungutted plaice or dabs, conveyed from Billingsgate, partly by carriers, and partly by costers, and in the main sold from fried fish shops, but in part sold as wet fish and cooked at home. In 1910, as in 1908, not only was the ground actually covered, so far as Bethnal Green was concerned, almost the same as in 1924, but the social circumstances of the sufferers were practically identical with those encountered in the recent outbreak; the fish coming under suspicion in 1924 was, moreover, as before in 1908 and 1910, in numerous instances referred to as “plaice or dabs.” In 1924, as in 1910, but not in 1908, the fish at fault was apparently purchased not only as fried fish but partly also as wet fish destined to be cooked at home.

(ii.) *The time relationships of the 1924 prevalence.*—The date of original infection in 1924 must have been in the first 12 days of September, and probably within a day or two of Saturday, the 6th September. It was noted from study of available records that, on September 4th and 5th, small plaice and dabs were sold at exceptionally low prices at Billingsgate, and one of the Bethnal Green inspectors, quite independently of this observation, reported that “about the period covered by late August and early September last there was a quantity of steamer small plaice (*i.e.*, fish weighing from 4 to 8 ounces) on the market, and this was being sold in an ungutted state. When the gutting process was performed at the fried fish premises the fish was in a condition known in the trade as ‘gassy,’ viz., emitting a peculiar chemical smell.”

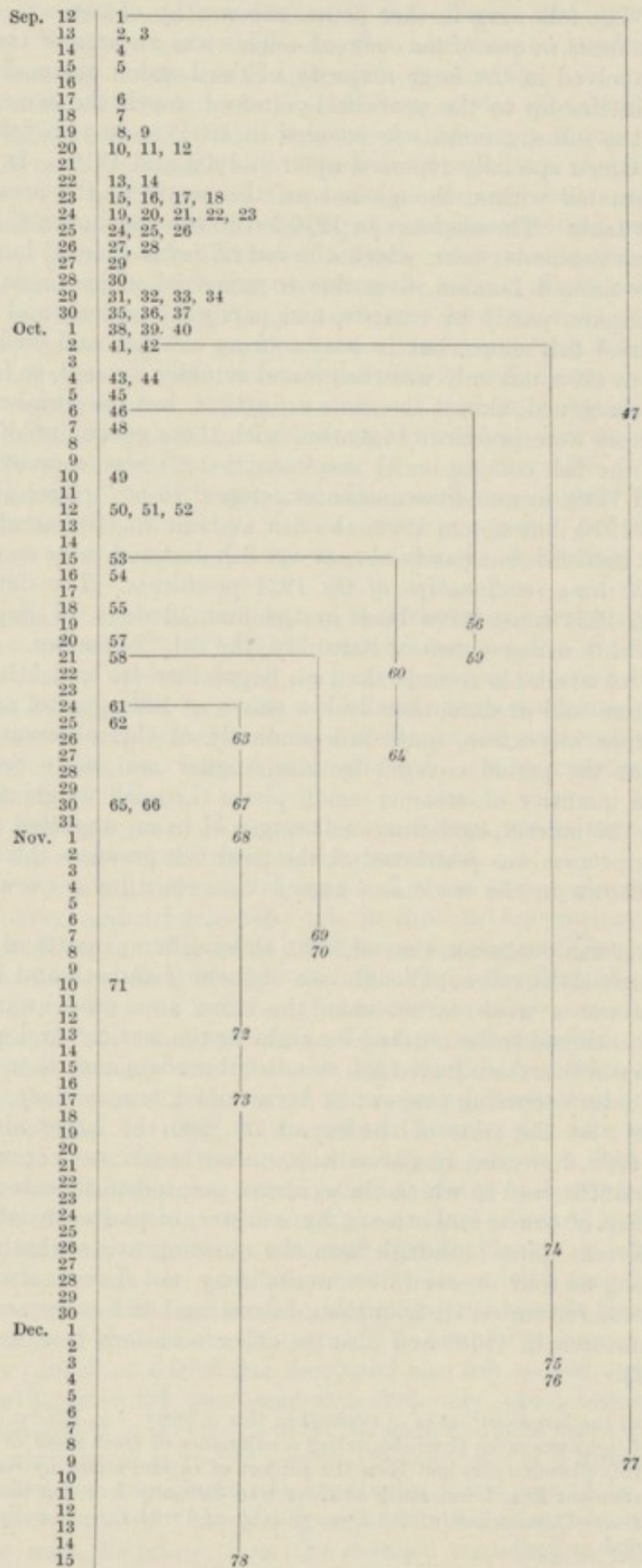
In the first fish outbreak, that of 1900, three different parts of London were almost simultaneously involved, though two of them (Lambeth and Kensal Town) were infected about a week earlier than the third area (Southwark). In each instance cases continued to be notified for eight or ten weeks,\* and question arose at the time as to whether the infected fish was distributed on more than one occasion, or whether the later occurring cases must be ascribed to secondary, *i.e.*, “case to case,” infection. At the time of the report of 1900 the latter alternative was accepted. In 1908, however, in Shoreditch, an outbreak was encountered which lasted several months, and in which the evidence pointed to repeated distribution, in the same group of courts and streets, by a coster, of plaice or dabs on at least four or five different dates; though here the question arose whether incubation periods of as long as four or even five weeks may not have occurred in some instances. Again, reiterated distributions in one and the same area of infected fish were encountered in 1910, and also on other occasions (see Annual Report, 1922, pp. 18-32).

Examination of the time relations of the outbreak in comparison with those of certain earlier London outbreaks.

\* In several of the large outbreaks of typhoid in this country, *e.g.*, Maidstone and Lincoln, a similar period of eight weeks (or thereabouts), of continuance of fresh cases of the disease, had been noted, and this phenomenon had been the subject of careful study by medical inspectors of the Local Government Board, inasmuch as there was difficulty in reconciling so extended a period with the assumed time when infection was possible and with the generally accepted length of incubation period.



TABLE SHOWING THE TIME DISTRIBUTION OF SINGLE AND  
MULTIPLE CASES OF TYPHOID FEVER IN INVADIED HOUSES.  
THE CASES SUBSEQUENT TO THE FIRST CASE ARE SHOWN  
IN *ITALICS*.





It is generally held that the incubation period in typhoid fever is about a fortnight, but the need for assuming the possibility of the apparent date of onset of illness being exceptionally *within a day or two* of the ingestion of infected oysters was demonstrated by Bulstrode in 1904; and the probability that the period of incubation may on the other hand be prolonged even for *four or five weeks* was also pointed out by him. (See Transactions of the Royal Society of Medicine, Vol. IV., 1910-11, Epidemiological Section, p. 131, on the question of prolonged incubation period.)

On arranging cases in order of onset of illness as stated by the patient or relatives, it appears that the first two undoubted cases of typhoid in the outbreak of 1924 commenced on 13th and 14th September. The cases occurring in the week ended 20th September and following weeks numbered 9, 20, 15, 5, 5, 8, 4, 3, and 2, respectively; in the remaining 6 weeks of the year, 5 cases occurred. It will be seen that the large majority of the patients sickened during the first three or four weeks, but the increase in the numbers of those sickening in the 5th, 6th and the three next succeeding weeks suggests the possibility that a subsidiary outbreak or recrudescence, was then developed.

The facts may be accounted for by case-to-case infection or by a second introduction of infected food material. There is a third possibility, namely, that in the latter part of the prevalence cases of a slight and doubtful character were included as cases of typhoid. In this connection it is noteworthy that 2 or 3 of the later groups of multiple cases included cases in which the bacteriological results were indefinite. Moreover influenza was prevalent in London at the time.

There were in all six instances of multiple cases in a household (see the annexed chart), viz., four of 3, one of 4 and one of 7.

In one family two cases, Nos. 35 and 36, occurred on September 30th, but as the attacks were practically simultaneous they are not included among the six "multiple case attacks." In only one instance did the first case occur in September, and here the diagnosis of the illness of the original sufferer was not free from doubt. In two instances the first case occurred in the first week of October, and in the remaining three the first illness did not commence until the 15th, 21st, and 24th October. It is of special interest to note that all save one (No. 71) of the cases of typhoid fever with onset after the end of October (*i.e.*, 10 cases in 4 families) occurred in households in which there had been previous cases.

It is of considerable interest to note that two distributions of infected fish, one early in September and one early in October, would (allowing for the incubation period and allowing in one or two instances a small amount of latitude as regards date of onset) account for all the cases. On such a hypothesis of two infections it is to be observed that the main groups of multiple cases in households might result from the later of the two infections. The suggestion that the earlier infection was by fried fish from a fried fish shop, and the later infection by fish bought at a coster's stall and cooked at home (both consignments of fish being conveyed presumably from market by the same coster), would afford a comparatively simple explanation of the curious phenomena both as regards the age and sex incidence and the grouping of multiple cases observed in this outbreak.

The hypothesis that all the multiple cases were to be explained by case to case infection is difficult of acceptance; thus, in all the groups taken together, the length of time separating the multiple cases or groups of cases in households averaged nearly 4 weeks, and in one instance it was 9 weeks; again, the removal of a first case to hospital together with the taking of precautions against spread of the disease was nevertheless in some instances followed by the occurrence of later cases in the same house. The difficulty in deciding in the case of such groups whether later attacks in families should be regarded as resulting from case-to-case infection, or as being due to a continued operation of the cause which produced the original case was discussed twenty years ago by Bulstrode in connection with an outbreak

Study of the anomalous time distribution of the multiple cases in households occurring in this outbreak.



of typhoid fever at Whitehaven. It was exemplified, too, very strikingly in the first recorded fish-outbreak—that of 1900.

*Conclusion.*—The various facts elucidated in this Bethnal Green prevalence point very suggestively to small plaice or dabs as the source of infection; prior to 1906 these fish were widely implicated on several occasions in London; this cause, however, practically ceased to operate in 1909 and (with an exception in 1911) remained conspicuous by absence until after the war.

The very slight rise of typhoid fever prevalence in September, 1923, and the striking increase manifested in September and October, 1924, taken in conjunction with the facts which have been set out in detail, suggest that this source of danger is not entirely removed, and make it desirable that a close watch should be kept upon London typhoid prevalence in this connection.

Throughout the outbreak I was in communication from time to time with members of the medical staff of the Ministry, and Drs. Brincker, Forbes and Chaikin on my behalf have conferred with the medical officers of the City and of Bethnal Green. I am indebted to all of them for advice and help. So far there has been no evidence of recrudescence of the mischief in question, at any rate since the early days of October last year.

### *Report of the Bacteriological Laboratory.*

During the past year bacteriological and microscopical examinations reached a total of 6,875, mainly represented by investigations in connection with diphtheria and ringworm. This shows an increase in the amount of material submitted as compared with the year 1923, caused by nearly 1,000 more throat and nose cultures, and over 20 more cerebro-spinal fluids examined. This work involved the preparation by the laboratory staff of between five and six thousand tubes and plates of various media for bacteriological cultivation.

I. *Diphtheria investigations.*—In spite of the lower general incidence of diphtheria among school children during 1924 (3,696 cases as compared with 3,985 in 1923, as mentioned elsewhere), the disease has been focused in certain localised areas and has called for more frequent and extensive investigations for carriers in particular schools, including the Army school (known as Newport Market), Bushy Park Camp School and the Industrial School at Mayford near Woking, and resulting in a total of 3,973 children swabbed, or 973 more than in 1923.

Of this total, 314, or 7·9 per cent., yielded positive results for the presence of morphological diphtheria bacilli in throat or nose; in 294, or 7·4 per cent., suspicious organisms were present; and 3,365, or 84·7 per cent., proved negative.

The virulence tests carried out gratuitously by the Wellcome Research Laboratories during 1921 and 1922 proved of great value in securing the early re-admission of non-virulent carriers, who would otherwise have been excluded until found bacteriologically free from diphtheria bacilli.

II. *Ringworm and favus.*—2,694 specimens of hairs were examined with positive results in 1,222, or 45·3 per cent.; represented by 992, or 36·8 per cent., cases of small spore fungus, 197, or 7·3 per cent., large spore fungus, and 17, or ·63 per cent., of favus. In 16 the type of fungus was unclassified.

III. *Conjunctivitis and ophthalmia neonatorum.*—Smears from the eye discharges of 45 infants were examined. The presence of the gonococcus was recognised in 5, or 11 per cent.

IV. *Histological sections* were made and examined from 42 specimens of brain, liver, spleen and thyroid, from post-mortem material of cases of encephalitis and acute ex-ophthalmic goitre.

V. *Miscellaneous material* sent for examination included:

(1) Urine, 6 specimens for chemical analysis as well as microscopical and bacteriological examination.

(2) Sputum, 6 specimens; tubercle bacilli were found in two.



(3) Water, 2 samples for bacteriological counts.

(4) Blood, complete cell count of a school teacher for evidence of pernicious anæmia.

VI. *Cerebro-spinal fluid*.—During 1924 a total of 106 specimens of cerebro-spinal fluid were examined from 100 separate cases, many of which presented difficult and obscure points and yielded results of considerable interest. The specimens were sent with a view to help in diagnosis, notably of encephalitis lethargica, the various forms of meningitis, syphilitic and other affections of the central nervous system. 63 came from the Fulham Infirmary, 27 from St. James Hospital, Balham, 10 from St. Pancras hospital, one from St Luke's Hospital, Chelsea, and five specimens were obtained from lumbar puncture of cases visited in consultation with private practitioners.

The cases may be grouped under the headings set out in the margin as regards final diagnosis :

26 specimens of fluid were examined from 23 cases, eventually diagnosed as probable encephalitis or confirmed as such by their ultimate course. The original diagnosis of encephalitis on clinical grounds was regarded as probable in 7, and doubtful in 16, with alternative diagnoses of meningitis in 10, neurosyphilis in 3, cerebral tumour in 2, and epilepsy in 1. Encephalitis  
lethargica.

From examination of the cerebro-spinal fluid it was possible to draw conclusions in support of encephalitis in 18 cases, and doubtful in five—two of which were complicated by epilepsy, one by possible cerebral syphilis, and two were subsequently diagnosed as encephalitis. These conclusions were based on the slight departures from the normal composition of the cerebro-spinal fluid usually shown in encephalitis, taken in conjunction with the clinical features of the individual cases. Confirmation was supplied by their subsequent course, leading to notification in 14 cases and death in 9, five of which were further confirmed by post-mortem examination. The puzzling and protean clinical aspects of encephalitis have for some years now been fully realised and, despite increasing familiarity with this disease, its diagnosis is still often extremely difficult. With the aid of examination of the cerebro-spinal fluid in such cases it is usually possible to eliminate meningitis and neurosyphilis. But in other pathological conditions, such as cerebral hæmorrhage, cerebral abscess or tumour, concussion, and, as in one case to be referred to, of acute ex-ophthalmic goitre, in which the symptoms of hyperthyroidism simulated those of encephalitis, the comparatively negative results of examination of the cerebro-spinal fluid may lead to the mistaken diagnosis of encephalitis, corrected only should there be a post-mortem examination.

Analysis of the results which led to conclusions in favour of encephalitis, in cases subsequently confirmed as such, showed that in 10 specimens the fluid appeared to be normal in composition, and in four heavy traces of blood were present, preventing satisfactory examination. Four showed some turbidity, or opalescence, with particles of fibrin and collections of the débris of degenerate and dead cells. In five the presence of lymphocytes in excess of the normal number (2-5 per c.mm.), up to 30 or 40 per c.mm. were found.

The amount of protein varied from .001 to .08 per cent., with an average of .027, i.e., above the normal .01-.02, as measured by Aufrecht's albuminometer. In one specimen, only, globulin was present in excess, and in all a trace of dextrose was indicated by the ready reduction of Fehling's solution, apparently in about normal amount.

The suggested alternative diagnosis of neurosyphilis in three cases was contra-indicated by the negative Wassermann reaction, negative colloidal benzoin or Lange gold tests, and by the absence of globulin in excess. One case which was clinically regarded and notified as encephalitis and subsequently developed insanity, was complicated by evidence obtained from the cerebro-spinal fluid in favour of cerebral syphilis, namely, positive Wasserman and colloidal benzoin reactions,



excess of globulin and a lymphocytosis of 27 per c.mm. Alternative diagnoses of tuberculous or other meningitis in 10 cases were also contra-indicated by negative bacteriological results in slide and cultural examinations.

Tuberculous  
meningitis.

Examination was made of 21 specimens of cerebro-spinal fluid from 19 cases. The original clinical diagnosis of tuberculous meningitis was regarded as probable in 12, and doubtful in 7 cases, with alternative suggestions of septic or pneumococcal meningitis in 3, cerebral tumour in 2, cerebral abscess in 1, and encephalitis in 1.

From examination of the fluid it was possible to arrive at a positive diagnosis of tuberculous meningitis in 11 cases, or 61 per cent., by the discovery of tubercle bacilli in slide preparations of the fine clot usually present, together with the characteristic well marked lymphocytosis. In the other 8 cases conclusions were based solely on the excess of lymphocytes with cell counts of 200 to 300 per c.mm., examination of the clot having failed to show the presence of tubercle bacilli.

In addition, chemical examination of the fluids showed a range of the total protein content from .1 to .7 per cent., more often .1 or .2, globulin in excess, and the presence of dextrose in traces below normal, but in 2 cases there was no reduction of Fehling's solution—results which, together with the cytological evidence, were in accord with the diagnosis of tuberculous meningitis, supported by the clinical features and fatal termination, further verified in 4 cases by post-mortem examination. In 4 additional cases a tentative diagnosis of tuberculous meningitis was not supported by examination of the cerebro-spinal fluid, which showed no departure from the normal, borne out by recovery in 3 cases, and, in the remaining case which ended fatally, by post-mortem discovery of cerebral abscess.

Meningitis.

Meningitis, due to other organisms than the tubercle bacillus, was diagnosed on the examination of 14 specimens of cerebro-spinal fluid from 12 cases, as shown by the presence of pus or a marked excess of polymorpho-nuclear cells, clot formation, high protein content, usually the non-reduction of Fehling's solution, as well as by cultural tests and the identification of the causative organisms. As might be expected from the low incidence of cerebro-spinal fever during the past year, with the exception of one case, the meningococcus has been conspicuously absent as the causative organism in the cases of meningitis investigated. The following organisms were identified either in slide preparations of the cell deposit or in culture :—

*Streptococcus* in 5 cases (in three secondary to otitis media and invasion of the mastoid, and in one following on pneumonia—all 4 of which proved fatal), one case, in which a streptococcus of low virulence was isolated from the cerebro-spinal fluid, associated with rheumatism, mitral valvular disease and resulting septicæmia, eventually recovered from the attack of meningitis.

*Pneumococcus* in 4 cases, associated with septicæmia or pneumonia, all proving fatal.

*B. influenzae* in 1 case, which later developed measles and died after an illness of 4 weeks.

*Meningococcus* in 1 case, identified in slide preparations from the cell deposit, but not obtained in culture, the case proving fatal after 3 weeks and diagnosed as post-basic meningitis rather than epidemic cerebro-spinal meningitis.

*Staphylococcus pyogenes aureus* was eventually obtained in culture from a case which on clinical grounds and from the cytological examination of the cerebro-spinal fluid led to the provisional diagnosis of cerebro-spinal meningitis. Death occurred two days later and post-mortem examination showed acute endocarditis, pericarditis and commencing cerebral abscess formation with leakage into the subarachnoid space, inflammatory cells thus gaining access to the cerebro-spinal fluid.

Inflammation  
of the middle  
ear.

In 6 cases of suppuration of the middle ear with involvement of the mastoid, examination of the cerebro-spinal fluid proved of value in deciding whether inflammation had extended to the meninges, and in helping to exclude alternative diagnosis of encephalitis, typhoid fever or cerebral abscess. In 3 of the 6 cases there was found evidence of meningitis due to streptococcal infection which proved



fatal and was verified at post-mortem examination in 2 cases, with cerebellar abscess as well in one case. In the remaining three cases the cerebro-spinal fluid proved to be normal in composition, and subsequent recovery occurred.

The cerebro-spinal fluid was examined in fifteen cases in which the diagnosis of G.P.I. was made on clinical grounds as probable in 13 and doubtful in 2. The facilities available at St. Thomas' Hospital for testing the Wassermann reaction and so assisting in the diagnosis of neurosyphilis, proved of much value and materially helped to confirm the other tests carried out in the Council's laboratory, which included the colloidal benzoin reaction, a test very nearly as sensitive as the Wassermann reaction, fully described by G. Guillian and his colleagues in 1922, and more recently forming the subject of a paper published by J. A. Braxton Hicks and J. Pearce in the British Medical Journal (February 16th, 1924).

General  
paralysis of  
the insane.

The information resulting from examination of the cerebro-spinal fluid confirmed the diagnosis of G.P.I. in 12 cases. The confirmatory tests included the presence of globulin in excess in 11 out of 11 tests, positive Wassermann reaction in 9 out of 10 tests (one case of neurosyphilis and alcoholism proving negative in the cerebro-spinal fluid, but positive in the blood), positive colloidal benzoin reaction in 7 out of 8 tests (the 8th yielding positive W.R.), lymphocyte cells in excess of the normal in 10, with counts varying between 47 and 57 per c.mm. The total protein content ranged between .016 and .15 per cent. with an average of .076 per cent. (as compared with the average .01 to .02 in normal fluid).

The diagnosis of G.P.I. was contra-indicated in three cases in which the cerebro-spinal fluid examination showed negative W.R. and C.B.R., no excess of globulin and cells. These cases subsequently proved to be suffering respectively from laryngitis, dementia, and chronic nephritis with uræmia.

The cerebro-spinal fluid was investigated in 16 cases, in 12 of which the lesion proved fatal, and on post-mortem examination was found to be cerebral hæmorrhage in 6, softening due to arterial disease in 3, cerebral tumour in 1, and abscess in 2. Four cases which recovered or were lost trace of, were diagnosed as cerebral thrombosis, concussion, meningeal hæmorrhage and cerebral tumour respectively. The scope of tests applied was necessarily limited to the estimation of total protein, the presence of globulin in normal or excessive amount, the number and character of cells obtained in count and by centrifugation, to the Wassermann and colloidal benzoin reactions, as well as to bacteriological examination. Though definite evidence in favour of or against meningitis or syphilitic lesion may be forthcoming, other cerebral conditions, except for the presence of blood due to cerebral hæmorrhage, cause but little alteration in the composition of the cerebro-spinal fluid likely to be of help in diagnosis. Conclusions as to the probable nature of the case must therefore be based on the clinical evidence supplied, taken in close conjunction with the results of cerebro-spinal fluid examination.

Gross cere-  
bral lesions.

*Cerebral hæmorrhage* (6).—*Original clinical diagnosis*: Hæmorrhage in 2, meningitis in 2, cerebral tumour or encephalitis in 1, doubtful in 1. Examination of the cerebro-spinal fluid contra-indicated meningitis in all, supported or suggested the probable diagnosis of cerebral hæmorrhage in 4, and suggested doubtful encephalitis in two cases.

*Cerebral softening and arterio-sclerosis* (3).—From examination of cerebro-spinal fluid it was possible to exclude suggested clinical diagnosis of meningitis and syphilitic lesion.

*Cerebral tumour* (2).—The diagnosis of encephalitis or syphilitic lesion was not supported by the cerebro-spinal fluid.

*Cerebral abscess* (2).—Diagnosis of tuberculous meningitis and cerebral hæmorrhage not confirmed. One case of multiple cerebral abscess was suggested as being due to syphilitic gummata. (W.R. and C.B.R. positive; protein=.1; globulin in excess; cells 42 per c.mm.)

*Cerebral thrombosis*.—Hemiplegia and aphasia associated with pregnancy. Alternative diagnosis of encephalitis not supported by cerebro-spinal fluid examina-



tion. In two cases diagnosed as meningeal hæmorrhage and cerebral concussion, conclusions after examining the cerebro-spinal fluid were confirmatory. Eventual recovery followed.

Lesions of  
the spinal  
cord and  
peripheral  
nerves.

Examinations of the cerebro-spinal fluid were made in 8 cases, which included tabes dorsalis, tabo-paresis (juvenile type), disseminated sclerosis (2), transverse myelitis, cerebral diplegia in a congenital syphilitic imbecile, spinal concussion with traumatic lesion of the cord, peripheral neuritis.

It was possible from the evidence obtained from the examination of the cerebro-spinal fluid to exclude the likelihood of a syphilitic lesion in the cases of disseminated sclerosis, myelitis, traumatism of the cord and neuritis, by the negative W.R. and C.B.R., low cell count and absence of globulin.

In the cases of tabo-paresis and cerebral diplegia, the syphilitic origin was indicated by positive W.R. and C.B.R., and the presence of globulin and lymphocytes in excess. In contradistinction (as is found in some 40 per cent. of cases of tabes dorsalis) the remaining case of tabes, however, yielded negative W.R. and C.B.R. with no excess of globulin or cells.

Meningismus;

In five cases which presented symptoms of meningitis, the cerebro-spinal fluid was found normal, and therefore contra-indicated the clinical diagnosis. Two of these cases proved to be due to pneumonia, verified by post-mortem examination, which also showed no evidence of meningitis. The other three, originally diagnosed as tuberculous meningitis, but subsequently regarded as enteritis, broncho-pneumonia, and doubtful encephalitis, recovered.

To this group of cases, occurring usually in children, and presenting the clinical picture of meningitis, but showing no change in the composition of the cerebro-spinal fluid, the name meningismus has been given and is recognised as a clinical entity not easily explained.

*Consultation visits.*—Visits were paid by either Dr. J. A. H. Brincker or Dr. J. G. Forbes to 18 private patients at the request of general practitioners or medical officers of health for the purpose of help in diagnosis of doubtful cases of encephalitis lethargica or meningitis; 7 being in Kensington, 5 in Islington, 1 in each of the boroughs of Bermondsey, Camberwell, Hornsey, Lewisham, Westminster and Woolwich.

The cases may be tabulated as follows—(E.L.=Encephalitis lethargica; C.S.M.=Cerebro-spinal meningitis):—

Initials, age and sex.	Provisional diagnosis.	Consultation diagnosis	Lumbar puncture.	Result and final diagnosis.
E. W. 39 female ...	? E.L.	? E.L.	No.	Luminal poisoning self administered. Recovery.
A. L. 26 male ...	? E.L.	Doubtful.	No.	Recovery. Not E.L.
M. B. 18 female...	? E.L.	Doubtful E.L. Cause? concussion.	No.	Recovery.
H. M. 52 female...	? E.L.	Probable E.L.	Yes. Cerebro-spinal fluid consistent with E.L.	Died in hospital. P.M. not E.L. Acute exophthalmic goitre.
L. B. 50 female...	? E.L.	Doubtful but possible E.L.	No.	Died. P.M. cerebral hæmorrhage.
L. G. 2 male ...	? E.L.	Meningitis.	Yes. Diagnosis influenzal meningitis.	Died. Diagnosis confirmed in hospital.
W. S. 33 male ...	? E.L.	E.L.	No.	Died. P.M. cerebral tumour.
A. C. 45 male ...	? E.L.	Post influenzal condition.	No.	Recovery.
C. D. 35 male ...	? E.L.	E.L.	No.	Notified E.L. Recovery.
M. M. 31 female...	? E.L.	Not E.L. Post influenzal condition.	No.	?



Initials, age and sex.	Provisional diagnosis.	Consultation diagnosis.	Lumbar puncture.	Result and final diagnosis.
W. W. 24 male ...	? E.L.	E.L.	No.	Notified E.L. ?
F. C. 8 male ...	? C.S.M.	Probable C.S.M.	Yes. Cerebro-spinal fluid in favour of meningitis.	Died in hospital. P.M. acute endocarditis, pericarditis and cerebral abscess.
H. I. 42 male ...	? C.S.M.	Doubtful meningitis.	Yes. Cerebro-spinal fluid in favour of meningitis.	Septicæmia and meningitis. Died. No P.M.
E. W. 5.12 female	? meningitis ? E.L.	Probable meningitis.	Yes. Cerebro-spinal fluid post basic meningitis.	Died in hospital. Post basic meningitis.
E. J. 28 female ...	? meningitis.	Measles.	No.	Measles. ?
O. W. 1 female ...	? meningitis ? polio-myelitis.	C.S.M.	No.	Notified C.S.M. ? result.
D. E. 11 female...	Doubtful.	Enteric fever.	No.	Notified enteric fever.
A. P. 31 female ...	Doubtful.	Influenza.	No.	?

Of the 11 cases provisionally suggested as E.L., after consultation, 4 were regarded as probable E.L.; of these two were notified and the other two on post-mortem examination proved to be due to cerebral tumour and acute ex-ophthalmic goitre respectively. The obscure symptoms in the latter case, suggestive of encephalitis, viz., restlessness, raised temperature, drowsiness, muscular weakness, defective speech, and difficulty in swallowing were in reality referable to a state of hyperthyroidism, although during life there was no obvious enlargement of the thyroid gland evident. Microscopical examination showed characteristic change in the gland, but in the brain none typical of encephalitis.

4 were regarded as doubtful E.L.; of these 3 recovered, the condition not being confirmed as E.L., one died, and on post-mortem examination cerebral hæmorrhage was found.

3 were not regarded as suffering from E.L.; two were recovering from the effects of influenza, and one was identified by lumbar puncture as a case of influenzal meningitis, subsequently confirmed as such in hospital, where death occurred 4 weeks later.

Of the remaining 7 cases, in two which were suspected cerebro-spinal meningitis, the diagnosis seemed probable in one and was supported by cerebro-spinal fluid examination, but proved on post-mortem examination to be an unusual case of acute septicæmia with acute endocarditis, pericarditis and commencing cerebral abscess; in the other case the cerebro-spinal fluid examination was not in favour of cerebro-spinal fever but pointed to septicæmia and probable septic meningitis, but no post-mortem was obtainable.

Of three other cases provisionally regarded as meningitis, one was diagnosed on lumbar puncture as post-basic meningitis, a second proved to be measles, and the third was diagnosed on clinical grounds and notified as cerebro-spinal meningitis.

Of two cases, the nature of which was entirely doubtful, one was regarded as influenza, and the other as typhoid fever, subsequently confirmed and notified.

#### B.—ADMINISTRATION.

Statistical information available is comprised in Table II., on p. 64, and details of the Administration of the General Powers Acts (tuberculous milk) and observations on the supervision of slaughterhouses, cowhouses, and offensive trades, will be published later in Chapter XXV. of the Annual Report of the Council, Vol. III.

The supervision of the 174 common lodging-houses licensed by the Council under the L.C.C. (General Powers) Act, 1902, entailed 10,263 day visits and 478 night visits by the inspectors. The supervision of 38 seamen's lodging houses, Common and seamen's lodging houses,



licensed under the Merchant Shipping Act, 1894, entailed 1,086 visits by day and 97 by night.

Census of  
homeless  
persons.

A census of homeless persons in London was taken on the night of Friday the 15th February, 1924. The area covered extended over the whole of the County, except the outlying portions, which are not usually the resort of such persons. The night was cold and fine but had been preceded by a cold wintry day with some snow. Only 4 persons (all females) were found sheltering under arches or on staircases. In the streets 61 men and 17 women were found, as compared with 126 men and 11 women in 1923, and 296 men and 76 women at the census taken shortly before the war in 1914. In the common lodging-houses, 14,165 persons were accommodated as compared with 13,891 in 1923, and 20,173 in 1914. In the free shelters and labour homes not licensed, 481 men, 118 women and 13 children were accommodated as compared with 347 men, 112 women and 14 children in 1923. The number of persons in casual wards on the night in question was 429, (407 men, 21 women and 1 child), the largest number recorded at any census since 1914. At Rowton Houses, 5,047 men were accommodated and there were no vacant beds.

Venereal  
diseases.

The number of new cases of venereal disease dealt with by the hospitals under the Council's Scheme during 1924 was 18,281, of which 6,626 were syphilis, 11,350 gonorrhoea, and 305 soft chancre. Comparing these figures with those of the previous year it will be observed that the total number of new cases dealt with is 725 less than in 1923.

Year.	Syphilis.	Gonorrhoea.	Soft chancre.	Non-venereal.	Total.
1923 ...	7,128	11,563	315	6,644	25,650
1924 ...	6,626	11,350	305	7,292	25,573
Increase + or decrease —	—502	—213	—10	+648	—77

The distribution of the new cases of disease between the sexes is shown in the following table, the figures for the preceding years being given for comparison. It will be seen that in the case of syphilis the figures for 1924 are considerably lower than for several years past.

Year.			New cases.						Total venereal cases.	
			Syphilis.		Soft chancre.		Gonorrhœa.			
			M.	F.	M.	F.	M.	F.	M.	F.
1917...	...	...	4,427	3,351	199	11	3,830	1,207	8,456	4,569
1918...	...	...	3,764	3,002	116	13	4,844	1,940	8,724	4,955
1919...	...	...	6,394	3,391	463	18	10,441	2,440	17,298	5,849
1920...	...	...	6,988	3,579	766	25	10,669	2,427	18,423	6,031
1921...	...	...	5,088	3,100	458	13	8,573	2,136	14,119	5,249
1922...	...	...	4,207	2,600	309	12	8,233	2,402	12,749	5,014
1923...	...	...	4,497	2,631	311	4	9,043	2,520	13,851	5,155
1924...	...	...	4,174	2,452	301	4	8,565	2,785	13,040	5,241

Importance is attached to the necessity of securing the regular attendance of patients at the clinics, more especially in the case of gonorrhoea, and efforts to secure the requisite provision of facilities for intermediate treatment at times other than during the hours of the clinics, are meeting with considerable success. A number of patients still fail to complete the full course of treatment considered necessary before final discharge, due in no small measure to the false impression that a cure has been effected on the disappearance of outward signs of the disease. The need for improving conditions likely to cause patients to discontinue attendance at the clinics or transfer from one clinic to another continues to receive careful attention.



The total attendances were 589,002, and the ratio of attendances to venereal cases is in the proportion of 32 attendances to each new case. This is noteworthy when it is borne in mind that in those countries where venereal diseases are compulsorily notifiable, the ratio of attendances to new cases has never been greater than the figures which are shown for London under the voluntary system adopted in this country. Comparative figures for the seven years the scheme has been in force are shown in the following table :—

Year.	New cases.		Total.	Attendances.	In-patient days.
	Venereal.	Non-venereal.			
1917 ...	13,025	2,360	15,385	120,659	63,923
1918 ...	13,679	2,693	16,372	169,485	66,095
1919 ...	23,147	5,118	28,265	307,722	73,211
1920 ...	24,454	6,592	31,046	464,033	81,612
1921 ...	19,368	6,050	25,418	496,209	79,692
1922 ...	17,763	5,950	23,713	529,003	112,564
1923 ...	19,006	6,644	25,650	555,509	106,662
1924 ...	18,281	7,292	25,573	589,002	102,456

Attention is also drawn to the very large number of non-venereal patients who present themselves for examination. This appears to indicate quite clearly that the general public is appreciating more and more the efforts which have been, and are being, made to spread far and wide a knowledge of the serious nature and grave after effects of the venereal diseases.

Another point worthy of note is the total number of examinations made of pathological specimens. Comparative figures for the seven years are shown in the following table.

Year.	Pathological examinations.	
	For treatment centres.	For private practitioners.
1917 ...	13,988	3,649
1918 ...	25,973	6,380
1919 ...	51,554	10,464
1920 ...	58,920	14,027
1921 ...	66,134	18,472
1922 ...	74,022	19,836
1923 ...	69,784	21,403
1924 ...	79,005	24,797

The increased use made by medical practitioners of the facilities for the examination of pathological specimens is highly satisfactory. Under the Scheme, medical practitioners who fulfil certain conditions, are entitled to free supplies of the approved arseno-benzol preparations for the treatment of their private patients. The number of medical practitioners availing themselves of this service is now 405, as compared with 108 at the end of 1917, the first year of the operation of the Scheme.

*Hostel accommodation.*—During the first year of the operation of the Council's scheme, the necessity was recognised for hostel accommodation where young women and children under treatment could be lodged during the period of infectivity. Certain hostels managed by or independently of hospitals, have received grants in aid for this purpose, and experience has proved the value of these hostels for the more efficient treatment of certain cases and for preventing the spread of disease. During the year 1924 the number of patients dealt with at these institutions from the areas in the scheme was 266, the aggregate number of days in residence being 25,987.

Details of the progress made with the several represented insanitary areas and the housing schemes undertaken by the Council will be seen on reference to Chapter XXVII. Housing Acts.

The table on p. 50 shows the houses in each borough in 1924; the number repaired under Section 28 of the Housing Act of 1919; certain other particulars as



Metropolitan borough.	No. of houses.			No. of houses for the working classes.		No. of representations.			No. of closing orders.			No. of houses demolished.		
	In borough.	Inhabited by working classes.	Repaired by local authority.	Erected.	In course of erection.									
	1924.	1924.	1924.	1924.	1924.	1911-14	1915-19	1920-24	1911-14	1915-19	1920-24	1911-14	1915-19	1920-24
Battersea ...	27,844	24,953	25	15	21	187	1	13	44	—	13	6	—	—
Bermondsey ...	19,187	18,927	1	10	49 flats	68	13	3	111	46	1	67	—	—
Bethnal Green ...	19,465	Almost all	—	6	—	32	34	14	43	19	9	40	2	9
Camberwell ...	41,877	33,500	—	2	—	—	—	8	—	—	—	1	—	3
Chelsea ...	11,440	2,440	—	—	56 flats	3	—	—	—	—	—	9	8	17
Deptford ...	18,100	16,290	—	—	1	95	8	—	95	7	—	40	2	—
Finsbury ...	11,000	6,500	—	—	—	21	17	5	2	17	5	—	—	50
Fulham ...	27,040	20,265	—	2	—	43	1	14	38	1	14	22	—	7
Greenwich ...	16,698	Majority	—	—	132	193	—	—	—	—	3	26	—	—
Hackney ...	34,917	14,166	—	4	48 maisonettes	11	29	45	11	34	—	9	—	—
Hammersmith ...	18,563	12,000	—	82	—	37	26	14	6	38	18	—	25	5
Hampstead ...	12,557	About half	—	—	—	17	17	25	17	17	23	5	—	14
Holborn ...	3,473	8,571 t'n'mts	—	—	1 block of t'n'mts	63	4	1	6	2	1	46	—	—
Islington ...	43,000	27,000	3	—	—	50	10	3	38	8	3	19	1	1
Kensington ...	28,419	9,144	—	3	40	86	9	5	24	9	22	1	—	—
Lambeth ...	42,607	31,955	—	108	96	102	38	17	102	—	—	129	—	103
Lewisham ...	35,539	Not stated	—	—	—	25	9	1	11	19	16	8	3	—
Paddington ...	Not stated	Not stated	—	—	—	23	17	26	27	10	8	1	—	1
Poplar ...	23,248	Almost all	—	61	43	68	39	6	68	33	13	2	1	—
St. Marylebone ...	19,270	8,112	—	32 flats	32 flats	32	20	—	32	19	—	9	3	1
St. Pancras ...	25,216	16,000	—	—	—	109	53	—	72	56	—	—	—	—
Shoreditch ...	14,000	13,000	—	—	20	12	9	—	12	3	17	11	7	11
Southwark ...	20,312	13,958	—	—	—	152	4	411	84	—	64	—	32	43
Stepney ...	31,750	31,750	—	11	87 tenements	44	27	2	44	59	—	—	6	—
Stoke Newington ...	8,599	3,978	—	—	—	—	—	—	—	—	—	1	—	—
Wandsworth ...	68,839	44,661	—	553	—	—	1	—	—	—	1	—	7	1
Westminster (City)	27,260	Not stated	—	40	—	21	7	—	9	6	—	25	39	4
Woolwich ...	27,009	22,768	1	175	104	97	40	34	42	32	21	16	5	5



to conditions in 1924; and also gives the details of action taken by the metropolitan borough councils under the provisions of Section 17 of the Housing and Town Planning Act with regard to the making of representations and closing orders—the figures for the years 1911–14, 1915–19, and 1920–24 are included for comparison.

The subjoined table shows the number of sanitary officers and health visitors employed by the sanitary authorities in London:—

Sanitary area.	Sanitary inspectors.				
	Male.	Female.		Health visitors.	
		Whole time.	Part time.	Whole time.	Part time.
City of London...	22	1	—	—	—
Battersea ...	11	—	2	7	2
Bermondsey ...	11	—	—	8	—
Bethnal Green ...	9	—	—	10	—
Camberwell ...	12	2	—	3	—
Chelsea ...	3	1	—	1	—
Deptford ...	8	—	—	6	—
Finsbury ...	6	1	—	3	—
Fulham ...	9	1	—	5	—
Greenwich ...	5	1	—	5	1
Hackney ...	18	2	—	9	—
Hammersmith ...	9	1	—	3	—
Hampstead ...	7	1	—	3	—
Holborn ...	3	—	1	1	1
Islington ...	19	2	—	7	—
Kensington ...	12	—	7	9	—
Lambeth...	15	2	—	4	—
Lewisham ...	9	1	—	8	—
Paddington ...	9	2	—	2	—
Poplar ...	10	1	—	7	—
St. Marylebone ...	11	—	3	3	3
St. Pancras ...	14	1	4	2	4
Shoreditch ...	12	—	—	5	—
Southwark ...	13	1	—	10	—
Stepney ...	18	—	—	11	—
Stoke Newington ...	3	—	—	3	—
Wandsworth ...	13	—	—	6	—
Westminster, City of ...	10	1	—	5	—
Woolwich ...	9	1	2	6	2
London County, 1924	310	23	19	152	13

At the end of 1924 there were 49 sets of premises registered as subject to the by-laws regulating the business of a dresser of fur-skins.

Detailed inspections of the premises (which are estimated to number some 120), subject to the by-laws regulating the business of a slaughterer of poultry, are now in progress.

Under the Council's scheme for the treatment of tuberculosis the total number of beds actually in use on 31st December, 1924, was as follows:—

Institutions.	Adults.		Children.	Total.
	Ex-service.	Civilian.		
Metropolitan Asylums Board ...	114	869	554	1,537
Voluntary ...	151	478	192	821
Total ...	265	1,347	746	2,358

5,634 applications for institutional treatment of adult patients were received, viz.:—

First applications.		Applications for further treatment.	
Males (Ex-service men)	363	Males (Ex-service men) ...	714
„ (Civilians) ...	1,823	„ (Civilians) ...	560
Females ...	1,705	Females ...	469
	3,891		1,743—Total 5,634



Of these 470 were not accepted for treatment under the Council's scheme; 924 patients were examined at the County Hall, and their disposal then determined; 1,283 were referred to observation hospitals for admission as a preliminary step to their disposal; 2,832 were accepted for admission direct to institutions on the reports of the medical officers recommending the cases, and in 125 cases the applications for various reasons were not proceeded with. In 327 of the cases for residential treatment, the patients for various reasons failed to enter observation hospitals or other institutions, and their applications were treated as withdrawn. In 170 other cases treatment was not commenced before the end of the year.

As a general principle, the cases passed through the observation beds are patients in whom the diagnosis has not been confirmed by the presence of tubercle bacilli in the sputum; patients with acute symptoms; and patients with well-marked disease whose suitability for sanatorium treatment can be determined only after a few weeks' close observation. Cases examined at the County Hall are those in which the diagnosis has been confirmed by the presence of tubercle bacilli in the sputum and which appear, from their reports, to be suitable for sanatorium treatment, and cases of surgical tuberculosis. Cases sent direct to sanatoria are chiefly applicants for further treatment, whose condition and prospects are already known.

Action taken with regard to adult patients examined at the County Hall during 1924:—

Observation hospital.	Sanatorium.	Home for advanced cases.	Not accepted.	Total.
93	729	49	53	924

During the year 1,365 patients were discharged from observation hospitals and 4,385 from other institutions.

The classification of the 1,365 patients discharged after observation in hospitals:

Classification—Group A	...	...	...	...	...	...	...	283 cases or 25.11%
„ B <sub>1</sub>	...	...	...	...	...	...	...	74 „ 6.57%
„ B <sub>2</sub>	...	...	...	...	...	...	...	515 „ 45.69%
„ B <sub>3</sub>	...	...	...	...	...	...	...	204 „ 18.10%
Surgical cases	...	...	...	...	...	...	...	51 „ 4.53%
Total diagnosed as tuberculous	...	...	...	...	...	...	...	1,127
Diagnosis of tuberculosis not confirmed	...	...	...	...	...	...	...	238
Total discharged from observation beds	...	...	...	...	...	...	...	1,365

Action taken with regard to 1,127 cases in which tuberculosis was diagnosed, compared with the figures for 1923:—

	Year.	
	1924.	1923.
Discharged home	71	183
Made their own arrangements or refused further treatment	136	172
Transferred to institutions for advanced cases	157	236
Elected to go to infirmaries	14	36
Transferred to surgical hospitals	13	12
Transferred to general hospitals	5	—
Transferred to training centres	2	3
Died during observation	48	42
Discharged for misconduct	2	5
Transferred to sanatoria	679	769
Totals	1,127	1,458

Tuberculous children.

At the commencement of 1924 the Council had in use 713 beds for children in hospitals and sanatoria, of which 197 were in voluntary institutions and 516 in Metropolitan Asylums Board institutions. The number of cases under treatment on 31st December, 1924, was 746 (192 in voluntary institutions and 554 in Metropolitan Asylums Board institutions). On 1st January, 1924, 384 boys and 323 girls were under treatment and 477 boys and 438 girls were sent away during the



year. The total number treated during the year 1924 was, therefore, 1,622 as compared with 1,404 in 1923. In addition, 297 children had the advantage of convalescence through the Invalid Children's Aid Association with the financial assistance of the Council.

The scheme of co-operation between the Council and the Association, under which, in return for a grant, the Association provides convalescent treatment for children, and also assists in the provision of clothing, outfits and surgical appliances for children who had received treatment under the tuberculosis scheme, was continued during 1924. The sum paid to the Association during 1924 was £2,000. During 1924 the Association received 409 applications for assistance, and 297 children were sent away with the assistance of the Council's grant. 26 applications were for boots and clothing, and 18 cases were found to be ineligible. 68 children were supplied with surgical instruments with the help of the Council's grant-in-aid. In addition to these, 36 children were sent away without help from the Council's grant-in-aid, as the parents were able to pay the full cost of treatment.

Since 1920 the Council has arranged with the Association for the children attending the Council's schools for tuberculous children to go away to the seaside for a fortnight's holiday during the summer. In 1924, children to the number of 245 were sent to a convalescent home at St. Leonards-on-Sea, the Council making a grant of £526 towards the cost.

In addition to the provision for treatment of tuberculous children in residential institutions, the Council continued the use of five open-air schools specifically for children notified under the Tuberculosis Regulations, 1912, as suffering from tuberculosis of the lungs or of glands with no open wounds.

The children are admitted on the certificate of the medical officer of the Council, and preference is given to those returning home after treatment in a sanatorium. The five schools—Camberwell, Elizabethan, Kensal House, Springwell House, and Stormont House—have, together, accommodation for 365 children.

During 1924 there were 147 children admitted to the schools and 146 discharged. Of the latter, 40 were fit for elementary school, 68 were fit for work, 26 were transferred to hospital or sanatorium, 9 moved away, and 3 were discharged for other reasons.

At Kensal House the average gain in weight of the children was 3.117 kilograms, which was the highest ever recorded for the school. At the Elizabethan the average gain in weight was 3.6 kilograms, at Camberwell 3.8 kilograms and at the two remaining schools the average gain was 2.77 kilos.

Only one child was reported to have lost weight (0.4 kilograms).

The following observations are quoted from the report made by the medical officer of the Elizabethan School:—

"The Open-Air School is without doubt justifying its existence and the results of treatment have been excellent.

"Unfortunately the weather during 1924 has been frequently cold, wet and windy, and it has been impossible to conduct the classes in the open air on a number of days. The School rooms, however, are fortunately large and airy, with plenty of light and are very suitable for open-air treatment.

"An endeavour has been made to obtain the co-operation of the parents in carrying out the treatment in order to point out defects which they were not aware of in their children, such as defects of breathing, phonation, articulation, or deformities such as scoliosis. Parents have also been encouraged to call at the School or Dispensary in order to point out any disability which might not be ascertained by examination. The success of the school depends very much on the individual attention to each of the children, although general hygienic measures are also of the greatest importance.

"A considerable number have been treated at the School Clinic, Bagley's-lane, by the school dentist and the teeth of all the children are in excellent



condition. Some of the children have also been treated at the throat and eye departments.

"The children take a real interest in the gardening which is taught at the school and the benefit derived is obvious; this will probably be a useful hobby in later years. One of the former pupils secured a post in the country as a result of his training in gardening at the school.

"The fortnight's holiday in the country was a source of great benefit to the children, 28 of whom were sent away; all of them gained weight."

Dr.  
Bardswell's  
report on  
after  
histories of  
adult  
tuberculous  
patients.

Reference was made in the report for the year 1923 to investigations which had been made into the after histories of adult persons treated in residential institutions for tuberculosis during the years, 1914, 1915 and 1918. The statistics based upon the information available could only be considered approximate, since the data had been noted and recorded by many physicians and tuberculosis officers, who, apart from their varying experience of tuberculosis, used different standards of classification, and it was recognised that the results could only be regarded as affording a useful general impression rather than accurately ascertained facts.

Certain modifications which were made in the Council's Tuberculosis Scheme came into operation in 1921. These included the provision of "observation" beds, examination of patients by medical officers at County Hall, the use of uniform method of classification of cases, and a closer personal contact of the Council's officers with the patients. These factors have resulted in a greater accuracy and uniformity of records than it has hitherto been possible to attain, and it was decided, therefore, that it would be more advantageous to investigate these patients' after-histories rather than to make a further study of those of patients discharged in the preceding years.

On the new basis of selection of patients for residential treatment the sputum positive cases (*i.e.*, cases in which tubercle bacilli have been found in the sputum) are classed separately from sputum negative cases (*i.e.*, cases in which tubercle bacilli have not been found in the sputum). The last mentioned cases form Class A, while the sputum positive cases comprise class B. These latter are divided into three groups according to the severity of disease, *viz.*, group 1, cases with slight constitutional disturbance (if any) and with obvious signs of limited extent, group 3, cases with profound systematic disturbance or constitutional deterioration, and all cases with grave complications, and group 2, all cases not falling in groups 1 or 3. This new classification includes under the new groups A and B<sub>1</sub> the cases formerly recorded as "early cases," under the new group B<sub>2</sub> the "moderately advanced" cases, and under B<sub>3</sub> the "advanced" cases.

The after-histories of adults discharged from residential institutions during 1921 were traced up to July, 1924, a period ranging from 2½ to 3½ years after the date of discharge. These cases include the first group of pulmonary cases classified on the new basis. The number of cases definitely diagnosed as pulmonary tuberculosis was 3,060.

The following were the results graded under the revised classifications:—

Classification.	Group.	No. of Cases.	Percentage.	Percentage alive.	Percentage dead.
Early ...	A.	512	16.7	91.2	8.8
Early ...	B <sub>1</sub>	344	11.2	78.2	21.8
Moderately advanced	B <sub>2</sub>	1,346	44.0	51.7	48.3
Advanced ...	B <sub>3</sub>	858	28.0	9.2	90.8

The results of this further enquiry again demonstrate the great importance of treatment of tuberculosis being provided as early as possible after the onset of the disease. Efforts have been made with a view to securing earlier "notification" of cases, thus enabling more prompt provision of treatment.

Voluntary  
care  
committees.

In the Interim Report of the Departmental Committee on Tuberculosis, 1912, the opinion was expressed that the effectiveness of the work of tuberculosis dispensaries could be greatly increased by the organisation of voluntary care committees



formed of representatives of local authorities, board of guardians, insurance committees, and from all charitable and social work organisations in the district. Care committees on the above lines have been in existence since the inception of the Council's scheme for the treatment of tuberculosis and have functioned continuously in all except two boroughs.

Thanks to the generous co-operation, as regards both personal service and finance, of the societies associated with the work, *e.g.*, the British Red Cross, United Services Fund, Invalid Children's Aid Association, Charity Organisation Society, etc., and to devoted work on the part of other members, much good work is being done, not only in obtaining temporary help but in other more permanent ways, such as employment, advice as to insurance and pension questions, assistance in moving into the country, etc. There are also a few striking instances of successful efforts to restore families to independence.

The nature of the disease and the economic circumstances of the patients attending a dispensary renders the sociological aspect of the tuberculosis problem of almost paramount importance. It is not difficult for the tuberculosis officer to give or arrange for all the medical treatment that is indicated, but to secure suitable living and working conditions and sufficient food is a much more difficult matter. Sitting in a consulting room and advising a winter in Egypt is one aspect of medicine, sitting in a dispensary and advising an open window in a one-room tenement is another, and more often than not raises the question of sufficiency of blankets. If anything beyond such relief as can be obtained from the guardians or charitable societies is to be attempted, the making of a considered plan for each family, with full knowledge of the circumstances, is essential. To do this and to endeavour to carry it out calls for the assistance of workers with special knowledge and experience and with abundant time to devote to the work. In view of the above, one of the first interests of the tuberculosis officer must be to see that he is given all possible information and assistance on the social side, and this obtains to a considerable extent throughout London.

This is one of the recognised aids to institutional treatment of tuberculosis and is utilised at various institutions to which patients are sent under the Council's tuberculosis scheme for residential treatment. Enquiry has been directed to the question whether light treatment—natural and artificial—can be usefully extended in this country, and investigations have been carried out by Dr. W. B. Knobel, who has made a summary of the views of leading experts in the matter. The Council has had the benefit, moreover, of the experience of Sir Henry Gauvain. It may reasonably be claimed that the value of such treatment in suitable cases is proved, but that the knowledge and experience of to-day are insufficient to define accurately the limits of the usefulness of the two forms of "light" treatment. The information which has been collected indicates that it is only during recent years that the use and application of artificial light has been scientifically studied. In expert hands, as part of the treatment of lupus, the success of artificial light treatment is regarded as incontestable. Such treatment in the case of surgical tuberculosis is still to some extent in its experimental stage, and whilst, in competent hands and in selected cases, it is considered to be a very valuable factor in treatment, it must be regarded merely as an addition to other methods of treatment. It appears not to be suitable in all types of cases of pulmonary tuberculosis,

Artificial  
light  
treatment

The question of the fullest use of artificial light for curative purposes has arisen not only in relation to tuberculosis, but also to other physical conditions among children in attendance at the Council's schools, and in connection with maternity and child welfare work in the boroughs; and it may be found, after further investigation, that additional provision for treatment by artificial light should be of a general character, available for all types of cases met with in connection with the education service and the health services of the central and local authorities.



Facilities for treatment by artificial light are available at various general and special hospitals, and are not limited to tuberculous cases. The Public Health Committee is investigating the possibility of arranging for a large scale test of artificial light treatment under satisfactory conditions in association with the Education Committee and in consultation with the Ministry of Health.

#### Midwives.

Duly certified midwives with London addresses exceed 5,000 in number, of whom 906 gave notice of their intention to practise within the County during the whole or part of the year, an increase of 1 on last year's figures. About 10 per cent. of the midwives with London addresses are in actual independent practice in the County, the remainder acting mostly as monthly or general nurses under medical supervision. Practising midwives, other than those who work entirely in hospitals or infirmaries under medical supervision, are subject to inspection by the Council's officers, with a view to ensuring that a proper standard of efficiency is maintained. This work is carried out by four women medical inspectors, who pay special visits to midwives having cases of a septic nature or persistent high temperature or inflammation of the eyes. Advice is also given by the inspectors on any point of difficulty arising in connection with the work; 2,294 visits were paid by the inspectors this year, as compared with 2,549 the previous year.

97 infringements of the rules of the Central Midwives Board were reported during the year, of which 74 were slight, and therefore dealt with by means of a verbal caution; 14 cases were of a more serious nature, and were dealt with by a written caution. Of the remaining 9 cases, 6 midwives were seen by the Committee, and 5 of them cautioned, the other one being reported to the Central Midwives Board, as were 2 other midwives who were not so seen. In the remaining case interviewed by the Committee, legal proceedings were instituted against the midwife for failure to notify intention to practise, and she was fined £1 and costs. Of the 3 cases reported to the Board, two midwives were struck off the Roll; in the third case the Board postponed sentence and asked for periodical reports on the midwife's conduct and methods of practice. Four midwives were suspended from practice with a view to the prevention of the spread of infection, and in 2 cases compensation was authorised. One midwife applied for a certificate in support of her application to the Central Midwives Board for the restoration of her name to the Midwives Roll. The Midwives Act, 1902 (section 1 (2)), makes it an offence for any uncertified woman habitually and for gain to attend women in childbirth except under the direction of a registered medical practitioner. During the year 16 inquiries were made by the inspectors into such cases, in 7 of which it was decided to take no further action; 8 were dealt with by a verbal or written caution, and one woman was committed for trial for an illegal operation.

During the year there were 594 still-births reported by midwives in their practice. The figures for previous years were: 1920, 896; 1921, 684; 1922, 720; 1923, 582. Of these infants, 304 were males, and 281 females, and 9 not stated. Of the 594 still-births, 310 were reported macerated, and 284 not macerated.

300 cases of puerperal fever were reported during the year, as against 360 the previous year. 70 cases proved fatal, as compared with 97 the previous year, a case mortality of over 23 per cent. as against 27 per cent. the previous year. In addition the Registrar-General recorded 36 deaths from puerperal sepsis, which were, however, not notified as puerperal fever. The distribution of the notified cases was as follows:—

	<i>Delivery conducted by</i>	Cases.	Deaths.
(a) Medical practitioners	... ..	110	30
(b) Certified midwives	... ..	102	18
(c) Medical practitioner and certified midwife	... ..	4	2
(d) Hospitals and poor-law institutions	... ..	48	10
(e) Medical students	... ..	11	2
(f) Cases of miscarriage or abortion where no attendant was engaged	... ..	23	7
(g) Uncertified women	... ..	2	1
	<b>Total</b> ... ..	<b>300</b>	<b>70</b>



In certain emergencies specifically enumerated in the Rules of the Central Medical aid. Midwives Board a midwife is required to advise in writing that medical aid be summoned, and must also see that such help is summoned and obtained. The notice is sent to the doctor, and a copy must be forwarded to the local supervising authority. During 1924 as many as 6,961 notices were received, as compared with 7,040 in 1923. Assuming that approximately 42,000 confinements were conducted during the year by midwives in independent practice, it appears that medical aid was required in under 17 per cent. of the cases, about the same percentage as in the preceding year.

Great stress is laid by the Council on the due observance by midwives of the Rules of the Central Midwives Board with regard to inflammation of the eyes. However slight the inflammation may be, it is the duty of the midwife to summon medical aid, and as soon as the notice is received at this office the case is followed up by one of the medical inspectors. Notice is also sent to the borough medical officer, so that the health visitor may continue to keep observation on the child after the midwife has left the case. Most valuable assistance is also given by the Voluntary Nursing Associations in cases where domiciliary treatment is necessary.

1,266 notices were received from midwives during the year with regard to medical aid summoned for inflammation of the eyes of infants, as compared with 1,339 in 1923. In addition, 57 other cases occurred in which either medical help was not called in by the midwife or she failed to notify the Council that she had done so. Of these 1,323 cases, 431 proved to be ophthalmia neonatorum, as compared with 449 in 1923; 275 other cases that did not occur in the practice of midwives were also notified, making a total for the year of 706 notified cases of this disease. The percentage occurring in the practice of midwives was 61.0, as against 59.6 in 1923. All the cases that occurred in the practice of midwives were investigated by the inspectors, and it was found that 403 were reported as completely cured, while 7 died. Impairment of the vision in both eyes occurred in 4 cases and [of one eye also in 4 cases, whilst in 13 instances the result could not be ascertained owing to the removal of the patients. In addition, one unnotified case in the practice of midwives was investigated in which there was damage to the eyes, resulting in impairment of vision in one eye. 54 cases received in-patient hospital treatment at St. Margaret's Hospital.

In past years classes have been arranged for the instruction of midwives, and were well attended. As it was found that there had been a falling off in the attendance, it was decided to dispense with such classes during 1923, but they were resumed this year.

The occurrence during the year of 35 cases of pemphigus neonatorum in the practice of midwives calls for some special comment. As regards the nature of this complaint, it would appear that no definite description of it was made until the year 1588, when Schenck wrote an account of an epidemic in Germany amongst newly born children, which appears to have been pemphigus neonatorum. Since then the subject has been frequently referred to by various writers, but there are still unsolved various points in connection with the ailment. For example, agreement has not been reached as to the actual place this complaint should occupy amongst skin diseases. Again, the causative organism, if any, has not been identified with any degree of certainty, and there is still doubt as to the length of the incubation period. There is, however, one question on which there can be no disagreement, and that is the extremely infectious nature of pemphigus neonatorum. Under the Central Midwives Board rules a midwife has to notify to her supervising authority any case of skin disease in an infant when accompanied by the presence of blisters, and on receipt of such notice the child is at once visited by one of the Council's inspectors, and it is often found that sufficient attention has not been paid to the infectivity of the condition. It has sometimes proved difficult to limit the spread of the disease, and the question has even been raised as to the necessity of having to

Pemphigus  
neonatorum.



suspend a midwife from practice on this account. One instance during the year in which a midwife had five consecutive cases of pemphigus neonatorum in her practice presents a point of some interest. She had been disinfected after each successive case, apparently without attaining the desired object. Before resorting, however, to so drastic a measure as suspension, she was seen once more, and it then transpired that up to that time her spectacles had not been dealt with. Accordingly these were disinfected, and as a matter of fact no more cases occurred. Whilst it is reasonable to point out how very natural it would be for a midwife to peer closely at the skin of each infant with whom she had to deal, adjusting meanwhile her spectacles for the purpose, it is not, of course, suggested that the disinfection of the spectacles was the actual cause of the cessation of the series of cases, but it is quoted to illustrate the desirability of dealing with absolute minuteness and particularity in the matter of infection.

Whilst dealing with the question of runs of cases occurring in any given midwife's practice, it should be mentioned that during the year another midwife had a series of seven so-called cases. Space will not admit of a minute analysis of this small outbreak, but certain details in regard to the investigations conducted may be mentioned. At the onset of the disease history was given of the infant having been wrapped in a bed jacket borrowed from a neighbour who was attending at a V.D. clinic, though in the light of clinical evidence afforded by the following six cases it would not appear that any specific infection was thereby carried. Two of the cases were of a very slight nature, and had they not occurred in connection with the others would probably not have been suspected as being cases of pemphigus neonatorum. The midwife voluntarily relinquished practice. In 1923 a run of five cases occurred in the practice of two midwives acting in partnership. The circumstances here made investigation peculiarly difficult, inasmuch as the two midwives concerned delivered the mothers and washed the infants more or less as convenience dictated, that is to say, they did not each adhere to any one given case. Rigorous disinfection of person and property, including household furniture, would appear to have brought this outbreak to an end.

As has been stated, the number of cases for this year was 35, giving a case-rate per 10,000 births of 8.3. The figures during the preceding quinquennium were—1923 (6.6), 1922 (0.9), 1921 (5), 1920 (3), and 1919 (4.5). Altogether the cases during these six years numbered 127. The season of the year at which they occurred and the length of time after birth do not yield any very significant information, except that there did seem distinctly increased incidence during the months of September to December. These cases, of course, all occurred within the practice of midwives, but there is no doubt that over and above this number there were, at any rate during this year, a considerable number of further cases. This was ascertained on chance enquiry at children's hospitals, but circumstances did not allow of any detailed investigation in these instances. As regards locality, there was an undoubtedly high proportion of cases in the western riverside area of London. As has already been pointed out above, considerable doubt exists as to the cause of this complaint. In very many cases the staphylococcus is present and is by some thought to be the *causa causans* of the condition. Others, again, attribute it to the activities of the streptococcus. There are, however, three cases within the knowledge of the department which may have some significance. In one of these the organism obtained from the fluid of the blister was the pneumococcus, in another it was the gonococcus, whilst a third yielded a diphtheroid organism, and it does not appear to be outside the realms of possibility that pemphigus neonatorum is, in fact, due in part to the presence in the appropriate layer of the infant's integument of some pyogenic organism. This would, at any rate, account for the undoubted variability in the incubation period and also the degree of severity of the disease, which is so remarkable, and furthermore the variability in the colour of the contents of the blisters which is a noticeable feature of this complaint. The very frequent presence of



the staphylococcus might surely be regarded as being a purely symbiotic association which could reasonably be looked for in a condition affecting the skin. The foregoing suggestion must, however, be taken as a very tentative one, and it may well be that the cocci above-mentioned are themselves no more than concomitants of one ultra-visible organism which has not yet been identified, in association with which the others produce the disease in its different manifestations. A few cases are undoubtedly of specific origin, these exhibiting definite divergence from the others. For instance, the rash occurs on the soles of the feet and the palms of the hands, which are otherwise immune from the attacks of pemphigus neonatorum. Furthermore, the rash appears on the first day of the disease, that is to say, the infant is born with it and has probably developed it in utero, whilst a further distinction is that a fatal issue is very much more frequent. When a fatal issue arises it is conceivable that the infant suffers from a systemic as well as local infection, the organism having gained a ready entrance through the umbilicus.

The by-laws made under section 18 of the L.C.C. (General Powers) Act, 1921, are being carried out by the keepers of lying-in homes, and are of assistance to the Council in dealing with any complaint that may be made with regard to the home.

The powers of the Council under the Children Act, 1908 (Part 1), with regard to infant life protection are fully indicated in the Annual Report for 1921. The work of inspection is carried out by 14 visitors and two male inspectors. Nurse infants who are being kept under specified unsatisfactory conditions, may under powers given by the Act be removed to a place of safety—i.e., in London to Poor Law institutions. During 1924, 7 nurse infants were removed, as compared with 6 in the previous year. The Act permits the Council to grant whole or partial exemption from inspection in cases where the circumstances appear to warrant such a course, and partial exemption limited to inspection once or twice a year was granted in 4 cases.

All the homes in which foster children are kept are visited with a view to ascertaining whether the sanitary condition of the premises is satisfactory. During 1924, 992 reports as compared with 1,009 during 1923 were made. The premises were found to be satisfactory in 617 cases as compared with 648 the previous year. Sanitary defects were discovered in 157 homes as compared with 143 the previous year, while overcrowding was reported in 128 homes as compared with 141 in 1923. Overcrowding and sanitary defects were found in 37 homes as compared with 18 the previous year. In 53 cases no action could be taken owing to the removal of the infant prior to the visit of the inspector. In any case of serious sanitary defect the attention of the borough council was drawn to the defect. A rearrangement of the accommodation has in some cases enabled an improvement to be effected, but in others this has been impossible and the foster mothers have in such cases been urged either to obtain more suitable accommodation or to return the infant to its parent. As will be obvious, the lack of suitable housing accommodation has added to the difficulty of dealing with such cases.

The help of the local infant welfare centre is sought in the case of the illness of an infant, and where a foster mother has charge of a weak or ailing infant she is urged to take the infant to the centre and follow the medical advice given there. The visitors are instructed to watch such cases with a view to seeing that the treatment is carried out. Whenever a visitor is doubtful as to the progress of an infant the matter is reported with a view to an inspection being made by one of the Council's medical officers. This practice has worked very satisfactorily and has been of great assistance to the visitors.

A nurse infant ceases to be under this part of the Act at the age of seven years, but as the child usually attends school from the age of 5 years it has from that age the additional advantage of supervision by the School medical service.

The number of deaths of nurse infants during 1924 was 26, as compared with



53 last year, while inquests were held in 8 cases, as compared with 11 in 1923. The verdict in 7 cases was death from natural causes, and in the other accidental death.

In last year's report reference was made to the question of adoption of infants. During the year three bills dealing with this matter were introduced in Parliament. A committee was also appointed by the Home Secretary to examine the problem of child adoption from the point of view of possible legislation, and at the request of that committee evidence was submitted on behalf of the Council.

#### *Mental Deficiency Act, 1913.*

On the 31st December, 1924, the 3,583 cases being dealt with at the expense of the Council may be classified as follows :—In institutions, 1,881 ; under guardianship, 20 ; under supervision, 1,657 ; in places of safety waiting other action, 25. There remained 3,117 out of the total number 6,700 of cases of alleged mental defect, of which notice has been received since the Act came into operation. These cases include 429, in which no action could be taken ; 1,279 ascertained not defective, not subject to be dealt with, or not to be London cases ; 523 dealt with through the Poor Law ; 784 removed from the register (died, discharged, or removed to mental hospitals), and 102 still under consideration.

During the year 653 cases were examined with the following results :—

	Idiot.	Imbecile.	Feeble minded.	Moral Imbecile.	Not Defective.	Insufficient Evidence.	Total.
Male ... ..	8	88	241	—	15	4	356
Female ... ..	8	66	200	—	25	12	311
Total ... ..	16	154	441	—	40	16	667

In addition to the foregoing, certain cases were examined while still of school age and are recorded on a later page.

Occupation centres.

The Occupation Centres opened in the year 1923 were continued throughout the year. Visits were paid to all the centres, and 148 children, who were actually in attendance on the occasion of the visits, were medically examined, and the following minor defects were noted :—

Defect.	Teeth.	Eyes.	Nose.	Throat.	Ears.	Total.
No. ... ..	25	20	6	3	2	56
Percentage ... ..	16·9%	13·5%	4·1%	2·0%	1·3%	37·8%

The general standard of nutrition, clothing and cleanliness was found to be good, but some of the children seen at the Deptford Occupation Centre were noted to fall below the average in nutrition and clothing and, to a less extent, cleanliness. This was not altogether unexpected, as some of the contributory areas are among the poorest in London.

There was no evidence of neglect of any of the children and all the serious physical defects appeared to be receiving treatment. Some minor defects of the eye, ear, nose and throat, however, were noted not to be apparently receiving attention. All these cases were reported to the London Association for the Care of the Mentally Defective as being in need of treatment, and those parents who were present at the examinations were advised as to the best course to adopt.

The centres appeared to be conducted in a satisfactory manner and the children seemed to derive benefit from attendance thereat. The Council has made provision for the employment of guides where necessary in order to convoy the children to and from the centres.

Children of female defectives dealt with under the Act of 1913.

A special investigation has been made with a view to ascertaining the educational attainments of children of certified defectives. Reports have been obtained in regard to fourteen children of school age ; only one attends a special M.D. School, six children were stated to be dull and backward but well-behaved, and in the remaining seven the reports were satisfactory.



The Council's scheme for carrying out the provisions of the Blind Persons Act, 1920, set out in previous reports, was continued throughout the year, during which 60 persons over school age were seen. Of these, 29 males and 25 females were found to be capable of benefiting by training, and advice was given as to trades in which the persons should severally be trained, having regard to the prospects of future employment. Three males and 3 females were considered to be unfit for training.

Blind  
Persons Act.

### *Work of the Chemical Branch.*

The work of this branch was carried out at four laboratories, viz., the Central Laboratory at County Hall, the Greenwich Generating Station, and the laboratories at the Northern and Southern Outfalls.

During the year over 3,000 samples of various articles were submitted by departments of the Council and examined, in most cases, as to their compliance with specified conditions or general suitability for use. This number includes 185 samples of building materials, 154 of coals, 38 of disinfectants, 183 of foods, 176 of oils, 61 of paints and colours and 194 of petrol (under the Petroleum Acts). Analyses were made *in situ* of 29 gases used in connection with dry-cleaning and degreasing plant in use in London. In connection with the supervision of dietaries of necessitous children in Council Schools, 1,186 samples of milk and 40 complete meals were examined.

Central  
Laboratory.

52 samples of hard and softened water were examined, and advice given, in connection with the water-softening plant at County Hall, and 500 samples of river-water were collected at various states of tide and examined in connection with the general investigation of the condition of the river. Much of the work undertaken is of an advisory character.

A series of experiments was made in the Central Laboratory to test the amount of moisture in coke, as sold, its capacity to absorb moisture, and the extent to which in dry atmosphere moisture can be evaporated. Four samples were obtained from different sources on the same day, the weather being dry when the samples were collected, and the latter being unaffected by recent rain. In 3 cases care was taken to obtain similar samples of broken coke from quantities which were about to be sold. The result of the tests proved that the natural moisture of coke which had been left in the air, protected from rain, was not more than 5 per cent.; that coke was sent out in such a condition that 100 parts could be increased to 119 parts, and that coke might be so watered that 100 parts of air-dried coke could be increased to 123 parts without the coke appearing unduly wet. The water content of coke, as sold, appears to be very variable; it is nearly all adhering and not absorbed water, as in coal.

Moisture in  
coke.

A considerable amount of chemical work has been done in connection with the bathing lakes, open-air swimming baths and paddling ponds. Many analyses of the water and a study of the conditions of use have shown that the green growths, to which objection has sometimes been made, are beneficial as they are instrumental in purifying water which is subject to organic pollution. The condition of the water in the swimming baths, as distinguished from lakes and ponds, has been the subject of special study; and various recommendations have been made and experiments with a system of filtration are being kept under observation.

Bathing  
lakes,  
open-air  
swimming  
baths and  
paddling  
ponds.

The work of the laboratory at the Greenwich Generating Station comprises:—  
(i.) The daily examination of samples and materials for controlling the operation of the water-softening plant, the blowing-down of boilers, condenser leakage, and the purity of condensed water supplied to the station batteries; (ii.) the sampling, preparation and examination of fuel (coal); the preparation and examination of fuel ashes, the analysis of flue gases, boiler scale, stores, etc., and (iii.) investigations connected with corrosion and other matters affecting the operation of the station plant. Two matters to which attention has been specially directed during 1924

Greenwich  
Generating  
Station  
Laboratory.



are the trustworthiness of a certain type of CO<sub>2</sub> recorder and the efficiency of a plant for de-aërating boiler feed-water.

**Outfalls.** At the outfall laboratories systematic daily examinations of sewage treated and the resulting effluent and sludge, as well as the water of the river Thames at both high and low tides, and other analyses in connection with the working of the outfalls have been continued. In addition much experimental work needed to throw light on matters connected with the river, or sewage treatment, has been undertaken at these laboratories.

**Biological treatment of sewage.** The experimental treatment of large volumes of sewage, and, later, of large volumes of effluent by mechanical agitation has been continued with uniformly satisfactory results. Further points in connection with this mode of treatment need investigation and are the subject of experimental observation.

**River Lee.** Visits to this river in April and October showed that it continued to be in the bad condition which has now been observed for some years from Tottenham Lock downwards. Chemical and all other evidence pointed to the relatively pure water from above the lock having been mixed with very large proportions of sewage, with the result that the water itself is like a dilute sewage and the bed very foul and continuously bubbling and throwing up black masses. The surface of the river down to Spring Hill was very bad in October. The natural stream flowing alongside Hackney Marshes was much polluted, but being shallow and swift was not offensive, although black stains on the banks showed that the water contained much putrescible matter. The tidal portion of the Lee Navigation was in a bad condition in April.

**River Thames.** The systematic examination of the river Thames was continued in 1924 at points from Waterloo Bridge to the Edinburgh Lightship, which is in the vicinity of the discharge area for sludge from the Council's outfalls and for waste matters discharged by other bodies. In addition to examination of the water, the survey of the river bottom, which has been in progress for some time, was carried out. The results obtained from the examination of both river water and material from the bed showed that, from the Chapman Light at the upper end of Sea Reach onwards to the estuary, the evidence of pollution and deterioration of the river was small and rapidly decreased seaward. In the neighbourhood of actual discharge no evidence of general pollution was found.

Although provision was made for additional treatment of sewage at the outfalls, at no time did it become necessary to use chemical precipitants. This was in part attributable to the relatively low temperature of the river water and the abnormal fresh water flow of the river during the summer months.



TABLE I.  
COUNTY OF LONDON.

Vital statistics for the several metropolitan boroughs and the County of London in the year 1924. (Rates per 1,000 of civil population.)

Metropolitan boroughs. (Arranged in topographical order.)	Estimated civil population, 1924.	Births.	Deaths.	Infant mortal- ity (per 1,000 births).	Measles	Scarlet fever.	Diph- theria.	Whoop- ing cough.	Ty- phoid fever.	Diarrhoea and Enteritis, age 0-2 (per 1,000 births).	Phthi- sis.	Pneu- monia.	Bron- chitis.	Cancer.	Cases of notifiable infectious disease. (a)						
															Scarlet fever.	Diph- theria.	Ty- phoid fever.	Erys- ipelas.	Puer- peral fever (per 1,000 births).	Cere- bro- spinal fever.	Acute pneu- monia.
<i>Western.</i>																					
Paddington ...	146,400	17.1	13.1	78	.56	.02	.10	.06	.01	12.8	.86	1.33	.80	1.60	1.5	1.89	.11	.46	3.55	.01	3.09
Kensington ...	178,550	16.3	13.1	75	.42	.01	.08	.11	.02	6.9	.68	1.41	1.03	1.67	1.79	1.27	.18	.35	1.70	.02	.87
Hammersmith ...	134,200	17.9	12.3	72	.25	.04	.12	.13	.01	5.8	1.07	1.15	1.00	1.47	1.77	1.98	.04	.26	4.93	.05	1.14
Fulham ...	163,100	18.2	11.1	72	.18	.04	.07	.10	.01	7.4	.79	1.09	.85	1.38	2.21	1.60	.04	.57	8.64	.01	2.01
Chelsea ...	64,580	14.3	13.3	64	.46	—	.05	.09	.02	15.1	1.24	.90	.91	1.90	1.33	1.24	.14	.55	1.07	—	1.59
Westminster, City of	139,900	11.2	12.1	61	.19	.03	.18	.02	—	2.5	.89	.99	.97	1.48	1.47	1.69	.11	.20	6.17	0.2	.65
<i>Northern.</i>																					
St. Marylebone ...	105,300	14.5	13.5	80	.48	.02	.03	.02	.02	13.7	.95	1.28	1.31	1.83	1.72	1.18	.17	.46	6.44	.01	.65
Hampstead ...	87,600	13.5	11.7	56	.07	.01	.03	.05	.03	8.4	.66	.88	.65	1.72	1.82	1.17	.12	.17	3.33	.02	1.16
St. Pancras ...	214,300	18.9	13.1	74	.35	.06	.10	.21	.01	14.3	1.09	1.02	1.46	1.42	3.49	2.85	.06	.50	3.90	.01	1.95
Islington ...	337,400	19.9	12.4	67	.31	.03	.09	.17	.01	7.8	.98	1.24	.99	1.43	3.15	2.51	.04	.34	2.79	.01	.55
Stoke Newington ...	52,920	16.6	11.5	56	.08	.02	.09	.06	—	5.7	.70	.94	.60	1.51	1.66	1.96	.02	.19	1.13	.02	.22
Hackney ...	226,900	18.6	11.2	59	.13	.03	.14	.07	—	6.2	.97	1.00	.76	1.37	2.32	2.42	.03	.21	2.57	.03	.19
<i>Central.</i>																					
Holborn ...	43,250	13.4	12.2	81	.25	.02	.09	.14	—	5.2	1.09	1.04	1.23	1.62	2.08	1.64	.05	.50	3.41	—	1.46
Finsbury ...	77,180	21.6	14.3	78	.58	.03	.18	.32	—	7.2	1.23	1.30	1.63	1.30	2.85	2.51	.06	1.24	4.14	.03	.79
London, City of (b)	13,621	7.2	12.0	112	—	.07	—	.07	—	—	1.17	1.10	.59	1.54	.94	.72	.14	—	—	—	.43
<i>Eastern.</i>																					
Shoreditch ...	106,500	25.0	13.6	84	.59	.03	.14	.26	.01	9.8	1.18	1.62	1.62	1.21	3.45	3.63	.04	.52	3.71	.02	3.38
Bethnal Green ...	119,200	22.1	12.3	77	.36	.03	.24	.13	.10	11.4	1.11	1.56	.96	1.02	3.53	4.73	.75	.64	2.24	.02	2.80
Stepney ...	253,740	21.3	12.4	76	.26	.01	.09	.15	.02	14.4	1.15	1.53	.95	1.21	2.21	2.20	.11	.42	2.55	.03	1.87
Poplar ...	167,300	22.9	12.1	72	.23	.04	.12	.23	.01	7.6	.97	1.77	1.08	1.28	2.91	2.40	.06	.34	2.06	.02	3.64
<i>Southern.</i>																					
Southwark ...	187,714	22.5	14.1	71	.40	.05	.27	.09	.01	10.2	1.40	1.43	1.09	1.32	2.81	4.18	.06	.66	4.68	.02	1.27
Bermondsey ...	122,100	24.3	13.7	79	.41	.05	.21	.10	.01	10.1	1.18	1.83	1.01	1.44	3.20	4.39	.02	.34	0.67	.01	1.96
Lambeth ...	309,300	19.0	12.6	67	.28	.04	.17	.08	.00	9.7	1.03	1.14	1.04	1.52	3.04	1.94	.06	.33	3.52	.02	.91
Battersea ...	171,000	18.4	11.8	62	.30	.02	.15	.10	.01	7.3	.89	.93	1.07	1.35	2.32	2.53	.05	.44	4.71	.03	2.97
Wandsworth ...	338,200	14.7	11.1	57	.21	.02	.07	.08	—	4.4	.73	.66	.74	1.51	2.47	1.36	.05	.33	4.56	.02	1.70
Camberwell ...	273,700	18.8	11.4	70	.28	.03	.19	.06	.01	9.5	1.00	1.04	.87	1.38	2.17	3.00	.04	.40	2.88	.01	.63
Deptford ...	115,200	20.6	12.0	76	.30	.02	.13	.13	.03	6.7	.90	1.30	.79	1.28	2.52	3.04	.16	.69	2.91	—	1.22
Greenwich ...	102,470	20.0	11.5	74	.29	.01	.14	.15	.01	11.6	1.02	.87	.70	1.12	2.82	3.07	.10	.48	2.39	.02	1.08
Lewisham ...	184,900	16.4	10.4	48	.10	.03	.05	.06	.01	4.3	.72	.78	.79	1.42	1.96	.98	.06	.30	3.25	—	.61
Woolwich ...	139,980	17.9	11.0	65	.20	.03	.06	.09	.01	3.9	1.22	.68	1.01	1.29	2.87	1.37	.06	.32	2.67	.08	2.39
<b>London ...</b>	<b>4,576,505</b>	<b>18.6</b>	<b>12.2</b>	<b>69</b>	<b>.29</b>	<b>.03</b>	<b>.12</b>	<b>.11</b>	<b>.01</b>	<b>8.7</b>	<b>.98</b>	<b>1.16</b>	<b>.98</b>	<b>1.42</b>	<b>2.50</b>	<b>2.30</b>	<b>.09</b>	<b>.41</b>	<b>3.43</b>	<b>0.2</b>	<b>1.47</b>

(a) Four cases of smallpox were notified, one each in Kensington, Chelsea, Westminster and St. Pancras. there were no deaths.  
(b) Including Inner and Middle Temples.



TABLE II. COUNTY OF LONDON. Statistics of the administrative work carried out during the year 1924.

Sanitary Authority.	Cow-sheds.		Slaughter-houses.		Offensive Trades.		Smoke nuisances.			Under-ground rooms.		Over-crowding.		Houses let in lodgings.			Common lodging houses.		Cleansing of persons and rooms.			Water supply.	Milk-shops.		Ice cream premises.		Other food places.	
	No. licensed.	No. of inspections.	No. licensed.	No. of inspections.	No. licensed.	No. of inspections.	Observations.	Complaints.	Notices.	No. illegally occupied.	No. closed or otherwise remedied.	Instances found.	No. remedied.	No. on register.	No. of inspections.	Prosecutions.	Houses licensed.	Authorised lodgers.	Adults.	Children.	Premises or rooms.	Tenement houses extra supply.	No. on register.	No. of inspections.	No. on register.	No. of inspections.	No. of places.	No. of inspections.
City of London ..	—	—	7	*	—	—	150	13	—	1	1	2	2	130	Periodical	—	1	455	20	903	325	—	339	463	72	123	916	817
Battersea ..	1	2	2	333	2	4	119	17	8	6	2	3	3	85	125	—	3	201	311	5,063	5,968	17	128	369	190	258	251	1,904
Bermondsey ..	—	—	—	—	13	38	36	—	1	—	—	—	—	223	446	—	3	853	72	—	2,225	—	202	589	125	125	509	2,420
Bethnal Green ..	12	51	3	17	1	8	25	9	3	—	—	47	20	207	786	—	7	405	1	—	1,780	—	239	657	182	365	359	1,206
Camberwell ..	1	5	4	154	7	31	182	15	1	—	—	38	3	287	261	—	5	438	72	3,205	141	—	416	1,256	331	467	882	2,245
Chelsea ..	—	—	3	40	—	—	16	6	—	—	—	5	5	—	—	—	2	172	4	609	428	—	75	145	60	72	90	200
Deptford ..	—	—	2	36	2	15	79	11	6	—	—	9	9	289	578	—	4	1,089	—	1,749	2,072	—	155	368	143	170	28	95
Finsbury ..	—	—	2	103	2	21	19	6	6	2	2	11	11	909	3,929	—	2	470	5	—	85	2	154	181	31	125	247	348
Fulham ..	—	—	2	85	—	—	222	18	7	—	—	40	40	—	—	—	2	87	7	3	3,616	76	105	167	216	196	346	983
Greenwich ..	4	6	5	17	1	3	30	9	—	5	5	2	2	247	247	—	2	90	15	712	165	18	102	138	138	142	180	1,145
Hackney ..	8	104	17	286	13	50	981	32	30	1	—	60	5	463	—	—	4	313	50	1,270	658	—	318	1,629	248	262	172	880
Hammersmith ..	—	—	7	277	—	—	75	15	10	2	2	35	13	2,499	14	—	1	292	40	1,547	45	13	86	1,607	131	135	873	5,732
Hampstead ..	—	—	2	16	—	—	2	1	—	13	13	7	7	—	—	—	—	—	4	910	37	70	89	194	68	121	595	1,380
Holborn ..	—	—	1	5	—	—	510	4	4	8	8	3	3	589	951	2	14	1,093	124	—	53	5	127	149	83	179	380	2,419
Islington ..	4	34	14	778	8	65	180	29	11	6	6	13	13	1,012	3,680	5	23	793	10	4,614	91	63	574	1,030	238	146	636	18,397
Kensington ..	—	—	5	294	—	—	277	13	1	65	63	31	31	2,904	11,681	40	8	416	130	4,261	1,572	656	175	602	163	283	871	1,630
Lambeth ..	3	9	11	154	4	48	230	14	115	1	1	38	38	272	4,464	—	4	415	—	—	390	114	448	2,668	165	495	11	132
Lewisham ..	6	38	8	216	—	—	21	15	15	1	1	54	54	3	38	—	—	—	—	—	—	—	147	330	—	—	Not stated	Not stated
Paddington ..	1	4	4	138	—	—	144	15	1	2	2	18	15	1,404	6,041	29	3	165	20	1	284	7	100	340	163	253	393	1,502
Poplar ..	10	37	9	62	2	4	24	55	48	—	—	24	24	1,453	?	—	6	499	136	1,680	469	—	167	385	94	165	402	1,080
St. Marylebone ..	2	26	3	151	2	53	689	9	9	4	4	3	3	1,115	11,798	—	5	763	4,387	2,916	750	27	143	356	120	215	347	1,155
St. Pancras ..	2	30	6	140	2	87	719	37	24	—	—	21	14	2,365	3,681	3	2	78	1,172	5,244	1,514	85	211	957	324	402	Not stated	5,147
Shoreditch ..	2	19	2	38	22	66	76	10	3	—	—	44	19	305	1,917	—	4	281	—	—	355	—	256	1,665	127	293	289	867
Southwark ..	—	—	5	57	2	9	36	7	11	—	—	62	62	1,272	772	—	22	2,758	842	3,252	14,871	25	342	2,090	157	162	516	1,843
Stepney ..	24	69	1	1	7	36	319	43	42	10	10	69	53	2,645	3,795	3	26	3,773	449	591	1,158	2	441	1,583	244	421	494	1,552
Stoke Newington ..	—	—	4	55	—	—	60	2	2	—	—	4	4	—	—	—	—	—	1	937	238	1	47	55	25	29	256	485
Wandsworth ..	1	10	9	105	3	118	38	27	27	5	—	14	14	292	932	—	5	126	15	—	470	1	256	675	338	393	1,049	2,166
Westminster ..	1	4	—	—	—	—	2,309	40	42	7	2	66	49	1,120	4,062	—	4	1,540	61	812	151	27	494	1,730	148	240	5,500	2,041
Woolwich ..	9	55	8	32	—	—	10	4	—	7	8	248	49	394	433	—	13	409	27	2,561	159	—	85	257	226	796	260	1,055

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

Common lodging houses, licensed number, 175; lodgers, 17,974; visits—day, 10,263, night, 478; prosecutions, nil.

Seamen's lodging houses, licensed number, 38; Bermondsey, 7; Deptford, 1; Poplar, 8; Stepney, 22; lodgers, 1,128. Visits—day, 1,086; night, 97; prosecutions, 4; penalties and costs, £14 3s.

Prosecutions—Smoke Nuisances: Poplar, 1; Islington, 2; Stepney, 2; Battersea, 3; Fulham, 2.

Water Supply: Hammersmith, 1; Paddington, 1; Kensington, 3; St. Pancras, 9; Fulham, 1.

Overcrowding: Shoreditch, 1; Paddington, 1; Fulham, 3; Kensington, 1; Battersea, 2.

Milkshops: St. Pancras 3; Woolwich, 1; Battersea, 1.

Underground Rooms: Islington, 4.

\* Continuous supervision during slaughtering.

Ice Cream Premises: Bethnal Green, 1; Islington, 1.

Offensive Trades: Hackney, 2; Shoreditch, 1; Stepney, 1.



TABLE III.  
TUBERCULOSIS DISPENSARIES—ANALYSIS OF RETURNS JAN.—DEC., 1924.

1  Borough and dispensary.	2  Under observation on 1-1-1924 pending diagnosis.		3  Examined for first time during 1924, including contacts.		4  Number of contacts included in (3).		5  Number included under (2) and (3) suffering from				6  Number included under (2) and (3) found to be non-tuberculous.		7  Under observation on 31st December, 1924, pending diagnosis or ceased attendance before completion of diagnosis.		8  Total attendances.	9  Visits to homes by		10  Home consultations.	11  Number referred to affiliated hospital.	12  No. of specimens of sputum examined
	(a) Pulmonary.	(b) Non-pulmonary.	(a) Tuberculosis officer.	(b) Dispensary nurse.																
					Adults.	Child-ren.	Adults.	Child-ren.	Adults.	Child-ren.	Adults.	Child-ren.								
*City of London .. ..	1	1	34	14	15	7	15	—	—	—	16	12	4	3	522	—	601	2	25	45
Battersea .. ..	85	69	417	388	69	202	135	16	11	31	186	312	170	98	4,389	266	6,534	12	81	1,265
Bermondsey .. ..	29	24	500	591	104	390	179	22	20	35	312	545	18	13	5,966	35	4,153	35	97	1,216
Bethnal Green .. ..	9	4	420	229	126	155	107	1	15	23	286	200	21	9	4,448	155	1,655	31	88	706
Camberwell .. ..	37	7	764	783	264	459	229	10	25	40	471	729	76	11	9,575	1,241	9,152	58	296	1,556
Chelsea .. ..	30	33	306	330	43	72	54	4	—	11	238	302	44	46	3,416	70	2,792	—	—	555
Deptford .. ..	11	3	341	292	96	97	101	5	12	21	214	253	25	16	5,537	331	4,571	42	—	709
Finsbury .. ..	18	7	213	148	72	105	81	6	12	13	126	126	12	10	3,569	221	2,807	3	6	356
Fulham .. ..	12	5	517	479	125	239	152	7	17	58	340	399	20	20	5,752	549	4,775	38	22	1,665
Greenwich .. ..	15	15	448	471	248	233	125	20	8	19	317	430	13	17	6,903	135	4,463	27	—	215
Hackney (Vic. Pk. Hpl.) ..	11	3	452	259	166	210	121	3	18	17	293	236	31	6	5,605	176	2,204	28	149	754
" (Metro. Hpl.) ..	13	4	243	146	84	117	90	1	7	15	151	129	8	5	2,826	105	2,410	16	102	417
Hammersmith .. ..	12	10	382	216	71	125	143	9	19	24	211	176	21	17	3,510	167	3,156	28	27	574
Hampstead .. ..	7	7	202	163	75	76	55	1	10	15	135	144	9	10	1,601	56	2,230	12	10	222
Holborn .. ..	3	—	70	38	22	26	29	—	4	1	34	37	6	—	654	11	998	1	46	103
Islington (R.N. Hpl.) ..	3	—	345	154	87	103	133	2	13	14	193	135	9	3	3,345	184	1,154	3	40	315
" (R. Ch. Hpl.) ..	18	11	379	169	115	103	146	4	20	16	209	150	22	10	6,072	325	2,256	3	8	606
Kensington .. ..	10	16	478	388	181	192	113	3	8	33	336	345	31	23	4,701	82	2,426	19	—	591
Lambeth (Cent.) .. ..	34	28	496	183	129	82	205	16	21	28	254	145	50	22	5,291	160	1,787	70	108	809
" (St. Thomas's) ..	7	—	564	337	98	231	149	8	19	15	395	311	8	3	5,084	186	2,406	13	676	461
Lewisham .. ..	9	12	419	268	122	141	161	7	19	21	236	247	12	5	3,327	354	2,887	20	13	183
Paddington (Talbot Rd.) ..	5	15	416	360	172	193	100	3	8	67	293	276	20	29	5,089	468	2,364	24	32	213
" (St. Mary's) ..	13	8	163	106	52	66	38	1	17	13	114	92	7	8	5,017	120	1,477	5	76	115
Poplar .. ..	25	5	812	799	268	358	160	16	18	30	633	725	26	33	6,186	313	8,869	3	34	1,668
St. Marylebone .. ..	4	36	223	114	42	56	76	13	10	20	113	68	28	49	4,010	216	2,470	10	4	316
St. Pancras (Oakley Sq.) ..	52	33	337	219	84	135	155	2	11	10	146	189	77	51	2,905	195	352	3	—	881
" (U.C. Hpl.) ..	6	3	111	46	20	29	49	3	9	3	53	43	6	—	955	8	669	1	73	130
" (Malden Rd.) ..	12	12	78	77	23	53	29	3	5	3	33	60	23	23	873	36	86	1	—	173
Shoreditch .. ..	18	12	402	255	147	196	141	5	6	11	237	243	36	8	6,088	258	2,816	—	7	693
Southwark .. ..	18	4	551	353	129	255	213	14	16	27	278	280	62	36	5,446	64	3,192	2	17	840
Stepney (Green) .. ..	21	32	439	369	264	265	100	30	8	8	325	334	27	29	2,747	111	2,163	11	15	648
" (St. G.-in-the-E.) ..	16	24	425	420	202	300	105	13	7	23	297	372	32	36	2,495	201	1,444	17	17	391
" (Whitechapel) ..	15	10	568	348	343	267	124	11	9	11	431	312	19	24	3,896	176	2,089	1	30	739
Stoke Newington .. ..	4	5	108	68	32	45	44	3	3	8	58	57	7	5	1,430	64	994	4	44	207
Wandsworth .. ..	30	7	849	461	175	208	311	6	29	18	514	435	25	9	6,627	331	4,914	69	33	1,789
Westminster .. ..	2	—	373	230	110	160	218	19	17	15	140	196	—	—	3,292	178	5,954	243	12	232
Woolwich .. ..	26	15	597	518	165	228	150	16	9	19	433	463	31	35	6,160	455	3,464	47	—	515
TOTALS .. ..	641	480	14,442	10,789	4,540	6,279	4,536	303	460	736	9,051	9,508	1,036	722	155,309	8,003	108,734	902	2,188	22,873

\*The scheme (for treatment of tuberculosis) of the Corporation of London includes non-residents employed in the City. The figures shown in this table are for residents only.



## CHAPTER XXII.

REPORT OF THE SCHOOL MEDICAL OFFICER (SIR WILLIAM HAMER)  
FOR THE YEAR 1924.

## INTRODUCTORY NOTE.

The health of the child population in 1924 was almost as good as in 1923, the latter being the record year. It has become apparent for some time past that, the marked decline in mortality at school and pre-school ages, which began with the new century, and which has continued with but little interruption even during the period of the War, is to be regarded as due, in the main, to education—operating directly and indirectly upon the school child, and indirectly upon infant mortality through the influence of parents who had themselves been school children in their time.

Sir John Simon, the first holder of the Central Medical Officership at Whitehall, had already clearly recognised at least thirty-five years ago, that from the health standpoint education is "the one far reaching true reformer." He meant, of course, education in the full sense of the word, not mere reading, writing and arithmetic, "but the education which completes, for self help and for social duty, by including wisdom and goodness among its objects—the education which teaches standards of moral right and wrong, gives height to character and aim, acts orthopaedically on the twisted mind, and applies its own hygienic discipline to the shaking palsy of purposeless life."

Criticism of this claim as to the wide reaching effect of education, so far as the health of children of school age is concerned, has not been forthcoming, and, indeed, cannot be sustained in the face of the evidence from a cloud of witnesses, for example, the headmasters and headmistresses who sent in to Sir Robert Blair their impressions regarding the changes which had taken place within their knowledge in the physical conditions of the children under their charge (*see Annual Report for 1912, vol. IV., chapter XXXIX.*). The existence of a corresponding indirect effect of education (operating through the parents and particularly the mothers) upon infant mortality has, however, been challenged, and the rival claims of the work of infant welfare centres and of health visitors, of improved milk supply, of better standards of living, of improvement of general sanitation, of decline in the birth rate, of ante-natal causes, of increased national sobriety, of wet and cold summers, and finally of lessened horse traffic and tarred roads have all been voiced; indeed, each of these several factors has been deemed, by one and another authority, the prime factor concerned in the decline of infant mortality. The whole question was (as noted last year) examined by Dr. James Wheatley, Medical Officer of Health of Shropshire, at the Annual Meeting of the British Medical Association at Portsmouth in 1923, and he concluded that general education has been the paramount influence, and that it has operated mainly by developing "the sense of responsibility of parents for the health and lives of their children."

The suggestion that increased national sobriety has been the prime factor was, a year later, argued with much persuasiveness by Dr. Gibson, Medical Officer of Health of the North Riding Combined Districts (*Public Health, vol. XXXVII., May, 1924*). Dr. Gibson places at the head of his paper a quotation from Richard Browne, a 17th century writer; "From these three things, Infection, Negligence and Ignorance, the accidents of old age come on." He claims that this quotation "is equally apposite to the accidents of all ages and is a useful mental clue in the labyrinth of causation." His charts strikingly exhibit the fact that (a) death-rates at ages 45-54, (b) infant mortality and (c) the amount of alcohol consumed per head of population, all show a steep decline from 1900 onwards, after having been maintained, though to somewhat varying extents, at a higher level throughout



the 'seventies, 'eighties, and 'nineties. Increased sobriety has beyond all doubt exercised considerable influence—it is unquestionably one of the ways in which education has worked for good. But undue stress must not be laid upon such correspondence as is exhibited between the fall of infant mortality and that in the mortality at ages 45–54. This question of fluctuations of mortality at different ages was touched upon in my Annual Report for 1917 (p. 4). It was there pointed out that graphs showing deviation from an even rate of decline (at ages 0–5 and 35–75) exhibited notable correspondences, in marked contrast with the graph for ages 5–35. In fact, at the extreme ages—in infants and at ages beyond middle life, as distinguished from the intermediate ages—there has been, following upon a comparative absence of decline in the closing years of the last century, a marked fall in the 25 years of the present century. As was noted at the time (*loc. cit.*) no theory purporting “to account for the behaviour of mortality at the youngest ages can be complete which fails to explain the correspondence shown to exist at the other extreme of life.” The statistics certainly justify the statement made in the quotation at the head of Dr. Gibson’s paper, and support the view that education, by removing negligence and ignorance, has materially influenced the mortality at the ages of comparative helplessness, childhood and advanced age.

Sir John Simon, in the final sentences of his “English Sanitary Institutions,” touches again upon the question as to the meaning of “Education in the full sense of the word.” He notes that in the closing years of the nineteenth century the Natural Sciences were “obviously the giants of the hour.” He says, students of Nature are almost “spellbound as they contemplate the stupendous magnitude of new generalisations which are being set before them, with regard to the elementary constitution and the mysterious chemical rhythmicity of all which we call the material universe.” (He is writing in 1890, just after discovery of Mendelejeff’s Periodic Law). But, he adds—turning in thought to the advances made since the far away time of “The stone breaking cave-dweller, whom our present generations call our ancestor”—“I doubt whether modern man be more ahead of him in science than he is ahead of him in conceptions of social duty . . .” “My thankfulness,” he says, “is not more for the great interpreters of Nature than for the men, who in newer and more distinctive senses have been the organisers of help and hope for their kind and have made human sympathy a power in politics.” The thirty-five years which have passed since these words were written have abundantly confirmed their truth.

During the past year 192,885 children in the three statutory age groups were examined by the school doctors in London elementary schools and 74,215 of them were found to require treatment for one or more defects. 1,486 children in the prescribed age groups in special schools were examined and 41,348 children not in the age groups were brought forward for special examination. In addition the school medical staff examined 6,486 candidates for scholarships or for permanent positions in the school service and 25,164 cases in connection with their specific defects in special schools. A detailed analysis by Dr. C. J. Thomas of the results of inspection is given on pp. 68 to 75. Medical Inspection,

The number of children treated under the Council’s scheme was 226,368, the highest number yet recorded. There have been increased attendances in all the departments of the treatment centres except in those dealing with ringworm in which there has been a marked decrease. Medical treatment.

The number of re-inspections was 197,413. The combined results of first and second re-inspections showed that 75.5 per cent. of the children found defective had been dealt with. Re-inspec-  
tions.

The Council, on 22nd July, 1924, approved in principle a programme of educational work for three years from 1st April, 1925. This included the following developments in connection with the school medical service :—(i.) Systematic Three years’  
programme  
of educa-  
tional work.



medical examination of children immediately prior to leaving school ; (ii.) extension of dental treatment and treatment of minor ailments ; (iii.) extension of in-patient treatment for enlarged tonsils and adenoids ; (iv.) further provision for ear disease cases ; (v.) further provision for remedial exercises ; (vi.) further provision for bathing of children at borough council baths and for cleansing of verminous children ; (vii.) further medical services in connection with open-air education, anæmic and tuberculous children, schools for mentally defective, places of detention, classes for backward children, physical education (classes for teachers).

Personal  
hygiene.

2,059,590 examinations were made at rota visits by the school nurses. The percentage of verminous conditions found was 16.1, the lowest figure yet recorded. The number of scabies cases treated was 2,155, the lowest figure recorded since 1914.

Infectious  
diseases.

The waves of prevalence of scarlet fever and diphtheria which had attained maximum height in 1921, showed in the following year marked diminution as regards scarlet fever, and rather less marked diminution in the case of diphtheria ; there was a further considerable fall in 1923, when the cases of scarlet fever amounted to 10,047, and those of diphtheria to 10,301. In 1924, there was a slight rise to 11,350 in scarlet fever and a very slight rise in diphtheria to 10,431. The death-rate from diphtheria in 1924 was very slightly less than in 1923. A report was prepared by Dr. J. Graham Forbes in 1924, detailing the action taken in America and elsewhere in recent years with regards to toxin antitoxin protective inoculation, see p. 98.

In London an outbreak of measles matured in the early months of 1924, attaining its maximum in March. Whooping cough was beginning to show increased prevalence at the close of 1924. Influenza reached the crest of a wave, as estimated by the number of deaths, in the seventh week of 1924, and towards the end of the year was again manifesting signs of increasing prevalence. The striking feature of 1924 was, however, the behaviour of encephalitis lethargica. This disease was for the first time made notifiable as from 1st January, 1919, and between that date and the end of 1924, 1,261 cases had been notified, of which 322 were children of school age (3-14). The heaviest incidence of the disease was in 1924, when 610 cases were notified, as compared with 86, 149, 243, 72 and 101, in the five preceding years.

The Ministry of Health's circular of 1st December, 1924, sets out the arrangements now in force for the early diagnosis and treatment in London of paralysis, following attacks of poliomyelitis, in children. The question has also been raised with the Ministry by the Council and the Metropolitan Asylums Board as to similar arrangements being made for the treatment of children suffering from the after results of encephalitis lethargica. These difficult cases have been specially studied by Dr. Shrubsall, and the subject is discussed on p. 109. Dr. Shrubsall presided over the section of anthropology (H), at the Toronto meeting of the British Association in 1924, and he was asked to make his visit to America the occasion for obtaining particulars concerning procedure in connection with the newly established Juvenile Courts in Canada and the United States. This report appears on p. 112.

#### *Results of Medical Inspections.*

Routine  
inspections.

The number of children inspected in the three statutory age groups was 192,885. This was 4,442 fewer than in 1923. The entrant infants numbered 65,231, the eight-year old group 62,318 and the twelve-year old group 65,336. The lowered birth rate during the War accounted, of course, for the somewhat smaller numbers examined. In addition, 1,486 children in special schools were examined in the eight- and twelve-year old groups.

Special  
inspections.

In addition, 63,861 children not in the age groups came under inspection by the school doctors for various reasons, either brought forward by head teachers



and care committees for advice, or seen in connection with camp school nominations, school journeys or general surveys.

The number of children in the age groups found to be suffering from ailments for which medical treatment was considered necessary was 74,215, being 38.5 per cent., compared with 36.7 per cent. in 1923. An increase was especially noted in the number of children with unhealthy throat conditions (tonsils and adenoids). Defects found.

Parents rarely object to medical inspection. Out of 193,024 children to be inspected the parents objected in only 148 instances. A letter explaining the objects of medical inspection and inviting the parents' co-operation was sent in each instance. In response nine objections were withdrawn, and in twelve others a report was submitted on the official record card by the private medical attendant. Parents' objections.

A parent attended the inspection in 69.4 per cent. of the routine inspections. This is an increase of two per cent. on 1923. The greater interest shown by the parents is very gratifying and enables much more satisfactory work to be done. The only group where satisfactory numbers of parents fail to attend is that of the elder boys, and it is suspected that it is owing to the influence of the boys themselves that this failure occurs. The elementary school boy of 12 dislikes any suggestion of "apron strings." Attendance of parents.

There is again a slight increase in the percentage of children classed as below normal in nutrition. About 12,000 children in the age groups were placed in this category. This is 6.2 per cent., compared with 5.9 per cent. in 1923, and 5.7 per cent. in 1922. In the year before the War the percentage of children in this group was 12.8. The figures correspond with the number of children who are fed in school. There is reason to believe that the prolonged periods of unemployment would have produced a disastrous effect upon the nutritional condition of the children were it not for the vigilance of the head teachers and the school care committees in detecting at an early period cases of necessity and bringing into play the remedial agencies which fortunately exist to an extent undreamt of in the years before the War. Nutrition.

Much greater use is made of the weighing machines than formerly. During the last three or four years arrangements have been made for the periodic measurement of all children under observation for malnutrition to whom milk or cod liver oil is administered in school. Another group of children systematically weighed at regular intervals includes those under special following up in association with the tuberculosis dispensaries, either on account of suspicion of suffering from tuberculosis themselves or because they come from homes in which tuberculous relatives are living. Physical measurements.

The children in the age groups are also weighed and measured. An opportunity this year has been taken to extract the averages of the intermediate and leaver groups for 1923.

	Boys.			Girls.		
	Number.	Average height in centimetres.	Average weight in kilograms.	Number.	Average height in centimetres.	Average weight in kilograms.
<i>Intermediate Group (born in 1915).</i>						
1923... ..	31,089	119.15	22.58	31,184	119.00	21.94
Pre-war standard ...		117.5	22.5		117.00	21.73
<i>Leaver Group (born in 1911).</i>						
1923... ..	29,528	138.63	32.65	29,636	140.68	33.04
Pre-war standard ...		137.31	31.73		138.96	32.3

Before the War a curve of heights and weights had been worked out as a result of measurements taken in the schools. The average age of the intermediate group measured in 1923, was 7 years and 10 months and the average age of the



older group was 12 years and two and a half months. In the table the heights and weights of the two groups ascertained in 1923, are compared with the pre-war standards on the same points of the curve.

In making comparisons several pitfalls have to be avoided. It will be noticed that the weights of the intermediate group are practically identical with those of the previous standard, but the weight of the twelve-year olds are about a kilogram above the previous standard. In this country children of a particular age weighed in the autumn are heavier than children of identical age weighed in the spring. Children grow fat in the autumn and grow thin in the spring. The difference in the weights is therefore likely to be due merely to a seasonal variation. On the other hand, both groups of children show an increase in height when compared with the standard, amounting to between one and two centimetres. The difference is most marked in the eight-year old group. Without laying undue stress on these results it nevertheless appears that there has been a slight improvement in physique as shown by physical measurements. That the height attained by a given generation can be affected by the conditions under which childhood is passed is well known to physicians. The condition known as rickets profoundly modifies growth and when widely prevalent this disease undoubtedly leads to much dwarfing. As all are agreed that rickets is much less prevalent now in London than it was, it would not be surprising to find an improvement in the height of the children affecting the eight-year old children, rather more than the twelve-year old children owing to this factor alone.

As the following table shows, the average physical measurements of children in schools for the mentally defective fall very much below those of normal children. Thus do physical and mental degeneration go hand in hand. The heights are shown in centimetres and the weights in kilograms and are based on information obtained in 1923.

Type of child.	8-year-old group.				12-year-old group.			
	Boys.		Girls.		Boys.		Girls.	
	Height.	Weight.	Height.	Weight.	Height.	Weight.	Height.	Weight.
Normal ... ..	119.15	22.58	119.0	21.94	138.63	32.65	140.68	33.04
Mentally Defective	116.0	21.8	116.2	21.8	134.9	30.27	134.2	29.72

#### Cleanliness.

The devoted work of the school nursing staff, supported everywhere by the influence of the head teachers, has literally revolutionised the standard of personal cleanliness attained by elementary school children in London. Year by year steady pressure maintained in this respect has brought about continuous improvement. Last year it was noted that the proportion of older girls with hair completely free from all traces of verminous infestation had for the first time reached the 80 per cent. level. This year the improvement has continued so that 82.5 per cent. of older girls were found in this desirable condition.

It is worth while setting out the figures of this progressive improvement. When doctors and nurses first began to visit the elementary schools in 1902 and the succeeding years the conditions found were indescribable. In many schools scarcely a girl was free from infestation, and vermin could be seen dropping from the heads of the older girls as they stooped over their lessons. In 1913 already a considerable amount of personal hygiene instruction and energetic action by the school medical staff had effected great improvement. But in that year, which was the first year in which comparative figures based upon complete medical surveys in the schools were obtained, only 67.2 per cent. of the older girls were free from verminous heads. In 1914 the figure was 68.8 per cent., in 1915, 72.6. In 1916 and 1917 the percentage was 70.8 and 70.2. These of course, were very difficult years when many of the experienced officers were on war service. In 1918 the



percentage again improved to 72·8. In 1919 it was raised to 74, in 1920 to 75·8. In 1921 the methods of dealing with the evil were fundamentally altered owing to the discovery of new methods of treatment. During the period of change there was a slight set back this year and the figure fell back to 73·2 per cent. Once the new methods were working smoothly, however, very definite and encouraging progress was recorded, in 1922 the percentage rose to 77·5, in 1923 to 80·5 and in the present year to 82·5. The great improvement in the personal hygiene of the children makes it possible for better work to be done in the schools, improves the health of the children and leads to an added sense of personal respect the value of which cannot be overestimated. The standard of cleanliness expected in London is very high and rigorous, for a single nit found in a girl's head removes her from the class of clean children. But the cases classed as unsatisfactory, in addition to being far less numerous, are also much less severe than formerly.

Whereas in 1913, 2·1 per cent. of the girls in elementary schools in London were found to be infested with body vermin, in 1924 only 0·1 per cent. were recorded, that is while 2,880 girls were found with body vermin in 1913 only 84 were found in 1924 out of 63,176 examined.

Although conditions have greatly improved as a result of dental inspection in the schools and the establishment of treatment centres by the Council, there still remains a very serious amount of dental decay. In 1924, 37·9 per cent. of the children were returned by the school doctors as suffering from obvious dental decay; in 1923, the proportion was 39·6 per cent. (the school dentist examining the teeth with mirror and probe, of course, finds higher percentages). There was no improvement in the condition of the teeth of entrant infants. As compared with 1923, the improvement in 1924 was found in the intermediate age group; the proportion whose teeth were passed as satisfactory being 58 per cent. as compared with 54 per cent. in 1923. The percentage with dental decay noted in the leaver group is only slightly better this year than last. The improvement in the eight-year old group must be ascribed to the institution since the War, of further facilities for treatment and increase in the number of school dentists. The new centres deal in their first years mainly with children aged 6 to 8, and the very definite improvement in the condition of the teeth of the children aged 8 recorded this year will be followed in due time by still further improvement in that of leaver children, which now stands at 18 per cent. better than in 1913.

During the year 8,944 children were referred for treatment for enlarged tonsils and adenoid vegetations of the throat. This was an increase over 1923 of 1·83 per cent. The increase in the number referred for operation put a considerable strain upon the treatment centres. The majority of cases are not referred for treatment, as all the slighter cases in which no complication has set in are noted for observation only. The total cases found increased by 2·12 per cent., so that it seems that the increase in the number referred for operation is not to be explained by an alteration in standard but to an actual increase in the number of cases found, and may be explained by climatic conditions and increased incidence of catarrhal conditions and of infectious diseases generally. The likelihood of the latter hypothesis is strengthened by the fact that the increased incidence falls much the most heavily upon the youngest children. It will be remembered that in the latter part of 1923 and in the early months of 1924, there was an exceptionally heavy prevalence of measles which cannot fail to have left an unusual amount of catarrh amongst the younger school children.

Otorrhœa (or running ears) was found in 2,554 children or 1·32 per cent. This is identical with the percentage found in 1923; considering the increase in unhealthy throat conditions, which are usually associated with ear discharge, it is a matter for congratulation that no increase in the number suffering from the latter condition was found.



Defective hearing was noted in 1,136 children (0·59 per cent.). The Council's policy of placing children suffering from partial deafness in "hard of hearing classes" reduces of course, the number of children with defective hearing found in the older age groups at statutory inspections of elementary school children. The proportion of children found with defective hearing in 1923 was 0·7 per cent.

Enlarged glands.

Enlarged glands of the neck were noted in 8,150 children (4·23 per cent.). Although there was no increase in the amount of otorrhœa, this other condition, which is also closely associated with unhealthy throat conditions, showed an increase for in 1923 the proportion was 3·9 per cent.

Visual acuity.

53·1 per cent. of eight-year old boys and 56·2 per cent. of eight-year old girls failed to pass the test for normal vision. In the twelve-year old group 41·9 per cent. of boys and 46 per cent. of girls failed. The excessive incidence of defective vision upon girls in comparison with boys is, therefore, still marked. The increase in the more serious degrees of defective vision between the ages of 8 and 12, which used to be so marked is now less apparent, although part of the improvement is illusory, owing to the fact that many children with higher degrees of defect are now in myope classes who would otherwise be examined in the age groups in the elementary school classes and, owing to the improvement in treatment facilities and following up, more of the older children are wearing glasses which correct vision and enable them to pass the test. Neither of these causes, however, would seem to explain any alteration in the comparative incidence of severer forms of visual defect upon boys and girls. The only explanation which could account for the much greater prevalence of defective vision amongst the girls, formerly so apparent, was the difference in the mode of life of children of the two sexes, especially the employment of the girls in indoor occupations which involved much eye-strain. Year after year in these reports attention has been drawn to this. It may, therefore, be possible that the steady diminution of the excess upon girls which has occurred during the past few years is due to improved understanding and care in this respect. In the past year the percentage of the girls aged 12, with more serious visual defect ( $v = 6/12$  and worse) is only 1·5 greater than that of the boys. Comparison of the figures for the first two and last two years of the series for which we possess comparative figures shows the relative improvement of the position so far as the girls are concerned. The table sets out the percentage of children aged 12 with vision  $6/12$  or worse.

		1913.	1914.	1923.	1924.
Boys	...	22·7	20·9	19·7	20·1
Girls	...	25·7	23·6	21·5	21·6
Difference	...	3·0	2·7	1·8	1·5

Vision in Jewish schools.

The returns showed surprising differences in visual acuity between the various schools in the Whitechapel area, the returns from non-Jewish schools following closely the average returns from London schools generally, but the Jewish schools showing an abnormally heavy incidence of defects. The following are the results of the test during 1924 in the Whitechapel schools:—

1924.	Leavers.							
	Boys.				Girls.			
	No.	6/6	6/9	6/12 or worse.	No.	6/6	6/9	6/12 or worse.
17 schools attended chiefly by Jewish children ...	557	145 26·0	169 30·3	243 43·7	455	133 29·2	160 35·2	162 35·6
10 schools attended by other than Jewish children ...	215	138 64·2	32 14·9	45 20·9	222	113 50·9	56 25·2	53 23·9



In considering this table two things must be borne in mind. In the first place the non-Jewish schools on the whole are worse lighted and less hygienic generally than the Jewish schools, yet the incidence of visual defect, and particularly the graver forms of visual defect, is immensely greater in the Jewish children. In the second place, every survey hitherto made of the vision of school children has shown the incidence of visual defect to be higher in girls than in boys. This holds in the Whitechapel area in the case of the non-Jewish children, but in the Jewish schools the practically universal experience is reversed and there is a markedly greater preponderance of visual defect and especially of graver forms on boys as compared with girls.

Attention has been drawn from time to time to the effect upon boys in Jewish schools of the long hours in the evening spent in studying Hebrew. The returns here given seem not only to show that the long hours of evening study intensify visual defect in Jewish boys but also to support the "hot-bed theory," that excessive use of the eyes in childhood, especially under unhygienic conditions is a powerful cause generally of deterioration of vision. It thus clinches the argument consistently maintained in these reports that the greater incidence in general of visual defect upon girls is due to the special strain placed upon their eyes by fine sewing and other indoor occupations from which boys in general escape.

Much attention is being paid to the incidence of rheumatic manifestations, in school children in London at the present time, by the voluntary organisations concerned in the case of invalid children, by the physicians at the great hospitals and by the Government research departments. Special arrangements have been made for the following-up of children on the return to school from illness of a rheumatic nature and the help of the Council's care organisation has been widely sought and freely given. The serious manifestations of rheumatism in children of school age fall not so much upon the joints and skeletal structures as upon the heart and nervous system. 5,384 children in the age groups were recorded as suffering from heart trouble. This number is 2.79 per cent. of those examined, compared with 2.6 per cent. in 1923, 2.8 in 1922, 3.7 in 1921, and 4.1 per cent. in 1920. Heart trouble still falls most heavily upon girls of 12 amongst whom heart defects was noted in 3.78 per cent., as compared with 2.81 per cent. in boys of the same age. Heart defects and anæmia.

Under the conditions in which children must be inspected, it is often not possible to differentiate between what used to be called organic disease and functional disease; indeed, most of the observers do not attempt to do so. Moreover, the theoretical distinctions are tending to disappear and more attention is paid to the behaviour of the heart under strain, such as abnormal increase in rapidity during exercise and persistence of the disturbed condition in the resting period after exercise, than to the presence of abnormal sounds on auscultation during rest. In about one-sixth of the returns a distinction was attempted between functional and organic disease and in these cases about twice as many functional as organic defects were returned.

Anæmia was recorded in 5,767 cases, this being 2.99 per cent., compared with 2.6 per cent. in 1923, 3 per cent. in 1922 and 3.7 per cent. in 1921.

It was a year of unusual absence of sunshine and no one would have been surprised if the increase in anæmia over the amount recorded in 1923 had been greater than the figures show. As with heart disease, anæmia continues to fall most heavily upon the twelve-year old girls of whom 3.39 per cent. were returned as anæmic.

6,510 children were recorded with lung disease other than tuberculosis, of whom the largest proportion were entrant infants suffering from bronchitic trouble. Lung disease. The proportion found is the same as in 1923.



**Tuberculosis.** The number of children in the age groups found to be suffering from tuberculosis remains exceedingly low and is in itself a testimony to the completeness of the arrangements for dealing with tuberculosis. 139 children were found to be suffering from pulmonary tuberculosis, compared with 175 children in 1923, and 158 children were found with other tuberculous diseases compared with 142 in the previous year.

**Nervous diseases.** The manifestations of nervous diseases such as fits, choreic twitchings and paralysis are so evident that it is not to be wondered at that such conditions are found at special inspections rather than at the inspection of routine age groups. 112 cases of epilepsy, 169 of chorea and 190 of paralysis were returned, while other unspecified nervous conditions were found in 1,080 children (.56 per cent.).

**Deformities.** Rickets was reported in 1,786 cases (.93 per cent.) compared with 1,975 (1 per cent.) in 1923; the heaviest incidence being as usual in entrant boy infants. On the other hand, spinal deformities continue to be heaviest by far amongst older girls of whom 1.21 per cent. suffered from these conditions. The total number of children suffering from spinal deformities was 978 (.51 per cent.). Other deformities were found in 1,432 children (.74 per cent.).

**Skin diseases.** As the school nurses see every child in the schools at least three times a year, whereas the routine medical inspections take place only three times during the child's school life, it is not surprising that the grosser forms of skin diseases are seldom met with at routine inspections. Skin diseases were found in 2,144 cases (1.06 per cent.). As was to be expected, a larger proportion was found amongst entrant infants than in the older age groups.

**External eye diseases.** 5,207 cases of external eye disease were found, *i.e.*, in 2.7 per cent., of the children examined in the age groups, an identical proportion with that of 1923. Again, as is to be expected, the heaviest incidence is on the entrant infants, amongst whom 3.7 per cent. are found with external eye diseases. This category includes not only such inflammatory conditions as conjunctivitis, but also conditions such as squint. Out of the 5,207 cases noted above 1,859 were found to be cases of squint. Of the inflammatory conditions blepharitis accounted for the largest number, conjunctivitis being second, while corneal ulceration was so rare as to be practically negligible.

**General résumé of the results of medical inspections.** The routine inspections of children in the age groups give a means of measuring the influence of social conditions upon the general condition of the school children. They do not, however, reveal the total amount of defect and disability in the child population of school age. Over ten per cent. of the children of school age are not in attendance at school owing largely to ill-health. Gross departures from health are detected by the nurses at their frequent rota visits to the schools, and the vigilance of teachers and care committee workers leads to the detection of a large amount of disability which is dealt with at once, only cases of doubt being reserved for the school doctor's opinion.

The returns for 1924 show that, in all those conditions which can be ameliorated by the work of the school medical service, the children continue to improve, progress has been noted in regard to cleanliness, the condition of the teeth, and the reduction of the excessive incidence of visual defect upon the older girls. On the other hand, there has been an adverse movement in certain general conditions and special diseases dependent upon environmental conditions over which the school has no control.

The general nutritional condition of the children has during the past three years shown a slight falling off, which is not to be wondered at when the extent of unemployment is considered. Looking at the comparison of the figures during the past year with those of the pre-war period it is clear that but for the ameliorative efforts at work the condition of the children in this respect must have been far



worse than, in effect, it is. The greater prevalence of nose and throat diseases and the slight increase in cases of anæmia are explained by climatic conditions and the effects of the periodical return of certain infectious diseases.

41,348 children were brought before the school doctors for individual examination as special cases. These included children found ailing by school nurses, children not attending school brought up by the attendance officers, and children upon whom care committees or head teachers required the doctor's advice, and in addition to these, 22,513 children were seen in connection with nominations for camp schools, open-air classes, etc. Amongst these 63,861 there were 1,073 children suffering from malnutrition, 1,747 from skin diseases, 3,840 from defective vision, 576 from squint, 1,104 with external eye diseases, 1,624 with deafness or ear disease, 4,031 with diseases of throat and nose, 498 with enlarged cervical glands, 3,738 with dental trouble, 1,484 with heart trouble, 2,572 with anæmia, 1,018 with bronchitis, 647 with other lung diseases (non-tuberculous), 371 with pulmonary tuberculosis definite or suspected, 223 with other tuberculous diseases, 1,112 with nervous diseases and 773 with deformities of various kinds. Although the number of children was only a third of those seen at routine inspections, it is noteworthy that the numbers of children found at special inspections suffering from corneal ulceration, scabies, tuberculosis and nervous diseases were very much higher than the numbers found amongst the children in the routine age group inspections. In connection with infectious disease investigations 46,215 children were seen during the year.

Special  
inspections.

9,994 students and pupils were inspected in training colleges, secondary schools and other places for higher education. It would not be helpful to set out in detail the disabilities and defects found amongst them as their ages are spread over a very wide range and their conditions vary greatly. It may be noted, however, that 1,588 were found to be wearing spectacles, 1,228 presented some spinal aberration and 971 were recorded as flat footed. The round shouldered, spectacled person with ungainly walk, the traditional student type, is therefore still too abundant in our schools and colleges in spite of modern ideals of physical culture.

Inspections  
of secondary  
scholars.

All pupils in secondary schools were inspected in detail at the ages of 12 and 15. There were 1,675 girls in secondary schools at the age of 12, and occasion may be taken here to compare the results of their inspection with those of girls of the same age in elementary schools, the corresponding percentages in the elementary school children being placed in brackets after those of the secondary school girls. The percentage of secondary school girls with sound teeth was 76.3 (70.5), with less than four decayed teeth 22.5 (26.9), with 4 or more decayed teeth 1.3 (2.6). Inspection of the hair and scalp showed that there were 97.6 per cent. satisfactory (82.5), 2.1 per cent. with nits (16.3), and 0.3 per cent. verminous (1.2). Normal vision was found in the secondary school girls in 65.9 per cent. (54.0), slight defect of vision in 16.3 per cent. (24.4) and serious defect in 17.8 per cent. (21.6), 15.5 per cent. were wearing glasses. Ear diseases were found in 0.4 per cent. (1.6), defective hearing in 0.7 per cent. (0.6), cardiac defects in 4.6 per cent. (3.78), anæmia in 4.3 per cent. (3.39).

### *Special Enquiries.*

At the request of Sir George Newman the inspecting staff were asked in the first two terms of the year to pay special attention to the question of congenital syphilis and a weekly return of all cases seen, definite or suspected, was sent in

Congenital  
syphilis.



by each of the school doctors. The following table shows the number of cases reported :—

	Entrants.	8-year old.	12-year old.	Re-inspection.	Specials.
Examined ... ..	37,469	52,538	25,090	101,570	41,200
Diagnosed as suffering from or having been affected by congenital syphilis ... ..	3	10	3	7	23
Suspected but not definitely diagnosed as suffering from or having been affected by congenital syphilis ... ..	10	28	22	17	22
Suffering from acquired syphilis... ..	—	—	—	—	—
Total ... ..	13	38	25	24	45
Children (included in above) attending or having attended a V.D. treatment centre ...	5	18	6	9	14
Children referred to V.D. treatment centre ...	2	7	1	4	2

The table refers only to children inspected in connection with elementary schools. Any comparison with other areas should take into account the fact that in London there is a very complete system of special schools and that the proportion of children in special schools suffering from the effect of congenital syphilis is much higher than that in the elementary schools.

Enquiries were made in special schools also and the following numbers of additional children were found (January—July, 1924) :—

	M.D.	P.D.	Blind and Myope.	Deaf.	Out of school cases and open-air schools.	Total.
Examined ... ..	5,053	6,197	About 650	About 250	—	—
Definite C.S. ... ..	20	8	32	9	3	72
Suspected C.S. ... ..	15	3	1	6	3	28
Total ... ..	35	11	33	15	6	100

In order that some criterion should be established whereby it could be deduced what proportion of children "suspected" to be suffering from congenital syphilis were in fact, the victims of the disease, a special arrangement was made with the London Hospital for a specialist report upon all such children as were not already under treatment. I am indebted to the Secretary and to Dr. Miller, who furnished the specialist report for their invaluable assistance in this respect. Of 27 suspected cases in the eastern division, referred under this arrangement, the diagnosis was confirmed in 9 instances and in 9 others it was stated that there was a probability that the conditions noted were due to the disease, in 2 cases no conclusion could be arrived at and in 7 the result was definitely negative.

No case of acquired syphilis in a school child was reported during the year. In regard to treatment it is to be noted that many of the cases were attending special departments of general hospitals or special hospitals for ophthalmic or aural conditions and there getting treatment for the disease. There is in London not the least difficulty in obtaining satisfactory treatment for the condition nor is there the slightest evidence that any child really needing treatment is not obtaining it.

An analysis of the symptoms recorded was made in respect to the 245 cases reported with the following results (many children presenting two or more symptoms) :—



Symptoms.	Elementary schools.		M.D. and P.D. schools.		Blind and Myope schools.		Deaf schools.		Open-air school and out of school cases.	
	D.*	S.†	D.	S.	D.	S.	D.	S.	D.	S.
Interstitial keratitis ...	23	11	11	2	25	—	8	1	2	2
Hutchinson teeth ...	21	46	19	9	22	1	8	2	3	1
Skull or nasal depression ...	11	50	11	15	5	1	4	2	1	—
Tibia nodes ...	1	—	2	2	—	—	—	—	—	—
Skin (Rhagades, etc.)	2	12	—	2	1	—	—	—	—	—
Iritis, corneal opacity, etc. ...	3	5	3	1	4	—	—	1	—	1
Deafness ...	4	7	1	1	1	—	—	—	—	—
Snuffles or sloughing of nose ...	4	5	1	1	—	—	—	—	—	—
Cleft palate, glossitis ...	—	2	—	—	—	—	—	—	—	—
History of treatment or family history ...	13	18	2	2	1	—	—	1	—	—

\* D = Definite.

† S = Suspected cases.

Dr. Nairn Dobbie has kept careful notes of all children presenting heart symptoms met with at his school inspections and has reported as follows:—

Dr. Dobbie's  
report on  
heart disease.

“Recognising that rheumatism in its various manifestations plays an important part in injuriously affecting the heart in school children, a record was kept of all children showing cardiac abnormalities and their past histories were investigated. About 10,000 children were seen as entrants and in the age groups examined at ordinary routine inspections.

*Definite* evidence of acquired carditis in children under 5 is comparatively rare, 1 in 1,000—the percentage gradually increases with the age—at 7 years the percentage was .25 (5 in 2,000), and at 12 years .7 (36 in 5,000). These figures are probably a low estimate of the condition amongst the poorer school population as many of the worst cases either do not attend school or are early admitted to special P.D. schools and so do not appear at routine examinations.

In 90 per cent. of all these cases of acquired structural alteration of the heart—definitely present—there was a history of rheumatic fever, definite chorea, recurrent pains and repeated tonsilitis either singly or combined. In some areas rheumatism appeared to be endemic and the number of cardiopaths whose parents gave a rheumatic history rather indicates a familial susceptibility to the virus. In the remaining 10 per cent., the only illnesses recorded were scarlet fever, diphtheria, influenza, measles or whooping cough. In these acute illnesses the infection is short-lived and not recurrent while the resistance and recuperative powers of the young heart are very great.

The virus of rheumatism has a selective action on the heart. The percentage of children showing definite cardiac involvement is greater in those with a history of two or more attacks of rheumatic fever, viz., 30 per cent. (14 out of 40). In 83 cases having had one attack of rheumatic fever, followed by “growing pains,” there were 15 with acquired valvular disease of the heart (18 per cent.) and amongst 211 children who had suffered from recurrent tonsilitis, 12 were definite cardiopaths (5.7 per cent.). Choreia is a rheumatic manifestation in those of the unstable nervous type. The percentage of choreic cases resulting in developed heart disease was not obtained, but 35 cases of valvular disease gave a history of chorea, though many of these also gave a history of either rheumatic fever, tonsilitis or pains.

The time elapsing between the initial onset of rheumatic fever and definite recognisable signs of carditis varies from under a year to many years, excluding, of course, cases of acute pericarditis and acute malignant endocarditis, which



on account of their acute nature scarcely come under the purview of the school doctor.

The main object of the investigation was to ascertain the early signs of cardiac implication. A frank history of rheumatism in any of its variations should mark out that child for special and repeated examination. The appearance of the child is important—whether pale, apathetic and off his food, easily fatigued, occasional rises of temperature, fleeting erythematoid rashes, indefinite pains and aches, hyperæsthetic patches on the skin, clubbing of finger tips, enlarged and tender spleen, etc. The myocardium is early involved and so there is an alteration of the first sound, usually a lengthening and roughening, the pitch and intensity is lowered, sometimes followed by a variable systolic murmur—this early myocarditis results in a lowering of the power of the muscle which is compensated by an increase in cardiac rate—so that a child with a clear rheumatic history, with an altered cardiac “tone” and a persisting rate of over 100, unaltered by lying down and markedly increased by exercise and not coming down to the pre-exercise rate after 2 minutes rest, requires careful and repeated examination. Functional tachycardias, common in nervous children, as is also adolescent irregularity (sinus arrhythmia), alter the pulse rate on lying down or on resting for a few minutes.

The exercise adopted in children under 12 was hopping 4 or 5 inches from the ground 20 times on each foot and in those over 12 stepping up and down the seat of an ordinary chair 20 times—the pulse rate being taken before the exercise, immediately after and again 2 minutes after ceasing the exercise. This exercise is a useful guide to the present efficiency of the heart and also forms a necessary guide for future reference.

Many children do not present definite valvular disease until after school life, until in fact the damaged valves have had time to undergo fibrosis, and so it is well to search for the early cases and get them under the necessary treatment.

Uncomplicated systolic murmurs do not usually call for much anxiety; diastolic murmurs are invariably serious and thrills are only present in affected hearts; enlargement is always a sign of structural alteration.

So far as congenital abnormalities are concerned, if the heart had been able to carry on its work through the period of “greatest momentum of growth,” without retarding the physical development and without producing any of the signs of inefficiency, then the presence of such abnormality is in all likelihood not serious, but on the other hand, if stunting of growth is present, dyspnoea, pallor or cyanosis, venous pulsation with enlarged liver, congestion of the bases of the lungs or other signs of an embarrassed heart, then in all probability this child will not attain adult age.”

Dr. McVail's  
observations  
on children  
prematurely  
born.

Dr. Elizabeth M. McVail has followed up the school history of children with a history obtained from the mothers of premature birth. Out of 1,306 births of which particulars were obtained, 65, or approximately 5 per cent., were premature, 23 of the children died under the age of one, giving a mortality very similar to that recorded for London in the Registrar-General's returns. No survival was recorded of children born at 6 months, 12 out of 23 died who were born at the 7th month, and 9 out of 40 born at the 8th month. In addition 5 children died after the first year and before school age, and one child died after arriving at school age.

Although the infant mortality of the 7th month babies is more than twice that of the 8th month babies, Dr. McVail found upon examination, at school, of 56 children who had been prematurely born, that there was no appreciable difference in physique between children born at 7 months and those born at 8 months. Physical measurements were taken in all cases. The general conclusion she has been able to arrive at is that premature children require greater care not only during early, but also in later, infancy, but that if they survive to school age there is no very great deviation from the normal in regard either to risk of death or to general physique. Of pre-



mature children in the elementary schools 58·3 per cent. were below normal weight, 13·9 per cent. at normal weight for age and 27·8 per cent. above normal weight. In 72·2 per cent. the weight is proportionately less than the height, 8·3 per cent. have height and weight normally proportionate, and in 19·5 per cent. the weight was proportionately greater than the height.

Several requests have been made by various bodies and institutions for facilities for carrying out enquiries or researches of a medical character in the schools, and reference is made in the succeeding paragraphs to some of the more important of these.

Dr. Percy Stocks, medical officer to the department of Applied Statistics of the University of London, University College, investigated blood pressure in early life. His monograph on the subject was published as one of the Drapers' Company Research Memoirs. 1,633 subjects were examined, and these included 540 boys in the Council's elementary schools and 560 in the Council's secondary schools. A continuous series of observations of blood pressure covering the period of adolescence was obtained and continuous age curves for males for the first time established. The following are some of his conclusions :—

Dr. Percy Stocks' investigations on blood pressure.

The commonly accepted rule that blood pressure rises uniformly throughout life is not supported. Up to 11 years the mean systolic pressure rises uniformly; during adolescence the gradient is temporarily increased and the blood pressure reaches a uniform level at the 18th year, showing no further rise beyond this up to the age of 35 to 40. The diastolic pressure rises uniformly until adolescence, then more slowly to 17, when it commences to rise rapidly to a maximum about 20 after which it falls slightly to 35. Pulse pressure rises uniformly to 15, but during adolescence rises to a considerable maximum at about 16 to 18, falls to its original level about 20, and afterwards slowly increases to 40.

During adolescence, therefore, and particularly about the age of 16 or 17, the heart in boys is performing more work in comparison with its weight than at any preceding or subsequent period of life up to 40. Regular physical exercise tends to keep the diastolic pressure at a lower level by reducing peripheral resistance, and thereby renders the heart more efficient. In schools where a strict discipline is maintained the average systolic and pulse pressure of the boys are appreciably higher than in the more easy-going schools, the pulse rate being reduced in compensation; to the healthy boy this is an advantage, but to delicate youths harm is likely to accrue from the keying up of the blood pressure, and a selection of type of school must be borne in mind in such cases.

At the request of the Medical Research Council permission was given to Dr. Helen Ashton and Dr. Gwenvron Mary Griffiths, working under the direction of Mr. Cleminson, the aural surgeon at the Evelina Hospital, to follow up in the schools children who had been operated upon for tonsils and adenoids at that Hospital. Only a short notice can be given, as nothing has yet been published by the authors. 500 children who had been operated upon between March, 1920, and March, 1922, were followed up, and 500 control children who had been recommended for operation but had failed to follow the advice given. Attention was especially given to the permanent results of the operation on the actual disease, to the size of glands in the neck in relation to the disease and to operation, to the relief of symptoms, to the incidence of mastoid operations and to the incidence of rheumatic affections. The general results of the investigation are as follows:—

Inquiry by Drs. Ashton and Griffiths as to results of operations on tonsils and adenoids.

(i.) Complete removal of all tonsillar tissue is desirable, as fragmentary remains grow again in the majority of cases in which they are left.

(ii.) The removal of tonsils and adenoids is followed by definite improvement in the case of glands in the neck.

(iii.) There is no constant relation between the size of the tonsils and the mass of cervical glands.



(iv.) There is definite improvement in operated cases, compared with those not operated upon, in all the general symptoms, including mouth breathing, otorrhoea, deafness and liability to colds.

(v.) Children with rheumatic tendencies were slightly benefited by operation, but showed an increased liability in comparison with non-rheumatic children to growth and re-infection of tonsillar remains where present.

Dental decay.

Other enquiries have been carried out under the general supervision of the school medical officer at the request of the Dental Decay Committee. Dr. Norman Ainsworth inspected the children in several schools, and the result of his researches is to be published shortly by the Medical Research Council.

#### *Following up and Re-inspections.*

The immense amount of following-up resulting from the inspections in the schools will be appreciated when the attendances at the treatment centres are considered. Appointments were made for 146,394 children for dental treatment, 1,431,850 attendances were made at minor ailment centres, 12,980 appointments were kept at aural sessions and 32,747 at refraction sessions. In addition, large numbers received attention at general and special hospitals, and were convalescent in the country with the aid of the Invalid Children's Aid Association and other Organisations.

The transference of children to special schools for the physically defective, for the mentally defective, for the blind and the partially blind, for the deaf and for the hard of hearing, attendance of children in stammering classes, at open-air schools, playground classes, the provision of spectacles, administration of milk and cod liver oil at school, attendance at tuberculosis dispensaries, all necessitate a volume of work which cannot be estimated fully. The preparation of children for visits to the convalescent camp schools alone necessitates a very large amount of clerical labour and visitation to homes. It may be pointed out that 16,296 boys have been sent to the King's Canadian Camp School at Bushy Park since it was opened in 1919.

A very large share of the work of following-up falls upon the voluntary school care committees. The annual reports of the Local Association of Care Committees give important indications of the progress of school medical work and of the difficulties experienced in carrying out the work. The Hackney and Shoreditch Associations remark that the number of free dinner cases does not differ materially from last year, though in Hackney the number of free milk meals is about 200, and in Shoreditch 470 a week in excess of last year's figure. In the opinion of the Association the increase is due to the greater care which is being given to the detection of really needy cases. The Hackney Association think the following-up results are extremely satisfactory, but they press the desirableness of providing additional accommodation for treatment so as to permit of the retention of children at a centre for 24 hours after an operation for tonsils and adenoids. The Marylebone Local Association state that a larger number of children have been treated at a reduced rate. "It must not be denied that occasionally the remission of charge is used as a lever to obtain treatment in the arduous struggle with prejudice and ignorance."

There has been a marked rise in the number of children receiving dental treatment, and the general attitude towards dental treatment is encouraging. A note is made of the frequency of requests for appointment made by the younger mothers.

The large number of children paying for milk is commented upon; in two Marylebone schools 445 children pay for milk in school prescribed by the school doctors. The children of Marylebone appear to be exceptionally fortunate in that in addition to Bushy, Margate and Bournemouth and the children's country holiday fund which sent away 650, numerous other agencies have sent children to the country or seaside; the guardians, the Invalid Children's Aid Association, the Charity



Organisation Society, the Middlesex Hospital, Miss Honor Brooke's Fund and the Jewish Girls' Institute all come in for a share of thanks from the association. The Bell Street and Cosway Street Committee note that about five-sixths of the loans for spectacles are repaid.

The St. Pancras Association reports that the medical results are encouraging, and more success is recorded even in dental cases. Some difficulty is experienced in following-up the mass of the latter. Great appreciation is expressed for the Highgate Treatment Centre, where children are kept in after operations. One Committee goes so far as to say that lunch milk given on the doctor's recommendation is of more value than school dinners. Another Committee is finding good results from the arrangement of periodical spectacle rotas taken by the collector, who sees all the children in their glasses and so helps to emphasise their importance. The special officer in this area has been most successful in persuading obstinate parents to get medical treatment, and reference to the N.S.P.C.C. has been comparatively rare.

The housing shortage which has produced so many inconveniences has incidentally rendered the work of "following-up" more effectual. The constant removal of the children from one area to another, which occurred before the war, made real following-up very difficult and brought the workers to despair. It was the usual state of things in many schools, containing the children most in need, for more than fifty per cent. of the children to have disappeared from observation between inspection and re-inspection. Whole sections of the population were vagrant and moved regularly every quarter day, leaving no trace behind them. This, of course, played havoc with the work of the Care Organisation. Now the children remain in the same school indefinitely, continued care is possible and the improved results which are so noticeable are very largely to be ascribed to this.

The school doctors re-inspect at intervals all children noted with defects whether referred for treatment or placed under observation. For each child found at original inspection to be ailing or suffering from any defect a re-inspection card is made out. All re-inspection cards originating in a given term are kept together. The children are seen again the next term but one, and all the entries are reviewed. The cards are then forwarded to the County Hall in order that the results of re-inspection may be tabulated. The cards of all children who are not discharged at the re-inspection are returned to the schools, and after the lapse of another term the children are again seen and the cards with final entries are once more sent up for statistical purposes. Any child not discharged at the second re-inspection becomes a special case and a new re-inspection card is made out. Re-inspec-  
tion.

The results of re-inspection give the measure of the success or otherwise of the following-up of the children. 197,413 cases which had been referred for treatment or placed under special medical observation were re-inspected during 1924. 105,879 of these were primary re-inspections of children referred for treatment. Of these 45,659 (43.1 per cent.) were discharged, and 17,054 (16.1) were improved or under treatment, and 43,166 (40.8 per cent.) were reported as not treated and still requiring it. 50,702 cases not discharged at their first re-inspection were presented for a second review, and of these 28,834 (56.9 per cent.) were found to have had treatment or no longer to require it. Combining the result of the first and second re-inspections it is found that 75.5 per cent. of the children noted for treatment at the original inspection had been marked off as no longer in need of medical attention. The corresponding figure in 1923 was 76.8 per cent. Dental cases present the greatest difficulty, and if these be excluded the combined results for the remaining defects show that in 82 per cent. of the cases the ailments were remedied.

Where there is persistent neglect on the part of the parents to obtain treatment the case is referred to the N.S.P.C.C. to take action under section 12 of the Children



Act. During 1924, 481 cases were so referred, several children having two or more defects. Of these cases 256 related to serious defects of vision, 185 to dental cases, and 88 to other defects.

There has been almost a continuous increase in the proportion of children dealt with under the Council's scheme compared with the total children receiving treatment from all agencies public and private. 78 per cent. of those treated during 1924 were dealt with under the Council's scheme. The similar percentages for 1920, 1921, 1922 and 1923 were, respectively, 69.5, 72.8, 75.8 and 74.6.

105,879 cases were re-inspected for a first time and 50,702 cases, not discharged after a first re-inspection, were brought forward for a second re-inspection.

Co-operation  
with child-  
welfare  
centres.

Wherever possible the school medical service co-operates with the maternity and child welfare centres. In several districts the two organisations use the same premises, and the use of Council's dental equipment has been allowed for mothers and infants attending the infant welfare centres. The cards at some of the welfare centres are transferred to the school, when the child reaches school age, so that the school doctor may have the full previous history when he makes his first medical examination.

### *Medical Treatment.*

The number of hospitals and centres included in the Council's treatment scheme at the end of 1924 was:—13 hospitals and 59 centres in addition to the dental centre at Bushy Park Camp School. A total of 226,368 children received treatment at these for the following defects:—Eye, 32,747; Ear, nose and throat, 12,980; Ringworm, 1,267; Minor ailments, 80,329; and Teeth, 99,045. These totals are all in excess of the numbers treated during 1923, with the exception of ringworm, the incidence of which is steadily declining.

(a) *Minor Ailments.* 80,329 children received treatment for minor ailments. This was an increase of 2,380 on the number for 1923. These cases made 1,431,850 attendances. At the cleansing stations, 2,155 children were treated for scabies and impetigo. Further facilities have been offered by the Metropolitan Asylums Board for the treatment of children suffering from contagious diseases of the eye, at their special residential school at White Oak, Swanley. During the year 258 children were sent to this school through the medium of the school medical service. Of these 216 were suffering from trachoma.

(b) *Visual defects.* 32,747 children were dealt with under the Council's scheme for refraction. Spectacles were prescribed in 23,573 cases, and in 21,338 cases (90.5 per cent.) were obtained.

(c) *Nasal and Aural defects.* The total number of cases was 14,173, of which 12,980 were treated under the Council's scheme. In the three-years programme of educational work authority is given for the provision of additional accommodation for the in-patient treatment of children suffering from enlarged tonsils and adenoids. Negotiations are now in progress for the establishment of additional centres. The Council approved a scheme for reorganising the method of dealing with discharging ears which will come into operation on 1st April, 1925. Under this scheme five special inspection centres, one in each division, will be established, to which children will be referred for expert advice by Dr. Wells and two half-time assistants. At the five centres, suitable cases will be given ionisation treatment, others will be referred to their minor ailment centre with directions for treatment, and others will be referred to the Metropolitan Asylums Board's institutions for mastoid operation.

Dr. Wells'  
report on  
discharging  
ears.

Dr. A. G. Wells reports on the following-up and treatment of children suffering from ear discharge during the past eighteen months. He has kept under observation, with treatment, 1,406 children at the five special inspection centres. Of these 887 were discharged cured, giving a percentage of 63 per cent.; this is a better result



than in any previous year, and is mainly due to the work done at the after-care clinic in Kentish Town, established by the Metropolitan Asylums Board. Dr. Wells sees here ordinary cases of otorrhœa needing ionisation, and the institution also acts as a clearing house both for cases of mastoid disease to be sent to the Board's special hospital at the "Downs," in Surrey, and for cases requiring after-care on leaving the "Downs."

At the Kentish Town institution alone 1,621 ionisations were performed in 1924, with cures amounting to 80 per cent.; in addition 101 children who had returned from the "Downs" hospital received after-care. Dr. Friel continued his ionisation work at Cable-street and Kenley-street, and 279 ionisations were carried out with cures in 59 per cent. of those treated. Ionisation has also been available at the Britannia-row institution, in Islington, where Lady Essex French installed the apparatus two years ago. 88 children were treated and 32 were cured.

There were 224 mastoid operations performed on Council children at the "Downs" hospital. 93 cases were discharged cured, 112 are still under treatment, 6 cases lapsed, and in 9 cases no cure could be effected. Two deaths occurred after operation, both being long standing and almost hopeless cases.

Ear discharge is frequently a sequela of Scarlet Fever. An arrangement has been made with the Metropolitan Asylums Board in the case of three of their isolation hospitals for all children who suffer from aural symptoms during scarlet fever to be notified to the Council. These children are specially watched in school by the medical staff in order that any recurrence of the disease may not escape detection in its early stages. During 1924, 252 cases were reported. Of those attending school 15 were found to suffer from further attacks of ear trouble, and prompt treatment at an early stage of the recurrence was thus secured.

(d) *Dental defects*.—54 part-time inspecting dentists were engaged in examining the teeth of children, and 2,256 sessions were devoted to this work. 256,642 children were inspected, i.e., 19,984 more than during 1923. Of these 178,802 were found to require treatment, or 69.67 per cent. 99,045 children were treated at the treatment centres, as compared with 95,332 during the previous year.

The following report has been received from Mr. C. Edward Wallis:—

"The fact that there are now in the Council's service some 54 dental centres, attending to upwards of 99,000 children a year, emphasises plainly the need for their existence and it is only the extreme difficulty of finding suitable premises that has delayed the provision of other centres already approved. In addition, visiting dental surgeons attend all the Council's residential schools with the greatest benefit to the health of their inmates. A return to comparatively normal times has enabled many valuable innovations to be introduced, and each year in the future it is hoped that general meetings of the dental staff as well as of the nursing staff doing centre work will be arranged. The fact that the treatment centres in most cases deal with other ailments as well, is a specially valuable feature, and facilitates greatly the co-ordination of treatment.

"*Dental staff*.—One of the improvements of the past year has been a reduction of the centre dental staff to two dental surgeons in cases where formerly 3 or more were working. This has greatly facilitated supervision and enables each surgeon to retain his own cases and thereby maintain his interest in their condition. It also enables parents to keep to the same surgeon.

"*Oral sepsis*.—An inspection of the mouths of many thousands of children shows that a large proportion are suffering from ill-health directly due to products of putrefaction being both swallowed as well as absorbed through the sockets into the blood stream from septic unsavable teeth and roots. It is a common idea that septic roots, of temporary teeth in particular, don't matter as they will soon fall out, whereas it is now known that these same roots are responsible for enlarged glands in the neck, septic tonsils, and many other conditions highly detrimental to health.

Ionisation.

Mastoid operations.

Ear discharge—  
Co-operation with  
Metropolitan Asylums Board.

Mr. Wallis's report on dental inspection and treatment.



While conservative work is the aim and object of all modern dental treatment, it must not be forgotten that merely to stop saveable teeth and to leave in the mouth septic teeth and roots that cannot be filled is to leave the seeds of continued ill-health unremoved.

*"Conservative work."*—The amount of conservative work done at the centres varies greatly. Speaking broadly, the greatest amount of such work is done by the most experienced dental surgeons, who, by reason of long practice, have acquired the art of working both quickly and efficiently. It does not necessarily follow that every qualified dental surgeon is suitable for the dental treatment of school children. The experience of the centres shows the importance of careful selection, as, however skilful the dental surgeon may be at actual operative work, he may fail in his relations with the children and in his power of impressing parents with the need for treatment.

"The Council's scheme is based in the main upon utilising the services of experienced part-time dental surgeons, who can be more readily obtained in London than in other parts of the country, with advantage to all concerned.

*"Propaganda."*—The system of dental inspection involves not only the giving of a very short address to the assembled parents on the general need for dental treatment, but also affords them a personal explanation of what is required in the case of their children. This is followed by another detailed explanation at the dental centres before treatment actually commences, so that it will be seen that every opportunity is taken of educating the parents in the need for a clean healthy mouth from which all unsavable septic teeth and roots have been removed, while all savable teeth are made healthy and functional. Before the war certain dental hygiene lectures were given at King's College, and it is highly desirable that such lectures should be revived. The co-operation of the teachers is one of the most valuable adjuncts, and it is therefore obviously necessary that the teachers themselves should receive instruction in dental hygiene. It would be highly advantageous for the same reason that similar lectures should be given in training colleges. In order to assist those engaged in dental following-up, a short pamphlet has been drawn up whereby each worker is provided with a simple plain answer to any of the objections raised by those as yet unfamiliar with, or unconvinced of, the advantages of dental treatment. In some areas evening lantern lectures have been given to parents and elder children.

*"Premises."*—The difficulty of finding premises is as great as ever, especially when it is recalled that three suitable rooms are absolutely essential, viz., a surgery with a good light; a recovery room, immediately adjacent, and a reasonably comfortable and cheerful waiting room for parents and children.

*"Regulation of teeth."*—Though no special arrangements obtain for the treatment of dental irregularities, a large number of such cases do actually receive treatment at the London Dental Hospitals. An investigation made some time ago at three dental centres showed that the proportion of children with dental irregularities suitable for treatment, was roughly about 1 per cent. By a friendly arrangement with one of the senior surgeons at the Royal Dental Hospital, selected cases were sent for an expert report, but only a very small proportion attended even once, owing to the apparent apathy of the parents.

*"Anæsthetics."*—During 1924 in addition to 32,895 administrations of nitrous oxide gas, as many as 12,631 children received ethyl chloride as a general anæsthetic without a single fatality, and when it is recalled that since the centres commenced some sixteen years ago, the number nearly equals a hundred thousand any doubt as to its safety in the hands of skilled anæsthetists should surely cease. Its great advantage is that where this is practicable it enables each case to be finished and rid of its oral sepsis at one sitting. Parents will take their children for two or three sessions for treatment, but after that the attendances



rapidly fall off, thereby rendering it essential that the treatment should be completed in not more than three visits, which, of course, includes the time required for the necessary stopping of teeth. Parents frequently lose a day or half day's work for each attendance, and this also renders a speedy completion of the work much to be desired.

*Difficulties.*—Attention has been drawn to the difficulties caused by the advice given, or said to have been given, to the effect that no treatment of septic temporary teeth is necessary. It is to be hoped that it may be possible to devise some means whereby this special difficulty may be overcome, as there can be no doubt that a large amount of ill-health is due to the retention of such teeth. Another difficulty that appears to be increasing is that parents are disinclined to allow their children to cross traffic junctions, and consequently centres approached by a main road are often difficult to fill as compared with centres in quiet neighbourhoods."

The six central classes for stammering children were continued throughout 1924. 292 children attended (232 boys and 60 girls), of whom 128 were discharged cured and 9 discharged very much improved. Generally, when children are discharged cured, reports are received from their head teachers, and if relapse occurs the child is again admitted to the class. Eleven relapses were treated, of these 4 were again discharged cured, after one term, 1 after three terms, 3 left school and 3 were still attending, at the close of the year. Stammering.

At the end of 1924 the centre at Lombard Wall was closed and a new centre was opened at the Jews' Free School, Shoreditch, in order to accommodate the number of stammerers amongst the Jewish community.

Pursuing a mode of treatment on the assumption that stammering is fundamentally a psychosis, a more individual investigation has been carried out. In a number of cases word association tests have been done and in several of these material benefit has resulted from the bringing to the surface of repressed conflicts in which fear is the predominant factor. Such fear complexes have in several cases been associated with or aggravated by the exhaustion following definite physical disabilities, the treatment of which has had a beneficial effect on the stammering itself.

There seems to be some relation between familial left-handedness, squint, defective vision and stammering. This is being further investigated. Untreated errors of refraction and squint seem to have an important bearing on stammering, especially noticeable when reading aloud; any such defect is an additional cause of lack of confidence and thus determines the tendency to stammer.

Several past pupils have testified to the lasting benefits derived from these classes.

#### *Nursery Schools.*

The two Council nursery schools and the eight voluntary nursery schools already established have continued through the year. An additional non-provided school has also been recognised, making 11 in all. This last-named school has been organised by Miss V. Doris Lester in premises in Eagling-road, Bow; it is the result of many years' experience by Miss Lester of nursery school work carried on in this neighbourhood in spite of much difficulty owing to inadequate premises. The Children's House, as the new building is called, was opened in October, 1923. Built especially for the purpose it surpasses any other nursery school in London, both in beauty of design and suitability of premises. The recognised accommodation is for 30 children. The rooms are light and airy and the building is centrally heated. There is a roof playground above the level of the surrounding houses. The internal decorations and the equipment present most ingenious and original features, and the sanitary arrangements and provision for hygienic care are thoroughly satisfactory. The children, of a poorer class than at many nursery schools, are happy and



unrestrained and reflect the kindly spirit in which the school is conducted. Official recognition makes it possible to give the school the advantages of the Council's provision for medical treatment and nursing care.

### *Open-Air Education.*

Convalescent  
camp  
schools.

During 1924 an addition was made to the provision for short-stay periods in the country by an arrangement with the Shaftesbury Society for the use of the Russell Cotes Home at Parkstone, near Bournemouth, for 30 girls. The residential open-air schools at Wanstead House, Margate, at Barham House, St. Leonard's, and now at Russell Cotes Home, continue to be of inestimable assistance in improving the physique of slightly debilitated London school girls. Between the child requiring a fortnight's holiday in the country (who is catered for by many associations and clubs) and the child requiring extended convalescence after serious illness (who is catered for by the I.C.A.A.) there is an extensive class of children in London who begin to flag and become listless, to grow pale and thin and to pine. The school and hospital doctors constantly say to the mothers: "The child should go to the country for a month or six weeks."

Prior to the Council's initiation of camp schools, it was this class for which there was no possibility in the great majority of instances of carrying out the physicians' recommendations. The testimony of the local doctors at the schools and of the school doctors in London is unanimous that a very great amount of good is being done for this type of child, and that, where a proper selection has been made, the improvement in health for most of them is lasting.

Dr. Elizabeth McVail has investigated the physical results of a visit of 30 girls to the Russell Cotes Home from 24th July to 30th August. The girls ranged from nine to thirteen years of age and were selected from the elementary schools for such defects as anæmia, general debility and adenitis, several being tuberculous contacts. The medical notes on the record cards indicate that great improvement resulted from the holiday. The average increase in weight over the five weeks was 5 lbs. 7.78 oz., or 1 lb. 1.56 oz. a week, a most satisfactory result. Similar results are also found in the children at Margate, who give practically identical increases on weighing at the beginning and end of the stay.

Dr. McVail states "in the case of weakly pre-tuberculous children taken from poor neighbourhoods in London to the seaside, where the period is devoted to dieting and the whole regimen of health guided according to individual conditions, the outcome is astonishingly good. Even in the period of five weeks it looks as if a delicate child may accumulate a reserve of health and strength very helpful to its physical powers of resistance. In the case of children in better home surroundings the benefit of such a change of air is, of course, universally recognised."

Apart from the physical conditions, the mental and moral improvement is, of course, remarkable, and is, in many instances, sufficient to change for the better the whole tone and outlook of the child's subsequent life. I have no reservation in my opinion that the short term period is a most economical and successful way of improving the health and physique of the particular class of child in London in whose interests it was devised.

Wanstead  
House,  
Margate.

Dr. Rowan McCombe, the medical officer of health of Margate, has supplied me with the following report:—

"During the year about 500 children from the poorest parts of London are sent to the Wanstead House School for a six weeks' holiday. The children, generally speaking, are of very poor physique, badly nourished and very languid upon arrival. They are all examined by the School Medical Officer the following morning, and directions given to the school nurse for any medicinal treatment which is required.



I am glad to say that, with very few exceptions, the children were personally clean in regard to their bodies and clothing. The heads, which are always a trial to the nurse, require very close supervision and treatment during the first one or two weeks.

Several of the children suffered from enuresis, which was partially cured during their stay. In my opinion a child with this complaint ought to be rigorously excluded, but it is generally the fault of the parents not admitting the fact when the children are examined in London.

We were very fortunate in having only one case of infectious disease, viz., mumps, which reflects great credit on the supervising authority.

As to the benefit to the children, one can only say it is remarkable. After the first week the languid child becomes bright and alert and the improved appearance is very noticeable. The average increase in weight at the end of six weeks was  $5\frac{1}{4}$  lb. a child.

I think there is no place in England better suited for this class of child than Margate, and it is a great pity the accommodation is so limited. I am sure the benefits to the children well repay the outlay."

The King's Canadian Camp School at Bushy Park continues to give very successful results. From June, 1919, to December, 1924, 16,296 boys have passed through it. During the  $5\frac{1}{2}$  years there have been only 50 cases of infectious disease amongst this great number. This is a remarkable record considering that 70 new boys are sent down each week, and it reflects great credit upon the arrangements made. One small outbreak of diphtheria (included in the 50 cases referred to) took place in November, 1924, but owing to prompt measures which are detailed elsewhere the disease was quickly stamped out, although it gave rise to some anxiety, as the first boy attacked unfortunately succumbed to the disease.

The improvement in health measured by the average gain in weight showed much variation, according to the district in London from which the boys came. Boys from better class districts as a rule make the smallest increase, *e.g.*, 1.2 lb. in those from Wandsworth and 1.6 in those from Greenwich; on the other hand boys from Stepney and Bethnal Green reach an average increase of weight of 4 lb. during their month's stay, and one boy from Ocean-street was noted as gaining 13 lb. in a month.

The equipment for attending to special features in connection with health is remarkably good. There is a half-time dental centre and a special point is made of remedial exercise work. Individual exercises were given to 781 boys for special defects, flat feet and mouth breathing, and many more were treated on the small group system with excellent results. As a rule children with established otorrhœa are not very suitable for camp school life, but during the year 62 boys were treated for this condition by the nurses, while 6,392 treatments were given by the school nurse for other minor ailments.

The Council's four open-air day schools at Stowey House, Shrewsbury House, Birley House and Bow Road were carried on successfully throughout the year. A number of sites have been viewed with the object of providing further schools, and it is hoped shortly to establish an open air school at Aspen House on Brixton Hill and one north of the Thames in the neighbourhood of Ken Wood. The head master of the Shrewsbury House School, Shooters Hill, in his annual report points out that although steps have been taken to improve the purely educational side of the school's work these have not interfered with the physical improvement of the children, and the report of Dr. Wiley, the school doctor, shows that the improvement in health and physique of the children has been even more marked than in previous years. The head master shows that on admission the average open-air school child is very backward, frequently being three or four years behind calendar age in school attainments, yet their rate of progress is such that they reach Standard

Bushy.

Open-air day  
schools—  
Shrewsbury  
House.



VII at an age only slightly higher than normal. He quotes the example of a girl pupil admitted in July, 1924, and only suitable for Standard III, although aged 12 years and 8 months. She had been continually absent from school before admission and at first was an untutored girl ready to treat members of the staff with the same freedom she would use towards the youngest child. She quickly found her place, became a hard worker, was promoted to Standard IV in October, and at the end of the year Standard V was in sight. In marked contrast to her earlier school life the whole period was passed without absence.

Dr. Wiley refers to the lack of sunshine during the year. In May and June only about 3 hours a day of bright sunshine was recorded and in July only  $2\frac{1}{2}$  hours. No sunshine occurred in January and only 32 minutes in the whole of February. Out of 253 school days rain fell on 192. Rest out of doors was possible only on 163 days. Every effort was made during summer days to get all the benefit from the little sunshine available, but the weather was so bad that this was not often possible.

Thirty children left the school during 1924, all of whom were greatly improved in health, nineteen of them had been under observation at tuberculosis dispensaries and two had been in sanatoria before admission. The average length of stay was 36 months.

One child is cited as an example. When admitted in 1918 she was a very puny child suffering from frequent bronchial catarrh and enlarged cervical glands. She was suspected to have abdominal tuberculosis and attended the tuberculosis dispensary for a period. Her chest expansion was noticeably deficient. Special breathing exercises were prescribed and carried out daily at school. In 1922 she began to show much improvement, and in July, 1924, her general condition was excellent. During the summer holidays this little girl won a race of 150 yards in a sports competition against all comers of her age in the district and gained a prize of a year's free tuition at a Commercial College.

The average net gain in weight was 3.75 kilos. as compared with 2.8 kilos., which is the average gain of ordinary school children of the same age distribution. These results were obtained in the face of many disadvantages under which the school labours, such as the distance many children have to walk, the difficulty in drying clothes, and the remoteness from the school of the dining accommodation.

Bow-road.

The headmaster of the Bow-road Open-Air school refers to the improvement in personal hygiene. From 8 per cent. unsatisfactory in 1922, the proportion is reduced to 1.3 per cent. in 1924. Nearly all the unsatisfactory cases now occur only on the return after holidays, particularly on the return from fruit picking and hopping. Dr. Chaikin has followed up in the elementary schools the subsequent career of several children who had been at the school. In 4 out of 9 girls the condition was found not to be very satisfactory. Out of 19 boys, 13 maintained improvement, 4 boys were not very satisfactory and two showed definite retrogression. The cases where improvement was not maintained after return to elementary school were chiefly among those children who had suffered from definite lung trouble. It is clear that it would have been better if some of these children had been retained, but it is not possible to retain children who appear to be restored to health, especially when there are children on the waiting list.

Stowey House.

Dr. Slowan reports that at Stowey House Open-Air school there were 160 boys and 115 girls. Of these 275 children 109 are fit to leave at the end of the school year. Improvement is most marked in cases of anæmia. Children suffering from bronchitis and bronchiectasis do not improve to the same extent at this school.

Birley House.

Dr. S. H. Griffiths reports that the children in attendance are chiefly anæmic and delicate, predisposed to tuberculosis and quiescent cases of tuberculosis of lungs, glands, skin, etc., chronic bronchitis and a few odd cases of empyema. The average roll for the year was 141 and average attendance 118. 55 children obtained dental treatment out of 59 needing it. Almost without exception soon after admission the



children's appetites became excellent although the common complaint before admission by the parents is that they cannot get the children to eat anything.

Satisfactory all round improvement in weight was made by the children at each age, but was especially marked amongst the older girls, whose average increase during the year was:—12-year old 3·34 kilos., 13-year old 4·9 kilos., and 14-year old 5·10 kilos.

Open air classes were held in connection with 95 ordinary elementary schools as compared with 89 in 1923. These were additional to the four classes whose continuance throughout the year has been approved by the Board of Education. The classes fall into two main groups:—Types A and B, composed of delicate children selected on health grounds from one or more schools and Types C and D, composed of ordinary school classes working in the open either for the whole session or for shorter periods in turn with other classes. Open-air classes.

Sixty-two of the classes were held in school playgrounds and the remaining 33 in parks, open spaces, squares or gardens placed at the Council's disposal. Twenty-five were special health classes (Types A or B); these were all reported upon by the school doctors who selected the children and made visits from time to time. Generally the beneficial results in the case of debilitated children were remarked upon. Children who previously suffered from frequent attacks of bronchitis have had no attacks since attending and children suffering from anæmia have improved, although the poor summer and lack of sun were unfortunately adverse to the best results being obtained. Most of the reports refer to the increase of mental alertness; improvement was also noted in carriage and physique. The following are characteristic reports upon particular classes:—

All the boys did well both mentally and physically; there was marked improvement in some of the delicate and anæmic ones, and the headmaster informs me that the mental improvement in the junior class specially was very much increased from the course of study in the open air. Queensmill-road school (Dr. Spaul).

There is marked improvement in nearly all the children in general condition, vivacity, and record of health. Two or three were less improved than the others owing to bad home conditions. Great credit is due to the teachers, to whose initiation and perseverance the excellent results are due. Salter's-hill Infants (Dr. Polhill)

This class was held in Brunswick Park, Camberwell, and consisted of 37 delicate boys, ranging from 8 to 11 years of age. Of these, 37 boys, 15 had been in for two years, and 3 for three years. The average gain in height was 1·7 cm., and in weight, 1·5 kilograms. In addition to the ordinary routine medical examination the vital capacity of 35 boys was taken on three different occasions. The results were that 28 gained, five remained the same and two lost in vital capacity. It is noteworthy that of the boys who had been in for two years, the increase in vital capacity was enhanced. Of the three boys who had been in three years—they had a marked tubercular family history and were particularly delicate—one gained slightly (0·2 kilos.), one remained the same, and the other lost slightly. These latter results do not seem to equal the others, but one cannot help feeling that had it not been for the open air class these three boys would have very rapidly declined in health. On return to the schoolroom quite a number of boys who had been suffering from bronchial catarrh previously to the class subsequently developed coughs. Special breathing exercises and special attention to physical exercises resulted in a marked improvement in mouth breathing and cases of bad posture. Mentally, these boys have been brighter and there is a marked increase in their ability to resist fatigue. Cork-street, Camberwell (Dr. Boome).

#### *Tuberculosis.*

Particulars with regard to children treated for tuberculosis in residential institutions and in the schools for tuberculous children are given in the first part



of this report. An account was given in the Annual Report for 1923 (vol. III., p. 81) of the scheme of co-operation between the tuberculosis officers and the school medical service. The scheme has been continued during 1924.

As an example of the combined work between the school medical service and the tuberculosis dispensaries the following account supplied by Dr. F. E. Lewis, the divisional medical officer in the N.E. Division of London may be given. "In this division during the year 1924 the total number of children upon whom watch has been kept amounts to 1,113. After joint review between the tuberculosis officers and myself of the individual records this figure has been reduced to 302 who are to remain on the scheme during the ensuing year. On these 21 are first to be re-examined by the tuberculosis officers.

The subjoined table shows the distribution among the dispensaries. During the year it was necessary to refer back to the dispensaries certain cases who have moved or left school or who appear to need attention from the tuberculosis officers. These are indicated in column 3. The cases regarded as satisfactory are grouped in column 4, and those to be "carried over" for 1925 in column 5. The figures in brackets, which are included in the main figures of the column, indicate cases which the tuberculosis officers wish to re-examine themselves."

(1) Hospital or dispensary.	(2) Total number of cases referred to D.M.O.	(3) No. of cases referred back to T.B.O. during year.		After conference between tuberculosis officers and divisional medical officer.	
		(a) left	(b) for review	(4) Number no longer needing observation—excluded from scheme.	(5) Number remaining in scheme
Royal Chest Hospital ...	583	34	14	452	97 (9)
Royal Northern Hospital ...	163	14	4	109	40 (4)
Victoria Park Hospital ...	189	4	—	100	85 (8)
Metropolitan Hospital ...	150	4	1	70	76
University College Hospital	28	3	—	21	4
Total ...	1,113	59	19	752	302 (21)

*Children absent from school on account of illness.*

The attendance officers are in communication daily with the divisional medical officers regarding children absent from school, and the vast majority of the children return at the earliest possible moment. When a child is absent for three months the name is sent to the school medical officer in order that the case may be considered if necessary in regard both to special treatment and to fitness for special education. A census of long period absences is taken once a year and the following table gives the results for the past four years. Important points arising are the great reduction in the number of children absent for tuberculosis, the very great improvement in absences from ringworm, contributed to both by reduction in number of cases and by a shortening of the duration of disease, and the continued and unabating influence of rheumatism as the chief cause of long continued absence from school. Further analysis of absences in 1924 shows chorea to be the chief single cause of long illness, as ten per cent. are absent from this. The ten-year old children suffer more from chorea than any of the others, a steady rise in the number taking place from 5 to 10 and a steady fall again from 10 to 14. Girls suffer from chorea in comparison with boys in the ratio of two to one. Encephalitis lethargica appears for the first time as a substantial cause of long absence, there being 40 children notified as absent definitely at one time from the results of this disease, and, of course, there are probably additional cases with unspecified nervous condi-



tions. In contradistinction to chorea the ratio of incidence in boys and girls is exactly reversed, twice as many boys as girls being reported absent from encephalitis.

<i>Complaint.</i>	<i>Children.</i>				<i>Percentage of total.</i>			
	1921.	1922.	1923.	1924.	1921.	1922.	1923.	1924.
Rheumatism of heart and chorea ...	659	682	652	672	21.61	23.5	23.92	25.02
Nervous disorders ...	238	245	274	288	7.8	8.44	10.05	10.72
Tuberculosis (pulmonary and other) ...	613	502	462	399	20.1	17.3	16.95	14.86
Anæmia and debility ...	219	212	184	201	7.18	7.31	6.75	7.48
Ringworm ...	231	200	145	85	7.57	6.89	5.32	3.16
Skin complaints (other than ringworm)	77	52	66	76	2.52	1.79	2.42	2.83
Eye complaints ...	150	144	112	135	4.91	4.96	4.11	5.03
Infectious diseases ...	—	80	67	*98	—	2.76	2.46	3.65
Other diseases ...	862	785	764	732	28.27	27.05	28.02	27.25
All diseases ...	3,049	2,902	2,726	2,686	—	—	—	—

\*Including encephalitis lethargica.

### *Employment of School Children.*

Applications were received for medical certificates in regard to employment out of school of 3,312 children; only 57 of these were girls. 100 applications were found to be for ineligible children or were withdrawn. 2,959 certificates were granted unconditionally, 185 were granted conditionally and 68 (2 per cent.) were refused for reasons of health. 2,104 were in connection with the delivery of newspapers, 221 of milk, 376 of parcels and goods and 219 in connection with shops. Of the 68 rejections, 6 were for defective vision, 14 for heart defect and 17 for general condition. The conditional certificates were issued subject to re-examination in short periods in most cases, and restrictions on the weight to be carried or conditions as to necessary treatment being obtained were imposed. In several cases it was noted that children were in more than one occupation and in one case at least the condition was imposed that the additional occupation should be given up as the child was not strong enough to do the two jobs in addition to school attendance.

In addition to the above, 29 boys and 141 girls were under observation in connection with licenses for employment in stage entertainments. Improvement was noted in the care given to children sent on tour, but the conditions under which they are lodged makes it difficult to ensure adequate attention to personal hygiene; five children were refused certificates on account of skin disease and one on account of congenital syphilis. Eleven other children were refused for personal hygiene until they were in a condition to be granted certificates. A party of about 12 children who were sent on tour in South Wales for the Christmas pantomime in 1923, returned to London early in 1924, and most of them were suffering from scabies which had been detected by the school medical officer at Swansea. Theatrical children.

With the popularity of plays of an Asiatic setting, children of Negro and Chinese extraction have been especially sought and a large proportion of children inspected were of this type. Healthy dwarfs between the age of 12 and 14 are also types frequently met with.

### *Physical Education.*

Attention to physical education in the elementary schools is decidedly on the up-grade. The refresher courses for teachers at the Council's College of Physical Education have been most useful in promoting and maintaining enthusiasm. The successful efforts made to supply the children, especially in the poorer schools, with suitable gymnasium costumes in which to drill have increased the efficiency of the work. In girls' schools above 11,000 girls have been taught to swim during the year and 2,875 certificates in life saving have been gained. The chief organised



game played by the girls is Netball. London is divided into 16 districts, and the champion team of each district competes for the All London Cup, which was presented by Lady Astor in June, 1923. As a netball court can be marked out on most of the school playgrounds the time restriction recently enforced by the Board of Education does not affect the game, but difficulties are being encountered in teaching swimming. Many of the most effective games and exercises involve the use of the school halls and it is important that the floors of these should be clean, and maintained in perfect condition. Accidents from splinters are not infrequent, and the question of the cleanliness of the floors is no less important. This, too, has a bearing upon the use of dustless oils, an experiment in connection with which is again in progress and is being watched with care by the medical staff.

Very interesting are the health classes. These are small classes of children selected by the school doctor as needing special physical care. They are given selected physical exercises by an experienced teacher for short periods, daily if possible. As the results obtained are remarkably good an attempt has been made recently to increase the number of these classes. At the end of 1924 such classes existed in 41 schools. Amongst the reports of the school doctors the following may be singled out :—Dr. Boome reports that in the girls' department at Cork-street School, Camberwell, there are two such classes each consisting of 20 children, a junior class for girls 8 to 10 years of age, and a senior for girls from 10 to 14. During the past two years 30 per cent. of the girls in the school have passed through these classes under Dr. Boome's personal supervision. The types of defect attended to include round shoulders, lateral curvature, lordosis, and flat foot. The classes last twenty minutes but the children requiring individual attention are given additional time. Children operated upon for enlarged tonsils and adenoid growths have also been included with marked benefit. In all cases clumsy gait and awkward positions have been improved or eradicated.

Dr. Thornton reports on the special health class in the girls' department at the Tooting Graveney School. This was commenced during 1924, and very satisfactory results are already evident. The number of girls at the commencement was 18. Five were cases of round shoulders; two were discharged cured, and two of the others are much improved. Seven were suffering from lateral curvature, of these, two were discharged cured and the other five are much improved; five suffered from a combination of the two defects, two of these were discharged cured and two were much improved.

Of the class in the girls' department of Smallwood-road School, Dr. Thornton reports that the work continues to be very satisfactory. He is of opinion that the usual type of desk is too small for the bigger girls and that this contributes to postural deformities. Of 21 girls, 18 were cured or improved.

#### *Feeding of School Children.*

A general weekly rise was perceptible in the number of children given milk in school on the advice of the school doctor. This corresponds with the tendency to lowered nutritional condition which is shown in the school inspection returns. Altogether, during the year 945,868 milk meals were given and 135,505 doses of cod liver oil and malt. The children placed on milk or oil are specially watched by the school doctors and are weighed by the school nurses at regular intervals. These milk canteens are most effective in the correction of malnutrition and in restoring children to health. In addition, 716,917 dinners were given to necessitous children. Sample dinners are analysed from time to time by the chemist in the Council's Public Health Department. The standard required is that each dinner should provide at least 25 grammes of protein and 750 calories.



*Personal Hygiene.*

The number of examinations made at rota visits during 1924, by the school nurses was 2,059,590; verminous conditions were present in 332,695 instances, or 16·1 per cent., as compared with 18·1 per cent., in 1923 and 18·7 per cent. in 1922. The results of the work for the last five years are\* :—

Year.	Examinations at rota visits.	Verminous conditions noted at rota visits.	Per cent.	Verminous children referred to stations.	Subsequently cleansed by parents.	Verminous children cleansed at stations.	Scabies cases bathed at stations.
1920	1,944,105	368,732	18·9	43,764	16,355	27,409	9,675
1921	2,113,463	435,282	20·5	65,084	22,489	42,595	5,863
1922	2,158,100	405,335	18·7	73,800	26,031	47,769	3,944
1923	2,052,904	371,790	18·1	79,702	26,469	53,233	2,935
1924	2,059,590	332,695	16·1	74,643	22,012	52,631	2,155

\* Figures for 1912-19 are given in *Annual Report for 1923* (vol. III., p. 88).

In addition to these figures the numbers dealt with at the head cleansing centres during 1921, 1922, 1923 and 1924, were 13,586, 24,637, 24,516 and 23,986 respectively.

It is satisfactory to report again a decrease in the percentage reported as unclean; a similar decrease is also reported as a result of the school doctors' inspections. The school nurses note as verminous, not only those children where pediculi and nits are found but also those cases which show signs of flea bites. Extra rota visits are occasionally paid to especially dirty schools, so that no comparison can safely be made with the returns from other authorities where differing methods and standards exist. The number suffering from scabies continues to decline, the number treated during 1924, being 2,155 as compared with nearly 10,000 in 1920.

Arrangements were made during 1924 for the use of the new cleansing station provided by the Hammersmith Metropolitan Borough Council, but the agreement for the use of the Stepney borough station was determined at the summer holiday. To replace the latter a centre was opened in the Council's building on the site of the Trafalgar-square school. In April a new centre organised by a voluntary committee was opened in Islington for the cleansing of verminous heads only. There are now 18 sanitary authorities with whom the Council has agreements for the cleansing of verminous children and in addition there are eight centres organised by voluntary committees for head cleansing work. These centres, with the Council's own ten stations, make a total of 36 centres, which are available for the cleansing of school children throughout London. The head cleansing centre at Hammersmith, organised by a voluntary committee, will, however, be closed on 31st March, 1925.

Out of 74,643 children whose verminous condition was brought to the notice of the parents 34,963 attended voluntarily, but in 20,739 cases it was necessary to serve statutory notices after a further examination. Following upon these statutory notices, 4,919 children attended voluntarily, but of the remainder 12,749 were found verminous after a still further examination and were compulsorily taken by the nurses for cleansing. Among the latter, 889 were subsequently found to have relapsed and prosecutions under section 87 of the Education Act, 1921, were instituted in 805 cases.

As in previous years the borough medical officers were informed concerning children dealt with under the Council's cleansing scheme in order that the home conditions might be remedied under the General Powers Act, 1922. During 1924 reports were received in regard to 2,282 homes visited; out of this number disinfection or destruction of bedding or disinfection of homes was carried out in 819 instances. In 1923 the corresponding figures were 3,589 homes visited, action taken in 1,088 cases; in 1922, 5,005 homes were visited and action was taken in 1,228.



Use of public  
washing  
facilities by  
school  
children.

Arrangements were continued during the year whereby parties were taken during school hours to the public washing baths in Camberwell and Kensington. The number of baths given during 1924 was 4,025 in Camberwell and 6,306 in Kensington, a total of 10,331. Applications have been made for an extension of this scheme and at present negotiations are on foot for similar arrangements to be made for other districts in London. Quite apart from the point of view of the personal hygiene of the child the scheme is considered to be educational as can be seen from the following extracts from letters written by the head mistresses of schools in Kensington:—

“The children return from their morning dip not only cleaner but much happier and more at ease, with that healthy glow about them which children ought to have. These children are much better able to benefit by the day's teaching than they ever were before and for many of them the bath is a far more educative influence than anything we do in school.”

“Now that the facilities are more widely known these people are showing their appreciation by using the baths both in the evenings and in the school hours for the children.”

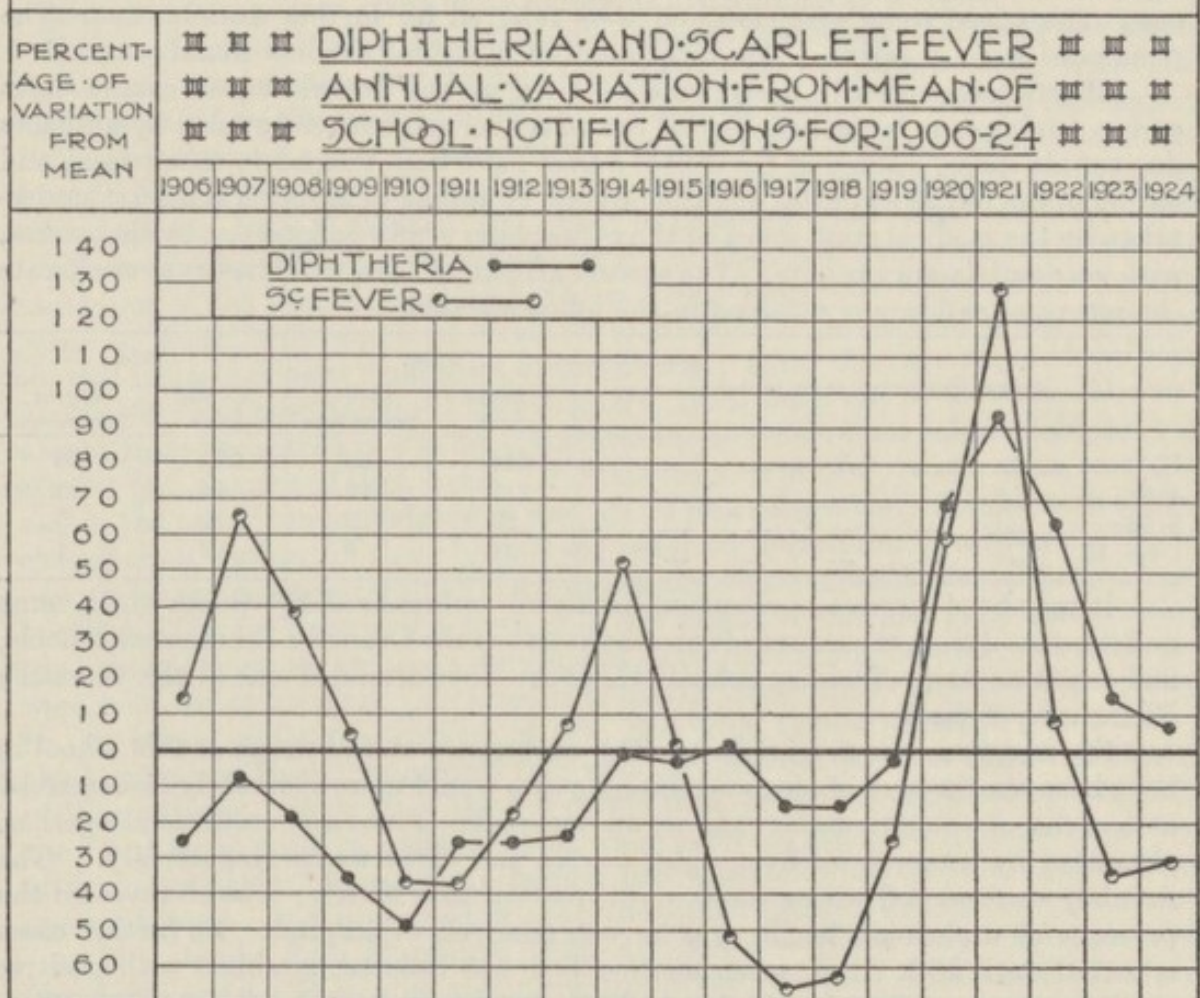
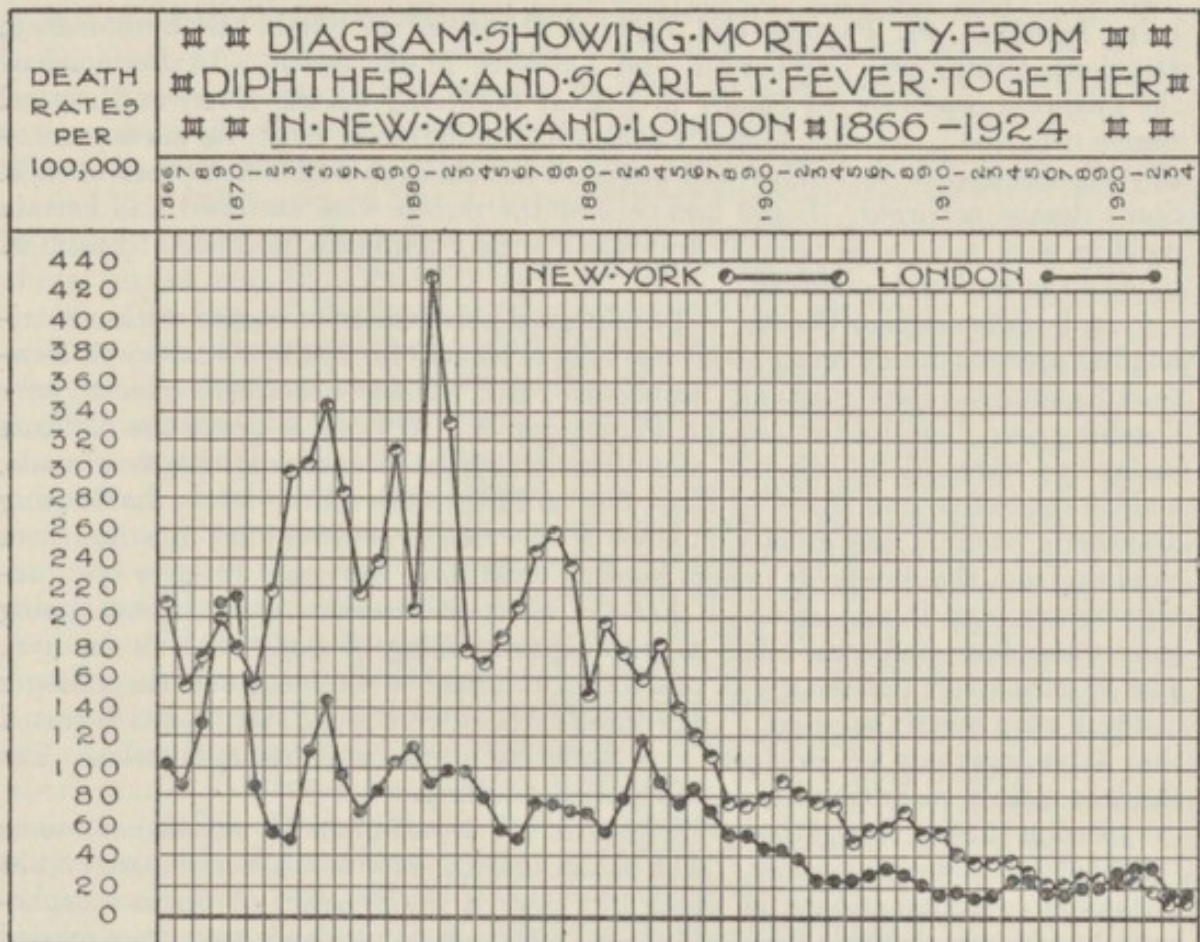
### *Infectious Diseases.*

Diphtheria.

Although the incidence of diphtheria in public elementary schools in London showed a progressive decline from 1921 to 1924, there has been a more rapid decline of scarlet fever since the epidemic of 1920-21. Prior to the epidemic of 1920-21, diphtheria had remained at a comparatively low level for many years, the number of school cases occurring each year varying but slightly, whereas in the case of scarlet fever the period from 1906-1924 (for which the school statistics are available) was characterised by two decided humps in the epidemic curve, in 1907 and 1914, before the wave of prevalence occurred in 1920-21. No such phenomena are to be observed in the incidence of diphtheria, as will be seen in the diagram on p. 95, in which the annual percentage of increase or decrease above and below the mean number of cases of scarlet fever and diphtheria occurring in the schools during the 19 years, 1906-1924, is shown. To what extent the continued prevalence of diphtheria is due to inflation of the notification figures by recourse to bacteriological methods of diagnosis is a matter for speculation, but there seems to be no doubt that the notification of mild cases, in which the diagnosis is made to depend upon a positive report from the laboratory, plays no inconsiderable part. Prior to the introduction of bacteriological aids to diagnosis, and when the incidence of diphtheria was at a low ebb, such cases would probably have been regarded as ordinary sore throats, and in some instances perhaps as mild scarlet fever. The unwonted prevalence four years ago of diphtheria and scarlet fever, however, doubtless gave a stimulus to swabbing, which has since been maintained and this may account in part for the greater prevalence of diphtheria in London than in other parts of the country where bacteriological assistance in diagnosis is perhaps not so readily obtainable. From the Council's laboratory alone, out of 193 children found to be harbouring *B. diphtheriae*, 119 were notified as clinical cases and sent to hospital. Of these, 66 were children discovered in elementary schools, and would probably in many cases have been missed but for the supervision of the school medical service; 53 were from residential schools, and many of them were removed to hospital, not so much on clinical grounds but by reason of the impracticability of isolating them at the school. In addition 6 further cases in which merely suspicious organisms were found were subsequently removed to hospital on private medical practitioners' certificates.

The number of cases of diphtheria reported from the schools during 1924 was 3,696, as compared with 3,985 (1923), 5,641 (1922), 6,661 (1921), 5,841 (1920). One-half of the total cases in 1924 were reported during the autumn and winter terms (*i.e.*, between the Summer and Christmas holidays), the districts chiefly affected







being Islington, St. Pancras and Bethnal Green in the north, and Bermondsey, Deptford, Southwark, Camberwell and Lambeth in the south. In Bermondsey the outbreak was centred chiefly in schools bordering on the river, and several deaths occurred; at Laxon-street School, which suffered the most, the cases practically all occurred in November and amongst the children under five years of age. Some deaths occurred. Large numbers of the pupils were swabbed and certain children were found to be carrying diphtheria germs. After repeated visits by medical officers the outbreak subsided.

In Southwark and Camberwell diphtheria persistently occurred within a triangular area (each side being about one mile in length) formed by Camberwell New-road, Kennington Park-road and Camberwell-road. The schools chiefly affected were Comber-grove, Beresford-street and Faunce-street. At Comber-grove the children under five were chiefly affected, and although repeated examinations were made, and swabs taken from time to time, few children were found to be harbouring diphtheria bacilli. The greater number of the cases occurred after the return of children from the hop-fields, where housing conditions were said to have been unsatisfactory, and it was assumed that the inclement weather during the hopping season may have had some effect in lowering the vitality of many of these children. The Faunce-street outbreak was practically confined to October, and the younger children were mostly affected. Only three carriers were found, but it was reported that large numbers of children were suffering from catarrhal symptoms. The children mainly came from clean two-storied dwellings.

During 1924, investigations were made in 174 departments (96 schools) and some 16,000 children were inspected. The bacteriological examinations numbered 3,973 (including re-examinations), of which 314 showed the presence of germs morphologically indistinguishable from diphtheria, although no virulence tests were carried out; 294 raised some suspicion and were referred for further examination. The remainder were negative. The total number of actual carriers found was 193.

Efforts have recently been made to speed up the reswabbing of carrier cases and to minimise as far as possible the loss of school attendance entailed by absences due to this cause. Many of the school nurses have been trained to take swabs, and although the initial enquiries and the original swabbing of suspects is always undertaken by the medical staff, much of the reswabbing is now carried out by the nurses, with very satisfactory results. The success attending these endeavours to accelerate the return of children is reflected in the following table:—

Period of absence from school.						1920.		1924.	
						Carrier cases.	Approx. percentage.	Carrier cases.	Approx. percentage.
Up to 4 weeks	...	...	...	...	...	324	66	233	80
4-8	„	...	...	...	...	111	22	44	15
8-12	„	...	...	...	...	27	5	10	3
Over 12	„	...	...	...	...	31	6	2	1

Diphtheria at residential schools.

It may be of interest to comment briefly on outbreaks of diphtheria which came under notice during the course of the year at two of the Council's Residential Schools, and one at an Army Training School, where the boys attended one of the Council's Elementary Schools.

(i.) *Mayford Industrial School*.—The occurrence of diphtheria at this school in boys between the ages of nine and sixteen years would more accurately be described as a series of sporadic cases than as an outbreak. Five cases occurred altogether, separated by intervals of five, eight, twelve and eight weeks respectively. The first boy was isolated with a suspicious throat on 23rd March; a swab revealed the presence of diphtheria bacilli and he was removed to hospital. No further cases occurred until 25th April, when another boy was isolated, swabbed with positive result, and removed to hospital. A sharp watch was kept by the medical officer



of the school with a view to isolating and swabbing any boys developing sore throat, but no further cases occurred until eight weeks later, when a boy was isolated with a sore throat and was sent to hospital on a positive bacteriological finding. All three were treated at Guildford Isolation Hospital, and it was reported that the illness was very mild with very little membrane on the fauces. They were discharged on 2nd May, 6th June, and 28th July respectively after two negative swabs had been obtained. After the third case, as many boys showed abnormal conditions of the throat, ear or nose, they were swabbed, but the specimens did not yield diphtheria bacilli. In July all the boys, except those under any suspicion, went into camp at Ramsgate, after consultation with the medical officer of health of that district. They returned in much improved health, and the school presented a clean bill of health, as regards diphtheria, until 11th September, when another mild sporadic case was reported. This boy was sent to one of the Metropolitan Asylums Boards hospitals. During the time these cases were occurring reliance was placed on careful supervision and isolation of suspicious cases. On 3rd November a boy was isolated with a sore throat and was removed to a Metropolitan Asylums Board hospital after a positive bacteriological examination. This case proved to be the only one which could not be described as mild, as the boy was said to have "well marked faucial diphtheria of moderate severity." The whole school, including the staff, were now swabbed, and two of the boys were found to be carrying diphtheria germs, and five had suspicious organisms; these cleared up in a comparatively short time. As a further precaution Woking and neighbouring hamlets were ruled out of bounds. At the time of writing (March, 1925) no further developments have occurred. Exhaustive enquiries were made to discover whether any common cause could have been responsible for this sporadic diphtheria, but nothing definite could be elicited. There was no evidence that any of the boys whose swabs yielded a positive or suspicious result were acting as distributors of infection.

(ii.) *Newport Market Army Training School, Westminster.* This is not under the Council's jurisdiction, but the boys attend one of the Council's schools. Attention was first called to the occurrence of diphtheria at the institution on 26th November, 1924, when it was discovered that sixty-five boys from the training school were absent from St. Matthew's school, Westminster, as possible contacts of diphtheria. Between that date and 16th December nine cases of diphtheria (one fatal) occurred. All the boys at the training school and certain of the staff were swabbed, with the assistance of the Council's medical officers; nine boys were found to be carrying germs of diphtheria and were removed to hospital. Only one of them, however, showed definite clinical symptoms of diphtheria. After the removal of these boys no further cases occurred until 12th January, 1925, when one of the boys, who was absent from the school in a general hospital the previous term when swabbing was carried out, developed diphtheria. Further inspection of boys was then arranged and in the meantime attendance at day school was suspended. The bacteriological examination resulted in three boys being removed to hospital as carriers, including one who gave a positive result on the previous occasion and had been discharged from hospital. On 1st February a fresh case was reported and following upon further swabbing of contacts two boys were found to be harbouring diphtheria bacilli and were removed to hospital. As a result of this outbreak the Schick test was applied to this school under the auspices of Drs. Monckton Copeman and W. M. Scott of the Ministry of Health in conjunction with Dr. Shinnie, Medical Officer of Health of Westminster. Some 70 of the boys were thus tested on 4th March; 13 out of the 70 showed positive reactions and these received their first immunising dose of toxin antitoxin followed by a further dose the following day and a third dose one week later. It was decided to apply the test to all new admissions to the school.

(iii.) *Bushy Park Residential Open-Air School.*—(See p. 87). Between 25th November and 1st December an outbreak of diphtheria took place when seven boys



were attacked. From the outset each case was promptly removed to the isolation hospital, disinfection was carried out by the local authority, careful observation was kept on all cases of slight indisposition; visiting by parents was stopped and new entries to the school countermanded, all the contacts among the pupils and the staff were swabbed. These measures were fortunately successful and no further cases developed after 1st December. Subsequently it was found that the school dentist, who already had a slight sore throat on 1st December, was in fact suffering from a slight attack of diphtheria.

The first case occurred on 25th November and was a boy, aged 10, from the "Springfield" school in Lambeth. This pupil suffered from a severe attack and unfortunately died at the isolation hospital on 2nd December. Very close watch was kept up to the end of the term. As a result of continued observation and swabbing of contacts, eight boys were found during this time with suspicious organisms in their throats and as a matter of precaution were removed to isolation, but none of these boys was at any time ill and none developed any symptoms of diphtheria. Of the six cases other than the boy who died only two were described by the Metropolitan Asylums Board as severe, the remainder being mild.

No cause of the outbreak could be discovered in the school itself. All the boys had been examined immediately before and immediately after admission. The outbreak took place amongst the Lambeth group of boys which was admitted on 18th November, and, as reported above, the first and most severe case occurred on 25th November. The outbreak was almost entirely confined to this group of boys and it is highly probable that the disease was introduced by visitors on Saturday, 22nd November.

Dr. Forbes' report on the Schick test for diphtheria, and artificial immunisation.

In the Annual Report for 1922 (vol. III., p. 84) reference was made to the Schick test and active immunisation for the preventive control of diphtheria, and the results of the work of Park and Zingher in applying the test to large numbers of children in New York were quoted. Since then this measure of prophylaxis has been widely extended in New York and other parts of America and adopted to a more limited extent in certain other countries. In the Annual Report for 1923 (vol. III. p. 93) the mortality from diphtheria, including croup, in New York was compared with that in London and England and Wales since 1858, and reference was made to the confusion which had occurred in the earlier years of the period between scarlet fever and diphtheria to which attention was drawn in the New York reports. In the diagram on p. 95 contours are shown for the two diseases in combination. It will be noticed that in the earlier years, peaks in the New York curve were broadly associated with similar peaks in the London contour, but it should be borne in mind that the New York curve relates to a smaller area up to 1897, and since then to a much extended area. Reports recently received appear to indicate some increase in the diphtheria death-rate for New York in 1924, while the London rate has remained the same as in 1923. In Great Britain the Schick test and immunisation have only been tried on a small scale and mainly in fever hospitals and such residential institutions as poor law schools. Between 1921 and 1923 it was ascertained that in residential institutions in the London area some 4,320 individuals had been tested, of whom 1,390 were Schick positive and 1,160 received injections of toxin-antitoxin. This has mainly been the work of Dr. O'Brien and his assistants. Dr. Monckton Copeman and Dr. W. M. Scott of the Ministry of Health have also carried out similar work at private schools and institutions in the provinces. In London the Metropolitan Asylums Board now requires the Schick testing and immunisation of the nursing and medical staff and one of the London boroughs (Holborn) provides facilities for obtaining immunisation at its maternity and child welfare centre.

In the provinces inquiries of the medical officers of health of some twenty of the largest towns elicited the fact that testing and prophylactic immunisation had not been adopted, so far as the school children or general population were concerned.



However, at the City fever hospitals of Birmingham and Manchester, the members of the nursing and hospital staffs have been tested and immunised, and a considerable number of patients have been Schick tested. It is also understood that Schick testing and immunisation is contemplated in Birmingham through the agency of the maternity and child welfare centres. Similar work on a more limited scale has been carried out in hospitals in Bristol, Newcastle and Brighton. In Edinburgh in November, 1923, with the sanction of the education authority the application of the test and the immunisation of school children in that city was commenced and is now proceeding. In Glasgow the use of the test has been restricted to the patients and staff of the City Fever Hospital and to the inmates of two residential institutions. In Fraserburgh, Aberdeen, a clinic has been opened for the preventive control of diphtheria and a number of children have been tested and immunised. The number of individuals who have been tested and immunised in Great Britain is at present too small and the dates too recent to warrant any deductions being drawn from the subsequent incidence of, and mortality from, diphtheria in the localities where the experiment has been made.

The authors of "Diphtheria" (Medical Research Council, 1923) draw attention to the work carried out by Dudley in 1922 as showing that a natural process of immunisation, in response to exposure to infection, is at work and may alone, in a suitable social environment, be productive of extensive immunity in a short time. Therefore results attributed solely to toxin-antitoxin injections, may to a greater or less extent in reality be due to a coincident natural immunisation. They are further of the opinion that the duration or permanence of immunity following active immunisation is not necessarily dependent on the injections alone, but that, more probably, in the production of immunity in the course of previous years, the natural immunising process has a larger share, and the primary stimulus of the injection renders the patient more susceptible to the natural immunising process. They also add that if a child who is not exposed to infection, *e.g.*, in a rural district, is immunised, it is probable the immunity will not be found to last so long.

The Council had the subject of the Schick test and active immunisation under consideration in May, 1924, on an exhaustive report by Dr. J. G. Forbes in which the whole matter was reviewed. It was resolved to await the publication of the report of the Ministry of Health on the test before taking any action.

The number of cases of scarlet fever reported from the schools during 1924 Scarlet fever. was 5,093, as compared with 4,824 (1923), 8,026 (1922), 17,030 (1921), 11,860 (1920) and 5,574 (1919). The usual seasonal rise in prevalence occurred during the autumn, the districts chiefly affected being St. Pancras and Islington north of the river and Lambeth, Wandsworth and Camberwell in the south. In each of these districts the disease, as frequently happens, seemed to cling mainly to certain circumscribed areas. Thus in St. Pancras the schools in the Kentish Town and Camden Town area were affected during the latter half of the year, whilst in Islington the districts east and north-east of the Angel were affected throughout the year. An outbreak began in the North Lambeth district during the summer term and persisted through the following term. In Wandsworth the Earlsfield district was chiefly affected. In Camberwell The Friern School, Peckham Rye, was badly attacked in the autumn and other cases were reported from one or two neighbouring schools. The outbreak at The Friern School commenced immediately after the summer holidays and continued until December. The school was visited by the Council's medical officers. It would appear that the infection was introduced by an unrecognised case or cases. The number of schools specially affected and visited by the Council's medical officers during the year was 168, entailing 248 departmental investigations and the inspection of some 30,000 children.

The epidemic of measles referred to in the Annual Report for 1923 (vol. III., Measles. p. 93) continued until the beginning of June, 1924. The increase in cases from



the schools was first noticed in the middle of October, 1923, and just prior to Christmas, 1,000 cases were being reported weekly; in February, this figure had reached 2,000, and it remained at about that level for eight weeks. The special scheme providing for close co-operation between the nursing service, attendance officers and the local sanitary authorities, described in the Annual Report for 1919 (vol. III., p. 85), was put into operation in January, with the following results:—

(1) Schools visited by nurses	...	...	...	...	...	...	...	585
(2) Hours devoted to work	...	...	...	...	...	...	...	4,922
(3) Definite cases of measles discovered to be in attendance at school and reported direct to the Borough Medical Officer	...	...	...	...	...	...	...	212
(4) Suspicious cases discovered in school and excluded by the nurse	...	...	...	...	...	...	...	1,727
(5) Suspicious cases referred to in (4) which subsequently proved to be measles	...	...	...	...	...	...	...	1,207
(6) Doubtful absentees reported to school attendance authorities for immediate visitation	...	...	...	...	...	...	...	14,327
(7) Absentees under (6) who proved to be suffering from measles	...	...	...	...	...	...	...	3,275

The reports of the school nurses enabled the borough medical officers of health to arrange for the health visitor to follow up cases of measles, particularly in the younger ages, and to put into operation the borough scheme of nursing provision where necessary at the earliest possible moment. It would appear that as pointed out in the Annual Report for 1923 (vol. III., p. 94), the operation of this special scheme had some effect in flattening the curve of incidence.

Whooping  
cough.

The number of cases of whooping cough reported during 1924, was 8,404, as compared with the following figures for preceding years:—7,304 (1923), 10,340 (1922), 9,584 (1921), 8,779 (1920), 3,397 (1919) and 11,671 (1918). There was a noticeable prevalence of the disease in the autumn and winter terms. The school nurses specially visited 30 schools with the object of assisting head teachers in controlling outbreaks.

Ringworm  
and favus.

One of the most satisfactory features of the activities of the school medical and nursing service has been the success in the prevention of ringworm among elementary school children in recent years. This success may be ascribed to a twofold cause, namely the efficiency with which new cases are promptly discovered by the school nurses and the increasing percentage of cases which are treated by means of X-rays. In 1911, when 6,214 fresh cases were discovered, only 30 per cent. received X-ray treatment and this percentage has progressively increased year by year until, in 1924, as many as 70 per cent. of the cases were X-rayed. The popular prejudice against this treatment, which is the only known cure, has been very largely overcome and the result is shown in the reduction in the incidence of the disease. Another very great advantage of X-ray treatment is the avoidance of much loss of school attendance, for whereas a child treated in this way should ordinarily be able to return to school in two months or less, children receiving ointment and other forms of treatment may be away from school for years to the detriment of their whole career in life

Ringworm.

Year.	Fresh cases.	Cured cases.	Cases outstanding at the end of the year.
1911	6,214	5,872	2,458
1912	5,311	5,131	2,204
1913	5,573	5,257	2,277
1914	4,449	4,904	1,638
1915	3,747	3,928	1,334
1916	3,115	3,081	1,232
1917	2,814	2,964	992
1918	2,639	2,555	979
1919	3,447	3,103	1,259
1920	3,983	3,856	1,332
1921	3,473	3,765	999
1922	2,766	2,918	818
1923	2,322	2,395	705
1924	1,724	1,924	482



During the year 2,694 specimens of hair stumps were examined in the Council's laboratory and of these 1,191 (including re-examinations) proved to contain ringworm fungus. 10 fresh cases of favus were discovered during 1924 and 3 cases reported in 1923 remained uncured at the beginning of the year. Of these cases 6 have been cured and the remaining 7 are still under treatment.

The prevalence of chickenpox among London school children during the past two years has been very marked. During 1924, some 11,826 cases were reported, the disease being most prevalent during the period October to December. The number of cases reported in the preceding five years were 13,849 (1923), 8,213 (1922), 9,811 (1921), 8,506 (1920) and 7,593 (1919). The school nurses specially visited 92 schools where outbreaks occurred in order to advise head teachers. Chickenpox.

Mumps was prevalent in the schools throughout the year with the exception of a quiescent period during September and October. The greatest incidence occurred during the first four months. Altogether 15,424 cases were reported. The numbers in the preceding five years were 7,916 (1923), 4,207 (1922), 13,317 (1923), 8,389 (1922) and 6,925 (1921). The school nurses visited 160 schools where outbreaks of the disease occurred with a view to giving any necessary advice to head teachers. Mumps.

The incidence of ophthalmia among school children, noticeably high in 1923, declined in 1924, 1,101 cases having been reported as compared with 1,881 in 1923, 801 (1922), and 466 (1921). Ophthalmia.

The disease called trachoma is one from which the London school population is generally free. It is one of the chief causes of blindness in many foreign countries. About half-a-dozen cases have come to light annually during the past twenty years, generally in connection with the alien population in the east end of London. Early in 1924 an unusual number of absences on account of external eye disease were noticed in the riverside parts of Poplar and Stepney. Some of these children were examined by Mr. Bishop Harman, who discovered that most were suffering from early trachoma. Thereupon all the cases were followed up, and it soon became apparent that there was a spread of the disease unprecedented in recent years. Fortunately the Metropolitan Asylums Board was able to receive the children into its schools at Swanley, special arrangements being made by which all cases diagnosed as trachoma should be admitted with a minimum of delay. The course of the outbreak is illustrated by the number of children seen at the County Hall with trachoma:—January, none; February, none; March, 17; April, 34; May, 51; June, 36; July, 51; August, 2; September, 4; October, 4; November, 10; December, 6; total 215 cases. The fact that most of these were promptly received by the Board into Swanley probably prevented a much wider spread of the disease which was confined to the original area. Trachoma.

During 1923 and the early part of 1924 there was an unusual prevalence of simple conjunctivitis all over London. It seems probable that the trachoma was enabled to spread by being grafted upon cases of simple conjunctivitis. Conjunctivitis.

During 1924 several small outbreaks of infectious illness were reported from the Council's residential schools. Mayford School and Bushy Camp School were somewhat affected by mild cases of diphtheria, referred to on pp. 96 and 97. There was a slight outbreak of measles at Rayners Deaf School, Penn, Bucks, involving only six cases, whilst at Upton House Deaf School, Homerton, 24 cases of mumps and tonsilitis occurred in the early part of the year. A small outbreak of mumps affecting 8 children was also reported from Linden Lodge Blind School. Apart from these occurrences the condition of health of the children at the residential schools as regards infectious illness does not call for special comment. Residential schools.

The diphtheria attack-rate in London during 1924 was 2·3 per thousand population; in 1923 the rate was also 2·3, and in 1922 it was 3·4, while for the ten years 1911-20 the average was 2·0. The attack-rate in London is still considerably greater Infectious disease: incidence and mortality in London.



than the corresponding rate in the rest of England and Wales (0·8 per 1,000 living). The existence of greater facility for bacteriological examinations in the former area is doubtless in part responsible for the higher attack-rate there. Of the total cases notified in 1924, numbering 10,684 (53 weeks), 4,620, or 43 per cent., were among children aged 5–15 years, while the deaths at these ages were 178 or 3·9 per cent. The corresponding percentages for 1923 were 46 per cent. and 4·7 per cent., respectively.

The scarlet fever attack-rate in London during 1924 was 2·5 per thousand of population, as compared with 2·2 in 1923. In the rest of England and Wales the corresponding figures were 1·9 and 2·2 respectively. Of the total of 11,610 cases of scarlet fever notified in 1924 (53 weeks), 6,133 (53 per cent.) were of ages 5–15, the deaths at these ages numbering 28 (0·5 per cent.). The corresponding percentages for 1923 were 56 and 0·6 respectively.

The deaths from whooping-cough and measles in 1924 at ages 5–15 numbered 14 and 61 respectively.

The death-rates from the infectious diseases which mainly affect child life, measles, whooping-cough, diphtheria and scarlet fever, show considerable variations in age-incidence in the course of the past sixty years. The following tables show the death-rates per 100,000 living at each age-period.

#### MEASLES.

Period.	All ages.	0 –	1 –	2 –	3 –	4 –	5 –	10 –	15 –	20 +
1861–70	57·2	348	869	485	247	128	24	2	1	0
1871–80	50·8	365	771	364	199	104	26	2	1	0
1881–90	63·4	454	991	476	273	162	37	2	1	0
1891–1900	58·3	494	1,069	436	255	146	27	1	0	0
1901–10	43·9	419	904	351	180	111	19	1	0	0
1911–20	34·3	341	752	299	156	93	22	1	0	0
1921–23	16·2	172	379	153	71	36	9	0	0	0

#### WHOOPIING-COUGH.

1861–70	87·6	1,014	1,124	572	294	152	27	1	0	0
1871–80	81·3	1,044	1,022	462	241	133	25	1	0	0
1881–90	69·0	950	901	395	228	125	22	1	0	0
1891–1900	49·9	810	724	283	152	87	15	0	0	0
1901–10	32·6	614	519	178	95	50	9	0	0	0
1911–20	19·8	386	341	131	68	39	7	0	0	0
1921–23	15·5	304	307	101	54	28	5	0	0	0

#### SCARLET FEVER.

1861–70	113·5	231	644	794	717	588	264	54	18	6
1871–80	60·1	115	327	407	392	329	140	25	8	3
1881–90	32·8	65	194	228	229	188	73	14	5	2
1891–1900	16·9	39	106	134	131	97	37	8	3	1
1901–10	9·1	20	61	74	73	50	23	5	2	1
1911–20	4·1	8	26	32	32	24	12	3	1	1
1921–23	5·2	11	40	39	44	31	16	4	2	1

#### DIPHTHERIA.

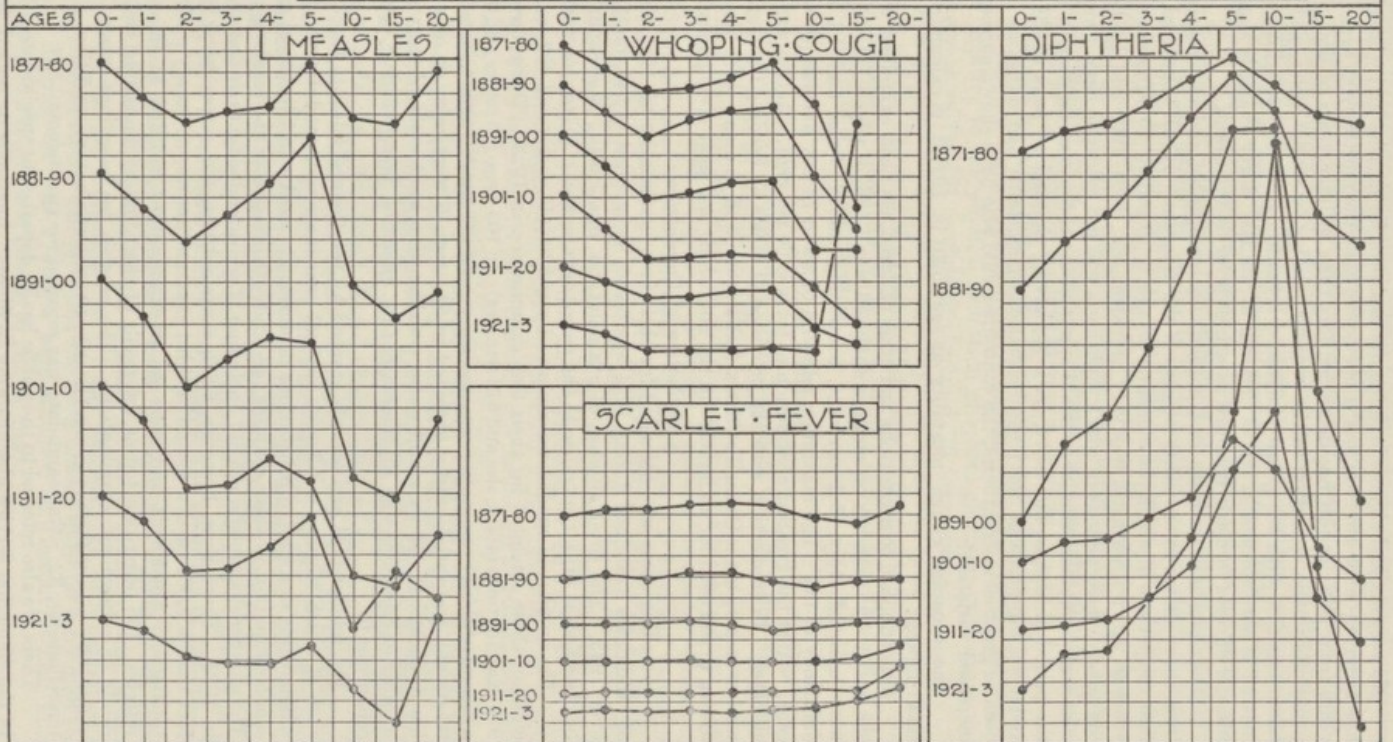
1861–70	43·0	211	391	328	256	173	50	7	3	3
1871–80	29·9	109	237	208	187	150	47	6	2	2
1881–90	41·9	117	311	297	287	240	80	10	3	2
1891–1900	53·4	139	401	378	382	336	127	18	4	2
1901–10	16·6	57	142	125	122	100	43	5	1	1
1911–20	14·7	50	101	95	104	98	51	9	1	1
1921–23	21·4	58	166	148	184	170	79	20	3	0

Taking the death-rates for 1861–70 as 100 for each age-period, figures are obtained which illustrate the changes which have occurred in the age-incidence of mortality in subsequent periods. The results are shown in the diagram on p. 103.

Similar diagrams appeared in Sir Shirley Murphy's Annual Reports for 1897 and 1905.



# LONDON DIAGRAM SHOWING THE VARIATION IN MORTALITY FROM CERTAIN INFECTIOUS DISEASES AT DIFFERENT AGE PERIODS 1871-1923 NOTE:- THE MORTALITY RATE FOR EACH AGE PERIOD IN 1861-70 IS TAKEN AS 100





No very marked change in the contours shown for measles and whooping-cough has occurred since 1871-80, but it is evident that the mortality at ages under two years from these causes has decreased less than in later years of life. There is remarkably little alteration in the contour relating to scarlet fever, and this fact, taken together with the greatly increased attention given to bacteriological examination of sore throats in school children in the last thirty years, is suggestive of transfer of cases formerly regarded as scarlet fever to diphtheria.

The changes in the rates for diphtheria are remarkable, and are entirely different from those shown in the other sections of the diagram. It will be noticed, however, that the periods in which the mortality at ages 5-10 and 10-15 is in excess comprise years in which diphtheria was very prevalent, *i.e.*, 1891-1900 and 1921-23, while conversely, those periods in which diphtheria was not epidemic have a much flatter contour. Something similar to this is apparent in the contours for measles mortality, the period of highest mortality, 1881-90, having the highest peak in the contour; and it is not improbable that if the fluctuations in mortality had in the case of measles been so great as in diphtheria, the contours would also have shown correspondingly increased variation.

The whooping cough mortality at age 15-20 in 1921-3 is calculated on very small figures.

Supervision  
of dietaries.

Milk supplied to necessitous and other children has been examined throughout the year. The number of samples analysed was 1,186, of which 111 (9.3 per cent.) were unsatisfactory, 5.2 per cent. containing added water and 4.1 showing a deficiency of fat. The maximum addition of water in any one sample was 30 per cent., whilst the greatest abstraction of fat was 60 per cent. Action was taken in all cases. In connection with the provision of meals at Feeding Centres, 40 meals were examined in the Council's Central Laboratory, and in many cases attention was drawn to the need for an increase in the nourishing and heat-giving constituents.

#### *Examination of Candidates.*

Including some who attended for their first examination in 1923, the number of candidates examined during 1924 was 6,486, an increase of 940, or 17 per cent. over 1923. The total number of examinations was 7,650. The candidates may be classified as (a) for entrance to the permanent service; (b) for scholarships.

Candidates  
for per-  
manent  
services.

The number of candidates examined was 869 (417 males and 452 females), but eight of these attended for their first examination in 1923. There were, however 972 examinations (460 males and 512 females); in 103 cases (43 males and 60 females) a second or third examination was necessary. Of the number thus referred, remedial treatment was satisfactorily obtained in 94 cases, 5 were rejected, one withdrew her application. 46 were still under consideration at the end of the year. The number of rejections was 15, the reasons for rejection being vision 8, heart 1, miscellaneous 6.

Candidates  
for scholar-  
ships.

The scholarships and awards granted by the Council fall into three divisions, each of which requires a different medical examination of candidates: (i.) County scholarships as a step to institutions of university rank; (ii.) technical and special scholarships; (iii.) awards enabling candidates to prepare for the teaching profession. The number examined was 5,617, including 31 who attended for their first examination in 1923. There were, however, 6,678 examinations, the excess being due to the fact that in 1,061 cases a second or third examination was necessary; 953 obtained satisfactory treatment and were on re-examination certified as fit. 181 were rejected, 156 being rejected as the result of their first examination, and 25 as the result of subsequent examinations. The reasons for rejections were: defective vision, 97; unsatisfactory general health, 40; unsatisfactory condition of heart, 13; miscellaneous, 32. One candidate was rejected for two defects.

Cases  
specially  
referred.

There are also referred to the public health department special cases of employees in the education service absent owing to illness; questions in regard to students



in institutions for higher education whose health renders exceptional attention advisable; teachers proceeding overseas under the interchange scheme; teachers returning to duty after extended leave of absence (i.) owing to personal illness; (ii.) for educational purposes; (iii.) married women under E.22 of the Regulations; teachers about to apply for a breakdown allowance; applications for special consideration owing to wounds, etc., of teachers demobilised from H.M. Forces; and claims received from teachers and others in the permanent service for exceptional treatment as regards sick pay and reimbursement of medical and other expenses, in respect of illnesses alleged to be due to the conditions under which they may have to work. The number dealt with was 3,751 as compared with 3,154 in 1923, an increase of 597, due largely to extensive sickness in the early part of the year. The major part of these were teachers of whom 653 were men and 2,762 women. In connection with sick leave, 62 per cent. of the teachers were over 40 years of age; the average age of the Council's teaching service is 38 years.

All applicants for admission to the Council's course of physical instruction instituted in 1920, to train teachers to carry out the provisions of the Education Act, 1918, relative to the physical education of school children, were examined. During the year, of the 151 candidates examined, 16 were rejected. Physical education of teachers.

The arrangements made in 1922, whereby medical advice could be given upon accidents or sudden illness at the County Hall were continued in 1924, when 207 cases were attended. Generally the cases were of a minor character, and of the 61 cases of injury, only four were serious. Accidents and sudden illness at County Hall.

### *Defective Children.*

The total number of examinations conducted under the Education Act during the year was 25,164—an increase of 785 on 1923.

5,418 admission examinations were held as compared with 4,944 in 1923. 1,935 children (1,033 boys and 902 girls) were deemed suitable to attend elementary schools, 85 (51 boys and 34 girls) schools for the blind, 268 (128 boys and 140 girls) schools for myopes, 254 (137 boys and 117 girls) Swanley, 933 (501 boys and 432 girls) physically defective schools, 1,129 (619 boys and 510 girls) mentally defective schools, 12 (7 boys and 5 girls) open-air schools, 66 (30 boys and 36 girls) schools for the hard-of-hearing, 110 (59 boys and 51 girls) schools for the deaf; 41 (25 boys and 16 girls) were epileptic, 502 (235 boys and 267 girls) invalided from school attendance, 70 (38 boys and 32 girls) deemed to be imbeciles and 13 (7 boys and 6 girls) idiots. Admission examinations

The special schools were visited at least once a quarter and every child was seen at least once during the year, the total examinations amounting to 19,312; in addition, 350 special examinations were made of children already on the rolls of special schools in connection with applications for non-enforcement of attendance at special schools, etc. As a result the following re-classification took place:—245 returned on improvement to elementary schools; 12 to schools for the deaf and hard-of-hearing; 8 to schools for the blind and partially blind; 22 from schools for the physically defective to schools for the mentally defective; 48 were excluded as imbecile; 48 were invalided on medical grounds; and 451, over 14 years of age, were excluded as no longer certifiable. Examinations were also conducted in 84 cases with a view to ascertaining fitness for education in industrial or reformatory schools.

There are 4 residential industrial schools, 6 residential schools (2 for blind, 2 for deaf, 1 for defective deaf and 1 for mentally defective children), with a total accommodation for 820 residential and 161 day scholars. To each institution is allocated a medical officer and provision has been made for dental inspection and treatment. During the year 713 boys were admitted to Pentonville-road Place of Detention, and 299 girls and infants to Ponton-road. Residential schools.



Exceptional children.

The following table shows the number of exceptional children in London during 1924 and the incidence per 1,000 of the total elementary school population :—

Defect.	Children.		Defect.	Children.	
	No.	Incidence per 1,000.		No.	Incidence per 1,000.
Blind—Totally ...	323	·5	Pul. Tuberculosis ...	1,320	2·2
Partially ...	946	1·6	Non.-Pul. Tub. ...	2,257	3·8
Deaf—Totally ...	719	1·2	Delicate ...	14,111	23·8
Partially ...	144	·2	Crippled ...	7,750	13·1
Mentally Defective ...	7,367	12·4			
Epileptic ...	890	1·5			

Mr. Yearsley's report on deaf children.

307 children were referred for special examination as suffering from deafness. These were seen by the Council's consulting aural surgeon, with the following results :—

Fit for central school ...	2	Fit for physically defective centre ...	0
Fit for elementary school ...	16	Invalided ...	25
Fit for elementary school (front row) ...	76	Advice given ...	14
Fit for hard of hearing centre ...	64	Imbecile or idiot ...	2
Fit for deaf school (normal) ...	81		
Fit for deaf school (defective) ...	14	Total ...	307
Fit for mentally defective centre ...	13		

In the cases found suitable for special education the cause of deafness has been classified as under :—

	Boys.	Girls.	Total.
Congenital ...	16	22	38
Acquired ...	49	36	85
Doubtful ...	4	4	8
	69	62	131

Of all the acquired cases of deafness there were 20 cases, or 23·5 per cent., attributable to infectious diseases as against 33·5 per cent. in 1923, and 14·7 per cent. in 1922. Of the diseases in this group, scarlet fever heads the list with 45 per cent., measles follows with 30 per cent., pertussis with 14 per cent., and diphtheria and influenza with 4 per cent. each. As in 1923, the comparatively low percentage of diphtheria is noteworthy. The sudden increase of scarlet fever, which has been for some years below that of measles, is also to be noted. Taken altogether, the lowered percentage of the infectious diseases in causing serious deafness in children suggests an improvement in the treatment of these conditions, although observations are required for some ten years to confirm this.

The amount of serious deafness due to pertussis, 14·9 per cent. as against 11·6 per cent. in 1923, is no doubt the result of the greater incidence of the disease during the war years. In 1919 it reached 27·7 per cent.

Out of the 20 cases, in 15, or 74 per cent., the deafness was the result of middle-ear suppuration, in 3, or 14 per cent., to internal ear complications and in 2, or 10 per cent., to catarrhal sequelæ. The figures last year were 67·7 per cent., 16·4 per cent., and 13·9 per cent., respectively. The vast majority of cases of serious deafness resulting from the infectious fevers was, therefore, preventible.

The congenital cases were made up as follows :—

True Hereditary Deafness ...	5
Sporadic Deaf—Birth ...	33
	—38

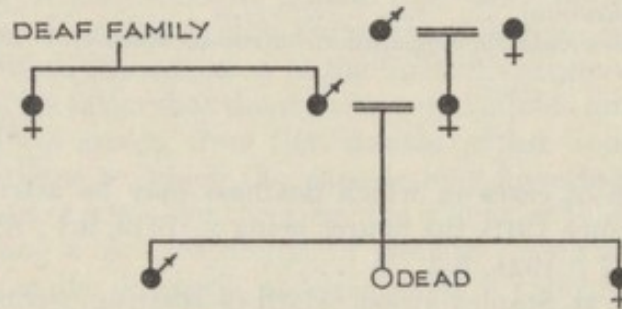
The cases of true hereditary deafness comprise four families, from which scholars have already been supplied to the Council's deaf schools. The family trees were as follows :—



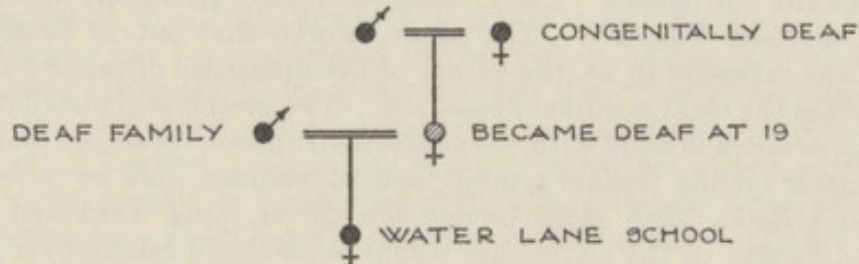
# — FAMILY TREES —

● = DEAF

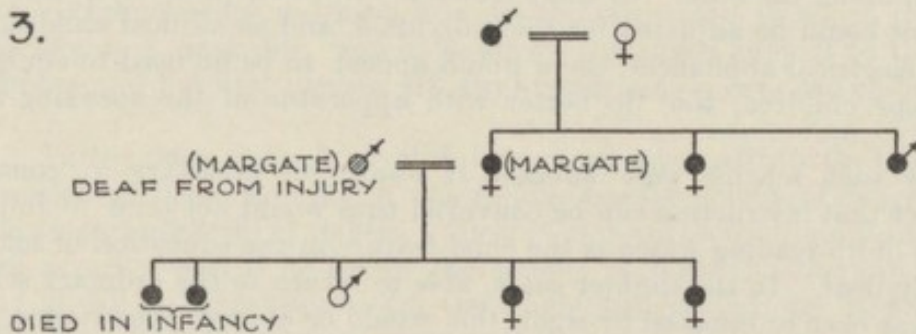
1.



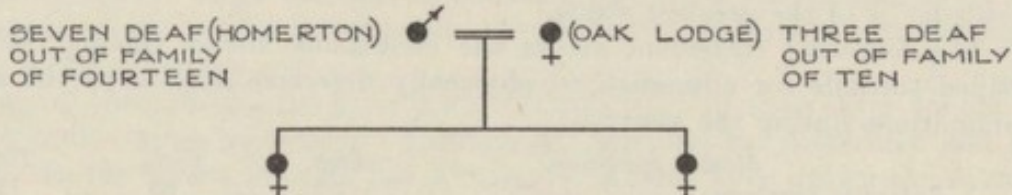
2.



3.



4.



In families 1, 2, and 4, there are seen examples of the working of the Mendelian hypothesis, in which pure recessives (deafness being a recessive character) "breed true." In family 2, it is true that the mother suffered from acquired deafness, but both the parents came of deaf families. In family 3, the effect of mating between an individual of a deaf family and an acquired deaf case is seen. It has been established by Fay ("Marriages of the Deaf in America," p. 128) that "Congenitally deaf persons, whether they are married to one another, to adventitiously deaf, or to hearing partners, are more liable to have deaf offspring than are adventitiously deaf persons."

Of the 33 cases of sporadic deaf birth, in four cases the condition was attributed to air raids. In one of these the mother stated that she received a severe electric shock by the touching of a live wire during a raid. In one case the mother, while pregnant, was badly frightened by the Silvertown explosion and lost her speech for some days after.



The acquired cases were due to the following causes:—

	Boys.	Girls.	Total.
Meningitis (various forms) ... ..	5	4	9
Infectious fevers ... ..	14	6	20
Congenital syphilis ... ..	4	5	9
Pneumonia (suppuration) ... ..	1	1	2
Primary ear diseases (catarrh, suppuration, or results thereof)... ..	24	20	44
Injuries ... ..	0	1	1
	48	37	85

The percentage of cases in which deafness may be attributed to congenital syphilis has fallen since 1919, the figures being:—1919, 9·1; 1920, 8·8; 1921, 8·7; 1922, 7·3; 1923, 4·7; 1924, 5·2.

Ear-phones  
for partially  
deaf children.

Some children at Stanley-street (Hard-of-Hearing) School have been tested with electric ear-phones. The investigation was carried out under the supervision of Mr. Macleod Yearsley. The result showed that out of 32 tested the hearing range was extended in 28, the extent of the difference of range varying from twice to 16 times the child's ordinary capacity. Two methods of installation are possible: (i.) to provide each child with a separate instrument; or (ii.) to install a microphone transmitter on the teacher's table, and to connect this by wires to each of the children's desks, each child having a receiver, plug, cord and headphones. A minor difficulty in the latter case would be to avoid falling over the wires, unless they are carried under the floor. Of these methods the first is probably preferable. Each instrument could be adjusted for the individual, and as all deaf children do not benefit by electrical appliances, there would appear to be no need to equip all the desks. Some children, too, do better with apparatus of the speaking-tube type.

Before any such scheme were adopted it would be necessary to consider whether the fact that instruction can be conveyed thus would not tend to impede the acquisition of lip-reading which is the chief feature in the education of schools for the partially deaf. In the slighter cases, able to return to the ordinary school when hearing has been re-inforced by sight, this would be of great importance. In the more severely and permanently deaf anything enabling them to acquire knowledge is of the greatest value.

Admissions  
to schools  
for the  
physically  
defective

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

Morbid condition.	Boys.	Girls.	Total.
Infantile paralysis ... ..	57	53	110
Cerebral paralysis ... ..	5	7	12
Various paralyses ... ..	30	15	45
Tuberculosis of bones and joints ... ..	131	91	222
Congenital deformities ... ..	11	11	22
Other deformities ... ..	66	36	102
Heart disease—Congenital ... ..	23	24	47
Acquired valvular ... ..	115	145	260
Acquired non-valvular ... ..	5	6	11
Other diseases ... ..	58	44	102
	501	432	933

Treatment  
of children  
suffering  
from  
crippling  
defects.

The general provision for the care of physically defective children was undertaken in London at an earlier date, and more extensively than in most, if not in all, other areas. London is exceptionally well provided both with special orthopædic hospitals, general hospitals with orthopædic departments, and other institutions which render ancillary treatment for crippling defects. There have been regular visits from an orthopædic surgeon to the special (P.D.) schools since September,



1905, and, with the assistance of the Invalid Children's Aid Association, and the school managers and, later, of the Care Committee organisation, a large number of the children have secured treatment through the various voluntary hospitals. With the introduction of the general school medical inspection, practically all crippled children attending school came to notice, the chief difficulty in earlier days being the delays necessitated by the numbers of children waiting for treatment at the hospitals. With the inception of the Council's scheme for the treatment of tuberculosis it may be taken that the provision is available for all children suffering from crippling defects arising from that disease, either under the scheme or at hospitals or institutions to which the parents may have taken them. A special list of all children out of school for three months is kept, so that there is little chance of any child escaping notice for prolonged periods. More recently arrangements have been made for the diagnosis and treatment of poliomyelitis. The Ministry of Health informed the local sanitary authorities of the assistance that can be rendered by the Public Health Department in the matter of diagnosis in the early stages, and a circular has been addressed to the medical officers of health of the, metropolitan borough councils, pointing out that the Metropolitan Asylums Board, at the request of the Council, have provided accommodation at Queen Mary's Hospital, Carshalton, for the treatment of this disease, either at the second stage (three months after onset), or discharged from the hospitals after undergoing correctional operations. The Council's consulting orthopædic surgeon and the school doctors examining children in physically defective schools are aware of these arrangements and have brought to notice cases in which they think further treatment is desirable, which is always arranged subject to the consent of the parents and hospital surgeon (if any) under whose care the child may happen to be.

Tuberculosis and poliomyelitis between them constitute the bulk of the crippling disorders of bones and joints, the residue consist chiefly of congenital deformities and the after effects of rickets. Rickets appears to be diminishing in its incidence and severity, and is no longer the serious problem that it was in former times and is still in other areas. On the whole, in view of the fact that the Invalid Children's Aid Association, in co-operation with the Council, follow up all cases of crippling, give a large measure of convalescence, and render assistance in all cases requiring orthopædic instruments, the provision for dealing with deformities appears to be adequate.

Many of these disabilities arise prior to school age, so that cases should now come to notice more particularly through the schemes for maternity and child welfare. In the recent circular the Ministry of Health have drawn the attention of the borough medical officers to the facilities available, so that in increasing numbers children are being dealt with before admission to special schools.

Apart from the diseases of the bones and joints, the most serious crippling disorder is heart disease. Steps have recently been taken to follow up cases of rheumatism with a view to averting, as far as possible, the conditions which lead up to the development of heart disease. Through the agency of the Invalid Children's Aid Association cases in the earlier stages have been sent for prolonged institutional treatment to such a school as Hartfield.

Encephalitis lethargica has attracted increasing notice during the year, and the records of cases have been investigated by Dr. Shruballs. It has been the practice, since the disease was made notifiable, to obtain from borough medical officers information of the symptoms and other particulars in every case and to secure, as far as possible, through the Children's Care organisation, reports on progress some months after the acute stage. The chronic stages of the sequelæ are of importance from the standpoints of education and after-care. They are characterised by various degenerative changes, such as mental hebetude, which may slowly disappear, a

Encephalitis  
lethargica.



tendency to the reversal of the sleep rhythm, in which the patient is restless at night and sleepy by day, though the total amount of sleep appears adequate to maintain physical vigour. Children returning to school have frequently been observed to drop off to sleep in class, though this tendency to drowsiness is less noticeable in lessons which attract the greatest interest. This sleep disturbance is usually more marked during the first year than subsequently, although it is sometimes observed for two or three years after the original attack. The most serious sequelæ are the physical and mental changes. On the physical side it has been found that children become progressively paralysed or develop increasingly jerky movements, tremors and the like, which may pass on to a condition known as "Parkinsonism," resembling the paralysis agitans of old age. Children thus affected have been able to attend physically defective schools, but of these some have had to be invalided on account of the progress of the malady.

On the mental side there are two types:—(i.) Those affected in fairly early life have lost the power of intellectual development, and have remained in a sub-normal condition, varying from idiocy to feeble-mindedness, according to the severity of the attack, those affected a little later have been severely retarded, whilst others have slowly returned towards normal mentality. Some cases have exhibited conduct changes, but for the most part, where the intellect has been severely impaired, there has been little difficulty in this respect, possibly because the necessary nervous energy required to stimulate misbehaviour has been lacking. (ii.) In other cases there has been little intellectual deterioration, but great disturbance of conduct. The children are much more irritable and less capable of self-control than before their illness. Whilst some are irritable and impatient, others are excitable, noisy and restless, or are destructive, spiteful and violent so that they are a danger to other persons. A marked feature is the frequency with which these children take to pilfering. The juvenile courts have had to deal with many such cases, and as has already been pointed out their disposal has been a matter of some difficulty, for even in the ordinary residential school their bad behaviour, combined with the latitude necessarily allowed them by reason of their ill-health, has proved detrimental to the other children. Only two cases of sexual misconduct have been observed.

The following table gives an analysis of the subsequent symptoms observed in 1924 relating to cases whose original attack occurred either in 1924, or in previous years; in some of these the onset of the disease dates back for many years:—

Year of onset of disease.	1924.	Prior to 1924.	Total.
Reported upon ... ..	119	74	193
Notified ... ..	111	25	136
Apparently completely recovered; predominant symptom			
in 1924 ... ..	26	16	42
(i.) Sleep impaired ... ..	40	8	48
(ii.) Paresis or paralysis ... ..	6	18	24
(iii.) Twitchings, tremors or "fits" ... ..	12	10	22
(iv.) Ocular symptoms ... ..	10	2	12
(v.) Intelligence impaired ... ..	26	21	47
(vi.) Conduct changes, including:—	44	45	89
(a) irritability and impatience ... ..	17	10	27
(b) excitability, noisiness, restlessness ... ..	12	6	18
(c) lack of control, destructiveness, spitefulness, and violence ... ..	8	18	26
(d) stealing ... ..	2	15	17
(e) other manifestations, e.g., hysteria, obsessions, suicidal tendencies ... ..	4	4	8

Five cases prior to 1924 developed a "Parkinson" syndrome, whilst two cases previously noted had died, and so are excluded from the return. The mortality rate is variable, but figures for the whole country taken over some years indicate



an average rate of about 50 per cent. Last year, however, the mortality was comparatively low.

Under the Education Acts it is a duty of the Council to provide education for those mentally defective children who are not, on the one hand, merely dull or, on the other, imbecile or idiot. All children suspected of mental deficiency are examined by a certifying officer, who has before him a report by the teacher of the school (if any) the child has previously attended. It often happens that children of lower mental grade have not attended school, but they have often been under observation between the ages of five and seven.

Children  
certified  
imbecile  
without  
having been  
first given a  
trial in a  
Special  
(M.D.)  
School.

All children whose responses show them to be on the border-line and whose behaviour is such as to offer a chance of education in a special school are placed therein on probation and reconsidered after an interval of three to six months. The probation is continued as long as any hope exists. Those who are of very low mentality and in whose case there is a complete lack of attention, dirty habits, or the like, cannot be admitted. The standard is revealed in the following account of 70 cases certified directly as imbecile during 1924. The ages of the children were as follows :—

2 aged 6-7 years.	1 aged 9-10 years.	1 aged 12-13 years.
48 " 7-8 "	0 " 10-11 "	4 " 13-14 "
12 " 8-9 "	2 " 11-12 "	

Of the older cases, D.A. is blind and epileptic, had been in Dr. Barnardo's Home, and had been found hopeless by an expert teacher of the blind. H.C. dribbles, screams, is very weakly and rarely leaves her bed. C.H. is a mongol, suffers from tuberculosis of the feet, cannot walk or dress, attainments less than those of a child of 2½ years. M.R. is a mongol attending a private school, her speech is defective, her responses are below those of a 3-year-old child, though she knows a few two-letter words she cannot add 2 and 1, nor take 1 from 2 in spite of the education she has received. R.B., a mongol, has been seen on several occasions. The hospital reports a grossly mentally defective. T.E., a mongol, has been in Earlswood, speaks very little and is lethargic. J.M., a mongol, is mischievous, irresponsible, with wet and dirty habits; was passed as imbecile in 1919, but has been re-examined on the chance of improving. His attainments are less than those of a 3-year-old child.

All the others were between the ages of 6 and 10, and among these the following conditions were found :—

Epileptic	...	...	...	...	6	Detrimental on account of destructive	
Mongols	...	...	...	...	19	or indecent habits	15
Cretins	...	...	...	...	5	Having serious physical defects other	
Paralysed	...	...	...	...	12	than paralysis which would prevent	
Blind	...	...	...	...	2	their attendance at school and in many	
Constant dribbling	...	...	...	...	11	cases often keep them in bed for pro-	
Wet and dirty habits	...	...	...	...	15	longed periods (of these 2 died during	
						the year)	17

None of these in response showed a mental age of above 3, and many of them failed at tests for that age, their intelligence quotient (I.Q.) being less than 45.

All children under seven who are too defective to remain in the infants' department of an ordinary school, and who cannot be admitted to a special school for any reason, *e.g.*, the objection of the parent, inability to make the journey, or detrimental behaviour, are inquired into unless there is *prima facie* evidence that they are well cared for at home. If on inquiry it appears that they are subject to be dealt with under the Mental Deficiency Act, the necessary steps are taken.

After careers of children formerly attending special mentally defective schools.

After careers  
reported by  
the London  
Association  
for the Care of  
the Mentally  
Defective.

							Male.	Female.	Total.
(i.) Children born in or after 1906, who have left special (mentally defective) schools and who have been on the books of the Association	...	...	...	...	...	...	1,109	810	1,919
(ii.) Since died	...	...	...	...	...	...	4	2	6
11908									



(iii.) Known to be incapable by reason of mental or physical defect of undertaking employment—										
(a)	Notified and sent to institutions	...	...	...	...	...	...	17	4	21
(b)	Notified and placed under supervision	...	...	...	...	...	...	14	13	27
(c)	Not notified ( <i>i.e.</i> , home circumstances satisfactory at present)	...	...	...	...	...	...	51	41	92
(iv.) Employed in—										
(a)	Industrial or manual occupations ( <i>i.e.</i> , factory work, any trade or part of a trade)	...	...	...	...	...	...	339	230	569
(b)	Agricultural or rural occupations	...	...	...	...	...	...	7	1	8
(c)	Domestic occupations ( <i>i.e.</i> , servants sleeping in or out, lift-boys, and those helping at home)	...	...	...	...	...	...	44	227	271
(d)	Commercial ( <i>i.e.</i> , shop assistants or selling behind a counter), professional (or army and navy), clerical (office boys and girls)	...	...	...	...	...	...	26	3	29
(e)	Blind alley or other precarious occupations ( <i>i.e.</i> , vanboys, newsboys, errand-boys or girls, selling from a barrow)	...	...	...	...	...	...	235	24	259
(f)	Judged to be employable but out of work owing to industrial crisis	...	...	...	...	...	...	145	103	248
(v.)	Number whose careers have not been traced or who have left the neighbourhood	...	...	...	...	...	...	222	156	378
(vi.)	No action possible	...	...	...	...	...	...	5	6	11

The blind, deaf and crippled cases were notified to the After Care Association for blind, deaf and crippled children, who have hitherto furnished information in regard thereto. The Association were approached with a view to obtaining data for this report, and the information will be forwarded to the Board in due course.

Dr. Shrub-sall's report on mental examinations in places of detention.

Dr. F. C. Shrub-sall, senior medical officer, who visited America during the Summer recess, took an opportunity of investigating the question of the mental examination of delinquent children in the Canadian Provinces and in the Northern States of the United States. He was everywhere received with great kindness and courtesy and all with whom he came in contact did their best to forward his inquiries. The chief items of his report are set out below:—

"The functions and powers of the Children's Courts, both in Canada and the United States, vary from Province to Province and State to State. They have to deal with children on the ground that they are either delinquent, dependent, out-of-control, or neglected, but the term "neglected" seems to have a somewhat wider meaning than has been given to it in the Children Act of this country. In some places, for example, a child may be treated as neglected who has not been properly educated, or who is subject to such blindness, deafness, feeble-mindedness, or physical disability as is likely to make him a charge upon the public. The problems with which the Courts have to deal are also rendered more complex in those cities in which the upper limit of the jurisdiction of the Juvenile Courts has been raised to 18 or even to 21 years of age. Some Juvenile Courts deal with adults of impaired mentality, for example, in Manitoba, an individual of adult age who is certified as feeble-minded or as having a mental age of under 14 years, may be transferred from the ordinary court to the jurisdiction of the Judge in the Juvenile Court, and be treated in all matters of probation and the like as if he were a child or a young person.

In several places these Courts deal with adults who have been concerned either in offences against children, or have neglected their responsibilities towards them. As a consequence of all these differences and other factors, the volume of work is greater than that to be found in the London Courts.

Almost all the Juvenile Courts do a great deal of unofficial work of the most varied character, and although the law provides that cases may be brought to the attention of the Court by any citizen, complainants are encouraged to state their difficulty in an informal manner, which gives the Court an opportunity to make preliminary investigations, so that formal complaint is only filed if the conditions found seem to warrant Court action. The general aim is to render the work of the Juvenile Courts preventive rather than punitive, and revised legislation contemplates



that all the proceedings should be in the form of petitions on the part of the child for protection against neglect, rather than the hearing of charges against the child for any form of delinquency ; in case of action the children being regarded as being the wards of the State or Province. Often the functions of wardenship are in large part exercised through Provincial or State departments for child welfare, the officers of which in turn are able to dispose of many of the children through voluntary agencies.

The main object of the Courts with regard to delinquent children brought before them is to adopt such measures as may bring about a normal level behaviour, and an adequate adjustment to social relations ; consequently, the Judge desires the fullest information with regard to the child, his needs and problems. This attitude has steadily increased during the past decades and has led to a widespread demand for a full examination of each individual child prior to any judicial decision as to his immediate future.

The gradual growth of the system of medical examinations may perhaps be best illustrated by the story of the Chicago Juvenile Court. The law at first gave the Court no specific power to require examinations, but permitted it to commit a child in need of medical care to a hospital, or to adjourn proceedings for the filing of a petition in the case of a feeble-minded child. At this time there was no machinery for the provision of probation officers, juvenile detention homes, or medical examinations ; these were first provided by private philanthropy. In 1902 the Children's Hospital Society furnished a trained nurse, who attended the Court and secured so far as possible medical care for any child committed to her by the Court. In 1907 this service was extended by the society, so that all children in the detention home, and any others before the Court whose parents gave consent, were given a general medical examination. In 1909 this work on the physical side was taken over by the County Commissioners, and during the same year the " Juvenile Psychopathic Institution " was established under private auspices to provide for any necessary mental examinations. This institute was maintained as a private endowment, although all of its services were given to the work of the Juvenile Court. In 1914 the institute was taken over as a regular department of the Court, in 1917 it became a State Organisation under the authority of the Illinois Department of Public Welfare, although the County still contributed to the expenses in return for the services rendered in examining children, and in 1920 the name was changed to that of " The Institute for Juvenile Research," and was withdrawn from the direct control of the Courts, although these still referred their cases to it for mental and social reports. With this change the services of the institute were thrown open to cases referred to it by private individuals, or by social agencies generally. This order of events, being the inception of the work by private bodies and its ultimate adoption by public authorities, has been the general story both in the United States and Canada, and all phases of the process can at present be found in operation. The work commences by the provision of simple medical care for children actually under detention, and terminates by the provision of a system whereby any interested person, whether the Court, the school, or the parents, can obtain advice as to any medical, educational, or social measures which might serve to adjust the child's personality to his environment.

From the standpoint of the Court the functions served by these examinations are :—

- (i.) To discover and arrange for the treatment of any physical disorders or disabilities, whether these be concerned as factors in the delinquency or not ;
- (ii.) To separate out mentally defective or abnormal children who may require to be placed in institutions for the feeble-minded or in mental hospitals.
- (iii.) To advise the Court as to the fitness of any children for industrial training, should the question of their commitment arise.



(iv.) To give an account of the chief factors and problems with regard to individual children—for the information of the Court in relation to the disposal of the cases, and for the guidance of the probation officers or other agencies who may subsequently be called upon to deal with them.

The centres therefore are not intended merely for the determination of the feeble-minded or psychopathic, but rather to help and advise in the case of any problem child. Furthermore, in the case of most centres attached to the Courts, arrangements are made for children to be brought up for re-examination and further report whenever the probation officer or others concerned deem it desirable.

The investigation consists of a social history, which is a record as complete as can be obtained of the child's environment, the stock from which he springs, and his developmental career. It is intended to describe not only the physical conditions of the home, but the intellectual, moral, religious, and social atmosphere, and to reveal the mental attitude of the individuals with whom the child is most in contact; thus, by indicating the influences and interplay of personalities which have made the child what he is, to suggest possible causes of mal-adjustment.

The physical examination is of the same character as is carried out in England, though more stress is laid on investigations as to the incidence of venereal disease.

The mental examination aims at the estimation of the level of intelligence, of educational progress, and the presence of special abilities or disabilities (which are often of the greatest importance), while from the child himself is obtained an account of his behaviour and his motives, his attitude towards himself, and his associates, and other factors of his mental life experiences.

The recommendations made to the Court are of much the same character as in London, but the judges all like a technical summary of the details set before them, and have requested that the fullest recommendations should be made, whether or not there was any prospect of their being carried out. Judges and officers of the Juvenile Courts were unanimous in their opinion that full reports were of the greatest advantage in cases where the children had been placed on probation; nearly all seemed anxious for the further development of following-up work with a close co-operation between the probation officer, social workers, and the medical officer at the centre, and in particular they urged that, in the case of young children, there should be close co-operation with the education system. Mr. Leopre, the chief probation officer of Buffalo, stated:—"The school has as close a contact with the child and more information concerning his characteristics than any other agency excepting the home—and more than some homes."

The State Criminologist of Illinois has suggested the formation of a division of mental health in the Department of Education which would act in the closest co-operation with the Juvenile Court, but which could also deal with the problem children in a pre-delinquent phase. The probation officer of Cincinnati, in one of his reports, points out the great advantages of extra legal action, stating that a boy when charged in some cases becomes in his own mind a hero, while in other cases he feels that a stigma has been placed upon him, but that in either case he becomes a greater problem than before.

The time required for the necessary studies varies naturally according to the type of problem and the amount of information that can be obtained. The director of the clinic attached to the National Committee for Mental Hygiene in New York estimates that it takes from 3 to 5 days to secure a complete history (though the social worker or other officer might not be occupied the whole time on one case), and that the child must spend from 6 to 8 hours at the Centre for mental examination, though this naturally has to be spread over a period of several days.

Facilities for the medical examination of delinquent children are available in the chief cities in Canada, and, according to the returns of the Washington Bureau, in 77 per cent. of the Juvenile Courts in the cities of the United States with a population of over 100,000.



The types of arrangement for mental examination may be classified as follows :

(i.) Centres forming part of the Court organisation, a method adopted for 15 juvenile courts in the United States and in Toronto.

(ii.) Centres connected with State Institutions for the feeble-minded or insane. These are utilised in 46 courts in the States and by some of the Courts in 3 of the Canadian provinces.

(iii.) Centres separately maintained by the City or County authorities ; these are utilised in four courts of the State.

(iv.) Centres in connection with Universities or Colleges ; the facilities of 17 of the Universities in the States are utilised by 22 Courts, and to some extent the corresponding services are rendered in certain places in Canada.

(v.) Centres for the study of sub-normal or abnormal children in connection with the elementary school system of the district ; these are utilised for 14 courts in the State and at 2 at least of the Canadian provinces.

(vi.) Clinics connected with mental hygiene societies.

(vii.) Other methods. According to the report of the Washington Children's Bureau, 31 courts of the United States utilised the services of psychiatrists or psychologists, but gave no explanation of their connection or identity ; 13 Courts stated they utilised teachers, nurses, or probation officers who had had some experience in mental testing ; and 269 Courts reported mental examinations by general practitioners, but afforded no evidence that these practitioners had special knowledge of mental disorders or defects. In only 14 States of the Union was there no report of any mental examinations at all.

It did not prove possible to obtain exact information as to the proportion of court cases that received full and detailed mental examination. It seems probable that, as a rule, only those children were examined who had been referred by the Judge, or in whose case the parents, teachers, probation officers, or others had suggested some mental abnormality. In Toronto, out of 1,733 children brought before the Court, 472 were reported upon by the medical officer, who, in addition, reported on 378 adults against whom proceedings had been taken in the Juvenile Court on account of some neglect or misconduct in relation to children. In Buffalo, 249 out of 892 delinquent children were reported upon in the course of a year, and in New York 966 out of 10,061. The clearest statement as to the limitations is shown in an extract from a report of the Chicago Juvenile Court :—

"It has never been possible to have all the children examined in full detail owing to the large numbers concerned. (There being over 3,000 delinquents and over 2,000 dependants considered in each year, as well as some 17,000 cases per annum, which are dealt with without formal court record.) At one time an attempt was made to have a psychiatrist at court to give elimination tests to all children brought in for hearing, but the children were found to be abnormal, nervous, and excited at the Court hearing, and the practice was abandoned. At present all children who are placed in the detention home even for a day are given brief tests designed to eliminate those who are definitely not feeble-minded. These tests are given by the teachers in the detention home school, and are graded by the two psychiatrists employed by the Institute for Juvenile Research, and stationed at the detention home. The child deemed by this test to be defective is given a thorough examination by the psychologist, and if any abnormality of the age score is observed, he is also given a psychiatric examination either at the detention home or at the institute for juvenile research.

The diagnosis of the case, together with a recommendation for treatment, is reported to the Court at the hearing."

In each Court, however, the medical officers appear to have dealt with other children brought before them by the probation officers or the Judge, so that the



total number examined must be greater than would appear from the statistical returns.

The practice with regard to the maintenance and use of "Places of Detention" varies considerably. The detention homes are intended primarily for the care of the children pending the decision of their case, but they are at some times and in some places called upon to serve as short term disciplinary institutions. The limitations of institutions for delinquents often make it necessary to care for children who have been committed to institutions, but whose admission cannot immediately be arranged. Where no other institution is available, the detention home may be used for the care of dependent, neglected, or lost children. Runaway children are often kept for considerable periods pending arrangements for their return home. In some parts of the United States probation officers are sometimes authorised to send probationers to the detention homes for short periods as a means of discipline without official action by the Court.

In Montreal, Toronto, Winnipeg, Vancouver and some other Canadian cities, the detention homes are comparatively simple, and form part of the building of the Juvenile Court. The superintendence is of much the same character as in England, the medical attention is given by visiting medical officers, and children are usually taken elsewhere for mental examinations. In other cities, shelters maintained by some child welfare agencies are employed for the purpose.

At Boston there is no detention home. Dr. Healy, the Director of the Judge Baker Foundation at Boston, states that he has been converted to the feeling that in most cases it is better for a child not to be placed in a detention home at all. In Boston the majority of the cases are either allowed to return to their homes, provided they come up for examination as ordered, or are placed temporarily in carefully selected private homes under the protection of the Boston Children's Aid Society. The method of boarding-out, it is said, prevents social contamination of one child with another, which has been found a definite evil in juvenile detention homes throughout the States, but there is the arrangement that the small number of children, probably about 100 in any given year, who cannot be trusted to remain with their own parents, or under special observation in a private family, can be placed temporarily in the City jail in a section apart from all the other prisoners.

Under the Massachusetts law, Juvenile Courts are responsible for children up to the age of 18, and most of the children thus committed temporarily to jail represent those in the latter age groups, who would go to a remand prison in any case, if the Juvenile Court jurisdiction ceased at 16.

At Boston the mental examinations are conducted at the Judge Baker Foundation, where there is one medical officer assisted by several psychologists and a staff of social workers.

In New York City the children who need detention are committed to the care of the "New York Society for the Prevention of Cruelty to Children," which devotes itself entirely to law enforcement work. This society has a large home on several floors with six large school-rooms in charge of teachers furnished by the Department of Education for the City of New York. They receive for shelter between six and seven thousand children per year. Arrangements are made for the absolute segregation of various types of children, so that those in custody because they are without proper guardianship do not mingle at all with those charged with delinquency, but have separate dormitories, playgrounds and classes. All children from 6 to 16 are divided into three classes, while the sexes are also separated. The three classes distinguished are:—

Class A.—Those who come into custody as the result of improper guardianship, destitution, brutality, or other offences against them.

In Class B are placed children in custody for reasons of delinquency of a minor character; and in



Class C—those against whom the charges of delinquency are of a more serious nature. A sub-division of this class is made of girls under observation as the result of suspected immorality. The average length of stay in the shelter is 9 days, the minimum in the case of a lost child may be but a few hours, and the maximum sometimes runs into several months; as, for example, in the case of those of material witnesses in criminal charges against adults, or where the children have to be returned to distant countries. The matron-in-charge is a registered nurse, and has a staff of 24 nurses in attendance. Medical attention is given to the children by a visiting physician, and there is an infirmary for cases of illness or suspicion of venereal disease. Children who require hospital treatment are at once transferred to one or other of the City hospitals. Children remanded for mental examination are for the most part placed in this shelter.

The psychiatric centre is housed partly in the building of the Children's Court, which is close by in the same street, and partly in an adjacent city hospital. The staff of the centre consists of the chief of the clinic, who is also psychiatrist to the post-graduate hospitals; 3 assistant psychiatrists or medical practitioners; 3 psychologists and a staff of stenographers. The social investigations are chiefly made by the probation officer of the staff.

In Detroit the detention home is of an elaborate character, providing for the separation of various classes of inmate, and for complete investigation of the cases. The premises comprise general offices for the staff, court rooms, interviewing rooms, record rooms, mental and medical examination rooms, hospital, schoolrooms, diet kitchens, recreation rooms, as well as dormitories; and special arrangements for the confinement of difficult problem cases. The school-rooms are staffed from the local education system, and elaborate arrangements are made for manual occupation, so that the officer concerned in reporting on the mentality and aptitudes of the children may have opportunities of ascertaining what occupations the children will be likely to take up with a reasonable interest, as well as testing any statement the children may make as to their capacities. The superintendent of the home is a medical officer who spends his whole time in investigating the children chiefly from a psychiatric standpoint, while the attached psychological clinic is conducted by full-time psychologists under the direction of the Professor at Ann Arbor University, who acts as a part-time officer. The reports are drawn up in conjunction with the superintendent of the home, and, if necessary, after consultation with visiting psychiatrists. Several social workers are attached to this centre.

In Chicago, New Jersey and San Francisco the arrangements at the Place of Detention are of an elaborate character. In the latter, owing to difficulties in obtaining hospital treatment, much of the treatment of venereal disease in adolescent delinquents is carried out in the detention home itself.

In Philadelphia the detention home is used only for the care of delinquents, although the Juvenile Court handles all types of cases. The municipal court provides a separate health and psychiatric service, which is used in connection with all juvenile court cases, as well as for adults passing through the other divisions of the court.

At Buffalo the detention home forms part of the court buildings. It provides the usual facilities for rest, separation of cases, and is visited by part-time medical officers, who make the physical examinations. Mental examinations are carried out by a medical officer, who belongs to the Public Health Department, and who also conducts mental examinations in connection with the public schools system. Under such circumstances, they are usually detained in the home for about a week for the purposes of report, but where medical or psychiatric treatment is required, they may remain for longer periods of time.

In the smaller cities the places of detention are generally attached to the buildings of the Juvenile Court under the charge of a male superintendent and matron for the male and female sides respectively. There is usually a visiting medical officer,



and the arrangements for medical examination are of a very varied character, as has been previously described.

The whole question of juvenile court standards has recently been the subject of a report by the Committee of the Children's Bureau of the United States Department of Labour, which was issued last year. Their conclusions on the subject of Places of Detention and the investigation of individual children are as follows :—

(i.) "*Methods of Detention.*"—For temporary detention either a public detention home or boarding homes under the supervision of the court should be provided, available for the entire area over which the court has jurisdiction.

(ii.) The essential features of a detention home are the following :—

(a) The juvenile court, if not actually operating the detention home, should control its policies and the admission and release of children.

(b) Provision should be made within the home for segregation of sexes and types of children, and for adequate isolation facilities and medical care.

(c) Adequate facilities should be provided for the study of the child's physical and mental health, but, except in rare instances, the detention home should not be used primarily for this purpose.

(d) There should be specialised school work for the children detained, and recreational facilities should be provided. The daily programme of activities should be full and varied in order that constructive interests may supplant morbid tendencies and undesirable companionships. Opportunity should be given for the exercise of the child's religious duties.

(e) Effective supervision should be maintained at all times.

(f) The detention home should not be used as a disciplinary institution.

*Study of the Case.*—(i.) Social investigation should be made in every case, and should be set in motion at the moment of the Court's earliest knowledge of the case.

(ii.) The minimum essentials of adequate study of a case of delinquency are—Study of the child himself, including a physical and mental examination and study of his behaviour, developmental history, school career, and religious background; study of his environment, including his family and home conditions; and estimate of the essential causal factors responsible for his behaviour; and in the light of this estimate, recommendations for treatment.

(iii.) Psychiatric and psychological study of the child should be made at least in all cases in which the social investigation raises a question of special need for study and should be made before decision concerning treatment, but only by a clinic or examiner properly qualified for such work.

(iv.) The clinic for study of the child should be a separate branch of the court or a separate organisation fully available. The personnel required includes a physician trained in psychiatry, a psychologist, and one or more social investigators.

(v.) The physical examination should be thorough and all the community facilities for diagnosis and treatment should be utilised. Physical examinations of girls should be by women.

(vi.) For rural communities facilities for study of the child may be provided through the development of centres in urban communities or through travelling clinics under the auspices of State Boards or Commissions or institutions.

Comparing the general practice in Canada and the United States with that existing in London, the following points seemed to be prominent :—

(i.) That in the greater number of the cities from which information is available there is little real difference in the kind of care, the nature of the medical examination or of the data and conclusions which are laid before the Court. There are some advantages in the Court House being adjacent to the detention house.



(ii.) That so far as the carrying out of any suggestions made to the Court is concerned, in all that relates to the provision of institutional care, whether in the form of schools, institutions for the feeble-minded, or mental hospitals, London is relatively better off, so that the admission of a child in really urgent need of such care can be more readily and swiftly secured.

(iii.) That in certain of the cities in America more children are referred for report, and in some of these the data finally secured are more extensive and intensive than is the case at present in London. The advantage of more extended data secured by the social investigator is however to a large extent neutralised by the apparently less complete co-operation with the education system; the reports received from the schools appearing to be inferior to those presented by the head teachers and care committees in London.

(iv.) That in such cities as Chicago, Detroit, Boston and Toronto, really close studies are made of the children; but that probably even there the studies are rather of selected children than of the whole mass of children who for one reason or another are brought to the notice of the Juvenile Court Organisation. Such studies demand opportunities for watching the children over a period under such conditions that their confidence can really be secured.

Under the London system a child must be brought up for examination and must be seen at a specified time; it is only rarely possible to arrange even for a second interview or for a visit to the place of detention. In consequence there is a risk that the confidence of the child may not be gained sufficiently, or that there may be emotional disturbance, while it is very difficult to secure interviews with parents who might have to make a financial sacrifice, *i.e.*, lose part of a day's work. A medical officer available daily can choose favourable opportunities for his interviews with the child and has chances of seeing the parents when they call at the place of detention. This point probably but little if at all affects the certification of a mentally defective child who has already spent a period in a special school, but materially affects the question of a diagnosis and treatment of those whose history is but partially known, and who appear to suffer from disturbance of behaviour without obvious intellectual impairment.

(v.) That the general methods of mental examination do not differ materially from those employed in London, and that though in some details there are useful features that may be incorporated in the London practice there are others in which the London methods are probably superior.

(vi.) It would be a distinct advantage if those who report on the social conditions of the children could have their attention drawn specifically to certain points on which information is particularly useful to those who attempt to assess the total personality of the child and particularly if they could acquire what is called in America the psychiatric outlook in these matters. This term is not quite so technical as it sounds, as it really means noting points which would affect character as well as those which affect the physical comfort and well-being of the child. To some extent it already characterises certain of the reports furnished.

(vii.) That the chief feature of the newer system, which has only been even tentatively in existence for a few years, is the process of following up. The steady influence of the psychiatric social worker whether attached to a Court as a probation officer, to a special centre, or to a school, on the family relationships, and outside activities of the children acts essentially as an educative factor which leads to social re-adjustment. It is on this work that the hopes of those who support the remodelled probation methods depend.



It would not be difficult to supply the chief features of the American system even without any remodelling of the existing places of detention. The chief requirement would be in staff. The time required to be spent over the children would be greater than at present and a larger number would be referred by the Courts, also if following up was adopted a certain number of past cases would no doubt be referred for further examination from time to time. Considering the whole of the problem, I should, however, think that the work could be undertaken by the male and female equivalent of a single medical officer, seeing that some of the girls might prove cases to be dealt with even on the mental side by a woman. I should also incline to the view that some of the interviews with relatives which in the States are conducted by social workers might with greater advantage be conducted by the medical officer himself, though all the information could not be obtained thus. I should think it would be feasible to improve the supply of other information without change in the existing staff by indicating to them either in writing or verbally the nature of the additional information required."

TABLE I.

## MEDICAL INSPECTIONS, 1924.

## (a) ROUTINE INSPECTIONS.

## (b) OTHER INSPECTIONS.

Age group.	Boys.	Girls.	Total.		Boys.	Girls.	Total.
Entrants ... ..	33,270	31,961	65,231	Special inspections* {	(1) 21,108	20,240	41,348
Intermediate ... ..	31,697	30,621	62,318		(2) 11,835	10,678	22,513
Leavers ... ..	32,781	32,555	65,336	Re-inspections ... ..	—	—	154,502
Total—							
Elementary schools...	97,748	95,137	192,885				
Special Schools ...	838	648	1,486				

\* (1) Special cases where individual notes are made. (2) Cases seen *en masse* where individual notes are not made (e.g., camp school nominations, school journey children, etc.; infectious disease contacts not included in this figure).

TABLE II.

## (a) DEFECTS FOUND BY MEDICAL INSPECTION IN 1924.

## ELEMENTARY AND SPECIAL SCHOOLS.

Defect or disease.	Routine inspections.		Special inspections.	
	Defects.		Defects.	
	Requiring treatment.	Requiring observation only.	Requiring treatment.	Requiring observation only.
Malnutrition ... ..	615	959	562	511
Uncleanliness—Head	Dealt	with under	cleansing	scheme.
Body	"	"	"	"
SKIN—				
Ringworm—Head	29	3	104	14
Body	71	4	52	3
Scabies ... ..	69	—	683	2
Impetigo ... ..	342	9	431	9
Other disease (non-tubercular)	886	106	379	70
EYE—				
Blepharitis ... ..	841	91	317	22
Conjunctivitis ... ..	370	29	443	26
Keratitis ... ..	5	2	27	17



Defect or disease.	Routine inspections		Special inspections.	
	Defects.		Defects.	
	Requiring treatment.	Requiring observation only.	Requiring treatment.	Requiring observation only.
EYE—(continued)				
Corneal opacities ... ..	8	10	17	10
Defective vision (excluding squint) ... ..	13,023	6,482	3,461	379
Squint ... ..	1,384	475	532	44
Other conditions ... ..	220	63	194	31
EAR—				
Defective hearing ... ..	477	232	371	66
Otitis media ... ..	1,785	485	801	122
Other ear disease or defect ... ..	539	122	228	36
NOSE AND THROAT—				
Enlarged tonsils ... ..	5,608	5,382	1,630	384
Adenoids ... ..	1,282	727	512	60
Enlarged tonsils and adenoids ... ..	2,097	642	559	65
Other conditions ... ..	1,237	414	664	157
Enlarged cervical glands (non-tubercular) ... ..	421	1,736	261	237
Defective speech ... ..	80	189	89	65
Teeth, dental disease ... ..	48,903	925	3,653	85
HEART AND CIRCULATION—				
Heart disease—Organic ... ..	49	217	43	40
Functional ... ..	23	419	12	24
Not stated ... ..	191	3,326	411	954
Anæmia ... ..	1,587	1,169	2,072	500
LUNGS—				
Bronchitis ... ..	1,504	1,509	755	263
Other non-tubercular ... ..	217	765	262	385
TUBERCULOSIS—				
Pulmonary—Definite ... ..	13	18	57	12
Suspected ... ..	30	65	105	197
Non-pulmonary—Glands ... ..	39	17	69	30
Spine ... ..	2	1	7	5
Hip ... ..	2	10	10	15
Bones and joints ... ..	3	7	21	12
Skin ... ..	7	7	6	5
Other forms... ..	20	13	29	14
NERVOUS—				
Epilepsy ... ..	42	56	192	114
Chorea ... ..	89	60	337	146
Paralysis ... ..	40	73	168	155
Other conditions ... ..	69	145		
DEFORMITIES—				
Rickets ... ..	99	46	64	9
Spinal curvature ... ..	456	281	191	66
Other forms ... ..	287	201	298	145
Other conditions ... ..	3,039	1,591	4,998	1,594

(b) CHILDREN FOUND AT ROUTINE MEDICAL INSPECTION TO REQUIRE TREATMENT  
(EXCLUDING UNCLEANLINESS).

Age group.	Inspected.	Found to require treatment.	Percentage requiring treatment.
Entrants ... ..	65,231	25,152	38.6
Intermediate ... ..	62,318	24,985	40.1
Leavers ... ..	65,336	24,078	36.9
Total—Elementary schools ...	192,885	74,215	38.5
Special schools ... ..	1,486	542	36.5



TABLE III.

## EXCEPTIONAL CHILDREN IN LONDON IN 1924.

		Boys.	Girls.	Total.
<b>BLIND</b> (including partially blind)—				
(i.) Suitable for training in a school or class for the totally blind	Attending Certified Schools or Classes for the Blind ... ..	167	142	309
	Attending Public Elementary Schools...	—	—	—
	At other Institutions ... ..	—	—	—
	At no School or Institution ... ..	10	4	14
(ii.) Suitable for training in a school or class for the partially blind	Attending Certified Schools or Classes for the partially Blind ... ..	390	449	839
	Attending Public Elementary Schools...	35	58	93
	At other Institutions ... ..	—	—	—
	At no School or Institution ... ..	6	8	14
<b>DEAF</b> (including deaf and dumb and partially deaf)—				
(i.) Suitable for training in a school or class for the totally deaf or deaf and dumb	Attending Certified Schools or Classes for the Deaf ... ..	361	338	699
	Attending Public Elementary Schools...	3	—	3
	At other Institutions ... ..	—	—	—
	At no School or Institution ... ..	9	8	17
(ii.) Suitable for training in a school or class for the partially deaf	Attending Certified Schools or Classes for the partially deaf ... ..	69	67	136
	Attending Public Elementary Schools ... ..	2	5	7
	At other Institutions ... ..	—	—	—
	At no School or Institution ... ..	—	1	1
<b>MENTALLY DEFECTIVE.</b>				
Feeble-minded (cases not notifiable to the Local Control Authorities)	Attending Certified Schools for Mentally Defective Children ... ..	3,857	3,011	6,868
	Attending Public Elementary Schools...	9	8	17
	*At other Institutions ... ..	251	153	404
	†At no School or Institution ... ..	42	36	78
Notified to the Local Control Authority during the year	Feeble-minded ... ..	40	62	102
	Imbeciles ... ..	70	58	128
	Idiots ... ..	8	4	12
<b>EPILEPTICS.</b>				
Suffering from severe epilepsy	Attending Certified Special Schools for Epileptics ... ..	44	37	81
	In Institutions other than Certified Special Schools ... ..	25	27	52
	††Attending Public Elementary Schools ... ..	15	10	25
	At no School or Institution ... ..	65	90	155
Suffering from epilepsy which is not severe	Attending Public Elementary Schools—			
	Ordinary... ..	286	291	577
	Special ... ..	86	66	152
	At no School or Institution ... ..	—	—	—
<b>PHYSICALLY DEFECTIVE.</b>				
Infectious pulmonary and glandular tuberculosis	*At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ... ..	75	178	253
	At Certified Day Open-air Schools ... ..	132	107	239
	At other Institutions ... ..	7	2	9
	At no school or Institution ... ..	33	31	64
Non-infectious but active pulmonary and glandular tuberculosis	*At Sanatoria or Sanatorium Schools approved by the Ministry of Health or the Board ... ..	64	147	211
	At Certified Residential Open-air Schools ... ..	—	—	—
	At Certified Day Open-air Schools ... ..	88	71	159
	†At Public Elementary Schools ... ..	97	80	177
	At other Institutions ... ..	—	—	—
	At no School or Institution ... ..	—	—	—

\* Some of these may not have come to the notice of the School Medical Officer, but have been dealt with throughout by the Guardians.

† 33 of these were ill.

† Discovered at medical inspections and referred for treatment.

†† Awaiting admission to Colony.



## PHYSICALLY DEFECTIVE

—continued.

		Boys. Girls. Total.		
Delicate children ( <i>e.g.</i> , pre- or latent tuberculosis, malnutrition, debility, anæmia, etc.)	At Certified Residential Open-air Schools ...	3,423	833	4,256
	At Certified Day Open-air Schools ...	436	289	725
	At Public Elementary Schools ...	4,019	4,656	8,675
	*At other Institutions ...	53	33	89
	At no School or Institution ...	177	189	366
Active non-pulmonary tuberculosis	*At Sanatoria or Hospital Schools approved by the Ministry of Health or the Board ...	439	362	801
	†At Public Elementary Schools ...	49	57	106
	At other Institutions ...	3	4	7
	At no School or Institution ...	37	31	68
(Note.—Cases of more or less quiescent tuberculosis attend the special Day Cripple Schools)				
Crippled children (other than those with active tuberculous disease), <i>e.g.</i> , children suffering from paralysis, etc., and including those with severe heart disease	At Certified Hospital Schools ...	15	20	35
	At Certified Residential Cripple Schools ...	18	12	30
	**At Certified Day Cripple Schools ...	2,119	2,004	4,123
	At Public Elementary Schools ...	1,560	1,893	3,453
	*At other Institutions ...	317	227	544
	At no School or Institution ...	220	376	596

\* Some of these may not have come to the notice of the School Medical Officer, but have been dealt with throughout by the Guardians.

† Discovered at medical inspections and referred for treatment.

\*\* These figures include about 1,000 children suffering either from non-pulmonary tuberculosis more or less quiescent, or from the after-effects of such disease.

TABLE IV.

DEFECTS TREATED DURING 1924.

## TREATMENT TABLE.

GROUP I.—MINOR AILMENTS (EXCLUDING UNCLEANLINESS, FOR WHICH SEE GROUP V.).

Disease or defect.	Defects treated or under treatment.		
	Under Council's scheme.	Otherwise.	Total.
SKIN.			
Ringworm—Head	1,321 834 } 2,155	1,267*	657
Ringworm—Body			
Scabies			
Impetigo			
Other skin disease			
EYE DISEASE.			
(External and other, but excluding cases falling in Group II.)	80,329 2,155	1,274	83,758
EAR DISEASE.			
Cases in which operative treatment ( <i>e.g.</i> , mastoid operations, etc.) is given are excluded.			
MISCELLANEOUS.			
(Minor injuries, bruises, sores, chilblains, etc.)			
	83,751	1,931	85,682

\* 1,154 by X-Ray.

† 1,345 by X-Ray.



GROUP II.—DEFECTIVE VISION AND SQUINT (EXCLUDING EYE DEFECTS TREATED AS MINOR AILMENTS, GROUP I.).

Defect or disease.	Defects dealt with.		
	Under Council's scheme.	Otherwise.	Total.
Errors of Refraction (including Squint, but excluding operations for Squint).	30,747	1,189	} 33,936
Other defect or disease of the eyes (excluding those in Group I.).	2,000 (estimated)		
Children for whom glasses were prescribed under Council's scheme ...	...	...	23,573
„ who obtained or received glasses under Council's scheme ...	...	...	21,338

GROUP III.—TREATMENT OF DEFECTS OF THROAT AND NOSE.

Number of defects.				
Received operative treatment.			Received other forms of treatment.	Total number treated.
Under Council's scheme.	Private practitioner or hospital.	Total.		
6,858	1,193*	8,051	6,122	14,173

\* 151 by private practitioners, 1,042 at hospitals.

GROUP IV.—DENTAL DEFECTS.

(1) Number of children who were:—

(a) Inspected by the Dentist—Age Groups—

5 years and under ...	...	...	...	7,958	} 256,642
6 „ ...	...	...	...	28,064	
7 „ ...	...	...	...	35,569	
8 „ ...	...	...	...	11,273	
9 „ ...	...	...	...	44,596	
10 „ ...	...	...	...	50,094	
11 „ ...	...	...	...	46,773	
12 „ ...	...	...	...	10,204	
13 „ ...	...	...	...	14,012	
14 „ and over ...	...	...	...	8,099	

(b) Found to require treatment, 178,802 (69·67 per cent.).

(c) Actually treated, 99,045 (including d).

(d) Re-treated as the result of periodical examination, 23,832.

(2) Half-days devoted to—Inspection, 2,257

Treatment, 14,526—Total 16,783.

(3) Attendances by children for treatment, 159,375.

(4) Fillings—Permanent teeth, 66,117

Temporary „ 27,698—Total 93,815.

(5) Extractions—Permanent teeth, 42,516

Temporary „ 270,314—Total 312,830.

(6) Administrations of general anæsthetics for extractions, 47,968.

(7) Other operations—Permanent teeth } Total 23,808.  
Temporary „ }

GROUP V.—UNCLEANLINESS.

(a) Average number of visits per school made during year by School Nurse, 6.

(b) Examinations of children in the schools by school nurses, 2,059,590.

(c) Instances of uncleanliness, 332,695.

(d) Children cleansed under Council's arrangements, 94,273.

(e) Cases in which legal proceedings were taken:—

(i.) Under the Children Act, 1908—805.

(ii.) Under School Attendance By-laws—Nil.



## CHAPTER XXIII.

## PUBLIC HEALTH.

The responsibility in London for the public provision of treatment for tuberculosis rests on the Council, which in 1914 prepared a comprehensive scheme, revised in October, 1922.\* Under this scheme the Council provides or arranges for the provision of residential treatment required through a public authority (other than poor law guardians) and the metropolitan borough councils provide or arrange for the provision of dispensary treatment. Further details are given in the Annual Report for 1922 (vol. III., p. 100).

Tuberculosis  
—History.

During 1924 it was considered desirable to arrange for the provision of more residential accommodation for advanced cases (adults) suffering from tuberculosis, and the Metropolitan Asylums Board, with the approval of the Minister of Health, agreed to recondition and utilise its institution at Grove-park, Lee, accommodating about 300 cases, for the reception of advanced cases of both sexes. Pending the preparation of this institution, additional beds have been provided at other hospitals.

The following table shows the provision for residential treatment under the scheme (excluding insured persons and ex-service men)† :—

Year.	New cases admitted during year.			Beds occupied at end of year.		
	Adults.	Children.	Total.	Adults.	Children.	Total.
1920 ...	932	1,167	2,099	306	704	1,010
1921 ...	1,215	1,050	2,265	225	669	894
1922 ...	1,024	906	1,930	250	655	905
1923 ...	975	749	1,724	285	707	992
1924 ...	1,041	915	1,956	302	746	1,048

The following table shows the provision for residential treatment in London for insured persons and ex-service men :—

	Admissions during year.			Beds occupied at end of year.		
	Insured adults.	Ex-service men.	Total.	Insured adults.	Ex-service men.	Total.
1920 ..	2,320	3,045	5,365	712	618	1,330
1921 ..	3,356	2,544	5,900	727	430	1,157
1922 ..	3,121	1,289	4,410	835	285	1,120
1923 ..	2,298	1,304	3,602	822	351	1,173
1924 ...	2,670	1,037	3,707	1,045	265	1,310

The above figures exclude cases of children referred by the Council to the Invalid Children's Aid Association for residential treatment under an agreement between the Council and the Association. The number of children so referred during 1924 was 297. At the end of 1924 there were 153 cases (133 adults and 20 children) under consideration for residential treatment. Details of treatment are given above (see pp. 52-55).

The dispensary service was the subject of a special survey in 1920.‡ A further survey was made in the autumn of 1921. Recommendations for the improvement of the service are made from time to time by the Council and the Minister of Health to the metropolitan borough councils.

There are now 21 municipal dispensaries, one voluntary dispensary—largely aided by a borough council—and 9 dispensaries—also aided by the borough councils and the City Corporation—at hospitals. Two borough councils have provided branch dispensaries.

\* *Scheme for the treatment of tuberculosis in London.* No. 2183. Price 4d.

† Figures for 1914-19 are given in the Annual Report for 1921 (vol. III., p. 62).

‡ *Tuberculosis in London. Report of the Public Health Committee.* 1st July, 1920. No. 2035. Price 6d. The development of the dispensary system was described in the Annual Report for 1920 (vol. III., p. 110).



During 1924, the numbers of new cases examined at the dispensaries were :— 8,081 adults (insured), 6,361 adults (uninsured) and 10,789 children.

Dental  
treatment.

The provision of dental treatment in connection with dispensary treatment is regarded as an essential part of the tuberculosis dispensary service. At the end of 1924, proposals submitted by nineteen borough councils had been approved.

Cessation of  
supervision.

With the object of reducing the number of cases of arrested disease under supervision at the dispensaries after they have reached a stage at which they may reasonably be regarded as "cured," the Council in consultation with the Minister of Health approved arrangements for the cessation of dispensary treatment or supervision of cases of tuberculosis on a definite basis, and the metropolitan borough councils have been asked to put the arrangements into force on 1st January, 1925.

In consultation with the Minister of Health the Council has approved of arrangements for the post-graduate instruction of tuberculosis officers.

Employment  
of persons  
treated for  
tuberculosis.  
Care  
committees.

In consultation with the Ministry of Labour the Council has co-ordinated arrangements for facilitating the finding of suitable employment for persons who have received residential treatment for tuberculosis.

In accordance with circular No. 308 (8th May, 1922) of the Ministry of Health, schemes have been submitted by the metropolitan borough councils for the establishment of permanent tuberculosis care committees composed of representatives of local authorities, boards of guardians, insurance committees and charitable and social work organisations in the district. Such committees are in operation in nearly all the metropolitan boroughs.

The functions of the care committees are set out in the circular addressed in June, 1923, by the Council to the borough councils giving detailed information as to work which, it was suggested, care committees might usefully perform.

Approved expenditure incurred by borough councils in respect of office and clerical expenses in connection with the care committees ranks for the Government grant and the Council's grant towards the cost of the dispensary service.

Physically  
defective  
children.

The Council considered the general question of the treatment and care of physically defective children.\* The Minister of Health was approached with a view to determining the best steps to be taken to secure early and efficient diagnosis and treatment of poliomyelitis, and of securing increased facilities for treatment of the resulting infantile paralysis. As a result of consultation with the Ministry it was clear that effort should be directed to rendering all possible assistance to general medical practitioners in order to secure accurate diagnosis in doubtful cases. Arrangements were made for the services of expert members of the Council's medical staff to be made available for assistance in this matter.

The Metropolitan Asylums Board undertook, subject to the concurrence of the Minister of Health, to provide additional accommodation of about 50 beds at its orthopaedic hospital (Queen Mary's Hospital for Children) at Carshalton. In order to secure the greatest measure of co-operation between the Council and the metropolitan borough councils, it was arranged that the Council would inform the borough councils of all cases sent for treatment and would desire similar information from the borough councils as to cases referred to the Board. Ten beds for cases requiring prolonged treatment were made available at St. Nicholas Orthopaedic Hospital, Pyrford.

The Minister of Health issued to the metropolitan borough councils a circular (No. 538—1st December, 1924) dealing with the foregoing arrangements, and suggesting that the borough councils should co-operate with the Council in this matter and should arrange for children requiring prolonged treatment to be referred to the organisation set up by the Council for this purpose.

Venereal  
disease.

Details are given in the Annual Report for 1921 (vol. III., p. 63) of the joint

\* *Physically Defective Children*. Joint report made to the Council by the Education Committee and the Public Health Committee, December, 1923. No. 2274. Price 6d.



scheme by the Council and authorities near London for the diagnosis and treatment of venereal diseases. Arrangements have been made for free treatment and diagnosis for in-patients and out-patients at 28 hospitals and for the reception of patients for treatment at seven hostels. Special provision has been made for the treatment of pregnant women and very young children. Practitioners secure, at the cost of the Council, scientific reports on materials from patients suspected to be suffering from venereal disease, and approved practitioners may obtain, free of cost, salvarsan or its substitutes. The cost of diagnosis and treatment at hospitals and hostels is divided between the Council and the participating authorities according to the user of the facilities available. The Council makes direct payments to hospitals for salvarsan or its substitutes supplied to medical practitioners in London. Details of cases treated in this and preceding years are given above.

The Council's scheme provides in general terms for lectures and addresses to selected audiences, and for the publication and dissemination of information. Since 20th March, 1917, a voluntary association—the National Council for Combating Venereal Diseases—has been permitted for limited periods to exercise on behalf of the Council certain of its powers relating to propaganda work; and the purposes for which the permission was to be operative for the year ending 31st March, 1925, were determined by the Council on 1st April, 1924. The Council undertakes publicity work which can most usefully be directed through official channels.

Publicity  
arrange-  
ments.

The Council considered the report of the Committee of Inquiry which was set up in 1922 to consider and report upon the best medical measures for preventing venereal disease in the civil community, having regard to administrative practicability, including cost. The main conclusions arrived at by the Committee coincided with the policy adopted by the Council in the working of its scheme for the diagnosis and treatment of venereal diseases in London. The report contained statements that there were found to be a considerable number of persons suffering from venereal disease among mental defectives and that the present arrangements for their control and treatment were inadequate. The Council's experience in regard to the treatment and supervision of the mentally defective, however, seemed to show that there was no justification for such wide statements.

Venereal  
disease.

Arising out of the proposals of the National Council of Social Service, a central council representing public authorities and voluntary agencies concerned in rescue and preventive work in London has been formed for the co-ordination of rescue and preventive work among women and girls in London. The Council has four representatives on the central council.

Rescue and  
preventive  
work.

A Royal Commission on National Health Insurance was appointed for the purpose of reporting what, if any, alterations, extensions, or developments should be made in regard to the scope of the scheme of national health insurance and the administrative, financial and medical arrangements set up under it. The Council on 18th November, 1924, decided to give evidence before the Royal Commission and expressed the opinion that consideration should be given to the questions whether:—

National  
Health  
Insurance.

(i.) Grants should be made from national health insurance funds in aid of approved work centres at which post-sanatoria cases could be employed under the medical supervision of the tuberculosis officer;

(ii.) The statutory maximum period of sickness benefit should be extended in the case of tuberculous persons;

(iii.) Allowances should be made from insurance funds to tuberculous insured persons capable of part-time, but incapable of whole-time, work; and

(iv.) The surpluses available under the National Health Insurance Act for "additional benefits" should be utilised, at the discretion of the approved societies, in part for certain benefits in kind, financial aid, etc., on a similar basis to the provision made for ex-service men by the British Red Cross and United Services Fund.



# Child adoption.

A departmental committee was appointed by the Home Secretary to examine the problem of child adoption from the point of view of possible legislation and to report upon the main provisions which in their view should be included in any Bill on the subject. The Council on 16th December, 1924, decided to submit evidence to the departmental committee in support of the proposals in its resolutions of 18th May, 1920, for the amendment of Part I. (Infant Life Protection) of the Children Act, 1908. (See Annual Report for 1920., vol. III., p. 113).

# Diseases of animals.

The Diseases of Animals Acts, 1894 to 1922, the object of which is the suppression of contagious diseases in animals, naturally do not affect London so much as the country. In London, apart from swine fever, attention is now principally directed to glanders, anthrax, rabies, parasitic mange and foot and mouth disease, diseases which are communicable to man. The Acts are supplemented by Orders issued by the Minister of Agriculture and Fisheries. During 1924 the incidence of the principal animal diseases so far as London is concerned was as follows:—Glanders, including farcy, *nil*; swine fever, 6 outbreaks in which 30 animals were affected; anthrax, one outbreak affecting one animal; parasitic mange, 67 outbreaks involving 102 animals; and foot and mouth disease, two outbreaks affecting 39 animals.

# Glanders or farcy.

Glanders is the disease in animals which has caused most trouble and expense to the Council. The disease is now dealt with under the Glanders or Farcy Order of 1920, which requires veterinary surgeons, etc., who consider that any horse, ass or mule is affected with glanders, or was so affected when it died, or was slaughtered, to notify the local authority. A fee of 2s. 6d. is payable by the local authority to the person giving such notice. Under the Glanders or Farcy (Metropolitan Police District) Order, 1911, the Council had powers to destroy nosebags and other stable material not capable of disinfection. The Order was revoked, but its provisions were re-enacted in the Glanders Order, 1920, and the powers continue to be fully utilised after each outbreak. All infected material of this kind is burnt at one of the knackers' depots at the expense of the Council.

# Swine fever.

Swine fever has been very prevalent throughout Great Britain during the past few years. Six outbreaks were dealt with in London during the year. During 1924 under the Regulation of Movement of Swine Order 17,790 swine were examined at feeders' premises. There were three infringements of the Swine Fever Order of 1908 which were dealt with by means of written cautions.

# Anthrax.

Anthrax occurs occasionally in London, and so long as fodder is imported from abroad sporadic cases will probably arise. Most stringent precautions in the way of cleansing and disinfection are taken by the Council's inspectors, who personally supervise the destruction of the entire carcase of an infected animal as well as any article with which it may have come into immediate contact.

# Rabies.

The Council is convinced that the most efficacious measures for stamping out hydrophobia are muzzling, the seizure of all stray dogs and the regulation of the importation of dogs. Under the Dogs Order, 1906, which revoked all then existing muzzling regulations, the Council made new regulations requiring the wearing of collars by dogs while on a highway. Under these regulations, 28,761 dogs were seized by the police during 1924 and 20,768 were destroyed.

# Parasitic mange.

On the outbreak of the war the Order dealing with parasitic mange was temporarily suspended, with the result that the disease increased largely. The conditions under which trade horses are fed and worked in London, particularly during busy seasons, tend to encourage the spread of the disease. During 1924, however, the returns of cases in London showed a considerable decrease and it is a satisfactory feature that fewer animals were affected in each outbreak than in the previous year. The following figures relate to 1924:—Outbreaks, 67; horses affected, 102; infringements, 12; written cautions sent, 6; cases referred to solicitor, 6; convictions 9; penalties and costs, £46 9s. For the purposes of comparison, it may be pointed out that the number of outbreaks in 1923 was 128, affecting 226 horses.



In consequence of the confirmation in the early part of the year of foot and mouth disease on premises at Acton and Neasden, Middlesex, the Minister of Agriculture and Fisheries issued an Order known as the Foot and Mouth Disease (Infected Areas) Order of 1924 (No. 9), by which a large area, including the County of London, was constituted an infected area and added to the list of infected areas set out in the First Schedule of the Foot and Mouth Disease (Infected Areas) Order of 1924, known as the Principal Order. Subsequently outbreaks occurred at two premises in Bethnal Green. Immediate steps were taken, in conjunction with the officials of the Ministry of Agriculture, to prevent the spread of infection. In all, 39 cows were slaughtered, and the disinfection of the carcasses and of the premises affected was thoroughly carried out. In consequence of a further outbreak of disease at Enfield on 6th April, 1924, the County of London was again included in an infected area, and a similar course was followed as the result of additional outbreaks of the disease in June, 1924.

Foot and  
mouth  
disease.

In consequence of a new outbreak at Loughton in September, 1924, the County of London north of the River Thames was again included in an infected area. The necessary steps were taken in each case to secure that the provisions of the various Orders issued by the Minister were brought to the notice of persons concerned.

Animals in  
Transit.

To ensure that the requirements of the Animals (Transit and General) Order, 1912, and the Animals (Transit and General) Amendment Order of 1924, and the Exportation and Transit of Horses, etc., Order of 1921, and the Exportation and Transit of Horses, etc. (Amendment) Order of 1923 are being observed, and that the animals are free from signs of disease, the Council's inspectors pay numerous visits to railway wharves, depots, etc., where animals in transit are collected. The visits during 1924 numbered 2,522, the animals examined being—horses 4,661, cattle 46,861, sheep 76,801, swine 15,209, making a total of 143,532. There were 55 infringements, 48 written cautions, 7 cases of legal proceedings and 4 convictions, with penalties and costs amounting to £40 10s.

Proceedings as indicated below were taken by the Council during 1924 with regard to smoke nuisances from railway and road locomotives, and some proceedings have also been instituted by the sanitary authorities in respect of smoke nuisances from trade premises. As regards railway locomotives, section 114 of the Railway Clauses Consolidation Act, 1845, requires that every locomotive shall be constructed on the principle of consuming its own smoke, and section 19 of the Regulation of Railways Act, 1868, enacts that, if a locomotive fails to do this, the railway company shall be guilty of an offence. Twenty-two prosecutions were instituted against railway companies; 18 convictions were obtained, penalties and costs amounting to £46 2s. 6d being imposed. Thirteen prosecutions instituted in respect of smoke nuisance from road locomotives were all successful, the penalties and costs imposed amounting to £20 15s.

Nuisances  
from smoke.

During 1923 the Council considered how far fog in London is caused by the pollution of the atmosphere due to preventable causes, whether by a larger use of electricity for power and other purposes the atmosphere of London might be improved, and whether any, and if so what, further powers were required to deal with the emission of smoke in London. Particulars are given in the Annual Report for 1923 (Vol. I., pp. 87–8) of the conclusions arrived at.

Part I. of the Children Act, 1908, provides that a person who undertakes for hire or reward the nursing and maintenance of an infant under the age of seven years apart from its parents shall, within 48 hours, give notice of such reception to the local authority (in London the Council), and empowers such local authority to fix the number of infants which may be kept in any dwelling. If an infant dies the foster-mother must notify the coroner within 24 hours, and the Council within 48 hours. At the end of 1924, 2,392 foster-mothers and 2,926 nurse-infants were under inspection. Power is given to remove to a place of safety an infant in the

Infant life  
protection.



charge of a foster-mother who is unfit to have the care of it owing to negligence, ignorance, inebriety, immorality, criminal conduct or other similar cause.

Similar action may be taken where the premises are overcrowded, dangerous or insanitary, or if the infant is being kept by a person or in any premises in contravention of the Act. The Act also empowers a local authority to exempt either partially or wholly premises which are so conducted as to render ordinary inspection unnecessary. Some particulars of the Council's work are as follows :—

Year.	Infants removed from foster mothers.	Exemptions.	Deaths.	Infringements discovered.	Cautions.	Prosecutions.	Convictions.
1921 ..	20	3	42	302	285	26	26
1922 ..	14	3	52	279	266	13	13
1923 ..	6	3*	53	303	292	11	10
1924 ..	7	4*	26	274	267	7	7

The Council on 18th May, 1920, expressed the opinion that Part I. of the Children Act, 1908, required amendment, and with that object made several proposals† to the Minister of Health. The Council on 16th December, 1924, decided that evidence in support of these proposals should be given on its behalf before the Departmental Committee on Child Adoption.

Lying-in homes.

The Council's powers and duties with regard to the registration and inspection of lying-in homes are described in the Annual Report for 1922 (vol. III., p. 104). At the end of 1923, 277 premises were on the register, 32 were added during the year, one registration was cancelled and 33 entries were removed (owing to discontinuance of user, removal, etc.), leaving a net total of 275 on the register at the end of 1924. Twelve premises carried on by registered medical practitioners were exempted during the year.

Midwives.

Under the Midwives Act, 1902, the duties of the Council, as the local supervising authority for London, were chiefly disciplinary in connection with the conduct, professional or otherwise, of midwives or persons practising as midwives in London. To enable it to carry out these and a lied duties the Council appointed four qualified women medical practitioners to inspect midwives and to investigate special cases. The Midwives Act, 1918, passed to amend the Act of 1902, enlarged the Council's responsibilities, the chief alteration dealing with the provision of medical assistance for midwives. By section 14 midwives are required to summon medical aid in an emergency as defined by the rules of the Central Midwives Board. The fees of the medical man so called in are payable by the Council (in accordance with a scale fixed by the Local Government Board and amended by the Ministry of Health) which has power to recover them from the patient, her husband, or other person, liable to maintain her, unless it can be shown that such person is unable to pay, the fees. Owing to the difficulty of assessing the sums to be recovered, the Council in 1921, adopted a scale of assessments graduated according to net income, after allowing a deduction in respect of each maintainable child or other dependant. From 1st April 1924, to 31st March, 1925, the Council's expenditure under this head was about £4,161, of which about £1,131 was recovered. Further details of the Council's work are given above (see p. 56).

Under section 5 of the Act of 1902, as amended by section 2 of the Act of 1918, any adverse balance in the accounts of the Central Midwives Board is apportioned between the councils of the several counties and county boroughs in proportion to population at the last census, and the Council's proportion for the year 1924 was £496.

Notifications by midwives of intention to practise during the year numbered 850 ; of intent on to practise for specific periods less than a year, 32 ; and of having acted in specific cases, 24. Proceedings were taken against a certified midwife

\* Partial.

† See Annual Report for 1920 (vol. III., p. 113).



for failing to notify the Council of her intention to practise as a midwife within the Administrative County of London during the current year, and a penalty of £1 was imposed with 10/6 costs. Four *prima facie* cases of negligence or misconduct were reported to the Central Midwives Board. In two cases the Board removed the name of the midwife from the roll; and in one case the Board postponed sentence and asked for periodical reports on the midwife's conduct and methods of practice; The remaining case has not yet been dealt with by the Board.

To prevent the spread of infection the Council suspended eight midwives from practice for periods under section 8 (3) of the Midwives Act, 1902. Under section 6 (2) of the Midwives Act, 1918, the Council as local supervising authority may, if it thinks fit, pay such reasonable compensation for loss of practice as, under the circumstances may seem just; and by virtue of this power the Council during the year paid compensation amounting to £29 5s..

Arising out of a suggestion made at an unofficial conference on the subject of the "Reduction of Maternal Mortality by the Co-operation of all the Health Services Concerned," promoted by the Post-Certificate School of the General Lying-In Hospital, the Central Midwives Board decided to convene periodical conferences between the Board and local supervising authorities. For this purpose the country was divided into seven groups, including the Administrative County of London as a separate entity. The Council authorised the medical officer of health or his representative to attend the preliminary conference upon the matter on the understanding that the Council was by such attendance in no way committed as to its policy.

Early in 1920 model by-laws under section 26 of the Housing, Town Planning, etc., Act, 1919, with regard to houses divided into separate tenements were issued by the Minister of Health, and on 27th July, 1920, the Council made by-laws based on the model by-laws, and applied for confirmation of the same. In view of the suggestions of the Minister of Health and of representations made by various interested parties, the by-laws were considerably revised, but in the early part of 1923 it was not found practicable to settle the by-laws without knowledge of the position which would arise on the expiration of the Increase of Rent and Mortgage Interest (Restrictions) Act, 1920. The Rent and Mortgage Interest Restrictions Act, 1923, prolonged, with certain exceptions, the duration of the Act of 1920 until 24th June, 1925. Moreover, under section 14 of the Housing, etc., Act, 1923, by-laws made by the Council in pursuance of section 26 of the Housing, Town Planning, etc., Act, 1919, may provide that the by-laws shall, either generally or as respects any particular metropolitan borough or any part thereof, have effect subject to such modifications, limitations or exceptions as may be specified in the by-laws.

The section provides, also, that as soon as any by-laws made by the Council come into force, all by-laws made by metropolitan borough councils under section 94 of the Public Health (London) Act, 1891, shall cease to have effect, but that a borough council shall have power, after the Council has made by-laws, to make by-laws under the said section 94 with respect to any houses or parts of houses in its area let in lodgings or occupied by members of more than one family to which the by-laws made by the Council do not apply.

The section extends the purposes for which by-laws may be made by the Council in order to include the taking of precautions in the case of any infectious disease.

On 19th February, 1924, the Council provisionally approved revised by-laws prepared on the basis of the powers conferred by the above-mentioned Acts. Copies of these by-laws were transmitted to the Metropolitan borough councils for their observations.

Censuses were taken by the medical officer, in continuation of those in previous years, of homeless persons in order to ascertain the use made of common lodging-houses, and the provision existing for the accommodation of persons of the poorest class. The censuses were taken on a winter night, and the total number of homeless persons found in the streets, on staircases and under arches were February, 1915,

Houses  
divided into  
separate  
tenements.

Census of  
homeless  
persons.



178; 1916, 44; 1917, 28; 1918, 9; 1919, 8; 1920, 51; 1921, 56; 1922, 112; 1923, 141; and 1924, 82. Further details are given above (see p. 48).

Particulars with regard to common lodging-houses licensed by the Council are as follows:—

Year.	Houses licensed.	Lodgers authorised.	Prosecutions.	Convictions.	Penalties and costs.	Cases of infectious disease.
1921.. ..	181	18,503	1	1	£3 18s.	1
1922.. ..	178	17,948	1	1	£3	2
1923.. ..	175	17,700	5	5	£19 10s.	2
1924.. ..	174	17,519	nil	nil	nil	1

Particulars of seamen's lodging-houses licensed by the Council are as follows:—

Year.	Houses licensed.	Lodgers authorised.	Prosecutions.	Convictions.	Penalties and costs.	Cases of infectious disease.
1921.. ..	51	1,287	13	11	£130 10s. 6d.	1
1922.. ..	44	1,170	1	1	—	1
1923.. ..	36	1,089	4	4	£40	1
1924.. ..	38	1,128	4	4	£14 3s.	2

In accordance with the powers conferred upon the Council by Part V. of the London County Council (General Powers) Act, 1907, the Council has made and renewed agreements with certain metropolitan borough councils for the cleansing of verminous inmates of licensed common lodging-houses and their clothing.

The following table gives particulars of licensed slaughterhouses, knackers' yards and registered offensive businesses for 1921-24:—

Year.	Slaughterhouses.	Knackers' yards.	Offensive businesses.
1921 .. ..	158	4	60
1922 .. ..	153	4	60
1923 .. ..	147	4	101
1924 .. ..	136	4	*230

During 1924 sanction was given in one instance to the establishment anew of the business of a gutscraper and in four instances to the establishment anew of the business of a dresser of furskins. Two applications for sanction to the establishment anew of the business of an extractor of fat and of a slaughterer of poultry were refused.

The number of cowhouses licensed by the Council are as follows:—1915, 154; 1919, 116; 1920, 107; 1921, 101; 1922, 100; 1923, 98; 1924, 89.

Under the powers conferred upon the Council by Part IV. of the London County Council (General Powers) Act, 1907, samples of milk forwarded to London from places outside the county are examined. In 1924 2,400 samples from milk consigned to London railway termini from 36 counties were submitted for bacteriological examination. Of these samples, 121, or 5·04 per cent., yielded tubercle bacilli as against 4·1 present in 1923, 2·6 per cent. in 1922, 3·48 per cent. in 1921, 5·9 per cent. in 1920, 6·5 per cent. in 1919, 7·4 per cent. in 1918, 10·3 per cent. in 1917, and 8·7 per cent. in 1916. In connection with these samples the veterinary inspector visited 114 farms and examined 3,156 cows. It was found that 60 cows, i.e., 1·9 per cent., showed signs of tuberculosis or were otherwise unhealthy; 38 cows supposed to have been tuberculous had been slaughtered prior to the inspector's visits. In each case the farmer undertook to have the animal removed. In addition the inspector re-visited 435 farms, and inspected 11,035 cows; all the animals examined at these re-visits were found to be in a satisfactory condition with the exception of 59 which appeared to be tuberculous. In each instance the owner undertook to have the animal removed.

At the request of the City Corporation six farms were inspected, the milk from which had been found to be infected with tuberculosis; 243 cows were examined,

\* Inclusive of the businesses of a dresser of furskins and a slaughterer of poultry.



and two instances of generalised tuberculosis were found. Arrangements were made with the farmer for the disposal of these animals. It was ascertained that one cow suspected to be suffering from tuberculosis had been slaughtered prior to the inspector's visit. Twenty samples of milk have been taken from cows at the Council's mental hospital. All these samples were found, on bacteriological examination, to yield a negative result.

During 1923 four inspections were made of the cows in London cowsheds, and the total number of examinations made was 6,197. No case of generalised tuberculosis was detected, but in 81 cases other unhealthy conditions were found.

Section 24 (1) of the London County Council (General Powers) Act, 1907, empowers the county medical officer of health or any person authorised by him to take samples of milk produced or sold or intended for sale within the county. Section 24 (2) of the Act provides that the Council may, if in its discretion it thinks fit, by resolution authorise any sanitary authority to exercise in substitution for the medical officer so much of the powers of section (1) of this Section as will enable such sanitary authority, through its medical officer or any person authorised by him, to take within its district samples of milk for examination by the Council and may by such resolution prescribe the period during which and the conditions subject to which such authorisation shall take effect. A proposal having been submitted by a metropolitan borough council that the Council should exercise its powers under the latter section of the Act referred to, the Council, on 29th July, 1924, decided that no useful purpose would be served by such an alteration in the existing arrangements.

The drainage by-laws made by the Council in 1900 under section 202 of the Metropolis Management Act, 1855, restricted the materials of soil and ventilating pipes within buildings to drawn lead only. From time to time representations have been made with a view to the relaxation of this requirement, and after careful consideration the Council on 23rd October, 1923, made amending by-laws allowing such pipes to be constructed of heavy cast-iron as well as of drawn lead. The amending by-laws have been confirmed by the Minister of Health.

The Appeal Committee are the statutory appeal committee under the Metropolis Management Act, 1855, section 212. The Committee also hear and decide all appeals made to the Council under any other Act of Parliament (except appeals under section 20 (5) of the Public Health (London) Act, 1891, against decisions of the Public Health Committee). The one appeal heard during the year 1924 was dismissed.

Details are given in the Annual Report for 1921 (vol. III., p. 67) of the Council's action with regard to the organisation of health administration in London. In accordance with the decision of the Council on 29th November, 1921, and 16th January, 1922, evidence relating to public health services was given before the Royal Commission on London Government on the lines of the report submitted to the Council on 19th December, 1919, by the Special Committee on Health Administration in London\* (see Annual Report, 1921, vol. I., pp. 34-36; and 1922, vol. I., pp. 46-52). The Report of the Royal Commission was issued in March, 1923, (see vol. I., pp. 46-7).

\* *Report of the Special Committee on Health Administration in London.* No. 2000. Price 3d.



## CHAPTER XXIV.

### MAIN DRAINAGE.

Drainage  
area and  
statistics.

The district drained by the Council's main drainage system has an area of nearly 149 square miles with a population (in 1921) of 5,333,387. This includes an area of nearly 32 square miles, with a population of 850,138, outside London.

The quantities of sewage, etc., dealt with during 1924 were as follows :—

Sewage treated—						Million gallons.
Northern outfall	..	..	..	..	..	55,584·8
„ „ (daily average)	..	..	..	..	..	151·9
Southern outfall	..	..	..	..	..	35,299·2
„ „ (daily average)	..	..	..	..	..	96·4
Sludge sent to sea—						Tons.
Northern outfall	..	..	..	..	..	1,526,000
„ „ (daily average)	..	..	..	..	..	4,169
Southern outfall	..	..	..	..	..	861,000
„ „ (daily average)	..	..	..	..	..	2,352

The sludge vessels made 2,187 trips and travelled altogether 241,868 nautical miles.

London  
sewage  
system.

The Council's by-laws prescribe how premises shall be drained, and subject to these, the metropolitan borough councils control house drainage. Disputants have a right of appeal to the Appeals Committee of the Council. The metropolitan borough councils provide local sewers for house drainage and surface water, the plans of these being subject to the approval of the Council. From the point at which local sewers discharge into main sewers the Council becomes entirely responsible. The main sewers, many of which are on the lines of streams formerly discharging into the Thames, now connect with intercepting sewers which run roughly parallel to the Thames. In turn the intercepting sewers connect with the outfall sewers which convey the sewage to the outfalls, where, after the extraction of solid matters, the effluent is run off into the river and the solids are sent to sea in specially designed sludge vessels. For the disposal of rain-water, storm-relief sewers have been constructed which discharge into the Thames by the shortest practicable route. Many main sewers also have storm water outlets to the river. Sewage and storm water flow principally by gravitation, but pumping stations are necessary at certain places.

Sewage  
treatment.

The experiments in connection with the biological treatment of sewage on the activated sludge basis have been continued during the year, tanks being equipped with different appliances for agitating the sewage, namely (i.) the diffusion of air through the sewage by means of porous tiles fitted in the bottom of the tank ; (ii.) the agitation of the sewage by paddle wheels which constantly expose fresh layers of the sewage to the air ; and (iii.) the spraying of the sewage into the air through a nozzle. The experiments have established the fact that London sewage responds to this treatment and that, owing to its regular character, it is more easily treated in this way than the sewage of some large towns where trade refuse forms a larger part of the sewage.

Later two of the tanks were used for experiments in the treatment of the effluent discharged into the river from the settling or sedimentation channels. Generally speaking it is found that effluent can be more expeditiously dealt with than crude sewage and that the results given in one tank vary from those in the other. In order to secure the best conditions the tanks are altered from time to time. Experiments on these lines are being continued. New methods of biological treatment of sewage are being adopted in other places and careful attention is being paid to the results. Sewage disposal is a comparatively costly matter and very



complicated, and having regard to the magnitude of the Council's work it is essential that before considering any change of system the Council should carefully study every phase of the problem.

The Council on 19th December, 1922, approved expenditure of £14,000 in respect of the installation of two new boilers of the water tube pattern at the Northern outfall. The work was completed during 1924 at a cost, including accessories, of about £13,500. The repair of the pier at the outfall was continued at a cost of £948. The use of new sludge vessels of 1,500 tons cargo capacity as compared with 1,000 tons of the old vessels made it necessary to extend the pier at an estimated cost of £10,000. The work was specially difficult as it must not interfere with the working of the sludge vessels. The work was entrusted to C. J. Wills and Sons, Limited, as part of their contract for the development of the Becontree housing estate not far from the outfall. Under this arrangement the company will be paid the cost of the work with a fixed sum as remuneration. The arrangements for loading sludge are being remodelled at an estimated cost, including the supply of sludge loading pipes, gantries, etc., of £1,050. In order to provide additional employment the raising and levelling of the western bank of the river Roding, estimated to cost £1,000, and the repair of roads at the outfall, estimated to cost £1,200, have been accelerated. The fencing at the workmen's cottages has been renewed at an estimated cost of £350.

After the opening in 1915 of the new engine house at the Southern outfall, it became possible to lay off for overhaul the main beam-engines and pumps. The work is proceeding continuously. The expenditure authorised during 1924 amounted to £2,000 for work to be executed by direct employment of labour.

Any overhauls of the sludge vessels undertaken by the Council's staff, take place upon the gridiron at the Southern outfall. The increased size of the new sludge vessels has made it necessary to extend the gridiron, and the tender, amounting to £3,933, of Anthony Fasey and Son, Limited, was accepted on 18th July, 1924.

The chimney shafts at the outfall showed signs of becoming dangerous, one of them having been struck by lightning, and repairs have been undertaken at a cost of £313 12s. 6d.

The new type of centrifugal sludge loading pump installed in 1923 proved superior to the old type and was not so liable to be choked by rags and other solid materials. During 1924 two new centrifugal pumps were ordered one of which, with its engine, will be placed at a lower level than the existing pumps in order to deal better with the solid matter which accumulates in the lower portion of the sludge store. The pumps are being supplied by The Lilleshall Company, Limited, at a cost of £555 and the total cost of the work will be about £1,000. The repainting of the interior of the triple expansion engine house and the repair of roads at an estimated cost of £1,000 and £750 respectively have also been accelerated in order to provide additional employment. Other work undertaken during the year include overhauling and repairing the revolving filth screen, estimated to cost £370; clearing sand from pump wells, £200; and repairs to roofs, £150.

The fleet of vessels for conveying sludge from the outfalls to the Black Deep was built up between 1887 and 1895 when six vessels were obtained, each of a carrying capacity of about 1,000 tons. These vessels are practically all worn out with the exception of the s.s. *Bazalgette* which was re-conditioned during 1921, and should have a further life of 15 years from that time. A new vessel, the *Henry Ward*, was obtained in 1923. This vessel has a capacity of 1,500 tons and proved so satisfactory in working that it was decided to obtain further vessels of the same type. The tender of Vickers, Limited, for two vessels at the price of £51,120 each, was accepted on 1st March, 1924. In consideration of the fact that the building of one of these vessels was expedited, State assistance was obtained towards the cost. One of the new vessels, the *J. H. Hunter*, was launched by Mrs. John Perring,



wife of the chairman of the Main Drainage Committee, on 2nd October, 1924. The vessel arrived in the Thames on 28th November and after satisfactory completion of her trials was put into commission on 12th December. The other vessel, the *G. W. Humphreys*, was launched on 13th November, 1924, and remains to be completed. Delivery is expected early in 1925. The greater length of the new vessels has made it necessary to alter the arrangements for mooring at Erith. The opportunity was taken to overhaul the existing moorings and buoys. The total estimated cost of the work was £800. Owing to lamination of some of the plates trouble developed in one of the boilers of the *Bazalgette*. The boiler had been put in only in 1921. The cost of repairs amounted to £361, towards which the makers, although they were under no liability, contributed £150. The Council's proportion of the cost of buoying the Black Deep deposit area during 1923 was £214. The *Barrow* was overhauled during the year at a cost of £479.

Outfall,  
intercepting  
and main  
sewers.

The arrangements with the Poplar Metropolitan Borough Council for the construction of a footway along the top of the northern outfall sewer embankment between Wick-lane and Marsh Gate-lane were completed during the year, and the footpath was opened to the public by the Mayor of Poplar on 14th April, 1924.

Repairs, etc., have been carried out during the year to intercepting and main sewers as follows:—\*Marcia-road sewer, £730; Effra branch sewer, £3,210; Lord Spencer sewer, £180; \*Fleet sewer, £8,150; \*Regent-street sewer, £775; \*Ranelagh sewer, £13,900; Hackney Brook sewer, £2,400; Pennington-street sewer, £2,600; Wick-lane sewer, £2,250; \*Ratcliff-highway sewer, £225; Wood-lane sewer, £725; \*Northern outfall sewer, bridges, £3,550; Northern low level sewer penstocks, £350; Savoy-street outlet, £350.

The storm water outlet from the Ratcliff-highway sewer discharges into the Thames under the property of the Free Trade Wharf Company, Ltd., and arrangements have been made to construct a new outlet which will pass mainly under the King Edward VII. Memorial Park at Shadwell. The tender of Scott and Middleton, Limited, amounting to £2,677 for part of the work, was accepted on 23rd August, 1924, the remainder having been constructed by the Free Trade Wharf Co., Ltd., which is responsible for two-thirds of the total cost of the whole.

The laying of the portions of the two new 14-inch pipes necessary to link up North Woolwich pumping station with the Northern outfall, in place of pipes of the same dimensions which formed the original North Woolwich rising main, was completed by Mr. Howard Farrow. The total cost of the work including the supplying and laying of the pipes, was £13,288. The rising mains now consist of one 24-inch and two 14-inch pipes.

Abbey Mills  
pumping  
station.

The raising of the river wall of the Channelsea river which flows beside Abbey Mills pumping station has been put in hand at an estimated cost of £750\*

Western  
pumping  
station.

The main beam engines at the Western pumping station were put to work in 1875. The beams have been repaired and strengthened from time to time. Further defects developed, and repairs have been completed at a cost of £546. The tender of Mr. J. Barr for repairing and painting the staff quarters was accepted on 28th March, 1924, and the work completed at a cost of £202 9s. 9d.

North  
Woolwich  
pumping  
station.

One of the two settling ponds at North Woolwich pumping station has been repaired at a cost of about £450. Electric light for the station and electric power for working the filth screens and for raising water from the silt pits have been installed at a estimated cost of £359. This amount provides also for the overhaul of the filth screens.

Lots-road  
and King's  
Scholars'  
Pond  
pumping  
stations.

The tender of Arthur H. Inns, Ltd., amounting to £388 and £124 for painting works at Lots-road and King's Scholars' pumping stations respectively, was accepted on 11th December, 1924. State aid has been promised towards the cost of internal painting which was accelerated in order to provide employment.

\* Expedited to afford employment, and ranks for State assistance.



The overhaul of the four main gas engines and pumps and auxiliary machinery, including the provision of a new air-compressing set, hydraulic pump and accumulator, at Heathwall pumping station has been undertaken at an estimated cost of £780. Repairs to the roof and the formation of openings therein to give access to the valves on the circulating water tanks have been authorised at an estimated cost of £120.

The gas engines were overhauled during the year at an estimated cost of £330. On 30th October, 1924, an explosion, which injured two members of the staff occurred in one of the engines owing to an accumulation of gas in the crank chamber. The estimated cost of the repairs is £250.

The Council, on 22nd July, 1919, had before it a comprehensive scheme of works to mitigate floodings in various parts of London on both sides of the Thames during times of heavy rainfall. The scheme is described in the Annual Report for 1920, (vol. III., p. 121.) Part of this scheme, a north-eastern storm relief sewer from Kelvin-road, Highbury, to the Thames at Shadwell, was completed and available for use on 24th June, 1924.

To provide additional employment the Council in 1921, accelerated the work on other portions of the 1919 scheme, particularly those which would provide work suitable for unskilled or partly skilled labour. The works selected were the improvement of the river Graveney, the Wandle Valley sewer, the Charlton storm relief-sewer, and flood relief works at Hammersmith. Unemployment continued during 1922 and for its relief further portions of the 1919 scheme were undertaken. These comprise the enlargement of the Isle of Dogs and Abbey Mills pumping stations, and the construction of the south-western storm relief sewer. In 1923 further works included in the scheme were put in hand, comprising the construction of storm relief sewers in Lewisham and Woolwich and the installation of additional machinery at Shad Thames pumping station, and in 1924 the Council decided to undertake the construction of the north-western storm relief sewer. H.M. Government, through the Unemployment Grants Committee, agreed to make a grant towards the cost. The completion of the improvement of the river Graveney was reported in the Annual Report for 1923 (vol. III., p. 126). Details of the other schemes are given below.

The Wandle Valley sewer is both a soil sewer and a storm-water sewer. Sewage is carried into the intercepting sewers and so to the Southern outfall, while the storm water will be discharged by gravitation into the Wandle. The sewer will be about  $2\frac{1}{2}$  miles in length, and, if necessary, can be extended to the Thames. The work was undertaken by W. G. Tarrant, Ltd., in December, 1921, and completed in January, 1924, at a cost including incidentals of approximately £143,000.

The Charlton storm relief sewer will relieve the southern high-level sewer. It connects with the high-level sewer at Charlton and is constructed across Greenwich marshes to discharge storm water direct into the Thames. The construction of the sewer was undertaken by S. Pearson and Son (Contracting Department), Ltd., in February, 1922, and was completed in March, 1924, at a cost, including the cost of property and incidentals, of approximately £135,000.

The relief scheme for the low-level area in west London of about 2,500 acres in Fulham, Kensington and Hammersmith provides for the construction of a sewer about a mile in length having an outlet to the Thames near Hammersmith Bridge, and the erection of a new pumping station near the outlet. The estimate for the whole work, including the acquisition of the property, etc., was £360,000. The sewer was completed in June, 1923, at a cost of £137,440. The tender of Gwynne's Engineering Company, Ltd., amounting to £59,370 for five sets of engines and pumps, was accepted on 17th February, 1922, the main and auxiliary engines being sublet to the Premier Gas Engine Company, Ltd. Later a receiver and manager on behalf of the debenture holders of the former company was appointed. Substantial progress had been made with the contract, and to avoid delay it was



arranged that it should be assigned to the latter company, with Gwynne's as sub-contractors for the plant which they were supplying. At the end of 1924 work to the value of approximately £40,000 had been completed and partly erected at the station. As mentioned in the Annual Report for 1923 (vol. III., p. 127), the motive power for the engines is gas supplied by the Brentford Gas Company. A tender by Leslie and Company, Ltd., and amounting to £56,290 for the erection of the proposed pumping station at Hammersmith, was accepted on 1st March, 1922, and at the end of 1924 the greater part of the machinery was delivered, and the first engines and pumps were nearly ready for work. The tender, amounting to £518, of H. J. Cash and Co., Ltd., for the installation of electric light, etc., was accepted on 21st March, 1924. The pumping station has been placed under the superintendent of the Western and other pumping stations and the staff has been fixed at one engineer-in-charge, two engineers and four oilers and cleaners.

Abbey Mills  
pumping  
station  
enlargement.

The enlargement\* of Abbey Mills pumping station involves alterations in the Worthington engine house at the station, the installation of new pumping plant there, and the provision of additional boilers in one of the boiler houses and of supplementary plant. The total estimated cost is £60,000. The boilers have been installed. The tender, amounting to £19,750, of Gwynne's Engineering Company, Ltd., for machinery was accepted on 20th December, 1922. Delay has occurred owing to the appointment of a manager and receiver on behalf of the debenture holders of the company. After negotiations the manager and receiver agreed to continue work and the Council agreed to expedite payments on account of work done. The tender of Mr. F. R. Hipperson, amounting to £13,815, for the construction of foundations for the new machinery, was accepted on 20th June, 1923. This work also has not progressed as rapidly as was hoped. It was hindered to some extent by the strike of building trade operatives in July and August, 1924. During 1924 tenders were accepted as follows:—Dilworth and Carr, Ltd., £5,926 for the supply of piping, valves, feed pumps, etc.; the Lilleshall Company, Ltd., for the supply of two penstocks, £405; Bumsted and Chandler, Ltd., for the supply of engine to drive mechanical stokers, £211.

Isle of Dogs  
pumping  
station en-  
largement.

In addition to the pumping carried out at Abbey Mills pumping station in connection with the drainage of the low-lying areas in Poplar and the Isle of Dogs, storm water from these areas is pumped direct into the Thames at the Isle of Dogs pumping station and the general flood relief scheme of 1919 provides for the enlargement of this station and the substitution of gas for steam power. The total estimated cost of the enlargement is £73,000. The engines are being provided under the revised contract with the Premier Gas Engine Co., Ltd., in 1922, the contract price being £9,829, of which £545 is provisional. On 7th December, 1922, the Council accepted the tender, amounting to £29,405, of W. Pattinson and Sons, Ltd., for the enlargement of the station. The contractors abandoned the work on 16th May, 1924, and the Council determined the contract. John Mowlem and Co., Ltd., who were then entrusted with the temporary pumping, watching, etc., eventually agreed to complete the building upon the basis of the Council paying (i.) the cost of labour, materials, stores, etc., (ii.) certain fixed sums for skilled supervision, office charges, plant, etc., (iii.) profits at specified rates, adjusted according to the actual quantities of work and (iv.) one-quarter of any saving on an estimate (£23,003), after adjustment according to actual quantities.

South-  
western  
storm relief  
sewer.

The south-western storm relief sewer has been designed to assist the drainage of Clapham, Streatham, Brixton, West Norwood and Dulwich. The estimated cost, including incidentals, is £315,000. If required the sewer can be extended southward to relieve the Effra Branch sewer at West Norwood. The length from Effra-road to Nine Elms is  $2\frac{3}{8}$  miles, and in order to expedite the work\* it was made the

\* Accelerated with Government assistance in order to provide employment.



subject of two contracts—(i.) between Effra-road and Clapham-road, begun in December, 1922, and completed in February, 1924, by Mitchell Brothers, Sons and Company, Limited, at a cost of approximately £52,000; and (ii.) from Clapham-road to the Thames, begun in March, 1923, by the Unit Construction Company, Limited, the value of finished work in December, 1924, being £117,049 out of a total of £210,939. The tender of Drysdale and Company, Ltd., amounting to £648, was accepted for the supply of an electrically driven centrifugal pumping set at Heath-wall pumping station for draining the section of the relief sewer near the station.

The scheme of relief sewers in Lewisham and Woolwich is described in the Annual Report for 1923 (vol. III., p. 128). The Council on 20th December, 1923, accepted the tender, amounting to £241,645, of Walter Scott and Middleton, Ltd., for the construction of the Lewisham branch sewer (Bell-green, Lower Sydenham, to a junction with the southern high-level sewer No. 2 near Court Hill-road, Lewisham), and a branch sewer from Catford station, and up to the end of December, 1924, the value of finished work was approximately £63,974. The tender, amounting to £223,721, of Messrs. Kinnear, Moodie and Co., for the construction of the Eltham sewer (from the junction of the Council's existing Eltham sewer and the local sewer in Eltham-road, near Eltham-green, to the southern high-level sewer No. 2 at Charlton), was accepted on 6th February, 1924, and up to the end of December, 1924, work of the value of approximately £71,581 had been completed.

Shad Thames pumping station, opened in 1909, was designed to accommodate six pumping sets, but as a first instalment three only were put in. The flood relief scheme of 1919 included proposals for completing the equipment of this station. The Council on 4th December, 1923, approved an estimate of expenditure of £22,000 and on 17th July, 1924, accepted the tender, amounting to £20,612, of the Lilleshall Company, Ltd., for the supply of gas engines, pumps, etc.

The negotiations, for the most part abortive, with authorities outside London for contributions towards the cost of a relief scheme to deal with the overflowing of Beverley-brook are referred to in the Annual Report for 1924 (vol. III., p. 129). Negotiations, however, with the Barnes Urban District Council have been brought to a conclusion, which was ratified in the London County Council (General Powers) Act, 1924. The principal item of the arrangement is the construction of a culvert, not less than 8 feet in diameter, to draw off storm water from the brook at a point near Priest's-bridge, Upper Richmond-road, and to discharge it into the Thames by the most direct route. The approximate estimate of the cost is £39,500, towards which the District Council will contribute one-fifth or £8,000, whichever is less. As a preliminary, trial holes have been sunk during the year at an estimated cost of £200.

The north-western storm relief sewer will extend from Kilburn to Hammersmith and has been designed to relieve floodings in Willesden, Paddington and North Kensington. The works comprise the construction of the principal sewer, which will be connected with the Ranelagh sewer in Shirland-road, Kilburn, and will run to the nearest point on the Thames, at Hammersmith, connecting with various main sewers on the way. Branch sewers will be constructed to connect the new sewer with the middle level sewer in Ladbroke-grove, and with the Wood-lane sewer at Wormwood Scrubs. A connection will also be made with the new pumping station at Hammersmith. Altogether the construction of about  $5\frac{1}{4}$  miles of sewer is involved. The sizes of the sewer and branches will vary from 4 feet to 9 feet 6 inches in diameter, increasing towards the outlet to the river. The total estimated cost is £527,000. As the work was being expedited to afford employment it was made the subject of two contracts, the first comprising the section between the Thames and Notting-hill and the second between Notting-hill and Kilburn and Hammersmith. Tenders for the work in the first contract received in December, 1924, were so greatly in excess of the Council's estimate that negotiations were opened with Walter Scott and Middleton, Ltd., who submitted the lowest

Storm relief  
sewers in  
Lewisham  
and  
Woolwich.

Shad Thames  
pumping  
station.

Beverley  
Brook.

North-  
western  
storm relief  
sewer.



tender (£318,141), upon the basis of the Council participating in any risks incidental to the work. These negotiations were successful, and on 16th December, 1924, the Council accepted an offer by that firm to construct the sewer on the basis of (i.) payment for work done, measured and calculated on a schedule of prices, (ii.) an allowance of 15 per cent on the value of measured work for use of plant, office expenses and profit and (iii.) payment or deduction by the Council of one-half of the amount by which the actual cost of the work (increased by 15 per cent. of the value of measured work) shall exceed or fall below the sum of items (i.) and (ii.). The order to begin was given on 30th December, 1924.

Sewer in  
Streatham-  
hill and  
Brixton-hill.

The Annual Report for 1923 (vol. III., p. 129) describes the negotiations with the Lambeth and Wandsworth Borough Councils for the construction by the Council of a new 4 foot sewer in Streatham-hill and Brixton-hill at the joint expense of the borough councils in the proportion of two-thirds to Wandsworth and one-third to Lambeth. After completion the new sewer will be vested in the Council. The proposed works will leave the present local sewer in Water-lane as a connecting link between two of the Council's sewers and it will therefore be taken over by the Council as a main sewer. The present local sewer in Streatham-hill and Brixton-hill will continue to be maintained by the borough councils. The estimated cost of the new sewer, including expenditure not provided for in the contract, amounts to £57,500 and the work has been included in the list of works approved by the Unemployment Grants Committee for the purpose of State aid. The Council on 24th December, 1923, accepted the tender, amounting to £46,428, of James Byrom, Limited. Some delay has ensued owing to the subsidence of a part of the road over the sewer and at the end of the year work to the approximate value of £16,013 had been completed.

Out-county  
drainage.

Some years ago the Leyton and Walthamstow Urban District Councils asked to be allowed to discharge sewage into the London main drainage system. The matter had a direct bearing on the pollution of the Lee and its tributaries, into one of which, Dagenham brook, effluent is discharged from the sewage works of the two District Councils, and proceedings have been taken by the Lee Conservancy Board in this respect. Prolonged negotiations took place between the Council and the local authorities of areas in the Lee valley comprising Enfield, Edmonton, Southgate, Leyton and Walthamstow, but ultimately the first three withdrew. Further negotiations with the Leyton and Walthamstow Urban District Councils were interrupted by the War and later by the proceedings incidental to the enquiries of the Royal Commission on the Local Government of Greater London. Afterwards negotiations were resumed and the Council on 11th November, 1924, decided to enter into agreements with these two District Councils and to apply to Parliament in the session of 1925 for powers to enable the agreements to be carried into effect. The agreed scheme provides for the construction of two connecting sewers not exceeding 4 feet in internal diameter, one from Walthamstow which will discharge into the Council's Hackney to Abbey-mills sewer at or near North Mill Field Recreation Ground, and the other from Leyton which will discharge into the same sewer at Gainsborough-road, Hackney. All works will be carried out by the district councils to the satisfaction of the Council's chief engineer. The quantity of sewage from the urban districts will be limited to 50 gallons a day for each head of population, and records of discharges will be supplied to the Council to enable it to ascertain whether this requirement is complied with. In order to prevent floodings in areas served by the Council, the flow of drainage from the two urban districts is to be prevented when in the opinion of the Council's chief engineer the conditions in the Council's system makes this necessary. At no time may surface water from surface water sewers be discharged into the London system. The connecting sewers and all incidental works will be vested in the respective district councils who will be responsible for maintenance, etc., to the satisfaction of the Council's chief engineer.

In addition to the annual charge mentioned later each of the district councils



will pay an amount in respect of the discharged capital outlay of the Council and its predecessors on main drainage works. The amounts so payable will be calculated on the proportion which the annual rateable value of each district bears to the whole area (including Leyton and Walthamstow) draining into the London main drainage system, but, as a special concession, one-third only of the full proportion of discharged capital will be paid. Payment will be made by means of one hundred equal half-yearly payments of principal and interest combined. The other annual charges to the district councils will be calculated on the rateable value and based upon the portion of the County rate attributable to expenditure on main drainage, including administrative expenses. Payments will be made at half-yearly intervals in the first instance on estimated expenditure subject to adjustment later when the actual expenditure is ascertained.

The Council on 29th July, 1924, decided to enter into an agreement with the Bexley Urban District Council for the drainage of property in Wickham-lane upon payment by the District Council of an annual charge of £10.

Section 69 of the Metropolis Management Act, 1855, provides that no local sewer shall be made without the approval of the Council. During 1924 the construction or reconstruction of 142,300 feet of sewers of various sizes has been sanctioned. Local sewers.

Under section 204 of the Metropolis Management Act, 1855, and section 68 of the Metropolis Management (Amendment) Act, 1862, no building or any other enroachment may be erected in, over or under any sewer vested in the Council except with the Council's consent. During 1923 the Council gave its consent in 16 such cases. Buildings, etc., over sewers.

The Council on 13th May, 1924, had before it a resolution passed by the Bucks County Council as follows:— Millers' rights.

“That the Minister of Agriculture be urged to enquire into the whole question of millers' rights and obligations and to introduce legislation to provide that such rights, if not usefully exercised, should be considered derelict and be transferred to any drainage board or other public authority having jurisdiction over the river concerned. In the opinion of this Council no drainage board can usefully exercise its powers unless and until such legislation is passed.”

There are a few mills on the river Ravensbourne within London and six mills on the part of the river Wandle which is under the Council's jurisdiction as a main sewer, and the Council, while not prepared to support the resolution of the Bucks County Council in its entirety, stated that it would be prepared to support a request to the Minister to enquire into the whole question of millers' rights and obligations with a view of ascertaining whether legislation is desirable to deal therewith and with any such rights as may not be usefully exercised or may become derelict.

The National Joint Industrial Council for Local Authorities' Non-Trading Staff. Services (Manual Workers) approved in July, 1923, a proposal that the Southern outfall, which was within the area of the Southern Home Counties' Provincial Council, should be included within the area of the London District Council and the District Council decided that the transfer should take effect from and in respect of the first full week in September, 1923. The National Council also decided in October, 1923, that Abbey-mills pumping station, which was originally within the area of the late Provincial Council for Middlesex, Essex and Hertfordshire should be included in the area of the London District Council with effect as from 2nd November, 1923. In accordance with these decisions the Council on 8th April, 1924, graded the workmen at the stations in question in accordance with the grading of the London District Council.

Difficulties arose in consequence of the better conditions secured to employees who come within the purview of the London District Council of the National Joint Industrial Council for Local Authorities' Non-Trading Services (Manual Workers) as compared with other employees. In some cases the men of higher rank actually



received less than those of lower rank and the Council on 20th May, 1924, authorised special payment to be made to certain officers and employees of such an amount as would maintain the difference which existed at the outbreak of war between their pay and that of the highest paid workmen under their supervision. This special payment does not apply to workmen whose wages are regulated by trade union conditions.

The National Maritime Board increased the rates of pay of officers and crews on weekly vessels on Board of Trade Articles, and the Council accordingly raised the wages of its officers by 5s. a week as from 5th June, 1924, and a further 5s. a week as from 5th September, 1924. The case of the crews was adjudicated upon by the Thames District Maritime Board who awarded advances to adult members of the crews of 3s. 3d. a week as from 5th June, 1924, and a further advance of 3s. 3d. a week as from 5th September, 1924. The total estimated cost of these increases is £2,825 a year.

The wages of certain employees follows variations in the trades of which they are members. Under this arrangement the staff employed in the chief engineer's department in connection with the Thames Floods Prevention service who are river workers received an increase of 6s. a week each as from 26th February, 1924, and a further increase of 6s. as from 2nd June, 1924, in accordance with the agreement between the Negotiating Committee of the National Council of the Port Labour Employers and the National Transport Workers' Federation.

## CHAPTER XXV.

### HOUSING.

Powers and  
duties of the  
Council.

The powers of the Council in relation to the housing of the working classes are derived from the Housing Acts, 1890 to 1924. Apart from administrative duties, the main divisions of the work are (i.) the provision of new dwellings to meet the need for additional accommodation, and (ii.) the improvement or reconstruction of unhealthy areas, including the provision of dwellings for rehousing persons of the working classes displaced.

With the passing of the Housing, Town Planning, etc., Act, 1919, as a result of conditions arising out of the war, a financial partnership was established between the State and local authorities in the matter of housing, the liability of a local authority being limited to the produce of a penny rate, while any expenditure incurred on duly authorised schemes over and above that limit was to be borne by the State. The grant of State aid was contemplated for a limited period only, and the scheme put forward by the Council in anticipation of the passing of the Housing Act of 1919 provided for a five years' programme of work. Owing to financial stringency, however, the Government in 1921 found it necessary to reduce its commitments and the Council's programme was curtailed accordingly.

A system of partnership was continued under the Housing, etc., Act, 1923, one of the main financial provisions affecting the construction of houses by local authorities being a State grant of £6 a year for each approved house over a period of 20 years. The share of the deficit to be borne by the State is thus strictly limited in amount, while the balance, whatever it may be, has to be met by the local authorities. A similar State grant is also made in approved cases in respect of houses erected by private enterprise, and this is supplemented by the Council in the case of houses let at weekly rents. The Act also contains provision for contributions being made by the State towards the cost of clearance of unhealthy areas.

National  
House  
Building  
Committee.

In the early part of 1924 a committee, known as the National House Building Committee, representative of employers and operatives in the building trade, was formed at the request of the Minister of Health and the Minister of Labour, to



inquire into and report on the means of the industry to carry out a full housing programme. This Committee, in their report \* dated 10th April, 1924, suggested a programme of building over 15 years, proceeding progressively to a maximum production of 225,000 houses annually and representing a total of 2,500,000 houses. To meet the deficiency of skilled labour available in the building trades, the Committee recommended that every effort should be made to facilitate the technical training of apprentices and the removal, for a time at least, of the restrictions as to the number of apprentices which one employer might have. The Committee also suggested a special form of apprenticeship for youths up to 20 years of age.

At the invitation of the Minister of Health representatives of local authorities in Great Britain met in conference under the chairmanship of the chairman of the Council's Housing Committee, and passed a series of resolutions on the subject of the housing shortage. The conference were doubtful of the sufficiency of the proposals of the National House Building Committee, and made recommendations which were subject to a sufficient supply of labour and materials at reasonable rates and prices being available, and to a periodic review of the situation. These decisions of the conference were to the effect that local authorities should retain their autonomy as to fixing the number of houses to be built in their respective districts, with power to suspend operations at any time; that the Government should bear two-thirds of the loss incurred on approved expenditure (with some increase in rural areas and small urban districts); that the fixation of rents should continue on the basis laid down in the Housing, Town Planning, etc., Act, 1919; and that the dimensions of houses laid down in the Housing, etc., Act, 1923, should be retained.

The recommendations of this conference were submitted to and discussed with the Minister of Health, and, in the main, were accepted by him. The Council, on 27th May, 1924, approved generally the resolutions passed by the conference.

The Housing (Financial Provisions) Act, 1924, the main purpose of which was to give effect to the agreement thus arrived at between the Minister of Health and the representatives of local authorities, received Royal Assent on 7th August, 1924. The Act provides for a programme extending over a period of 15 years and aiming at the production, at a gradually increasing rate, of approximately 2,500,000 houses in Great Britain. The Exchequer contributions under the Housing, etc., Act, 1923, towards the expenses of local authorities in providing houses or promoting the construction of houses by private enterprise or other bodies are continued until 1939.

The Act provides that houses which are subject to certain "special conditions" as to their letting and to the amount of rent to be charged for them, and which are completed before 1st October, 1939, shall be eligible for an increased Exchequer contribution of £9 (£12 10s. in an agricultural parish) a house per annum for 40 years. The most important of the "special conditions" imposed by the Act is that which limits the rents of the houses in the aggregate to the "appropriate normal rents" charged in respect of pre-war working-class houses. The Act contemplates a maximum contribution from the rates of £4 10s. a house per annum for 40 years, and the "appropriate normal rents" may only be exceeded in order to obviate any charge upon the rates in excess of that amount. The Exchequer liability may be terminated in the event of the production of houses, as ascertained triennially, falling short of two-thirds of the full programme proposed, or of the cost of houses being found, after full inquiry, at any time to be unreasonable. The rates of Exchequer contribution are subject to review every two years.

A committee representative of employers and operatives in the building industry and of manufacturers and suppliers of building materials have expressed

\* Report (Cmd. 2104) of the National House Building Committee on the present position in the building industry.



themselves satisfied that means can be devised to ensure a supply of the requisite labour and materials, and they have declared their readiness to adopt comprehensive proposals for revising the apprenticeship system.

The Minister of Health has set up Committees to advise and assist him in carrying out the scheme embodied in the Act, particularly as regards the development and co-ordination of the supply of labour and materials for house building. Local committees are also to be appointed in each area, composed of representatives of the building employers and building operatives in the area.

The Act empowers the Council to provide houses to meet the special needs of a metropolitan borough council or the City Corporation who are respectively authorised to contribute towards the cost. The Council's expenses under the Act, including money grants to private enterprise, are chargeable to general county account.

Refund of rates.

During the year the Council gave further consideration to the question of refunding rates in respect of houses converted into flats, and adhered to its previous decision to take no action under section 5 (1) (c) of the Housing, etc., Act, 1923, relative to the refund of such rates.

Housing programme.

The Council lost no time in considering the situation which would arise when the Housing (Financial Provisions) Bill, 1924, became law. It was difficult to obtain reliable data on which to base a computation of the necessities of London, and as an immediate measure of relief and without setting the final limits of a programme to be undertaken within any definite period, the Council, on 29th July, 1924, authorised the construction of some 20,000 houses to be undertaken strictly within the provisions of the proposed Act. The capital cost of constructing these houses may be roughly computed at £12,000,000.

Houses completed.

Since the war the Council has completed up to 31st December, 1924, approximately 9,160 houses and flats, which contain a maximum accommodation, on the basis of 2 persons a room, for about 68,800 persons. The houses and flats completed during the year 1924 number 1,452, with accommodation for 9,935 persons.

Building grants.

Particulars of the Council's scheme for the administration of the subsidy provisions of the Housing, etc., Act, 1923, were set out in the Annual Report for 1923 (Vol. I, pp. 132-3). Up to 31st December, 1924, the Council had approved proposals submitted by private builders for the erection of 1,118 houses to qualify for subsidy on completion, the number of houses approved during the year being 644.

Unhealthy areas.

The Housing, etc., Act, 1923, empowers the Minister of Health to make contributions from the Exchequer towards the expenses incurred by local authorities in carrying out improvement schemes under Parts I. and II. of the Housing Act of 1890, such contributions being limited to one half of the estimated average annual loss. The Minister has intimated that he is prepared to consider proposals involving contributions from the Exchequer amounting to £50,000 a year, and a comprehensive programme of slum clearance is being drawn up by the Council. A number of schemes, of which particulars are given later have already been approved, and some of them have been confirmed by the Minister of Health. Other schemes are in course of preparation.

White Hart-lane Estate.

Particulars of the Council's housing operations during the year are as follows :—

The development of about 56 acres of the White Hart Lane estate under the State Assisted (1919) Scheme by the erection of 710 houses and flats was completed in 1923. During 1924, arrangements were made for the development of the remainder of the estate under the financial provisions of the Housing Act of that year. In December, 1924, the Council accepted the tender of Wilson Lovatt & Sons, Limited, amounting to £76,513 for the erection of 138 dwellings and two shops along the Lordship-lane frontage of the estate. Lordship-lane may in the future develop into a main shopping thoroughfare but the time has not yet arrived when the erection of shops along the whole of this frontage would be justified. The buildings to be erected have, therefore, been designed to contain on the ground



floors two shops and 68 flats which can readily be converted into shops as occasion arises, and on the first and second floors 70 five-roomed dwellings of two storeys. Further sites comprising about 26 acres will shortly be developed by the erection of 277 houses and six blocks of three-storey buildings containing 60 flats. In connection with this development an additional strip of land a little less than an acre in extent was compulsorily acquired.

The 72 three-storey flats provided on this estate as part of the rehousing accommodation under the Ware-street, Hoxton, improvement scheme, were completed during the year. The accommodation consists of 36 flats of three rooms and 36 of four rooms, each having in addition a large scullery or kitchenette and a fixed bath. The weekly net rents (exclusive of rates), fixed after comparison with other accommodation on the estate, are as follows:—Three-roomed (intermediate) flats: ground and first floors, 10s., second (top) floor, 9s. 6d.; four-roomed (end) flats: ground and first floors, 12s., second (top) floor, 11s. 6d.

Roehampton estate was acquired in 1919, and an area of about 93 acres has been allocated for the erection of working-class dwellings. The roads and sewers on the whole estate have been constructed and the development of the first section and a part of the second section has been completed by the erection of 792 houses. Tenders for the erection of 422 houses and administrative buildings to complete the development of the estate were invited in December, 1924, but none of the tenders was accepted. The question of the best course to be adopted to secure the erection of the houses was being considered at the end of the year. About 45 of the houses are to be erected under the provisions of the Housing, etc., Act, 1923, governing State aid, while the remainder will be provided under the Assisted Scheme of 1919. Roehampton Estate.

During the year the Council accepted the undermentioned tenders for work on the estate—completion of certain roads, W. & J. Glossop, £3,097; iron fencing in Putney Park-lane, T. W. Palmer & Co., £178 10s.; oak fencing and other work along the Upper Richmond-road frontage, W. Turner, Riley & Co., Ltd., £300. Certain paving work along this frontage was also carried out for the Council by the local authority at an estimated cost of £113.

On 4th November, 1924, the Council decided to add about  $2\frac{1}{2}$  acres to the 9 acres of the estate already appropriated for use as playing fields in connection with secondary schools.

Putney Park House, with the adjoining grounds, on the estate has been let to the Tenants' Association for seven years from 31st March, 1924, for use as a club or institute.

The estate known as Becontree, situated in the county of Essex between Chadwell Heath on the north and Ripple Road on the south comprises about 2,800 acres and has been purchased with the aid of compulsory powers obtained in 1920. The development of the estate has been entrusted to C. J. Wills & Sons, Limited, on a basis of actual cost *plus* participating profit. The first section to be developed, known as the Ilford (No. 1) section and comprising about 440 acres, is situated in the north-western corner of the estate. Upon this section 2,901 houses have been built and are occupied. When the development of the Ilford section was approaching completion it was deemed desirable to proceed with the development of the south-eastern corner of the estate, and, with the approval of the Minister of Health, the erection of 1,000 houses was undertaken under the Assisted (1919) Scheme on what is known as the Dagenham (No. 2) section (59 acres), and a further 1,000 houses with the aid of the State grant under the Act of 1923, on the Dagenham (No. 3) section (58 acres). By the end of 1924 the former section was approaching completion, 894 houses having been built and occupied, and 364 houses had been finished on the latter section. The remaining houses were in various stages of progress. Development operations have also been commenced in the north-eastern corner of the estate distinguished by the name of "Valence," and the erection of Becontree.



1,056 houses has been undertaken under the provisions of the 1923 Act on the Valence (No. 4) section. At the end of the year more than 200 of these houses had been commenced. Arrangements were made during the year, with the approval of the Minister of Health, for the development of further sections under the financial provisions of the Act of 1924, but active operations had not been commenced before the end of the period covered by this report. On 29th July, 1924, the Council approved a capital estimate of £521,850 in respect of the erection of about 894 houses on the Ilford (No. 5) section and on 18th November, 1924, two further estimates of £600,000 each in respect of the erection of about 1,000 houses on the Dagenham (No. 6) section, and about 1,000 houses on the Valence (No. 7) section, inclusive in each case of the construction of the necessary roads and sewers.

Rents for accommodation on the Dagenham (No. 3) section have been based on those charged for the No. 2 section, both sections having been developed on similar lines. When fixing the rents for the No. 3 section the Council decided to reduce the rents of the ground floor cottage flats on the No. 2 section, some by 3d. and others by 6d. a week. The weekly net rents for the two sections subject to any reasonable variation on account of position or amenities are as follows:—*Houses*—Five rooms, scullery and bath, 12s. 6d.; four rooms (parlour type), scullery and bath, 11s. 6d.; four rooms (non-parlour type), scullery and bath, 10s. 6d.; three rooms, scullery and bath, 9s. 6d. *Flats*—Three rooms, scullery and bath, first floor, 8s. 9d, ground floor, 8s. 6d.; two rooms, scullery and bath, 7s. 6d. On 22nd July, 1924, the Council decided to reduce the net weekly rents of certain of the houses and flats on the Ilford (No. 1) section of the estate as follows:—Six-roomed houses from 20s. to 17s.; three-roomed flats from 11s. to 10s., and two-roomed flats from 9s. to 8s. 6d. The Council in 1923 had agreed to a temporary abatement of 1s. a week from the approved rent of the six-roomed houses, and in view of the permanent reduction the temporary abatement was reduced to 6d. a week.

During the year the Council agreed to surrender some strips of land, about 4 acres in extent, for the widening of Green-lane and Wood-lane, the local authorities undertaking to bear any tenants' compensation and the cost of fencing. As part of the arrangement the Council was permitted to incorporate in its building sites some land lying between the line of the hedge bordering the original road and the boundary line of the new road. Nearly an acre of land has also been surrendered on similar terms for the widening of Goodmayes-lane, and some small strips for improving a dangerous corner at Bull-lane and for the further widening of Long-bridge-road.

The central repair depot, including workshops and stores and the local representative's residence, has been removed from Gale-street to Valence farm house, otherwise known as "Burleighs." The work of adaptation has been carried out at a cost of £1,391.

During 1924 the Council sold two sites, one slightly more than an acre in extent for £600 for the erection of a Wesleyan church, and the other to the Essex County Council for £1,015 for an elementary school. Other sites have been let on building leases for 99 years for the erection of shops. On 12th February and 15th April, 1924, the Council accepted two tenders submitted by Messrs. F. W. Romain & Sons, and amounting to £6,611, for the erection of five shops with flats over and one lock-up shop on the Ilford section.

The question of the facilities on the estate for the sale of alcoholic liquors continued to engage the Council's attention. One of the four beerhouses on the estate was in a dilapidated condition, and the Council on 22nd January, 1924, agreed to a proposal to let to the Improved Public House Company, Ltd., a site at the junction of Becontree-avenue with Bennett's Castle-lane, with a view to the erection thereon of a model public-house for the general entertainment and refreshment of the population. In return for the grant of a licence for the proposed



new building the Council was prepared to agree to the surrender of the licence in respect of the old beerhouse. The Minister of Health, however, took exception to the financial details of the proposal and the matter has since remained in abeyance.

Arrangements were made during the year for the rates on houses at Becontree in the parish of Dagenham and the urban district of Ilford to be collected weekly with the rents subject to payment to the Council of a commission on the amount of the rates collected.

Under the main contract, completed in 1923, for the development of Bellingham. Bellingham (176½) acres, 2,090 houses and flats were erected. Two or three small sites remain on which it is proposed, with the approval of the Minister of Health, to erect about 30 houses, which will qualify for State aid under the Assisted Scheme of 1919. During the year under review the Lewisham Metropolitan Borough Council agreed to take over and undertake the maintenance of the roads on the estate subject to payment by the Council of £2,275 in respect of works still to be done to the carriageways and footways. On 13th May, 1924, the Council agreed to let a plot of land facing Bellingham Green for the erection of a doctor's house and surgery. The building has been completed.

The Council in 1920 acquired under compulsory powers about 470 acres of land Downham. at Grove-park, Lewisham, for development for housing purposes. The order made by the Council in 1923 for the compulsory purchase of about 66½ acres of additional land for rounding off the site was confirmed by the Minister of Health on 3rd January, 1924.

The development of what is known as the Bromley Road (No. 1) section by the erection of 2,000 houses and flats of varying types was undertaken during the year. The dwellings comprise 100 two-roomed flats, 689 three-roomed cottages, 499 four-roomed non-parlour cottages, 494 four-roomed parlour cottages, and 218 five-roomed cottages.

After due consideration of all the circumstances, the Council came to the conclusion that the only practicable course to ensure the provision of the requisite number of houses within a reasonable time was to entrust the whole work of development to one large firm of contractors possessing adequate powers of organisation and the necessary resources. It was felt that only by entrusting the whole of the work, *i.e.*, houses, roads and sewers, to one firm could the financial and time-saving advantages accruing from service railway connections across the estate be fully secured. It was further recognised that in the absence of very definite particulars of what work would be ultimately required, the financial control of a firm price contract would be difficult and complicated and, moreover, that owing to unstable conditions in the building trade and elsewhere the tendency would be for tenderers to make large provisions for contingencies. With a cost price contract these difficulties would be non-existent, and the Council decided to adopt this form of contract with a variable fee or commission to the contractors.

The Council furnished to the tenderers estimates of the prime cost of typical houses, roads and sewers, and the tenderers were asked to quote a percentage by which they considered the Council's estimate should be diminished or increased, the result in effect becoming the "standard prime value" of the house in respect of which the quotation was made. The contract provides that the contractors, while being able to retain one-fourth of any saving below the "standard prime value" (*i.e.*, their tendered estimate of the cost) of the work, will forfeit up to 75 per cent. of a scale fee a like proportion of any excess if the value is exceeded and it also provides for the "value" being independent of fluctuations in wage, and cost of materials. Although this type of contract is essentially a cost contract whereby the contractor is guaranteed against loss, his commission or profit remuneration is made to depend very largely upon the amount of skill imported into the conduct of his operations.

In response to a widely published advertisement 33 tenders were received, and



the Council, on 26th February, 1924, accepted the tender of Holland & Hannen and Cubitts, Limited, by which the "standard prime value" was fixed at  $2\frac{1}{2}$  per cent. below the Council's schedule of prices for the work. Rapid progress has been made with the work, and by the end of the year under review upwards of 550 houses were in various stages of building. Altogether, including the houses in course of erection, orders to commence had been issued to the contractors in respect of 1,190 houses.

On 6th February and 13th December, 1924, the Council accepted the offer of the South Metropolitan and South Suburban gas companies to lay mains and service pipes to the houses and to fix the necessary piping and fittings for lighting and cooking, including stoves, on the prepayment meter principle, free of cost to the Council, upon the condition that this arrangement will not exclude the use of electricity if hereafter desired on any part of the estate.

In connection with the provision of a water supply for the 2,000 houses, it was desirable to lay the necessary mains in advance of the house building and to enable this to be done the Council guaranteed to the Metropolitan Water Board for a period the payment of an annual sum not exceeding 10 per cent. of the total cost of the work. Any water rates accruing in respect of supplies taken from these mains will go towards the reduction of the annual guaranteed payment.

The Council, on 22nd July, 1924, fixed the scale of weekly net rents for typical houses and flats (each with scullery and bath) on the Bromley road (No. 1) section as follows:—Two-roomed flats, 8s. 9d.; three-roomed houses, 10s. 3d.; four-roomed (non-parlour) houses, 11s. 3d.; four-roomed (parlour houses), 12s. 3d.; and five-roomed houses, 13s. 3d., these rents to be subject to slight variation on account of position or other special amenities. The dwellings fall within the scheme of State aid under the Housing (Financial Provisions) Act, 1924, and they will accordingly qualify for a Government contribution of £9 each a year for 40 years. After allowing for this contribution the maximum loss to be borne by the Council is limited to £4 10s. a house for the same period, and rents fixed are calculated to be sufficient to meet all expenses in excess of the two contributions. They are, however, subject to revision when more reliable figures as to cost are available, so that the conditions attaching to the grant of a State subsidy may be duly observed.

A site on the estate, a little more than three acres in extent, has been appropriated for the provision of an elementary school.

East Hill  
estate.

The Council in 1923 decided to purchase the East Hill estate (8 acres), and the purchase was completed in 1924 at a cost of £19,000. The dwellings to be erected on the site, which will contain about 535 tenements, will afford accommodation for over 3,200 persons, and are intended primarily for rehousing purposes in connection with the clearance of unhealthy areas.

On 3rd June, 1924, the Council accepted the tender of George Bell & Sons, Limited, amounting to £7,834 for the construction of the necessary roads and sewers on the estate. On 8th October, 1924, the tender of J. E. Billings & Co., Limited, amounting to £6,374, for the construction of the foundations for the first five blocks of dwellings (160 tenements) was accepted, and, in view of the progress made, the Council on 16th December, 1924, approved an estimate of £81,479 for the erection of the superstructures. Invitations to tender for the work were issued before the end of the year.

The Council, on 25th November, 1924, considered the question of the arrangements for lighting and cooking in the dwellings. For general lighting purposes it was decided to employ electricity and to arrange with the County of London Electric Supply Company, Limited, for the purchase of the electricity in bulk and to distribute the current to the tenements through prepayment meters. The company will make the necessary extension of mains and carry in the necessary services free of cost to the Council, subject to the whole of the tenements being wired for electric



light at the cost of the Council. The cost of installation to be borne by the Council is estimated not to exceed £7,178, the capital charges in respect of which will be £377 per annum for 60 years. It is estimated that a charge of 7·7d. per unit will cover this amount, together with the cost of distribution and maintenance as well as the cost of supply of energy in bulk. The Wandsworth, Wimbledon and Epsom District Gas Company has agreed to instal a gas supply, with a cooking stove, in each tenement free of cost to the Council, provided the company is free to fix two gas points, which may be used by the tenant, if desired, for lighting purposes, the gas to be supplied to the tenements through automatic meters at the current rate for the district.

On 8th October, 1924, the Council agreed to guarantee to the Metropolitan Water Board annual payments for a period, by way of rates or by special payments, 10 per cent. of the cost of laying a water main to supply the estate.

On 16th December, 1924, the Council decided for the purpose of providing additional means of access, to acquire for £400 certain property known as St. Peter's Cottage with a yard and workshops adjoining the estate.

For the purpose of carrying out the programme of housing work contemplated by the Housing (Financial Provisions) Act, 1924, so far as the needs of London were concerned, it was necessary for the Council to acquire additional land for the erection of houses. The Council was already in possession of housing sites in all the suburban areas with the exception of the north-west district, and the possibility of acquiring sites in that district was therefore investigated. The amalgamation of the Midland and North Western lines into the London, Midland and Scottish Railway would doubtless result in the re-arrangement of the traffic facilities to the territories in the north-west, and it appeared to the Council that the construction of the Edgware extension of the Hampstead and Golder's Green tube railway, coupled with inter-communications towards the centre, would make practicable housing operations in that direction. Sites at Hendon.

The attention of the Council was directed to certain sites in the neighbourhood of Edgware-road in the Hendon urban and Hendon rural districts, and in the urban district of Kingsbury which it was thought would be suitable for housing purposes. No difficulties were anticipated in the lay-out and draining of the sites and the travelling facilities were good. The Council, therefore, on 22nd July, 1924, made an Order for the compulsory acquisition of the lands, comprising altogether about 450 acres, and approved an estimate of £300,000 in respect of the purchase and partial development of the sites. The Order was duly submitted to the Minister of Health for confirmation, and a local inquiry into the application was held on 11th-12th December, 1924.

The Council in 1920 decided to purchase a site at Castelnau, Barnes, for housing purposes. Owing, however, to the curtailment of the housing programme at the instance of the Government in 1921, it was decided that for the time being no further action should be taken to acquire the property, and the matter remained in abeyance. Further consideration was given to the proposal in 1924, and the Council decided to purchase the land with a view to its early development. The Council, on 29th July, 1924, accordingly made the necessary Order for the compulsory acquisition of about 54½ acres. The Order was submitted in due course to the Minister of Health for confirmation and a local inquiry into the application was held on 25th-26th November, 1924. Site at Castelnau.

The Tabard-street and Grotto-place, Southwark, and Crosby-row, Bermondsey, scheme relates to areas of about 17 acres, comprising 875 houses with a population of 4,593. Rehousing accommodation has to be provided on the Tabard-street area for not fewer than 2,580 persons. The reconstructed area is known as the Tabard Garden estate. Chaucer, Becket, Geoffrey, Harbledown, Rochester and Huberd Houses with accommodation for 2,124 persons were completed between 1916 and 1923. On 16th January, 1924, the Council accepted the tender of Allen Tabard-street, etc., scheme.



Fairhead & Sons, Limited, amounting to £18,578, for the erection of Tabard House to contain 42 tenements with accommodation for 256 persons. At the end of the year the dwellings were almost completed. During the year three shops with flats over and four workshops were erected on land adjoining Chaucer House, the work being carried out by Messrs. W. J. Dixon & Son under contract for £3,522. The Southwark Metropolitan Borough Council has undertaken, at an estimated cost of £4,084, to widen a section of Staple-street and to construct a further length of the new road named Manciple-street, the work, however, to be paid for on the basis of actual cost. The Bermondsey Metropolitan Borough Council has also arranged to carry out on similar terms the paving work in connection with street widenings at the junction of Crosby-row with Snowsfields on the Crosby-row area, the borough council's estimate of the cost of the work being £646.

The weekly net rents for accommodation in Tabard House have been fixed as follows: Two rooms, 10s. and 10s. 6d.; three rooms, 13s. to 14s.; four rooms, 15s. to 15s. 6d.; five rooms, 17s. 6d., the variations being due to position or special amenities.

The centre of the estate will be laid out as a public garden or playground, about 5 acres in extent, but much of the site is still covered with houses of which it is difficult to obtain possession on account of the shortage of accommodation. During the year a further portion was made available as a temporary playground for children and arrangements are being made for the permanent lay-out of the site in sections as the land becomes vacant.

Brady-street  
scheme.

The Brady-street scheme, which relates to an area of about 7 acres in the metropolitan borough of Bethnal Green, is being carried into effect under Part II. of the Housing Act, 1890. About 1,875 persons of the working classes will be displaced and accommodation has to be provided for 1,600 persons on the cleared site and for 265 persons elsewhere. In part fulfilment of the rehousing obligation under the scheme, a block of dwellings known as Whiston House, containing 12 tenements to accommodate 90 persons has been erected by the Council at Goldsmith's-row, Shoreditch, and 35 cottages with accommodation for 175 persons have been provided on a site at Walthamstow by the freeholders of a large part of the property required for the clearance scheme.

The first block of dwellings (Bullen House) to be erected on the improvement area, named Collingwood estate, was completed in 1923. Tenders for the second block (Pellew House), which will contain accommodation for 294 persons in 48 tenements, were invited in the early part of 1924, and on 6th February the Council accepted the tender of Messrs. Rowley Bros., amounting to £20,474, for the building work, which was approaching completion by the end of the year. The third block (Fremantle House) will be a replica of Pellew House, and the Council, on 11th February, 1924, approved an estimate of £700 for preliminary expenses to enable contract particulars to be prepared. The Bethnal Green Metropolitan Borough Council has undertaken to instal, free of cost to the Council, electricity for lighting purposes at Pellew House, and the Gas Light and Coke Company has arranged to instal gas for cooking purposes and to supply cooking stoves for the use of the tenants, in consideration of a payment by the Council of £2 10s. a tenement.

Ware-street  
scheme.

The scheme for dealing with the Ware-street area, Hoxton (9½ acres), under Part I. of the Housing Act, 1890, involves the displacement of about 2,648 persons of the working classes, and the scheme as confirmed by the Minister of Health requires rehousing accommodation to be provided for that number, of which not fewer than 2,160 are to be accommodated within the area. The name "Whitmore estate" has been selected for the area when reconstructed. Rehousing accommodation for 378 persons has been provided in 72 three-storey cottage flats on the White Hart-lane estate, the buildings having been completed in July, 1924. On 5th November, 1924, the Council accepted the tender of Messrs. R. Woollaston & Co., amounting to £19,349 11s. 5d., for the erection of the first block of dwellings



on the Ware-street area to be known as Archer House. The dwellings will contain accommodation for 228 persons in 39 tenements, and upon their completion steps will be taken to obtain possession of the houses standing on the site required for the second block, with a view to their demolition.

Another area which is being dealt with by the Council under Part I. of the Housing Act, 1890, is the Hickman's Folly area, Bermondsey (6 acres), to be known after reconstruction as the Dickens estate. About 1,645 persons of the working classes will be displaced, and the order of the Minister of Health confirming the scheme requires the provision of accommodation for 1,660 persons, of whom not fewer than 1,000 are to be accommodated within the area. Much of the property included in the area has been acquired, but little can be done in the way of providing a site for any dwellings until some accommodation has been provided off the area to rehouse the persons who will be displaced. A site in Staple-street, Southwark, which has been cleared under the Tabard-street, etc., scheme, is available and it is proposed to erect thereon two blocks of five-storey dwellings to contain 32 tenements with accommodation for 264 persons. To enable contract particulars to be prepared the Council on 18th November, 1924, approved a capital estimate of £700 to meet preliminary expenses in connection with the work. With a view to meeting to some extent the difficulty experienced in providing accommodation suitable for many of the persons to be displaced, it is proposed as an experiment to adopt some small structural alterations in design to enable tenants who may so desire to sub-let one room as a bed-sitting room. Every such room will have two windows and will be large enough (about 150 square feet) to permit of its use for this purpose. The room, which will be approached directly from the entrance lobby to the tenement, will be provided with a ventilated food and crockery cupboard, and light cooking may be done at the stove, which will be provided with a swing trivet for this purpose. If the experiment should not meet with sufficient success to justify its continuance, the tenements can be utilised for single occupation in the usual way without any structural alteration.

Hickman's  
Folly  
scheme.

The Bell-lane and Ellen-street scheme under Part I. of the Housing Act, 1890, provides for the clearance and reconstruction of two areas known as the Bell-lane area, Spitalfields (4 acres) and the Ellen-street area, St. George-in-the-East (1½ acres). Under the scheme as confirmed dwellings have to be provided for the accommodation of 1,705 persons of the working classes, of whom not fewer than 600 are to be accommodated within the Bell-lane area, and the remainder elsewhere. The acquisition of property in the Bell-lane area is being proceeded with and plans have been prepared for the first block of dwellings designed to contain 12 lock-up shops on the ground floor and 26 tenements with accommodation for 160 persons on the upper floors. The name "Holland estate" has been selected for the area when reconstructed.

Bell-lane and  
Ellen-street  
scheme.

A scheme for dealing with two unhealthy areas, known as the George's-road and Brand-street areas, Holloway (3¼ acres), was made by the Council on 27th November, 1923, and amended on 29th July, 1924. Altogether, 1,320 persons of the working classes will be displaced, and it is proposed to provide accommodation for an equal number of persons of whom about 900 will be accommodated on the cleared areas. The revised estimated cost of acquisition and clearance is £42,700 gross, exclusive of the cost of erecting the new dwellings. The scheme involves the displacement of a number of costermongers, and it is proposed, therefore, to provide a site upon which sheds for the storage of barrows can be erected, if required. Application was made to the Minister of Health for confirmation of the scheme, and a local inquiry was held on 4th December, 1924. The Minister's decision is now awaited.

George's-  
road and  
Brand-street  
scheme.

An official representation under Part I. of the Housing Act, 1890, was made to the Council by the Medical Officer of Health of Poplar with reference to three unhealthy areas, known as the Baker's-alley, Birchfield-street and Bromley-place

Baker's-alley,  
Birchfield-  
street and  
Bromley-  
place scheme.



areas, and the Council, being of opinion that the evils existing in the areas could only be effectively remedied by means of an improvement scheme under the Act, decided, on 29th January, 1924, to make such a scheme. The Baker's-alley area, of about  $1\frac{1}{2}$  acres, comprises about 51 houses containing a population of 416 persons of the working classes, together with a small timber yard, sheds, etc. The Birchfield-street area is about three-quarters of an acre in extent, and comprises 27 houses with a working class population of about 97 persons. The Bromley-place area, also about three-quarters of an acre in extent, comprises 25 houses, with a population of 227 persons. Altogether 740 persons of the working classes will be displaced, and it is proposed to provide accommodation for an equal number of persons within the area or elsewhere. The estimated cost of acquisition and clearance of the three areas amounts to £12,000, exclusive of the cost of erecting the new dwellings. The scheme was duly submitted to the Minister of Health for confirmation, and a public local inquiry into the proposal was held on 18th July, 1924. The Order of the Minister of Health sanctioning the scheme, subject to modifications, which was issued on 10th December, 1924, specifies that accommodation for not fewer than 190 of the 740 persons required to be rehoused shall be provided on the Birchfield-street area.

Prusom-  
street  
scheme.

On 27th August, 1924, the Minister of Health confirmed, with certain modifications, the scheme made by the Council under Part I. of the Housing Act, 1890, for dealing with the Prusom-street area in Wapping ( $8\frac{1}{2}$  acres) at an estimated cost of £70,000.

The scheme as submitted by the Council provided for the clearance of an area involving the displacement of 2,704 persons of the working classes, and it was proposed that rehousing accommodation for 2,030 persons should be provided within the area, leaving a provision for 674 persons to be made elsewhere. From the scheme as modified by the Minister certain properties were excluded with the result that the number of persons to be displaced was reduced to 2,601 persons and the Council is now required to provide accommodation for an equal number, of whom not fewer than 1,000 are to be accommodated on certain defined lands within the area. Other lands comprised in the scheme may, with the consent of the Minister, be sold or leased or exchanged for any other land within the area with or without payment for equality of exchange or appropriated to any purpose for which the Council has power to hold land. The Minister was asked to reconsider his decision and to include in the scheme a further area for rehousing purposes, but could not see his way to comply with the Council's wishes in the matter.

Active steps are being taken with a view to the erection of the first block of dwellings to be known as Willoughby House, and on 11th November, 1924, the Council approved an estimate of £700 for preliminary expenses. The name "Wapping estate" has been selected for the area when reconstructed.

Selection of  
tenants.

In view of the fact that the Council's housing operations involve a heavy loss which has to be met out of rates levied over the whole county, it was felt that some relationship should be established with the requirements of the metropolitan borough councils who should each receive a definite share of the accommodation provided. The Council accordingly on 21st October, 1924, decided, as an experiment for one year, that a part, not exceeding 50 per cent. of its new accommodation provided under Part III. of the Housing Act, 1890, should be allocated amongst suitable applicants recommended by the several metropolitan borough councils in proportions based upon existing conditions of overcrowding in such boroughs.

Disposal of  
refuse

The whole question of the disposal of refuse in the vicinity of London was under consideration during the year. As a matter of urgency the Council, on 1st July, 1924, decided to ask the Minister of Health to take such action as is immediately practicable to prevent further deposit of refuse in the neighbourhood of Becontree, and generally to discourage the continuance of the refuse tips in the locality.



The upper floors of a disused fire station in Calverley-grove, Upper Holloway, Calverley house, were converted into eight tenements, and the rents fixed as follows :—Two-roomed tenements, 9s. ; three-roomed tenements (top floor), 10s. and 10s. 6d., first and second floors, 11s. ; four-roomed tenements, 13s. 6d. The ground floor has been let on lease for 21 years for the purposes of a garage at a rent of £175 a year.

During the year the Council made grants amounting to a sum not exceeding £85 out of the interest on deposits paid by tenants on taking up tenancies, for Garden prizes. distribution to prize funds for the best kept gardens and window boxes on its housing estates.

During the year the Council had under consideration the possibility of adopting Supply of hot-water. a system of hot-water supply for domestic purposes, with or without radiators in the living-rooms, in block dwellings. Inquiries were made as to the views of tenants on different estates on the subject, but owing to the fact that certain tenants were opposed to what they feared might prove a source of additional expense, it was not possible to arrive at a definite conclusion. As an experiment, however, the Council agreed to the provision of a central heating system in one of the next blocks of dwellings to be erected, with a view to testing the actual cost of supply, the efficiency of the service, and the willingness of the tenants to pay any additional rent which might be required for the amenity.

The Council's action in the earlier years with regard to workmen's trains at cheap fares was dealt with in the Annual Report for 1920 (Vol. I., p. 77). In the Annual Report for 1923 (Vol. III., pp. 139-40) particulars are given of the proceedings before the Railways Rates Tribunal at which representations were made by the Council on the subject of the charges to be made for workmen's and season tickets on London railways. During 1924 schedules of the standard charges proposed to be made by the companies in respect of the conveyance of passengers and goods were submitted to the Tribunal and formal objections to the proposals were lodged on behalf of the Council. The Tribunal decided to deal with the matter in stages, the first question to be determined being the amount of the standard revenue of the companies in 1913 with the addition which may be made under section 58 of the Railways Act, 1921. Another question is that of the revenue which the proposed standard charges will bring in, while a further question will be the allocation of charges between goods' and passengers' interests together with the allocation of the passenger charges among the different classes of passenger traffic. The Council decided to be represented by counsel throughout the inquiry, which will be of a protracted nature.

## CHAPTER XXVI.

### ACCOUNTS AND STATISTICS.

#### MEMORANDUM BY THE COMPTROLLER OF THE COUNCIL (MR. C. D. JOHNSON) ON THE HOUSING ACCOUNTS FOR THE YEAR ENDING 31ST MARCH, 1925.

These accounts are prepared, subject to audit, in advance of the annual abstract of the Council's accounts, for the financial year ending 31st March, 1925. They contain provisional figures in respect of deficiencies on the schemes of metropolitan borough councils, which will be subject to adjustment.

The accounts show the financial results of the Council's operations under the Housing Acts, 1890 to 1924 (clearance of unhealthy areas and rehousing under Parts I and II, and housing under Part III of the Act of 1890), and of rehousing under various street improvement, etc., Acts. They are divided into four sections, distinguishing the schemes carried out by the Council prior to the Act of 1919 (designated "Non-assisted schemes") from the assisted schemes under the Acts of



1919, 1923 and 1924, respectively. Each of the first three sections is further subdivided between clearance schemes and dwellings.

The "Clearance schemes" sub-sections of the accounts cover only the acquisition and clearance of unhealthy areas. The "Dwellings" sub-sections deal with the dwellings both for rehousing and for housing on estates under Part III.

#### A.—NON-ASSISTED SCHEMES.

This section comprises the accounts of schemes carried out by the Council without financial assistance from the State. With one exception (Calverley House, provided to rehouse persons displaced from property acquired for a school site), the whole of the non-assisted dwellings were erected prior to the enactment of the Housing, Town Planning, etc., Act, 1919. The section includes all schemes, whether for the clearance of unhealthy areas or for the erection of dwellings and, as regards the latter, whether they have been erected under the provisions of the Housing Acts, or to provide the rehousing accommodation required by Acts authorising street improvements and other works.

*Clearance schemes.*—In the year 1924–25, the deficiency on clearance schemes, mainly debt charges on the capital cost of acquiring and clearing the sites, establishment charges, and items in connection with surplus property, was £42,227 9s. 3d., and this sum has been charged to the special county rate account.

*Working-class dwellings.*—The results of the year's working compared with those of the previous year are as follows—

Dwellings—				1924–25.			1923–24.			
Housing of the Working Classes										
Act, 1890—				£	s.	d.	£	s.	d.	
Parts I and II.	..	..	Surplus	22,371	11	7	Surplus	20,292	11	2
Part III.	..	..	Surplus	27,309	5	5	Surplus	18,592	6	7
Total—Housing Act				49,680	17	—	Surplus	38,884	17	9
Improvement, etc., Acts				15,053	16	8	Surplus	13,505	11	2
TOTAL—NON-ASSISTED SCHEMES..				64,734	13	8	Surplus	52,390	8	11

The surplus (£49,680 17s.) for 1924–25 on the dwellings erected under the Housing Act, together with the balance brought forward at 1st April, 1924 (£62,989 7s. 2d.), which was held in reserve, together amount to £112,670 4s. 2d. Of this sum £18,441 3s. 2d. is applied to meet the deficiencies for the year 1924–25 in respect of certain operations under Assisted (1923) schemes, the balance (£94,229 1s.) being carried forward as a reserve towards meeting the deficiencies which will arise on future housing operations of the Council under the Act of 1923.

The net surplus for the year on dwellings erected under Improvement, etc., Acts, is £15,053 16s. 8d. Of this, £14,961 13s. 8d. is transferable to the General County Account and £102 1s. 9d. to the Tramways Account (rehousing in connection with Greenwich power station), while £9 18s. 9d. is contributed from the Education Account to meet a deficiency in respect of rehousing in connection with displacements from a school site.

#### B.—ASSISTED SCHEME—HOUSING, ETC., ACT, 1919.

This section comprises the whole of the Council's operations under the first (Addison) Assisted Scheme, and, as provided in the Act, includes the losses incurred by the metropolitan borough councils, together with the transactions relating to the issue by the Council of Local Bonds for Housing for the purpose of financing the schemes of the borough councils. The Council's Housing Accounts thus embody the financial results of all the schemes subject to the 1919 Act for the County of London as a whole. The annual deficiency (as approved by the Minister of Health)



under this Act in excess of the produce of a penny rate is met out of moneys voted by Parliament. The results for the year 1924-25, compared with those for the previous year, are as follows—

				1924-25.			1923-24.		
				£	s.	d.			
				£	s.	d.			
1. Clearance schemes .. .. .	Deficiency	8,016	13	5	Deficiency	4,358	19	6	
2. Dwellings .. .. .	Deficiency	402,030	8	5	Deficiency	408,049	17	6	
3. Schemes of metropolitan borough councils .. .. .	Deficiency	240,011	15	11	Deficiency	254,546	1	3	
4. Local bonds (for housing) .. .. .	Deficiency	32,401	3	8	Deficiency	34,448	17	11	
Total deficiency .. .. .				682,460	1	5	701,403 16 2		

The total deficiency is provided for as follows—

Chargeable to Special County Account (penny rate) .. .. .	177,773	18	10	166,613	5	5
Exchequer subsidy .. .. .	504,686	2	7	534,790	10	9
	682,460	1	5	701,403	16	2

The liability of the Ministry under the Act of 1919 is limited to the "loss" as defined in the Regulations and as approved by the Minister. Should any part of the deficiency not be approved, the difference becomes an additional charge on the county rate.

As regards the deficiency under the head of dwellings, a sum of £34,786 19s. relates to "estates in course of development," the debt and other charges in respect of which, less receipts in aid, are shown separately in the account. This course follows the Council's past practice and is adopted in order to permit a clear view of the results of managing completed dwellings. As the work on each estate proceeds, the proper proportion of capital expenditure and debt charges is allocated to the account of the dwellings available for letting, and, in the end, the total capital expenditure on land and development is entirely absorbed in the cost of the dwellings.

*Housing schemes of metropolitan borough councils.*—A sum of £240,011 15s. 11d. is provisionally included to cover the borough councils' losses for the year 1924-25 as compared with £254,546 1s. 3d. for the year 1923-24. The amount is subject to revision, and any variation will be reflected in the amount of the Exchequer subsidy.

*Local Bonds (for housing).*—The issue of these Bonds ceased on 30th July, 1921, the total amount raised being £3,955,605. Deducting £106,373 6s. 2d. for expenses of issue, the net amount available for capital expenditure on housing was £3,849,231 13s. 10d. £3,847,868 of this sum has been advanced on loan to the metropolitan borough councils for housing purposes. No part of the proceeds has been used for the Council's own capital purposes. The expenses of issue are being spread over a period of five years, and charged to the assisted scheme. Provision has been made accordingly. The rate of interest charged on the loans to the borough councils is the same as that payable by the Council on the face value of the Bonds, viz., 6 per cent., and the instalments in repayment of the expenses of issue and the annual cost of management, etc., fall on the assisted scheme account as well as the deficiency of interest due to the investment of amounts repaid by borough councils not producing as much as the 6 per cent. payable on the Bonds.

#### C.—ASSISTED SCHEME—HOUSING, ETC., ACT, 1923.

This section covers (a) clearance schemes and the consequent rehousing, the deficiency in respect of which is met to the extent of 50 per cent. by State subsidy, (b) various schemes for providing additional housing accommodation, under the



conditions as to subsidy prescribed in the (Chamberlain) Act, *i.e.*, at the rate of not exceeding £6 a house annually for 20 years, and (c) assistance given by the Council to metropolitan borough councils in the form of grant, and to private enterprise either by grant or in the form of loans and guarantees under section 5 of the Act. The annual subsidy of not exceeding £6 a house is also receivable in aid of the Council's expenditure on grants to private enterprise.

The net deficiency under all heads for the year 1924-25 was £28,364 4s. 5d., as follows—

	1924-25.			1923-24.		
	£	s.	d.	£	s.	d.
Schemes undertaken by the Council—						
Clearance and rehousing (Parts I and II) .. .. .	5,425	6	8	2,409	6	9
Dwellings (Part III) .. .. .	20,454	3	2	3,655	10	11
Schemes of metropolitan borough councils—						
Contributions by the Council .. .. .	270	—	—	—		
Schemes undertaken by private enterprise—						
Debt charges on capital grants, and sundry expenses ..	2,029	5	5	916	12	7
Advances under section 5 of the Act—						
Expenses (net) .. .. .	185	9	2	126	8	4
Total deficiency .. .. .	28,364	4	5	7,107	18	7

The deficiency for 1924-25 is provided for as follows—

Exchequer subsidy .. .. .				5,962	15	11
Deficiency carried forward (advances under section 5 of the Act) ..				185	9	2
Balance falling on the Council—	£	s.	d.			
Dwellings (Part III) and contributions towards deficiencies of metropolitan borough councils—						
Met out of reserved surplus on non-assisted dwellings	18,441	3	2			
Chargeable to special county rate account ..	2,878	16	10			
Chargeable to general county rate account ..	895	19	4			
				22,215	19	4
				28,364	4	5

#### D.—ASSISTED SCHEME—HOUSING, ETC., ACT, 1924.

The operations under this (Wheatley) scheme cover Part III housing only, the State subsidy being at the rate of £9 a house annually for 40 years, subject to compliance with "special conditions" as to the letting of the houses.

At 31st March, 1925, the capital expenditure thereon related almost entirely to estates in course of development, only a few houses being ready for occupation by the end of the year.

The net deficiency for 1924-25 was £15,497 15s. 8d., towards which the subsidy due from the State was £238 10s., the balance (£15,259 5s. 8d.) being charged on general county account. As the completed houses increase in number, the State will bear a correspondingly larger share of the deficiency.

#### NET DEFICIENCY, 1924-25—HOW MET.

The financial results for the year under the several sections are as follows—

	£	s.	d.
Total expenditure .. .. .	1,782,786	19	6
Total income .. .. .	1,078,972	2	5
Net deficiency .. .. .	703,814	17	1



This is met or disposed of in the following manner—

	Exchequer subsidy.	Transfers to or from Rate, etc. Accounts.				(a) Carried forward or (b) disposed of by internal transfers.
		Special County Account.	General County Account.	Other Accounts.		
	£ s. d.	£ s. d.	£ s. d.	£ s. d.		£ s. d.
Non-assisted schemes—						
Clearance (deficiency, £42,227 9s. 3d.)	—	42,227 9 3	—	—	—	—
Dwellings (surplus, £64,734 13s. 8d.)..	—	—	14,961 13 8	*92 3 -	{(a)31,239 13 10 (b)18,441 3 2	
Assisted (1919) scheme (deficiency, £682,460 1s. 5d.)	504,686 2 7	177,773 18 10	—	—	—	—
Assisted (1923) scheme (deficiency, £28,364 4s. 5d.)	5,962 15 11	2,878 16 10	895 19 4	—	{(a) 185 9 2 (b)18,441 3 2	
Assisted (1924) scheme ..	238 10 -	—	15,259 5 8	—	—	—
(deficiency, £15,497 15s. 8d.)						
	510,887 8 6	222,880 4 11	1,193 11 4	92 3 -		31,054 4 8
			£703,814 17 1			

\* £102 1s. 9d. transferred to Tramways Account and £9 18s. 9d. contributed by Education Account.

The total charge for the year on the rate and other accounts concerned is thus £223,981 13s. 3d. The figure is, however, subject to the reservation that there is some doubt whether the loan periods adopted in calculating the debt charges on the 1923 and 1924 schemes may not have to be amended. The matter is under discussion with the Ministry of Health, and some adjustment may be necessary in the accounts of subsequent years.

#### REPAIRS AND RENEWALS FUNDS.

The purpose of these funds is to equalise the annual charges for repairs and to provide a surplus in the early years to meet the cost of the more extensive works which may be anticipated in subsequent years.

The annual transfers from the revenue account of the non-assisted schemes to the fund are based on definite estimates of the dates and intervals at which particular kinds of repairs and renewals will fall to be undertaken. As regards dwellings erected under the Assisted (1919) Scheme, the charge to the revenue account has been limited by the Minister of Health to an amount equal to 15 per cent. on the rental. The regulation on the point is due for review in 1927. Meanwhile, representations have been made to the Minister as to the inadequacy of the allowance.

#### CAPITAL EXPENDITURE AND DEBT.

The total capital expenditure in respect of housing up to 31st March, 1925, amounts to £17,163,582 1s. 8d., as follows—

	Non-assisted schemes. £ s. d.	Assisted (1919) scheme. £ s. d.	Assisted (1923) schemes. £ s. d.	Assisted (1924) schemes. £ s. d.
Clearance schemes .. ..	2,734,733 13 11	36,253 11 1	846 3 3	—
Erection of dwellings .. ..	3,030,824 3 4	9,744,922 16 4	851,560 12 1	432,941 1 8
Grants and advances to private enterprise	—	—	331,500 - -	—
	5,765,557 17 3	9,781,176 7 5	1,183,906 15 4	432,941 1 8
Net debt outstanding .. ..	3,334,638 11 1	10,803,614 13 8 (a)	1,169,960 11 4	432,747 11 -

(a) Including £1,251,369 10s. 11d. balance outstanding of deferred charges (expenses of issue, including discount) in respect of Local Bonds for Housing and London County Stocks and Bonds.

With the exception of the non-assisted clearance schemes, the debt in respect of which is provided for on the instalment system, provision for redemption is made on the cumulative annuity system.



HOUSING ESTATES—MEMORANDUM BY THE VALUER (MR. FRANK HUNT) FOR THE  
YEAR ENDING 31ST MARCH, 1925.

Expansion of  
Council's  
Housing  
Activities.

As has been the case in each year since the war, the volume of work connected with the administration of the Council's dwellings has during 1924-25 shown a continuous increase. This is the natural consequence of the expansion of the Council's housing activities caused by the housing legislation passed in recent years.

At the end of March, 1924, 8,046 dwellings had been erected under the provisions of the Housing, Town Planning, etc., Act, 1919, and during the year ended 31st March, 1925, 845 additional dwellings were provided under the Act of 1919, 701 dwellings under the provisions of the Housing Act, 1923, 46 under the Housing (Financial Provisions) Act, 1924, and 8 at Calverley House by the adaptation of a disused Fire Station, making a total of 9,646 dwellings. The dwellings, almost all of them erected before 1914, under *Non-Assisted Schemes*, numbered 9,985; so that the actual number of dwellings in charge at the end of the year was 19,631, or nearly double the number before the war.

New  
dwellings  
provided  
during the  
year.

Of the 1,600 additional dwellings provided during the year, 1,282 are situated at Becontree, 72 on the White Hart Lane estate, 96 at Roehampton, 4 at Bellingham, 45 on the Downham Housing estate, 8 at Calverley House, 45 on the Tabard Garden estate, and 48 on the Collingwood estate, which is being erected to rehouse persons displaced by the Brady-street clearance scheme. The dwellings on the Tabard Garden estate, the Collingwood estate and Calverley House are flats in block dwellings, while all the others are cottages or cottage flats. On the basis of two persons a room the *Assisted Scheme* dwellings, at the end of March, 1925, provided accommodation for 73,230 persons. The dwellings erected under *Non-Assisted Schemes* (together with the tenements in Calverley House) comprise 6,551 flats in block dwellings, 3,148 cottages and 294 cottage-flats, providing accommodation for 57,047 persons on the basis of two persons a room. There are also the three lodging-houses (Bruce House, Carrington House and Parker-street House), with cubicles providing accommodation for 1,880 persons. The accommodation under *Non-Assisted Schemes* thus provided was for 58,927. Adding to this figure the accommodation in dwellings under *Assisted Schemes*, the Council's dwellings and lodging houses provided, at the end of March, 1925, accommodation, calculated on the basis of two persons a room, for 132,157 persons. Schemes under which over 12,000 houses at cottage estates and approximately 2,000 tenements in block dwellings are projected at Becontree, Roehampton, Downham, White Hart-lane, Castlenau, Hendon, East Hill, and in various slum areas to be cleared.

Total accom-  
modation  
provided.

The work involved in the management of these dwellings, entailing as it does, in addition to the normal work of management, such as the collection of rents and the execution of repairs, the handling of a great number of applications for tenancies, the investigation of the circumstances of the applicants, the rationing of accommodation according to the applicants' needs, and the numerous other questions inevitably arising in connection with the management of new estates developed to meet special needs, has been out of all proportion to that associated with the management of an equal number of pre-war dwellings. A considerable amount of work has been created owing to the inquiries which have had to be made into cases notified by the Metropolitan Borough Councils, as well as other possible cases of hardship by reason of the applicants living in insanitary or overcrowded conditions. There has also been a great amount of preliminary work in connection with the development of projected new estates.

Demand for  
accommoda-  
tion.

There has been no abatement of the great demand for accommodation on the Council's estates. During 1924-25, 4,905 applicants were registered for different types of dwellings, although it had been necessary, except in the case of Becontree, to close the waiting lists, and a great number of persons had to be informed that their applications could not be entertained. Moreover, as in previous years, a very



large number of persons made inquiries, both written and oral, as to the possibility of obtaining accommodation, and being informed of the position, did not make formal applications, which in the circumstances would have been futile. It is undoubtedly the case also that many persons refrain from making inquiries owing to its being well known that the Council cannot, in the present circumstances, meet the requirements of the numerous applicants already registered. It is indicative of the situation that the number of persons who called at the central office during the year to apply for houses was over 38,000, an average of 136 a day, while over 51,000 inquiries, an average of 184 a day, were made by letter as to the possibility of obtaining living accommodation on the Council's estates. These figures represent an increase of over 6,000 persons calling to make inquiries, and of over 19,000 letters received, as compared with the numbers for the preceding year (1923-24).

In October, 1924, the Council decided that as an experiment for one year, a part, not exceeding 50 per cent. of the new accommodation provided under Part III of the Housing Act, 1890, should be allocated amongst suitable applicants, recommended by the several metropolitan borough councils in proportions based upon existing conditions of overcrowding in such boroughs. To a considerable extent advantage has been taken of this scheme by the majority of the Borough Councils, and under this arrangement it has been possible to accommodate about 230 families at Becontree and Downham. The Borough Council concerned is notified periodically in all cases in which applicants are accommodated on one of the Council's estates.

Allocation of accommodation between residents of different boroughs.

Having regard to the large number of applications from persons residing in the county of London, it has been decided that except in very special cases, all applications from persons residing outside the county should be held in abeyance.

The difficulty of obtaining suitable accommodation is most acute in the cases of persons about to be married, newly-married couples, and persons with families so small as to render them ineligible for accommodation in dwellings other than those of the smallest types.

Before the war it was the general practice of the Council, upon the receipt of satisfactory references, to accept tenants in the order in which their applications were received. Preference was only given (i.) to persons displaced through the acquisition by the Council of property for clearance or improvement schemes or other public purposes, and (ii.) to persons already residing in the county of London. These preferences still hold good. Since the war the Council has, from time to time, given temporarily further preferences, other circumstances being equal, to persons who gave up their homes in order to join H.M. Forces or to undertake work of national importance, to firemen required to vacate quarters at fire-stations and to certain other small classes of people.

Method of allotting.

In order to make the full use of all available accommodation the Council has found it necessary to adopt the following general principles: (i.) Applicants are to be allotted dwellings not larger than are deemed to be sufficient to meet the reasonable needs of their families, taking into consideration the sex and ages of the children and the bedroom accommodation required; (ii.) no person residing alone is to be accepted as a tenant; and (iii.) not more than two rooms are to be allotted to a married couple without children or two single women living together. In some cases the circumstances of the applicants, owing to ill-health, overcrowding, the insanitary state of their homes or to other conditions, have been such that it has been decided to grant special preference in exceptionally hard cases of this kind.

In some cases it has been necessary during the year to decline to entertain applications on the ground that the family income of the applicants was inadequate to enable them to pay the rents, although these are less than remunerative and involve heavy expenditure out of public funds. On the other hand some applications have been declined as it was considered that the financial position of the applicants did not justify their being accepted as tenants of *State Assisted* accommodation. Under the tenancy agreements tenants are not allowed to take lodgers or to sublet.



## Rehousing.

Owing to war conditions, the Council did not during the years 1915-20 carry out any displacements consequent upon street improvement, clearance or education schemes. During the years 1920-24, however, the Council rehoused 1,110 persons. During 1924-25, 1,074 persons were rehoused, who had been displaced mainly by the following schemes:—Tabard-street Scheme, Southwark; Brady-street Scheme, Bethnal-green; Ware-street Scheme, Shoreditch; Wood-street Widening Scheme, Westminster; Rowsell-street Scheme, Bow; and Hickman's Folly Scheme, Bermondsey. Of these 1,074 persons, 241 were accommodated on the Tabard Garden Estate, 224 on the Collingwood Estate, 172 on the White Hart-lane Estate, and the remainder on other estates. The total number of persons rehoused up to 31st March, 1925, was 3,940.

## Transfers.

During the year 1,011 tenants were transferred to other tenements on the Council's estates. 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 owing to an increase or decrease in the tenant's family. Whenever possible tenants living in overcrowded conditions are transferred to larger dwellings, but this is specially difficult at the present time owing to the shortage of accommodation and to the unstable economic conditions. Mutual exchanges of tenancies are facilitated at the request of, and in the interests of, the persons concerned, and a special register is kept whereby it is possible to arrange transfers between Council's tenants, when both parties are agreeable.

Removals  
and empties.

During the year 796 tenants left, of whom 77 were given notice to quit, either for non-payment of rent, unsatisfactory conduct or some other cause. The remaining 719 gave notice and left to suit their own convenience.

Enumeration  
of tenants  
and over-  
crowding

The annual enumeration of tenants was taken in January, 1925, when it was found that the actual population of the dwellings was approximately 82,000 persons, which is greater than that of the metropolitan borough of Finsbury; considerably greater than that of the city of Bath, and almost as great as the combined populations of the cities of Canterbury and Cambridge.

As in previous years, the enumeration returns were carefully examined in order to detect overcrowding. For this purpose the maximum number of persons to be allowed in any tenement has been fixed at two adults a room, children up to the age of five not being taken into account for this purpose, and each child between the age of five and ten being regarded as half an adult. This year the number of *Non-Assisted Scheme* tenements not complying with this standard was 313 out to a total of 9,993 and in *Assisted Scheme* dwellings, 18, out of a total of 9,638. At last year's enumeration it was found that 270 *Non-Assisted Scheme* dwellings and 17 *Assisted Scheme* dwellings exceeded this limit. The excess is due in a measure to the increase, with the course of time, of the ages of tenants' children, but mainly, of course, to the continuance of the general shortage of accommodation and the consequent difficulty of obtaining larger tenements. All the cases, however, although not complying with the Council's regulations, fall short of the standard of overcrowding laid down in the by-laws made under the Public Health Acts. The crowding will be remedied as opportunities occur by transfers to larger tenements.

Occupation  
of tenants.

Particulars of the occupations of the tenants have been obtained. These particulars, while conveying a general idea of the different occupations of the tenants, in some respects do not adequately describe the nature of employment owing to the individual tenants, varying descriptions of their employment. The information is obtained from the tenants who, it will be realised, do not in many cases give clear and precise descriptions of their occupations. Thus, it is impossible to say how many of the 268 tenants who describe themselves as "Conductors" are tramway conductors or omnibus conductors, while 399 tenants describe themselves as "Motor Drivers" and 231 tenants simply as "Drivers." For example, also, the description "Civil Servant," probably includes such employees as postmen and messengers as well as clerical employees, while 746



tenants describe themselves as "Post Office Workers," an occupation which might by some be regarded as coming under the heading "Civil Servants." The two most numerous categories of tenants are "Clerks, etc.," of whom there are 1,816, and "Labourers," of whom there are 1,033. Of the tenants 503 describe themselves as "Railway Workers," and 393 as "Tramway Workers." Adding to these figures the number of tenants who describe themselves as "Conductors," "Drivers," "Motor Drivers," and "Engine Drivers," and probably a considerable number of the "Engineers" and "Labourers," it is clear that a large proportion of the tenants are engaged in the Transport service.

The rents charged for the dwellings are fixed on the basis of pre-war rents of similar accommodation in the neighbourhood, the 40 per cent. increase allowed by the Increase of Rent, etc., Acts, being added and due variations being made having regard to size, amenities and position. Fixation of rents,

Under the Increase of Rent and Mortgage Interest (War Restrictions) Act, 1915, the additional rates which the Council had to pay in respect of the dwellings were added to the rents payable by the tenants while, in accordance with the Increase of Rent and Mortgage Interest (Restrictions) Act, 1920, the rents were further increased, as from September, 1920, by 30 per cent. of the net rents of 1914. In July, 1921, the Council, as permitted by the last-mentioned Act, increased the rents by an additional 10 per cent., thus making the full increase—namely, 40 per cent.—allowed by the Act. The amount produced by the increase over a complete financial year is about £66,500. These permitted increases have not been made in respect of property acquired by the Council forming part of slum clearance areas. The periodical revision of rents consequent upon alterations in the rates involves a great amount of work, the calculations affecting nearly 19,000 tenements with varying rents and rateable values and situated in the areas of nearly thirty different local rating authorities. Rent Restrictions Acts.

The health conditions on all the estates continue to be highly satisfactory. The population of the Council's dwellings in the different metropolitan boroughs is, of course, small in proportion to the borough population in each case, and properly comparable vital statistics are therefore not obtainable. The statistics available are such, however, as to justify the inference that the health conditions in the Council's dwellings are better than those in the boroughs concerned and in the county of London as a whole. Vital statistics.

In the Housing Accounts for 1924–25 details are given of the financial results of the Council's housing schemes up to 31st March, 1925, but it may be apposite to repeat here some of the more important figures. In this connection it is necessary to preserve a clear distinction between the *Non-Assisted Schemes* and the *Assisted Schemes* promoted under the Housing, Town Planning, etc., Act, 1919, the Housing, etc., Act, 1923, and the Housing (Financial Provisions) Act, 1924. Financial results.

Dealing first with the *Non-Assisted Schemes*, the aggregate capital expenditure on dwellings provided to 31st March, 1925, was £3,030,824. The gross rental (including rates and taxes) for the year was £349,193. From this amount should be deducted the losses arising out of empties and rent irrecoverable. The financial result of the year's working, after providing for interest and sinking fund charges on the capital expenditure, was a surplus of £64,734, as compared with a surplus for the preceding year of £52,390. In regarding this surplus it should be borne in mind that when the percentage increase under the Increase of Rent, etc., Acts, was fixed, allowance was made, having regard to the altered financial conditions, for an increase of one per cent. on the interest on the original capital expenditure. The interest and sinking fund charges amounted to £111,460, or 31·92 per cent. of the gross rental. Other outgoings amounted to £176,127, or 50·44 per cent. of the gross rental, including £79,819 (22·86 per cent. of the gross rental) for rates and taxes.

As regards *Assisted Scheme* dwellings provided under the Act of 1919, the aggregate capital expenditure up to 31st March, 1925, was £9,744,922. The gross rental



(including rates and taxes) for the year, of dwellings erected by the Council, was £307,192, from which amount should be deducted the losses arising from empties and rent irrecoverable. The financial result, after providing for interest and sinking fund charges on the capital expenditure, was a deficiency of £365,480. The annual deficiency under this Act in excess of a penny rate is met by a subsidy out of the National Exchequer. The interest and sinking fund charges amounted to £615,588, or 200·39 per cent. of the gross rental.

Other outgoings amounted to £184,794, or 60·15 per cent. of the gross rental, including £122,097 (39·16 per cent. of the gross rental) for rates and taxes.

The aggregate capital expenditure on *Assisted Scheme* dwellings erected under the Act of 1923 was £851,561 up to 31st March, 1925. The number of dwellings erected under this Act which came into charge during the year 1925 was relatively small, and a large proportion of the dwellings was not occupied until the financial year was well advanced. In the circumstances it hardly seems worth while recapitulating such financial results of the 1923 scheme as are available at this early stage.

The aggregate capital expenditure up to 31st March, 1925, on *Assisted Scheme* dwellings erected under the Act of 1924 was £432,941. Very few houses erected under this Act were ready for occupation by the end of the year, and even less than in the case of dwellings erected under the Act of 1923 would any useful purpose be served by touching here upon the financial results for the year under review.

It will be gathered from the foregoing that there were 19,631 dwellings (apart from the cubicles at lodging-houses) in occupation on 31st March, 1925. The gross rental collected during the year was nearly £749,000.

Rent irre-  
coverable.

About 140 tenants left during the year without paying arrears of rent, but the amount irrecoverable amounted only to £560, or about ·08 per cent. of the total rent. Of the amount irrecoverable £96, or ·027 per cent. of the gross rental, arose on *Non-Assisted Schemes*, while £464, or ·15 per cent. of the gross rental, arose on the *Assisted Schemes*.

Empties.

The loss by empties during the year was £906, or ·14 per cent. of the rent, as compared with ·34 per cent. in 1923-24. These empties were caused entirely by dwellings having to be cleaned and repaired in connection with changes of tenancy. It is noteworthy that, for the first year since Carrington House was opened in 1903, there was a surplus on the working of this lodging-house. In each previous year there has been a substantial deficiency in respect of this house, but the figures for 1924-25 show a surplus of about £818.

Repairs.

The high standard of upkeep, both as regards repairs and cleanliness, has been fully maintained. The necessary repairs to the dwellings are carried out by direct employment of labour. The number of repairs workmen employed varies largely according to the season, but during the year 1924-25, the average number of workmen employed was about 300. The amount expended on this work in 1913-14 was £23,934. In 1920-21, when there was practically no repairs work on dwellings erected under *Assisted Schemes*, the expenditure had risen to £68,572, this increase being due to the higher wages, to the rise in the prices of material, and to the necessity of overtaking the arrears of painting and other work suspended during the war. During 1923-24, the expenditure on *Non-Assisted Schemes* amounted to £47,560, and to £15,825 on *Assisted Schemes*. It will be seen that by this time there had been relatively a substantial decrease in the expenditure under this head, this being attributable partly to the fall in wages and the cost of materials and partly to arrears of work caused by the war having been overtaken in the preceding few years. During the year 1924-25 the expenditure on *Non-Assisted Schemes* amounted to £47,725, and £36,517 on *Assisted Schemes*. It will be noted that the expenditure in this respect on *Non-Assisted Schemes* has remained practically at the same figure during the last two years. The increase in the expenditure on *Assisted Schemes* is due, of course, to the growth of the number of dwellings coming into charge in 1920 and in subsequent years.



