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*With the Compliments of the Medical
Officer of Health.*

11 JUN 1903 190



ANNUAL REPORT
ON THE
STATISTICS
AND
SANITARY CONDITION
RELATING TO
THE CITY OF WESTMINSTER,
FOR THE YEAR
1902.

BY
FRANCIS J. ALLAN, M.D., C.M., D.P.H. CAMB.,
F.R.S. ED.

MEDICAL OFFICER OF HEALTH.

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ANNUAL REPORT

OF THE

COMMISSIONER OF THE GENERAL LAND OFFICE

FOR THE YEAR 1860



WASHINGTON: PUBLISHED BY THE
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Annual Report on the Health and Sanitary Condition of the City of Westminster.

1902.

To the

*Mayor, Aldermen, and Councillors
of the City of Westminster.*

MY LORDS AND GENTLEMEN,

I have the honour to submit to you my Annual Report on the Health and Sanitary Condition of the City of Westminster during the year 1902.

It is drawn up in accordance with the instructions of the Local Government Board, and contains a record of the work of the Department, as carried out under the Public Health Committee. The Special Report on the Small-pox outbreak, required by the Local Government Board, and the Report on the Factories and Workshops, required by the Home Office, are incorporated.

Notwithstanding the great concourse of people who came to Westminster during the Coronation year, I am glad to say there was no deterioration in the general health or increase in the death-rate.

The year 1902 was chiefly remarkable, from a health point of view, for the existence of two epidemic diseases, small-pox and typhoid fever. Small-pox came as an inheritance from the previous year, and assumed a greater prevalence than had been known for many years, and was due to the neglect of vaccination which had steadily increased during recent years. It should be clearly understood that the increase in the rates,

which has resulted from this cause is due to those who persistently opposed vaccination in the past.

In 1901 I indicated the possibility of typhoid fever being derived from the smaller kinds of shell-fish taken from polluted sources. Unfortunately, that view has been confirmed during 1902 by numerous cases which have occurred in Westminster and elsewhere. The question has been taken up by the Commission on Sewage Disposal, now sitting, so that steps may be taken to protect an important food supply from pollution in the future.

The indoor staff now has been re-organised in conformity with an alteration of the system in all the departments, and now consists of two first division, one second division, and one boy clerk, together with a messenger and general assistant in the Sanitary Inspector's office. The outdoor staff consists of one Chief, two Food and Smoke, and eight District Inspectors, with disinfecting, drain-testing and mortuary assistants. I am pleased to be able to say that the work of the department has proceeded smoothly and satisfactorily, the members of both branches having co-operated most loyally in carrying it out.

I have again to draw the attention of the Council to the desirability of appointing an Assistant Medical Officer, and Women Inspectors. With regard to the former, I reported last year that:—"The question of appointing an Assistant Medical Officer was discussed by the Council at the time when the staff was being arranged. I am able to say now that there is ample work for such an officer, who might be obtained without much extra cost, as he would be able to undertake the examination of candidates selected for positions under the Council, of employes who were ill or incapacitated, as well as the bacteriological and other work for all which the Council now employs outside help."

I am able to say now that not only might such an officer be appointed without extra cost, but that an economy could be effected by the appointment of such an officer. Additional work which cannot well be carried out by ordinary inspectors has been added to the department by the special work which all municipalities require to be carried out in connection with the prevention of consumption, and lately the Metropolitan Asylums Board have agreed to notify the date of discharge of fever and diphtheria patients, so that they might be visited with a view to seeing that the instructions given on leaving hospital were being complied with.

The inspection of work-places has become a specific duty under the Factory and Workshop Act, which came in force in 1902, and in view of the large number of women employed in Westminster it is desirable that women inspectors should be employed to visit such places, which seem to require constant supervision. Most of the Metropolitan



Councils have appointed Women Inspectors, who, besides the work I have indicated, are able to visit among the poorer classes, and give advice with reference to domestic hygiene, to call at houses let out in tenements and to see that the by-laws as to overcrowding and cleansing are enforced, &c. The work of such Inspectors is reported to be of much value wherever they have been appointed, and they do not interfere with, but rather relieve, the Sanitary Inspector of a good deal of work with which a man is not so well qualified to deal.

I trust that the Council will take steps to strengthen the staff, so that this part of the Council's work may be carried out in a manner worthy of the position and importance of the City of Westminster.

I desire to take the opportunity of expressing my grateful appreciation of the continued support and assistance which has been accorded to me by the Members of the Council and my colleagues, but I would especially thank the Chairman and Members of the Public Health Committee, who have at all times readily given me the benefit of their assistance and advice during what has been an exceptionally responsible and anxious year.

I have the honour to be,
My Lords and Gentlemen,
Your obedient servant,

FRANCIS J. ALLAN,
Medical Officer of Health.

March 23rd, 1903.

PART I.

A. VITAL STATISTICS.

POPULATION.

The resident population of the City for the year 1902 has been calculated in three ways, and none of the figures agree. The Registrar-General has made two estimates, one being 178,489, based on the returns of houses on the rate-books under the Equalisation of Rates Act; the other, 180,800, which is based on the assumption that the rate of decrease ascertained at the census as having taken place since the preceding census, is still continuing. My estimate is only 259 above this last. The City Comptroller has been good enough to supply me with a copy of the figures sent to the Local Government Board in May, 1902, as required by the Equalisation Act, and I have added thereto the figures as estimated thereon by the Registrar-General.

	1	2	3	4	5	6
	Number of Houses as defined in Local Government Board Schedule.	Number of Houses comprising two or more Rateable Properties.	Number of Separate Occupations included in Col. 2.	Actual Number of Rated Occupiers.	Estimated Population by Registrar-General.	Estimated Population by Medical Officer of Health.
St. George Han- over Square ..	9,838	56	2,236	12,018	75,923	76,184
St. Margaret and St. John ..	5,638	54	3,974	9,558	50,690	51,470
St. James ..	2,882	7	84	2,959	21,294	21,403
St. Anne ..	1,135	45	827	1,917	11,168	11,235
St. Martin and Strand ..	2,708	69	1,805	4,444	19,459	20,767
The City ..	22,201	231	8,926	30,896	178,489	181,059

I pointed out in my report for 1901 that 3,051 citizens were inmates of Poor Law Institutions outside the City, and that when any person dies there the death is recorded against the locality in which he lived at the time of admission, even though that may have been many years before. It would appear, therefore, only fair that the number of persons in such Institutions should be added to the population of the district. This would bring the population of the City for statistical purposes up to 184,110 for the year 1902. I suggested to the Registrar-General

Country of Birth of Foreigners enumerated in the City of Westminster and in each of its Constituent Wards, 1901.

Country of Birth.	City of Westminster.		WARDS.																											
	Total.		Con-duit.		Gros-venor.		Hamlet of Knights-bridge.		Knights-bridge St. George's.		Victoria.		St. Mar-garet.		St. John.		St. Anne.		Great Marl-borough.		Pall Mall.		Regent.		Charing Cross.		Covent Garden.		Strand	
	Males	Females	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Total	7,509	4,322	227	187	232	309	159	175	166	255	634	375	279	186	268	117	2,205	1,028	930	692	153	58	1,141	577	605	169	344	122	166	72
EUROPE.																														
Russia	509	394	3	2	7	2	2	2	3	3	9	5	2	4	7	1	135	102	192	159	4	1	119	107	11	3	8	2	7	1
Poland (Russian)	546	469	3	3	2	—	—	—	—	—	3	1	—	—	2	3	167	155	238	204	—	—	122	97	—	—	6	5	3	1
Sweden	117	68	5	1	5	3	—	2	12	19	14	6	9	4	1	2	12	5	25	14	1	3	20	3	8	2	4	1	1	3
Norway	14	14	—	—	—	—	—	1	1	1	—	2	—	1	2	5	1	2	—	—	—	1	4	1	3	—	2	—	1	—
Denmark	34	18	—	—	3	3	—	1	—	—	2	1	5	3	6	3	8	4	2	—	—	2	5	1	2	—	1	—	—	—
Holland	75	49	10	4	2	2	1	1	5	5	2	4	5	—	6	2	19	18	5	3	6	1	5	3	7	2	2	3	—	1
Belgium	149	174	2	14	8	17	7	9	2	18	17	14	4	3	4	6	48	42	16	17	1	—	12	16	11	11	13	5	4	2
France	1,143	1,106	34	71	49	108	38	54	30	69	176	174	41	63	41	30	358	234	64	108	21	10	157	116	66	27	53	32	15	10
Germany	1,319	712	55	26	57	72	25	45	39	58	131	63	87	43	94	23	279	135	153	94	28	9	152	82	108	23	73	24	38	15
Austria	300	92	18	5	15	6	7	7	13	5	33	8	29	1	12	1	35	16	49	28	4	—	43	10	14	2	24	2	4	1
Hungary	61	30	4	—	3	1	1	—	—	—	3	3	1	—	1	1	22	18	9	2	1	—	12	5	4	—	—	—	—	—
Switzerland	667	291	23	12	26	36	22	22	26	41	55	33	24	12	23	16	219	51	25	15	16	11	78	16	61	8	49	12	20	6
Spain	78	24	—	—	2	1	1	1	5	4	8	6	—	2	1	2	18	4	2	1	4	—	24	1	10	2	3	—	—	—
Portugal	7	3	1	—	1	2	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	3	—	1	—	—	—	—	—
Italy	1,826	456	35	4	20	7	42	8	23	3	130	28	19	4	33	5	813	218	134	35	19	2	342	95	122	22	63	18	31	7
Greece	18	3	—	—	—	—	1	1	—	—	—	1	1	—	—	—	7	—	—	—	2	—	1	—	2	—	2	—	2	1
Servia, Roumania, and Bulgaria	20	6	—	—	1	—	—	—	—	—	—	—	1	—	1	—	5	2	7	3	—	—	3	—	2	—	—	1	—	—
Turkey	32	3	1	—	2	—	1	—	—	—	5	1	—	—	3	—	5	—	4	—	3	1	2	—	1	1	5	—	—	—
ASIA.																														
China	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Japan	17	8	—	1	—	—	—	—	2	4	9	—	—	—	—	—	—	4	3	—	—	2	—	—	—	—	—	—	—	—
Other countries	8	2	—	—	1	—	—	—	—	—	2	—	—	2	—	—	3	—	—	—	1	—	—	—	1	—	—	—	—	—
AFRICA.																														
Egypt	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	1	—	—	—	—	—
Other countries	19	3	—	1	—	—	1	—	—	—	—	—	1	—	—	—	2	1	—	—	—	—	—	—	15	1	—	—	—	—
AMERICA.																														
United States	493	371	31	40	26	47	9	20	4	22	31	23	48	42	26	15	37	17	4	5	33	17	26	22	148	62	32	15	38	24
Mexico	5	3	—	—	—	1	—	—	—	—	—	—	1	1	—	1	2	—	—	—	—	—	—	—	1	—	—	—	—	—
Other States of Central America	3	2	—	—	—	—	1	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	1	—	—
Argentine Republic	11	4	—	—	1	—	—	—	—	—	—	—	—	1	1	—	1	—	—	1	3	—	—	—	3	2	2	—	—	—
Brazil	5	3	—	—	—	1	—	—	—	—	—	—	—	—	—	—	2	1	—	—	—	—	2	—	—	—	1	1	—	—
Other States of South America	11	7	—	3	—	—	—	—	—	2	2	—	1	1	2	1	—	—	—	—	1	—	2	—	2	—	1	—	—	—
Country not stated	19	6	2	—	1	—	—	—	1	—	2	1	—	—	1	—	1	—	1	3	2	—	6	2	—	—	1	—	1	—

that he should add these numbers to his figures, as he formerly did in connection with the late Strand District, but "while fully recognising the theoretical propriety" of the suggestion, the Registrar-General found that (*a*) the omission of these populations does not raise the rates by more than 1·7 per cent., and (*b*) that several other Metropolitan Boroughs are affected in a similar way, and that in many cases the due allocation of population could only be made by the help of information which was not recorded at the census. Moreover, it appears that Westminster contains an excess over the average of about 6,700 domestic servants, and the Registrar-General believes that as many domestic servants go away to their homes in case of serious illness, it is a question whether the population of Westminster, which should be used for calculating death-rates, is not too high even without the addition of the inmates of Poor Law Institutions."

The omission of paupers living outside the City makes little difference in calculations for the City as a whole or for the larger Wards, but for the smaller Wards the effect is more serious. In some of the Wards most affected the counterbalancing effect of a large proportion of servants does not exist, for such Wards have only a small proportion of that class. Moreover, a considerable number of servants do remain in the City when ill (see pp. 87 and 88). If it were practicable it would be better to allocate the outlying paupers in the first place, and afterwards to deduct persons in hospitals in the City who are not citizens and in hotels those who have not been resident for more than a few days. This, however, would be somewhat difficult to achieve, but may eventually be managed if the Registrar-General would permit access to the census records. The effect of those may be indicated with respect to Charing Cross Ward. The population at the census is given as 5,755, with 120 paupers, 5,875; on enquiry I find that there were about 2,400 persons in the various hotels, clubs and hospitals, probably half of these might be reckoned as staff, and deducting the remainder a nominal population is obtained of 4,675, and calculated to the middle of 1901, 4,600. This would raise the death-rate of that Ward for 1901 from 10·3 to 13·2. Probably similar results would be found in those other Wards containing a large number of hotels and clubs, but the information is not yet available.

As the Registrar's figures nearly agree with mine and for the sake of comparison, I propose to take his (180,800) as the population of the City for statistical purposes as a whole, but in calculating statistics for the Wards I have distributed paupers amongst them, and have made such deductions as are available from the census report as regards hospitals. Thus for the year the population of the Wards has been estimated as below:—

Conduit Ward...	...	5,800	Great Marlborough	
Grosvenor Ward	...	15,170	Ward ...	7,420
Hamlet of Knights-			Pall Mall Ward	4,010
bridge	...	7,631	Regent Ward	9,630
Knightsbridge St.			Charing Cross Ward	4,430
George	...	15,300	Covent Garden	
Victoria Ward	...	40,154	Ward ...	8,950
St. Margaret	...	13,560	Strand Ward	6,820
St. John	...	31,600	St. Anne Ward	11,414

This gives a total of 181,890, which is slightly higher than the figure adopted as the population of the City, but the difference in the rates calculated thereon is so slight as to be negligible, whereas the Ward rates approach more nearly to correctness.

As regards infectious diseases, the whole population with paupers should be included as notifications are receivable from outlying institutions, even if the infection has been contracted there, as well as in respect of visitors resident in hotels in the city.

BIRTHS.

As there are fifty-three weeks in the Registration year allowance has to be made for this by the addition of an equivalent population.

3,284 births were registered in the City in the 53 weeks ending January 3rd, 1903. On examination, 28 births were found to be referable to other districts. Through the courtesy of the Committees of Management of Endell Street, York Road, and the Queen Charlotte Lying-in Institutions, and of the Master of the Strand Workhouse at Edmonton, and the Steward of St. George's Workhouse, Fulham Road, I have ascertained that in these institutions 205 children were born, the home address of whose mothers was in Westminster. The net number of births was, therefore, 3,461; the birth-rate, uncorrected, was 17·8, corrected 18·7 per thousand persons. The birth-rate for the County of London for 1902 was 28·4, and was lower than that in any of the ten preceding years, during which the birth-rate averaged 30·1 per thousand. The birth-rate in England and Wales was 28·6, which is 0·1 per thousand higher than the rate in 1901, but lower than that in any other year on record; compared with the average of the preceding ten years the birth-rate in 1902 shows a decrease of 1 per thousand.

The uncorrected birth-rates were lowest in the City of London, 13·1; the City of Westminster, 17·8; Hampstead, 18·2; and Kensington, 19·3; and highest in Stepney, 38·0.

Consequent upon differences in sex and age distribution, and the proportion of married and unmarried persons in the various Wards of

the City, the rates vary widely, from 5·6 in Pall Mall Ward and 5·7 in Charing Cross Ward to 29 in St. John's Ward.

A more exact method of estimating the birth-rate is by calculating it on the number of females living at child-bearing ages, distinguishing married and unmarried.

Calculated on the total female population, the births, as shown in the accompanying table, varied from 9·1 in Charing Cross to 62 per thousand in St. John's.

TABLE I.—*Showing the number of Births in the City of Westminster and its Wards, and in the County of London, with rates per 1,000 population and per 1,000 females.*

Wards.	Births.			Birth-rate per 1,000 population,	Birth-rate per 1,000 females.
	M.	F.	Total.		
Conduit	25	21	46	7·8	13·2
Grosvenor	70	87	157	10·1	17·1
Knightsbridge St. George ..	85	77	162	10·1	16·3
Victoria	472	414	886	21·6	40·3
St. Margaret	77	83	160	11·5	22·0
St. John	472	481	953	29·5	62·0
Hamlet of Knightsbridge ..	55	42	97	12·4	20·8
St. Anne	141	137	278	23·8	50·0
Regent.. .. .	112	114	226	23·0	45·2
Pall Mall	10	13	23	5·6	12·4
Great Marlborough	86	94	180	23·8	45·8
Charing Cross.. .. .	16	10	26	5·7	9·1
Covent Garden	83	80	163	17·8	35·1
Strand	51	53	104	14·9	28·8
The City of Westminster .	1,755	1,706	3,461	18·7	35·1
The County of London ..	66,975	64,303	132,810	28·4	54·6

The total births reckoned on the number of married females (between the ages of 15 and 45) work out at 235 per thousand for London and 179 for the City of Westminster, both of which are about the same as in 1891. In 1891 the rates were 259 and 210, and in 1881, 283 and 238 respectively, so that there is now a very considerable decrease in the number of children born per family, compared with what was the case twenty years ago.

Allowance has not been made for illegitimate births in the above calculations, otherwise the rate would be still further reduced. There were in 1902, in Westminster, 186 illegitimate births forming 5·7 per cent. of the total births.

There is a notable decrease in the births in the Strand Ward, due to the clearances in progress, but, on the other hand, the filling up of the Millbank Estate is raising the St. John's rate.

The births are arranged according to the old divisions of the City in Table III. and the comparative rates are shown in Table IV. These are uncorrected for births outside the City.

DEATHS.

2,899 deaths were registered in the City in the 53 weeks ending the 3rd January, 1903. After deducting 906 deaths of non-citizens in public institutions in the City, and adding those of 959 citizens who died in other districts, the corrected total is 2,952, and is equivalent to an annual rate of 16·0 per thousand persons. The London death-rate for the same period was 17·7, and for England and Wales 16·3, which is the lowest rate on record, the only previously recorded rates below 17 per 1,000 having been 16·5 in 1894 and 16·9 in 1901.

The rates were, in each instance, below the average of the preceding ten years, to the following extent:—The City 1·6 per 1,000, London 1·3 per 1,000, and England and Wales 1·6 per 1,000. In making the calculations allowance has been made for 53 weeks in the year 1902.

A Factor for Correction of Death-rates.—Following on the method adopted by the Registrar General in dealing with the statistics of the large towns of England and Wales, Mr. Shirley Murphy, the Medical Officer of the County Council, has calculated out a "factor" whereby differences in the age and sex constitution of the population may be removed. This is arrived at by obtaining the age and sex distribution of the population of a district at the last census, and after ascertaining the death-rate for each sex, at each age period, in England and Wales during the last ten years, a calculation is made of the number of deaths which would have occurred in the district had similar rates been obtained, thus a "standard" death-rate is obtained. The difference between this rate and that for England and Wales, is, on the above assumption, due to differences in the age and sex constitution on the population of the district, and dividing the latter by the former a factor is obtained for correcting the crude death-rate of the district. The following table shows the rates corrected in this way for the year 1901:—

TABLE II.—*Crude and corrected death-rates per thousand persons living in the County of London and the several Metropolitan Municipal areas.*

District.	Standard Death-rate.	Factor for correction for age and sex Distribution.	Crude Death-rate, 1901.	Corrected Death-rate, 1901.	Comparative Mortality figure, 1901 (London, 1,000).
<i>England and Wales</i> ..	18·19	—	—	—	—
London	17·31	1·05107	17·1	18·0	1,000
Westminster, City of ..	15·46	1·17684	15·8	18·6	1,033
Paddington.. ..	17·10	1·06398	14·3	15·2	844
Kensington.. ..	17·05	1·06710	15·2	16·2	900
Hammersmith	17·47	1·04144	17·0	17·7	983
Fulham	17·39	1·04623	15·8	16·5	917
Chelsea	18·76	0·96983	16·6	16·1	894
St. Marylebone	16·93	1·07466	16·6	17·8	989
Hampstead.. ..	16·19	1·12378	10·6	11·9	661
St. Pancras	17·27	1·05350	18·3	19·3	1,072
Islington	17·55	1·03670	16·0	16·6	922
Stoke Newington	17·42	1·04443	13·2	13·8	767
Hackney	17·56	1·03610	15·8	16·4	911
Holborn	16·11	1·12936	20·1	22·7	1,261
Finsbury	16·83	1·08105	21·4	23·1	1,283
City of London	14·92	1·21944	20·1	24·5	1,361
Shoreditch	17·83	1·02042	21·9	22·3	1,239
Bethnal Green	17·98	1·01190	20·3	20·5	1,139
Stepney	17·29	1·05228	20·9	22·0	1,222
Poplar	17·92	1·01529	20·0	20·3	1,128
Southwark	17·29	1·05228	21·5	22·6	1,256
Bermondsey	17·60	1·03375	20·9	21·6	1,200
Lambeth	17·63	1·03199	17·2	17·8	989
Battersea	16·94	1·07403	16·4	17·6	978
Wandsworth	17·44	1·04323	13·4	14·0	778
Camberwell	17·61	1·03316	16·5	17·0	944
Deptford	17·31	1·05107	16·5	17·3	961
Greenwich	17·84	1·01984	15·2	15·5	861
Lewisham	17·64	1·03141	13·0	13·4	744
Woolwich	17·00	1·07024	14·6	15·6	867

Mr. Murphy makes a note that Chelsea has an abnormal age constitution, on account of the inclusion of 2,214 inmates of St. George Hanover Square Union Workhouse and Infirmary in its population. When the figures are available these will be deducted, and should be added to Westminster, which is thereby also affected, although to a much less degree.

In 1891 the factors worked out for the constituent parts of the City were:—

District.	Standard Death-rate.	Factor for Correction.
St. George Hanover Square.. ..	17·34	1·10438
St. Martin-in-the-Fields	15·74	1·21665
St. James	17·16	1·11597
Strand.. ..	16·24	1·17919
Westminster	16·94	1·13046

The effect of the addition of persons living in Poor Law institutions outside the area is shown in the case of the Strand, whereby the standard rate was reduced to 17·12, and the factor to 1·11857.

The Comparative Mortality Figure is obtained by comparing the London and District "Corrected Death-rates," taking London to equal 1,000.

Applying the factors stated above to the 1902 rates, the figures are :—

	Standard death-rate.	Crude death-rate.	Corrected death-rate.	Comparative mortality figure.
London	17·31	17·2	18·0	1,000
City of Westminster	15·46	16·0	18·8	1,044

Table III., in the form required by the Local Government Board, shows the vital statistics of the City and five groups of districts from 1891 to 1901. I have made out this table in such a way as to maintain as far as possible, consequent on alteration of areas, a comparison of statistics for the old divisions of the City, and in Table IV. I have calculated out the rates therefrom.

Table V. shows where citizens were at the time of their death distributed according to their respective Wards. The proportion dying in public institutions is not always an index of the circumstances of the inhabitants of the Wards. The number of public institution deaths in London was 34·7 per cent. of the total, in the City 42·4 per cent., and in the several wards as follows :—

Conduit	19·6	St. Anne	36·9
Grosvenor	34·8	Gt. Marlborough ...	48·1
Hamlet	39·3	Pall Mall	18·7
Knightsbridge St. George	36·2	Regent	42·4
Victoria	36·2	Charing Cross ...	31·2
St. Margaret	39·4	Covent Garden ...	44·1
St. John	49·6	Strand	36·9

In England and Wales 16·5 per cent. died in such institutions, as compared with 13·5, the average of the preceding ten years. The proportion of such deaths in London is a long way above any of the other 76 great towns.

Ward Death Rates.—The death-rates for the separate wards are shown in Table VII. for the year and for the four quarters; the rates for London and for England and Wales being also added for purposes of comparison. The death-rate for both London and the City are slightly higher than in 1901, the county rate being proportionately higher than the City. Conduit, Grosvenor, Victoria, St. Margaret, St. John, and St. Anne Wards have each a higher rate than in 1901, while the Hamlet of Knightsbridge, Knightsbridge St. George, Great Marlborough, Pall Mall, Covent Garden and Strand Wards show a decreased rate; that in the Regent and Charing Cross Wards is practically unchanged.

In the first quarter of 1902, there was a high mortality from bronchitis and pneumonia, especially affecting old people; there were also 27 deaths from influenza, and doubtless some of the other deaths were also due in some measure to this complaint, as in the country generally the death-rate was 1·7 below the average. It was in February that the bulk of this mortality occurred. The month was cold, the temperature being below the average throughout the first three weeks with extremely low readings of the thermometer, and fogs on several occasions.

The rise and fall of this mortality for London is shown in the list of deaths each week from the end of January to the end of March:—

Influenza:—26, 40, 51, 107, 103, 89, 67, 39, 30.

Respiratory diseases:—375, 486, 681, 885, 733, 589, 498, 388, 360.

In Westminster the wards nearest the river appeared to have suffered most, and to some extent this was the case throughout London, but the social condition of the inhabitants must, of course, be taken into consideration in this respect. The central districts (Holborn, Finsbury, and the City of London) had, as usual, the highest death-rates from these causes. In February the rates for these districts were 33·6, 34·6, 34·6 respectively; it will be observed that the rate for the Strand Ward, which was formerly included in the central group, shared a like rate. It is a matter for investigation whether this increased mortality be due to the character of the population, the conditions under which they are housed, or, as has been suggested, to the greater impurity of the air in districts which are so centrally placed and furthest from the open country.

The second quarter showed a general improvement in the death-rates. For the county as a whole it was 0·7 below the decennial average, for London 1·2 below. The City rate fell to 13·9, which was 1 below

the corresponding rate in 1901. The weather during this quarter was for the most part cold, and the duration of bright sunshine was below the average for each month.

The third quarter is usually characterised by an increase in the death-rate due to infantile diarrhoea and other complaints of a septic nature, but from the low temperatures in the second quarter, and which were maintained to a considerable extent in this quarter, deaths from that cause were much less than usual; thus the death-rates for both England and Wales and London were 3·1 per 1,000 below the average; in Westminster the rate was 13·3, the same as in 1901. The decrease in the diarrhoea rate alone accounted for 1·52 in the country and 1·1 in London; this can better be appreciated from the actual figures; usually, in London, there are about 4,000 deaths from diarrhoeal diseases in this quarter, but this year only 2,000 occurred. The death-rate in the City from this class of disease was 1·11 (the London rate being 1·76). Conduit, St. Margaret, Pall Mall, Regent, and Charing Cross Wards had no deaths from this cause in this quarter, but the City rate was exceeded in Victoria Ward, 1·49, and in St. John Ward, 2·91.

In the fourth quarter the English death-rate was 0·8 below the decennial average, the London rate 1·2 below: the Westminster rate was 1·0 below that for 1901, but in the Hamlet, Knightsbridge St. George, St. Anne, Great Marlborough, and Covent Garden Wards the rates were above those of 1901, apparently from chest complaints. St. John, with 23·8 per 1,000, and the Strand, with 25·9 per 1,000, again headed the list, although these figures were an improvement on the previous year. The weather in October was mostly cloudy and changeable, but November was fair and dry; frost set in early in December, but the latter part of the month was changeable.

Causes of Death.—These are set out in detail in Table IX., and details of the principal causes are shown for each Ward in Table X. I have also prepared a list showing the nature of the occupation of persons over 15 years of age and the disease from which they died, which may prove useful eventually in ascertaining the relative healthiness of various occupations, a summary of which will be found in Tables XXIII. and XXIV.

Reference has already been made to *Influenza*. 43 deaths were directly attributed to this disease, but, apart from these, there are always many deaths which result from the after effects of an attack, and a considerable proportion of deaths are attributed to Chest Diseases which should properly be placed against Influenza.

Respiratory Diseases again form a large proportion of the deaths, especially in the first and last quarters of the year. The rate for 1902 works out at 3·61 per thousand, as compared with 3·55 in 1901.

TABLE III (Required by Local Government Board).—*Vital Statistics of Separate Localities in 1902 and 11 Previous Years.*

Names of Localities }	1. The City of Westminster.				2. St. George's, comprising Conduit, Grosvenor, Victoria, and Knightsbridge St. George Wards.				3. Westminster, comprising St. Margaret, St. John, and the Hamlet of Knightsbridge Wards.				4. St. James, comprising Regent, Marlborough, and Pall Mall Wards.				5. St. Anne Ward.				6. Strand, comprising Covent Garden, Strand, and Charing Cross Wards.			
	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.	Population estimated to middle of each year.	Births registered.	Deaths at all ages.	Deaths under 1 year.
1891...	202,136	4,507	4,024	740	79,967	1,610	1,312	216	55,651	1,449	1,148	256	24,839	508	493	84	12,422	334	293	65	29,257	606	778	119
1892 ..	199,882	4,377	4,070	710	78,649	1,519	1,334	220	55,217	1,418	2,297	246	24,368	524	446	76	12,378	310	261	67	29,770	606	732	101
1893...	198,249	4,255	3,970	699	78,883	1,496	1,217	204	54,783	1,350	1,290	255	23,873	520	470	71	12,334	330	278	58	28,376	559	715	111
1894...	197,283	4,017	3,277	587	79,123	1,499	1,096	177	54,349	1,219	1,006	180	23,571	456	390	80	12,290	288	202	41	27,950	555	583	109
1895...	196,254	4,155	3,559	683	79,368	1,470	1,185	204	53,915	1,278	1,154	246	23,149	528	407	74	12,246	324	203	48	27,576	555	610	111
1896...	194,866	3,968	3,277	642	80,041	1,407	1,117	211	53,481	1,222	987	209	22,955	484	396	72	12,200	292	231	58	26,189	563	546	92
1897...	194,120	3,846	3,177	587	80,376	1,365	1,067	183	53,047	1,238	1,005	200	22,576	446	388	75	12,150	314	185	39	25,971	483	532	90
1898...	193,304	3,715	3,324	571	80,703	1,411	1,072	172	52,613	1,088	1,093	198	22,200	434	408	73	12,150	290	205	39	25,638	492	546	89
1899...	192,452	3,610	3,442	600	81,033	1,348	1,156	177	52,179	1,114	1,174	229	21,827	435	387	69	12,100	296	210	40	25,313	417	515	85
1900...	191,269	3,433	3,234	509	81,364	1,295	1,140	146	51,745	1,056	1,097	208	21,457	410	341	62	12,000	273	189	36	24,703	399	467	57
1901...	185,048	3,241	2,900	435	77,475	1,199	1,007	156	52,851	1,124	871	151	21,403	453	350	62	11,590	289	148	21	22,329	387	425	43
Averages of 10 years 1892 to 1901 ... }	194,222	3,854	3,423	602	79,701	1,401	1,139	185	53,418	1,210	1,122	212	22,738	469	398	71	12,143	300	211	44	26,281	498	560	89
1902 (53 weeks ... }	180,880	3,284	2,952	442	76,424	1,204	1,074	143	52,791	1,153	1,007	163	21,060	388	327	52	11,414	256	173	35	20,200	283	371	49

The figures for the several districts previous to the formation of the City in November, 1900, relate to the areas as then existing, except as regards No. 6, in which case the figures relating to the added part were obtainable from the reports of the late Medical Officer of Health for St. Giles. The other figures are from the reports of the Medical Officer of Health of the separate districts, and from those of the Registrar-General.

TABLE IV.—*Vital Statistics of Separate Localities. Birth- and Death-rates per 1,000 Inhabitants, and Death-rates of Infants under 1 Year per 1,000 births, calculated from the figures in Table III.*

	Birth-rate.		Death-rate.		Deaths under 1 per 1,000 Births.	
	Average of 10 Years 1892-1901.	1902.	Average in 10 Years 1892-1901.	1902.	Average, 10 Years.	1902.
1. <i>St. George's Division</i> —						
Comprising Conduit, Grosvenor, Victoria, and Knightsbridge St. George Wards	18·1	15·6	13·4	14·0	132	119
2. <i>Westminster Division</i> —						
Comprising St. Margaret and St. John and the Hamlet of Knightsbridge Wards*..	22·6	21·8	21·0	19·1	175	141
3. <i>St. James Division</i> —						
Comprising Pall Mall, Regent, and Great Marlborough Wards	20·7	18·0	17·5	15·6	151	134
4. <i>St. Anne Ward</i>	24·7	22·3	17·4	14·9	146	136
5. <i>Strand Division</i> —						
Comprising Covent Garden, Strand, and Charing Cross Wards*	18·9	13·2	21·2	18·4	178	173
The City of Westminster..	19·8	17·8	17·6	16·0	156	134

* The area of these divisions was altered at the incorporation of the City.

TABLE V.—Deaths of Citizens during the Year ending 3rd January, 1903, showing Locality at Time of Death.

WARDS.	LOCALITY AT TIME OF DEATH.																		TOTAL DEATHS.		
	At Home.			Workhouses and Infirmarys.			General and Special Hospitals.			Fever Hospitals.			Lunatic Asylums.			Elsewhere.					
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	MALES.	FEMALES.	TOTAL.
Conduit	22	21	43	3	—	3	4	2	6	—	—	—	—	1	1	4	1	5	33	25	58
Grosvenor	53	56	109	12	15	27	15	9	24	—	2	2	1	6	7	3	—	3	84	88	172
Hamlet of Knightsbridge..	14	21	35	4	4	8	6	8	14	1	—	1	—	—	—	1	2	3	26	35	61
Knightsbridge St. George	37	57	94	12	9	21	10	11	21	5	1	6	4	2	6	—	1	1	68	81	149
Victoria	183	246	429	50	75	125	53	35	88	10	7	17	10	10	20	12	4	16	318	377	695
St. Margaret	59	53	112	18	20	38	24	6	30	3	3	6	2	—	2	3	4	7	109	86	195
St. John	174	197	371	150	73	223	69	41	110	12	5	17	6	11	17	9	4	13	420	331	751
St. Anne	67	40	107	13	12	25	23	9	32	2	1	3	1	2	3	1	2	3	107	66	173
Great Marlborough	41	30	71	16	15	31	12	10	22	3	1	4	2	7	9	—	—	—	74	63	137
Pall Mall	18	7	25	1	—	1	2	2	4	1	—	1	—	—	—	1	—	1	23	9	32
Regent	46	42	88	17	12	29	14	9	23	2	2	4	5	5	10	2	2	4	86	72	158
Charing Cross	19	13	32	2	6	8	3	3	6	—	—	—	1	—	1	1	—	1	26	22	48
Covent Garden	55	30	85	17	16	33	20	6	26	1	1	2	3	3	6	1	1	2	97	57	154
Strand	15	32	47	33	40	73	14	4	18	9	7	16	6	5	11	3	1	4	80	89	169
City of Westminster..	803	845	1,648	348	297	645	269	155	424	49	30	79	41	52	93	41	22	63	1,551	1,401	2,952

TABLE VI (L.G.B.).—*Statistics of Births and Deaths during the 53 Weeks from 29th December, 1901, to 3rd January, 1903.*

1 Wards.	2 Population Estimated to Middle of the Year 1902 (53 weeks).	3 4 Births (Corrected).		5 6 Deaths Under One Year of Age.		7 Deaths at all Ages, Total.	8 Deaths of Citizens in Public Institutions.	9 Deaths of Non- Residents Registered in District.	10 Deaths of Residents Registered beyond District.	11 12 Deaths at all Ages. Nett.	
		Number.	Rate.*	Number.	Rate per 1,000 Births Registered.					Number.	Rate.*
Conduit	5,912	46	7·8	5	108	51	10	8	15	58	9·8
Grosvenor	15,461	157	10·1	15	95	121	60	11	62	172	11·1
Hamlet of Knightsbridge ..	7,777	97	12·4	10	103	38	24	2	25	61	7·8
Knightsbridge St. George ..	15,599	162	10·1	15	92	464	54	355	40	149	9·6
Victoria	40,928	886	21·6	108	121	478	252	32	249	695	16·9
St. Margaret	13,824	160	11·5	23	143	365	77	233	63	195	14·1
St. John	32,208	953	29·5	140	136	405	373	28	374	751	23·3
St. Anne	11,634	278	23·8	35	125	140	64	33	66	173	14·9
Great Marlborough	7,562	180	23·8	25	138	97	66	17	57	137	18·1
Pall Mall	4,088	23	5·6	1	43	27	6	2	7	32	7·8
Regent	9,807	226	23·0	26	115	106	67	16	68	158	16·1
Charing Cross	4,540	26	5·7	6	230	49	15	16	15	48	10·5
Covent Garden	9,121	163	17·8	26	159	302	68	205	57	154	16·8
Strand	6,956	104	14·9	17	163	256	118	192	105	169	24·3
The City	184,211	3,461	18·7	442	127	2,899	1,254	906†	959†	2,952	16·0

* Rates calculated per 1,000 of estimated population.

† These figures relate to City as a whole, and are therefore not the totals of the figures given for individual Wards.

NOTE.—The deaths included in Column 7 of this table are the whole of those registered as having actually occurred within the ward. The deaths included in Column 11 are the number in Column 7 corrected by the subtraction of the number in Column 9 and the addition of the number in Column 10.

TABLE VII.—Quarterly and Annual Death-rates per 1,000 Inhabitants in the City of Westminster (in Various Wards), in the United Kingdom, England and Wales, and the County of London, for the 53 Weeks ending January 3rd, 1903.

		United Kingdom.	England and Wales.	County of London.	The City.	Conduit Ward.	Grosvenor Ward.	Hamlet of Knightsbridge Ward.	Knightsbridge St. George Ward.	Victoria Ward.	St. Margaret Ward.	St. John Ward.	St. Anne Ward.	Great Marlborough Ward.	Pall Mall Ward.	Regent Ward.	Charing Cross Ward.	Covent Garden Ward.	Strand Ward.
1st Quarter .. ..	..	18.9	18.6	21.3	21.4	11.0	16.0	7.8	11.6	24.5	17.1	32.3	16.4	17.2	10.9	22.4	14.4	21.0	34.5
2nd Quarter .. ..	..	16.6	16.1	15.7	13.9	11.0	10.5	7.8	8.6	14.8	12.6	16.0	16.8	15.1	12.9	11.6	9.0	18.7	18.7
3rd Quarter .. ..	..	13.9	13.9	14.7	13.3	8.2	8.9	6.3	8.9	14.2	11.5	20.8	10.1	18.9	2.0	13.2	7.2	9.9	17.5
4th Quarter .. ..	..	16.7	16.6	17.2	15.8	8.9	9.0	9.2	9.9	14.3	15.0	23.8	15.9	21.0	5.5	17.0	11.5	18.6	25.9
THE YEAR.																			
Persons .. ..	..	16.5	16.3	17.2	16.0	9.8	11.1	7.8	9.6	16.9	14.1	23.3	14.9	18.1	7.8	16.1	10.5	16.8	24.3
Males .. ..	..	—	17.4	—	13.1	14.0	13.5	8.7	11.5	17.2	16.4	26.2	17.7	20.3	10.2	18.2	11.4	21.5	23.8
Females .. ..	..	—	15.2	—	14.2	7.2	9.6	7.6	8.2	16.9	11.8	21.7	11.9	16.0	4.8	14.4	9.3	12.2	24.7

TABLE VIII.
(Required by the Local Government Board.)
Vital Statistics of Whole Districts during 1902 and Previous Years.
CITY OF WESTMINSTER.

1	2	3	4	5	6	7	8	9	10	11	12	13
Year.	Population Estimated to Middle of each Year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non- Residents Registered in Public Institutions in the District.	Deaths of Residents Registered in Public Institutions beyond the District.	Nett Deaths at all Ages belonging to the District.	
		Number (Un- corrected).	Rate.*	Under 1 Year of Age.		At all Ages.					Number.	Rate.*
				Number.	Rate per 1,000 Births Registered.	Number.	Rate.*					
1901	182,567	3,232	17·8	435	135	2,998	16·3	1,227	1,019	921	2,900	15·8
1902 53 weeks	184,211	3,284	17·8	442	134	2,899	15·7	1,129	906	959	2,952	16·0

* Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

NOTE.—The deaths to be included in Column 7 of this Table are the whole of those registered during the year as having actually occurred within the district or division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 10 and the addition of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in public institutions there; and by the term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and have died in public institutions elsewhere.

The "Public Institutions" to be taken into account for the purpose of these Tables are those into which persons are habitually received on account of sickness or infirmity, such as hospitals, workhouses, and lunatic asylums. A list of the institutions in respect of the deaths in which corrections have been made is given opposite.

Area of District in acres (exclusive of area covered by water) 2502·7

Total population at all ages	183,011	} At Census of 1901
Number of inhabited houses	..	..	18,366
Average number of persons per house	..	..	8·9

TABLE VIII.—*continued.*

I. Institutions within the District receiving Sick and Infirm Persons from outside the District.	II. Institutions outside the District receiving Sick and Infirm Persons from the District.	III. Other Institutions, the Deaths in which have been distributed among the several localities in the District.
<p>St. George's Hospital. Westminster Hospital. Charing Cross Hospital. King's College Hospital. St. Peter's Hospital. Grosvenor Hospital. Heart Hospital, Soho Square. Women's Hospital, Soho Square. Belgrave Hospital. Throat Hospital, Golden Square. Station Hospital, Rochester Row. St. George's Workhouse, Wallis Yard. Poland Street Workhouse. Bear Yard Workhouse. 22, George Street, Hanover Square, Nursing Home.</p>	<p>Middlesex Hospital. St. Thomas's Hospital. St. Bartholomew's Hospital. St. Mary's Hospital. Guy's Hospital. London Temperance Hospital. German Hospital. French Hospital. Italian Hospital. Victoria Hospital. Royal Chest Hospital. Lying-In Hospital, Endell Street. General Lying-In Hospital, York Road. Queen Charlotte's Hospital. Great Ormond Street Children's Hospital. Cancer Hospital, Chelsea. Royal Free Hospital. National Hospital. Cheyne Hospital. Great Northern Hospital. Homœopathic Hospital. City of London Chest Hospital. Women's Hospital, Chelsea. University College Hospital. North-West London Hospital. Brompton Hospital. Hospital of St. John and St. Elizabeth. Clapham Maternity Home. St. Peter's House. Friedenheim. British Home for Incurables. St. Anne's Home, Stoke Newington. Hospital Ships, Long Reach. Gore Farm Hospital. North-Western Fever Hospital. South-Western Fever Hospital. Western Fever Hospital. Grove Fever Hospital. London Fever Hospital, Liverpool Road. St. George's Infirmary, Fulham Road. Kensington Infirmary. Wandsworth Infirmary. Chelsea Infirmary. Hackney Infirmary. Fulham Infirmary.</p>	<p>51, Welbeck Street. 33, Weymouth Street. 50, Weymouth Street. 36, Devonshire Street. 60, Great Cumberland Place. Licensed Victuallers' Asylum. Hostel of God. The Nest, Upper Clapton. St. Pelagias Crèche. Salvation Army's Maternity Home. Westminster Almshouses. St. Martin's Almshouses. Tailors' Institution, Kentish Town. Home for Consumptive Females.</p>

TABLE VIII.—*continued.*

I. Institutions within the District receiving Sick and Infirm Persons from outside the District.	II. Institutions outside the District receiving Sick and Infirm Persons from the District.	III. Other Institutions, the Deaths in which have been distributed among the several localities in the District.
	H.M. Prison Infirmary, Wandsworth. Edmonton Workhouse. St. Giles Workhouse. Lambeth Workhouse. Holborn Workhouse. Central London Sick Asylum, Cleveland Street. Central London Sick Asylum, Hendon. Banstead Asylum. Cane Hill Asylum. Caterham Asylum. Claybury Asylum. Colney Hatch Asylum. Darenth Asylum. Dartford Asylum. Hanwell Asylum. Horton Asylum. Hoxton House Asylum. Leavesden Asylum. New Grove House Asylum. Bethlehem House Asylum. Camberwell House Asylum.	

Deaths under one year of age.—In Table VI. the rate at which infants died, calculated in relation to the number of corrected births, is set out for the City and its Wards. In Tables III. and IV. the rates are calculated on the uncorrected births (*viz.*, only those registered in the City for the City and its old divisions, as formerly allowance was not made for births taking place outside the area of the division.

The uncorrected rate for the City is 134 per 1,000 births, the corrected 127; the London rate is 139, varying from 87 in Hampstead to 174 in Shoreditch. It is of considerable importance to secure a proper distribution of births, as the uncorrected figures given for the London boroughs by the Registrar-General are misleading. Thus some districts appear to have a high birth-rate and a low infantile death-rate, simply because they have lying-in institutions within their bounds.

On the average of the previous ten years, the deaths under one year in the City were fewer in 1902 in each division, when compared with the uncorrected births. Compared with the year 1901, the rates in St. Margaret, Charing Cross, Covent Garden and Strand Wards were higher in 1902.

The deaths of such infants were due to the following causes:— Small-pox, 2; measles, 13; scarlet fever, 2; whooping cough, 12; diphtheria, 3; epidemic diarrhoea, 42; other bowel complaints accompanied by diarrhoea (simple enteritis), 21; syphilis, 10; septic diseases, 3; tubercular affections, 18; premature birth, 66; debility at birth, 24; injury at birth, 6; congenital defects, 23; improper feeding, 2; rickets, 8; marasmus (wasting), 22; teething, 8; convulsions, 34; meningitis, 10; other diseases of nervous system, 4; bronchitis and other respiratory diseases, 86; gastric affections, 10; neglect at birth, 4; suffocation in bed with parents, 9.

With regard to the last, seven of these deaths occurred between Saturday night and Tuesday morning; the fact that the majority of deaths from this cause occur between those days has been commented upon by the Coroners in all parts of London, and is evidently connected with the greater amount of alcohol consumed than on other days of the week. It would be interesting to trace out the dates of the other causes of death, as no doubt illnesses arise from neglect at that time, although not so immediately fatal. Again, although only two deaths are directly ascribed to improper feeding, many others, as those ascribed to rickets, marasmus, diarrhoea, and stomach troubles, must be due to this cause. Many mothers have no knowledge of the proper manner in which to rear their children, and not only might the death-rate be reduced by proper instruction on the subject, but a stronger race of men and women might be reared if the children were fed in suitable manner.

32 of the 442 deaths were among illegitimate children, equal to a rate of 172 per 1,000 illegitimate children born, as compared with a rate of 125 among the legitimate. These deaths were due to syphilis, 4; tubercular disease, 1; respiratory diseases, 3; neglect at birth, 4; premature and debility at birth, 8; suffocation in bed, 2; improper feeding, 1; marasmus, 2; convulsions, 2; whooping cough, 1; diarrhoea, 4.

Deaths over 65 years of age. These were 762 in number, and were distributed thus:—

Conduit Ward	...	...	12	St. Anne Ward	...	...	30
Grosvenor Ward	...	...	56	Great Marlborough Ward	...	...	39
Hamlet Ward	...	...	16	Pall Mall Ward	...	...	14
Knightsbridge	St. George			Regent Ward	...	...	34
Ward	...	...	48	Charing Cross Ward	...	...	11
Victoria Ward	...	...	200	Covent Garden Ward	...	...	40
St. Margaret Ward	...	...	51	Strand Ward	...	...	43
St. John Ward	...	...	168				

TABLE IX.—*Showing the Several Causes of Death at Various Age Periods for the Year 1902. City of Westminster.*
(International system of Classification.)

Causes of Death.	Ages.													All Ages.
	0-	1-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85-	
Small pox:—														
(a) Vaccinated	—	—	—	—	—	—	4	12	9	1	—	—	—	26
(b) Unvaccinated	2	1	1	1	2	—	—	—	3	1	—	—	—	11
(c) No statement	—	—	—	—	—	—	1	—	—	1	—	—	—	2
Measles	13	29	—	—	—	—	—	1	—	—	—	—	—	43
Scarlet fever	2	9	2	—	1	—	1	—	—	—	—	—	—	15
Typhus fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Epidemic influenza	—	—	—	—	1	—	6	5	4	7	13	5	2	43
Whooping cough	12	22	—	—	—	—	—	—	—	—	—	—	—	34
Diphtheria, membranous croup ..	3	14	13	1	—	—	—	—	—	—	—	—	—	31
Enteric fever	—	1	—	1	4	7	4	4	1	—	—	—	—	22
Asiatic cholera	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Diarrhoea, dysentery	27	2	—	1	—	—	—	—	—	1	1	5	—	37
Epidemic or zymotic enteritis ..	15	2	—	—	—	1	—	—	—	—	—	—	—	18
Ulcerative colitis	—	—	—	—	—	—	—	2	—	2	2	—	—	6
Chicken pox	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Continued fever	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Hydrophobia	—	—	—	—	—	—	—	1	—	—	—	—	—	1
Syphilis	10	1	—	—	—	1	—	—	—	—	1	—	—	13
Gonorrhoea	—	—	—	—	—	—	—	—	1	—	1	—	—	2
Phagædena	—	—	—	—	—	—	—	—	—	1	—	—	—	1
Erysipelas	—	—	—	—	—	—	—	2	—	1	—	—	1	5
Pyæmia, septicæmia	1	—	2	—	—	—	—	1	2	—	1	1	—	8
Puerperal fever	—	—	—	—	—	2	2	—	—	—	—	—	—	4
Infective endocarditis	—	—	—	—	—	1	3	1	—	2	1	—	—	9
Carbuncle	—	—	—	—	—	—	—	—	1	—	1	—	—	2
Angina ludovici	—	1	1	1	—	—	—	—	—	—	1	—	—	4

TABLE IX—*continued.*

Causes of Death.	Ages.														All Ages.
	0-	1-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85-		
Necrosis of jaw	—	—	—	—	—	—	1	—	—	—	—	—	—	1	
Acute necrosis	1	—	—	—	1	—	—	—	—	—	—	—	—	2	
Cellulitis	—	—	—	—	—	—	—	—	—	1	—	—	—	1	
Gangrene of chest	1	—	—	—	—	—	—	—	—	—	—	—	—	1	
Septic pharyngitis	—	—	—	1	—	—	—	—	—	—	—	—	—	1	
Abscess	—	—	—	—	—	—	—	—	1	—	—	—	—	1	
Malarial fever	—	—	—	—	—	1	—	1	1	—	2	—	—	5	
Rheumatic fever, rheumatism of heart	—	—	3	2	2	1	2	3	1	—	2	—	—	16	
Tuberculosis :—															
Tubercular disease of brain or meninges, acute hydrocephalus	8	17	2	1	—	2	1	—	—	—	1	—	—	32	
Laryngeal and pulmonary phthisis	1	8	3	6	12	24	57	104	69	31	12	2	—	329	
Tabes mesenterica, tubercular disease of intestine	5	7	1	—	—	2	—	2	—	1	—	—	—	18	
General tuberculosis, tubercular disease of undefined position ..	3	2	2	2	1	1	2	2	2	1	—	—	—	18	
Other forms of tuberculosis scrofula	1	1	1	2	2	1	2	3	3	—	—	—	—	16	
Chronic alcoholism	—	—	—	—	—	—	1	4	7	4	2	—	—	18	
Acute alcoholism, delirium tremens	—	—	—	—	—	—	4	3	3	1	—	—	—	11	
Alcoholic neuritis	—	—	—	—	—	—	1	2	—	—	—	—	—	3	
Gout	—	—	—	—	—	—	—	1	2	1	—	1	—	5	
Cancer, malignant disease	—	—	—	—	—	1	6	16	54	49	49	22	1	197	
Diabetes mellitus	—	—	—	—	1	—	—	1	4	8	4	1	—	19	
Anæmia, leucocythæmia	—	—	—	—	—	—	—	2	2	—	2	—	—	6	

Lymphadenoma, Hodgkin's disease	—	—	—	—	—	—	—	—	—	2	—	—	—	2
Premature birth	66	—	—	—	—	—	—	—	—	—	—	—	—	66
Debility at birth	24	—	—	—	—	—	—	—	—	—	—	—	—	24
Injury at birth	6	—	—	—	—	—	—	—	—	—	—	—	—	6
Congenital defects	23	1	—	—	—	—	—	—	—	—	—	—	—	24
Want of breast milk.. ..	2	—	—	—	—	—	—	—	—	—	—	—	—	2
Atrophy, debility, marasmus ..	22	2	—	—	—	—	—	—	—	—	—	—	—	24
Dentition	8	3	—	—	—	—	—	—	—	—	—	—	—	11
Rickets	8	1	—	—	—	—	—	—	—	—	—	—	—	9
Old age, senile decay	—	—	—	—	—	—	—	—	—	—	14	60	38	112
Convulsions	34	2	—	—	—	—	—	—	—	—	—	—	—	36
Meningitis	10	5	1	—	—	1	—	1	1	1	—	—	—	21
Apoplexy	—	—	—	—	—	—	6	4	16	21	29	10	6	92
Softening of brain	—	—	—	—	—	—	—	—	3	9	2	—	—	14
Hemiplegia, brain paralysis..	—	—	—	—	—	—	2	1	3	9	14	11	1	41
Cerebral abscess, &c.. ..	—	—	—	1	1	—	—	2	1	—	—	—	—	5
Insanity, general paralysis of insane	—	—	—	—	—	—	1	6	2	2	—	—	—	11
Other forms of insanity	—	—	—	—	—	—	1	2	2	5	3	2	—	15
Cerebral tumour	—	—	—	—	—	—	2	—	—	1	1	2	—	6
Chorea	—	—	1	—	—	—	—	—	—	—	—	—	—	1
Epilepsy	—	—	—	1	—	1	2	3	1	3	1	—	—	12
Laryngismus Stridulus	3	—	—	—	—	—	—	—	—	—	—	—	—	3
Locomotor Ataxy	—	—	—	—	—	—	—	2	1	2	—	—	—	5
Paraplegia, disease of spinal cord ..	1	—	—	—	—	1	—	1	1	2	—	1	—	7
Paralysis agitans	—	—	—	—	—	—	—	—	—	—	2	—	—	2
Peripheral neuritis	—	—	—	—	—	—	—	1	1	—	—	—	—	2
Cerebral atrophy	—	—	—	—	—	—	—	—	—	2	—	—	—	2
Neuritis	—	—	—	—	—	—	—	—	—	1	—	—	—	1
Otitis, otorrhœa	—	2	1	—	—	1	—	1	—	—	—	—	—	5
Epistaxis, diseases of nose	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ophthalmia, diseases of eye.. ..	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Endocarditis, valvular diseases of the heart	—	—	1	5	4	2	11	6	10	20	10	5	1	75
Pericarditis	—	—	—	—	—	1	—	—	—	—	1	—	—	2

TABLE IX—continued.

Causes of Death.	Ages.													All Ages.
	0-	1-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85-	
Hypertrophy of heart	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Angina pectoris	—	—	—	—	—	—	—	1	2	1	1	—	—	5
Aneurism	—	—	—	—	—	—	—	2	4	8	3	—	—	17
Senile gangrene	—	—	—	—	—	—	—	—	—	1	1	6	1	9
Embolism, thrombosis	—	—	—	—	—	—	3	1	2	1	—	4	—	11
Arterio-fibrosis	—	—	—	—	—	—	—	—	—	1	1	1	—	3
Phlebitis	—	—	—	—	—	—	—	—	—	—	1	—	—	1
Fatty degeneration of the heart ..	—	—	—	—	—	—	1	1	7	7	2	2	1	21
Cardiac dilatation	—	—	—	—	1	—	—	1	1	3	4	—	—	10
Atheroma	—	—	—	—	—	—	—	—	—	3	4	3	—	10
Other diseases of circulatory system	—	—	1	1	6	1	4	5	17	18	26	22	2	103
Laryngitis	—	1	—	—	—	—	—	—	—	—	1	—	—	2
Other diseases of larynx and trachea	—	—	—	—	—	—	—	—	—	—	1	—	—	1
Acute bronchitis	43	15	1	—	—	—	—	6	14	32	30	38	5	184
Chronic bronchitis	—	1	—	—	—	—	2	6	15	37	55	61	13	190
Lobar, croupous pneumonia	2	6	—	—	—	—	7	8	8	6	6	2	1	46
Lobular, broncho-pneumonia	35	25	1	—	—	—	2	4	5	7	4	—	2	85
Pneumonia, form not stated	9	7	1	1	1	2	13	23	21	21	16	5	2	122
Emphysema, asthma	—	—	—	—	—	—	—	—	1	3	1	—	—	5
Pleurisy, empyema	—	—	—	—	—	1	1	1	3	2	—	1	—	9
Pleuro pneumonia	—	1	—	—	—	—	—	1	2	7	1	1	—	13
Bronchiectasis	—	—	—	—	—	—	—	—	1	1	—	—	—	2
Gangrene of lung	—	—	—	—	—	—	—	2	—	—	—	—	—	2
Abscess of lung	—	—	—	—	—	—	1	—	—	1	—	—	—	2
Septic pneumonia	—	—	1	—	—	—	—	—	1	—	—	—	—	2
Ulcer of stomach and duodenum ..	—	—	—	—	1	1	4	1	4	6	3	—	—	20
Other diseases of stomach	6	—	1	—	—	—	—	2	1	2	2	2	—	16

Enteritis	21	2	—	—	—	—	—	—	—	—	2	—	2	—	27
Appendicitis	—	1	—	—	—	2	4	1	2	—	—	—	—	—	10
Obstruction of intestine	3	2	1	—	—	—	2	2	2	2	2	2	—	—	18
Other diseases of intestine	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
Cirrhosis of liver	—	—	—	—	—	—	2	10	17	11	8	—	—	—	48
Other diseases of liver	1	—	—	—	—	1	1	3	3	2	2	1	—	—	14
Peritonitis	—	—	—	—	—	1	2	—	—	—	—	1	—	—	4
Retro peritoneal tumour	—	—	—	—	—	—	1	—	—	—	1	—	—	—	3
Abscess of liver	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
Myxœdema	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
Mediastinal tumour	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
Thyroid tumour	—	—	—	—	1	—	—	1	—	—	—	—	—	—	2
Acute nephritis	—	—	—	1	—	—	—	—	1	1	—	—	—	—	3
Bright's disease, albuminuria	—	—	—	—	1	3	6	12	23	28	16	6	—	—	95
Calculus	—	—	—	—	—	—	—	—	1	—	—	1	—	—	2
Diseases of bladder or prostate	—	—	—	—	—	—	—	—	2	—	11	6	—	—	19
Pyelitis	1	—	—	—	—	—	—	—	—	1	1	—	—	—	3
Disease of testis and penis	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
Diseases of ovaries, uterus, &c.	—	—	—	—	—	1	1	4	3	1	1	1	—	—	12
Abortion, miscarriage	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
Placenta prævia, Flooding	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1
Puerperal thrombosis	—	—	—	—	—	—	1	1	—	—	—	—	—	—	2
Arthritis, ostitis, periostitis	—	—	—	—	—	—	—	—	1	1	3	1	—	—	6
Pemphigus	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1
DEATHS FROM EXTERNAL CAUSES.															
By accident or negligence:—															
By vehicular traffic	—	2	1	1	—	—	1	2	1	4	2	—	—	—	14
„ machinery	—	—	—	—	1	1	—	—	—	1	—	—	—	—	3
In building operations	—	—	—	—	1	—	—	1	—	—	—	—	—	—	2
„ conflagrations	—	—	—	—	—	—	—	1	—	1	—	—	—	—	2
By burns, scalds, explosions	—	5	1	—	—	—	1	—	—	2	—	—	—	—	9
„ weapons and implements	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1
„ poisons or poisonous vapours	—	—	—	—	—	—	—	1	1	—	—	—	—	—	2

TABLE IX—continued.

Causes of Death.	Ages.													All Ages.
	0-	1-	5-	10-	15-	20-	25-	35-	45-	55-	65-	75-	85-	
Deaths from external causes— <i>contd.</i>														
Surgical narcosis	—	—	—	—	—	—	1	—	—	—	—	—	—	1
By drowning	—	1	—	—	1	2	5	2	—	—	—	—	—	11
„ suffocation (overlaid in bed) ..	8	—	—	—	—	—	—	—	—	—	—	—	—	8
„ „ otherwise	1	—	—	—	—	—	1	1	—	1	—	—	—	4
Falls, not specified	—	—	—	—	1	1	3	3	1	2	1	1	—	13
Neglect at birth	4	—	—	—	—	—	—	—	—	—	—	—	—	4
By weather agencies	—	—	—	—	—	—	—	1	—	—	—	—	—	1
Lift accidents	—	—	—	—	1	—	—	—	—	—	—	—	—	1
Electric shock	—	—	—	—	—	1	1	—	—	—	—	—	—	2
Otherwise and not stated, ..	—	—	—	—	—	1	—	1	—	1	—	—	—	3
Suicide :—														
By poison	—	—	—	—	—	1	2	4	2	1	—	—	—	10
„ hanging and strangulation ..	—	—	—	—	—	—	1	1	—	—	1	—	—	3
„ drowning	—	—	—	—	—	1	2	1	2	1	—	—	—	7
„ wounds—shooting	—	—	—	—	—	1	—	1	—	—	—	—	—	2
„ „ other weapons	—	—	—	—	—	—	1	1	2	—	—	—	—	4
„ inhaling gas	—	—	—	—	—	—	—	—	—	1	—	—	—	1
Ill-defined causes :—														
Pyrexia	—	—	—	—	—	—	—	—	1	—	—	—	—	1
Totals	442	210	44	30	48	74	200	328	388	426	385	300	77	2,952

TABLE X.—*Showing Distribution of Certain Causes of Death in the respective Wards of the City for 1902.*

Causes of Death, 1902.	TOTAL.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Conduit.	Grosvenor.	Hamlet of Knightsbridge.	Knightsbridge St. George.	Victoria.	St. Margaret.	St. John.	St. Anne.	Great Marlborough.	Pall Mall.	Regent.	Charing Cross.	Covent Garden.	Strand.
Small-pox	39	—	—	1	1	6	2	13	1	—	—	—	1	1	13
Scarlet fever	15	—	1	—	1	4	1	3	—	2	—	1	—	—	2
Measles	43	1	1	—	—	10	1	15	4	7	—	4	—	—	—
Epidemic influenza	43	2	8	—	6	15	1	5	—	—	1	2	2	—	1
Whooping cough	34	1	1	—	—	6	1	13	2	1	—	2	—	5	2
Diphtheria	31	—	4	—	5	6	—	5	4	3	—	3	—	1	—
Enteric fever	22	—	—	1	5	3	6	4	—	—	—	—	—	1	2
Continued fever	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—
Erysipelas	5	—	—	—	2	1	—	2	—	—	—	—	—	—	—
Tuberculosis of lungs	329	1	12	1	15	69	23	104	16	15	2	18	7	17	29
„ other forms	84	2	2	1	1	18	7	28	7	5	1	1	1	5	5
Respiratory diseases	664	7	37	9	37	127	39	191	44	30	7	48	14	34	40
Diarrhœa	88	—	6	3	2	26	4	27	5	5	1	1	—	6	2
Acute rheumatism	16	—	2	—	1	4	1	5	—	—	1	—	—	1	1
Puerperal fever	4	—	—	—	1	—	1	—	1	—	—	1	—	—	—
All other causes	1,534	44	98	45	72	400	108	335	89	69	19	77	23	83	72
TOTALS	2,952	58	172	61	149	695	195	751	173	137	32	158	48	154	169

TABLE XI.—*Death-rates per 1,000 inhabitants from certain causes of death during the 53 weeks of 1902, for the County of London and the City of Westminster:—*

	County of London.	City of Westminster.		County of London.	City of Westminster.
Small-pox ..	0·28	0·21	Other forms of tuberculosis ..	0·57	0·45
Measles	0·50	0·23	Respiratory diseases ..	3·46	3·61
Scarlet fever ..	0·12	0·08	Malignant growths ..	1·03	1·08
Epidemic influenza ..	0·29	0·23	Alcoholism ..	0·14	0·17
Whooping cough ..	0·40	0·18	Cirrhosis of liver ..	0·16	0·26
Diphtheria	0·25	0·16	Bright's disease ..	0·37	0·53
Enteric fever	0·12	0·12	Accidental deaths ..	0·59	0·44
Diarrhoeal diseases ..	0·53	0·48	Suicidal, &c., deaths ..	0·13	0·15
Erysipelas	0·03	0·02	All other causes ..	6·40	6·54
Puerperal fever ..	0·04	0·02			
Other septic diseases ..	0·10	0·16			
Rheumatic fever ..	0·06	0·03			
Tuberculosis of lungs ..	1·60	1·78		17·2	16·00

Tubercular Disease.—Exactly the same number (413) of deaths were ascribed to various forms of this complaint in the 53 weeks of 1902 as in 1901, being equal to 2·32 per thousand in 1902 and 2·68 in 1901.

The phthisis (tuberculosis of the lungs) deaths number 329, as compared with 341 in 1901, the rates being 1·78 and 1·83 per thousand respectively.

The deaths from phthisis in London registered during the year under notice numbered 7,424, and were equal to a rate of 1·60 per 1,000, against 1·85, 1·74, and 1·66 in the three preceding years. Among the various boroughs the death rates from this disease ranged from 0·85 in Hampstead, 0·90 in Wandsworth, 1·05 in Paddington, 1·06 in Lewisham, 1·12 in Deptford, and 1·19 in Greenwich, to 1·88 in Southwark, 1·90 in Stepney, 1·92 in Marylebone, 1·97 in Bethnal Green, 2·28 in Finsbury, and 3·01 in Holborn. In the central and east districts the mortality from this disease was considerably higher than in any other part of the metropolis. In the west districts the phthisis death-rate was 1·40 per 1,000, in the south 1·52, and in the north 1·56, while in the east it was 1·85, and in the central 2·43 per 1,000.

As a result of the enquiries I have made, I am satisfied that a proportion of the deaths certified as chronic bronchitis or broncho-pneumonia are of tubercular origin.

The distribution of deaths in wards are shown in Table X.

Voluntary Notification of Phthisis.—The Council, after consideration of the recommendation in my last Annual Report, have agreed to institute a system of voluntary notification, which will come in force during the current year.

Sanatoria.—The Bermondsey Borough Council, some time ago, addressed a letter to the Asylums Board, requesting them to provide sanatoria, for the open-air treatment of persons suffering from consumption, and, later, set out an epitome of the replies they had received to letters sent to the other Metropolitan Borough Councils, informing those bodies of their action in the matter, and requesting them to make similar representations to the Asylums Board and the Local Government Board. The Managers indicated that they would take action in the desired direction should it become manifest that the sanitary authorities are practically unanimous in desiring their aid.

In December, 1901, the Council of Kensington made representations to the Local Government Board in regard to the provision of means for securing open-air treatment for the sick poor suffering from consumption. In this connection reference is made by Dr. T. Orme Dudfield, Medical Officer of Health of Kensington, in his report on the subject, to the unanimous opinion of the London Poor Law Authorities in support of the course suggested, as expressed in 1900 at a Conference, which had been convened at the suggestion of the Local Government Board, "to consider the general question of establishing hospitals for the open-air treatment of consumption." The Board were of opinion that such provision, if made at all, should be for the metropolis as a whole, and be under the management and control of a Metropolitan Authority. One of their Medical Inspectors, present at the Conference unofficially, stated that on July 7th, 1900, there were 1,562 consumptive patients in "Metropolitan institutions," of whom 1,000 could be removed to a sanatorium within fifty miles of London; and of the total number 400 were in the initial (and curable) stages of the disease. The number stated was, of course, irrespective of the persons living at consumptive homes. The suggestion that the Local Government Board should be asked to give to the Asylums Board the requisite powers to carry the proposals into effect was favourably received by the Conference, and a deputation was appointed to bring the matter before the President of that Board.

It has been suggested that some of the extensive buildings at Gore Farm or Joyce Green, prepared for small-pox patients, and which are now empty, should be utilised for the reception of persons suffering from consumption, thus avoiding the outlay that would otherwise be necessary if the Managers had to provide special hospitals for the purpose. Most of the Borough Councils have approved of this course.

An enquiry was instituted during 1902 by the editor of the "British Medical Journal" among the leading hospitals and infirmaries of London and the provinces, with the intention of bringing prominently forward the present position of these institutions towards this question of phthisis treatment, and the following statements are made in respect of

such institutions in Westminster and in the adjoining boroughs to which citizens go:—

Charing Cross Hospital.—Hopeless consumptives are not, as a rule, admitted, and, so far as can be ascertained, there are no arrangements for any special form of management.

St. George's Hospital.—No arrangements have been made for open-air treatment. Though, by a rule of the hospital, chronic cases of phthisis are ineligible for admission, the regulation has been tacitly allowed to become disregarded, and tuberculous cases are taken in at the discretion of the physicians. They are treated in the general wards, due precaution being taken for the proper disinfection of sputa.

Middlesex Hospital.—The regulations of the hospital exclude from admission cases of pulmonary tuberculosis, but patients are frequently taken in on account of acute complications. They are received in the general wards, and no special provision is made for them or their treatment. (A few patients are treated at the Convalescent Home.)

Italian Hospital.—Being a foreign hospital, the management is obliged to receive patients in all stages of phthisis, but those who speak English, and in whom the disease is far advanced, are referred to the local infirmary. Treatment is carried on in the general wards with suitable precautions to prevent infection. Open-air methods are adopted as far as practicable, but there are no special rooms for the purpose.

King's College Hospital.—Patients suffering from tuberculosis are received into the general wards in all stages of the disease if they are likely to be benefited by ward treatment. There are no facilities for open-air management.

Westminster Hospital.—Only cases which offer a hope of cure are taken in; they are not separated from other patients, but occupy the general wards of the hospital. The open-air method is not practised.

Central London Sick Asylum.—Patients are admitted in all stages of the disease, and are treated in the general wards. No system of open-air management has so far been inaugurated.

St. George's Infirmary.—All classes of patients are received and distributed throughout the general wards. The open-air treatment has not been adopted, and the general question of providing sanatoria has not yet been considered by the guardians.

In many poor law infirmaries arrangements have been made for affording special treatment to consumptive patients, and if only they will avail themselves of such assistance sufficiently early, excellent results may be obtained.

The general hospitals do not care to take phthisical cases, with the result "that they must either drift into poor law infirmaries, in most of which they are no better provided for and are no more acceptable than

in the general hospitals, or they must continue to mix with their neighbours and the members of their families, and so contribute to the continuance and extension of the disease from which they are suffering."

Through the instrumentality of the St. Henry Convalescent Fund, (of which the Medical Officer of Health of the City is *ex-officio* a Trustee) consumptive persons living or employed in St. Anne's Ward may now be sent to sanatoria at the expense of the Fund, and special arrangements are also made by the Board of Guardians for the Relief of the Jewish Poor to deal with cases.

Bacteriological Diagnosis.—In only 7 instances have medical practitioners availed themselves of the facilities granted to have the sputum of persons suspected to be suffering from phthisis examined bacteriologically at the Jenner Institute; all were fortunately negative. There is, however, this to be said, that in London there are many opportunities for obtaining a report of this kind from hospitals and private laboratories, and it is therefore likely that opinions have been obtained from such sources in suspected tuberculosis cases, as to my knowledge is done with respect to suspected diphtheria and enteric fever.

Disinfection of rooms has been carried out in 10 instances, but in many more cases thorough cleansing or renovation of the rooms occupied has been secured, and where this can be done the results are equally satisfactory.

Malignant Growths.—197 deaths were ascribed to such causes, which affected 81 males and 116 females. In 4 cases among the males and 9 cases among the females the tumour was sarcomatous, in 12 males and 2 females it was an epitheliomatous, and in 7 females it was schirrous in character. Among males the digestive system was the principal seat of such growths, and 63 deaths occurred from malignant affections of parts thereof; in 10 instances the part affected was the tongue, in 4 the mouth and throat, in 21 the stomach and gullet, in 15 some part of the bowels, in 10 the liver, and the remainder other abdominal organs. Certain classes of occupations show a higher rate than others, thus gold and silver workers had a death-rate of 4 per thousand, cabmen and coachmen 2·68 per thousand, messengers and porters 2·2 per thousand, general labourers 2 per thousand. The death-rate for all males over 10 years was 1·1 per thousand.

Among females in 43 instances some part of the digestive system was affected, the stomach and liver being the most frequent seat of the disease; in 32 other cases the ovaries and uterus were affected, and in 22 the breast.

B. INFECTIOUS DISEASES.

(1) *Notifiable Diseases.*

During the 53 weeks of 1902, 1,275 notifications of infectious disease were received. The details respecting them are set out in the Local Government Board's Return (Table XIV.), which also shows the number treated in hospital as well as the number of deaths.

The number of cases of each disease notified in London since 1890 are shown in Table XIII., together with cases notified during the same period in the different divisions which, with some modifications, now form the City, as compared with 1,059 in the previous year. These figures are exclusive of chicken-pox, of which there were 741 cases in 1902, but which was not compulsorily notifiable in 1901, and exclusive of duplicate notifications.

TABLE XII.—*Notifications Received in each Month of the Years 1901 and 1902.*

1901.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Small-pox ..	—	—	—	—	—	—	1	3	5	37	38	18	102
Scarlet fever ..	23	14	23	26	35	41	89	32	43	82	41	26	475
Diphtheria ..	13	10	16	22	19	19	34	19	27	36	21	17	253
Enteric fever ..	10	4	7	5	13	9	11	4	8	13	15	5	104
Continued fever ..	—	—	—	—	—	—	—	—	1	1	—	—	2
Erysipelas ..	14	3	9	8	4	6	13	9	13	15	16	7	117
Puerperal fever ..	2	1	—	—	—	—	1	2	—	—	—	—	6
Total ..	62	32	55	61	71	75	149	69	97	184	131	73	1,059

1902.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Small-pox ..	92	50	32	16	22	18	2	—	—	—	—	—	232
Scarlet fever ..	40	26	27	28	68	54	47	40	29	46	37	33	475
Diphtheria ..	27	19	17	17	25	20	39	25	9	27	32	28	285
Enteric fever ..	11	8	1	2	13	8	12	5	24	25	10	13	132
Continued fever ..	—	—	—	—	—	—	—	—	—	—	—	1	1
Erysipelas ..	17	6	9	11	12	14	13	10	11	12	12	17	144
Puerperal fever ..	1	—	—	—	3	—	—	—	1	—	—	1	6
Chicken-pox ..	18	77	98	76	91	107	109	48	10	19	38	50	741
Total ..	206	186	184	150	234	221	222	128	84	129	129	143	2,016

The notifications in respect of small-pox, enteric fever, and erysipelas, were in higher proportion than in 1901; a comparison is made in Table XIV. of the various years and of the ten-yearly average.

CITY OF WESTMINSTER.

(To face p. 34.)

TABLE XIV.—LOCAL GOVERNMENT BOARD TABLE C.—Cases of Infectious Diseases Notified during the 53 weeks from 29th December, 1901, to 3rd January, 1903.

NOTIFIABLE DISEASES.	CASES NOTIFIED IN THE CITY OF WESTMINSTER.							TOTAL CASES NOTIFIED IN EACH WARD.													NUMBER OF CASES REMOVED TO HOSPITAL FROM EACH WARD.																
	At all Ages.	At Ages—Years.						Conduit.	Grosvenor.	Knightsbridge St. George.	Victoria.	St. Margaret.	St. John.	Hamlet of Knightsbridge.	Pall Mall.	Regent.	Great Marlborough.	Charing Cross.	Covent Garden.	Strand.	St. Anne.	Conduit.	Grosvenor.	Knightsbridge St. George.	Victoria.	St. Margaret.	St. John.	Hamlet of Knightsbridge.	Pall Mall.	Regent.	Great Marlborough.	Charing Cross.	Covent Garden.	Strand.	St. Anne.	Total.	
		0 to 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards.																														
Smallpox— Cases Deaths	232 39	3 2	5 1	12 2	49 2	158 32	5 —	— —	5 —	7 1	26 6	7 12	87 13	5 1	— —	7 —	1 —	1 1	21 1	57 13	8 1	— —	5 —	6 —	26 —	7 —	86 —	5 —	— —	7 —	1 —	1 —	21 —	57 —	8 —	229	
Diphtheria— Cases Deaths	285 31	7 3	79 14	104 13	49 1	45 —	1 —	7 —	24 4	20 5	48 6	29 —	37 5	7 —	4 —	32 3	28 3	3 —	13 1	4 —	38 4	4 —	18 —	19 —	40 —	12 —	35 —	5 —	4 —	29 —	27 —	2 —	12 —	4 —	32 —	243	
Erysipelas— Cases Deaths	144 5	2 4	1 —	9 —	12 —	103 3	17 2	2 —	7 —	7 2	36 1	10 —	28 12	8 —	1 —	13 —	12 —	2 —	5 —	4 —	9 —	— —	2 —	1 —	10 —	4 —	11 —	— —	— —	1 —	1 —	1 —	1 —	2 —	— —	34	
Chicken-pox— Cases Deaths	741 1	63 —	334 1	302 —	24 —	18 —	— —	9 —	32 —	36 —	271 —	80 —	111 —	30 —	5 —	50 —	21 —	10 —	38 —	13 —	35 —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	—	
FEVERS.																																					
Scarlet— Cases Deaths	475 15	— 2	122 9	225 2	87 1	41 1	— —	6 —	16 1	34 1	116 4	30 1	95 3	8 —	3 —	34 1	36 2	11 —	13 —	9 2	64 —	4 —	12 —	32 —	100 —	25 —	87 —	5 —	3 —	32 —	32 —	11 —	13 —	8 —	61 —	425	
Enteric— Cases Deaths	132 22	— —	6 1	36 1	40 11	50 9	— —	6 —	6 —	4 5	33 3	9 6	29 4	3 1	2 —	1 —	1 —	2 —	7 1	22 1	7 —	3 —	4 —	3 —	21 —	6 —	25 —	2 —	2 —	— —	1 —	2 —	5 —	21 —	5 —	103	
Continued— Cases Deaths	1 1	— —	1 —	— —	— —	— —	— —	— —	— —	— —	— —	— —	1 1	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	— —	—
Puerperal— Cases Deaths	6 4	— —	— —	— —	2 2	4 2	— —	— —	— —	1 1	— —	— 1	2 —	— —	— —	1 1	— —	— —	— —	— —	1 1	1 —	— —	— —	— —	— —	— —	— —	1 —	— —	— —	— —	— —	— —	— —	— —	1
Total Cases ..	2,016	75	548	688	263	419	23	30	90	169	530	156	390	61	15	138	99	29	97	110	162	11	41	61	200	54	244	17	9	70	62	16	52	92	106	1,035	

17 cases notified as smallpox, 21 as scarlet fever, 28 as diphtheria, and 3 as enteric fever were eventually stated not to be suffering from the disease notified. In addition to the above, 1 case of smallpox, 1 of puerperal fever, 1 of diphtheria, and 4 of enteric fever were not notified.



TABLE XIII.—*Infectious Diseases Notified, 1890–1902, in London.*

Year.	Small-pox.	Scarlet Fever.	Diphtheria and Croup.	Enteric Fever.	Typhus Fever.	Other Continued Fevers.	Puerperal Fever.	Erysipelas.	Cholera.	Relapsing Fever.	Totals.
1890	60	15,330	5,870	2,877	35	237	206	4,598	25	7	30,245
1891	114	11,398	6,412	3,372	27	152	221	4,764	23	39	26,552
1892	423	27,095	8,356	2,465	20	147	347	6,934	54	7	45,848
1893	2,813	36,901	13,694	3,666	22	205	397	9,700	86	4	67,485
1894	1,192	18,440	11,190	3,360	21	162	253	6,080	21	2	40,925
1895	979	19,757	11,223	3,506	14	105	236	5,660	29	3	41,512
1896	225	25,647	13,941	3,190	6	103	279	6,438	13	3	49,845
1897	104	22,848	13,199	3,103	4	65	264	5,800	38	1	45,361
1898	32	16,894	11,855	3,024	16	55	247	5,169	23	1	37,316
1899	29	18,113	13,704	4,463	14	69	330	5,615	15	1	42,353
1900	87	13,800	11,985	4,291	7	73	237	4,762	5	—	35,247
1901	1,700	18,381	12,157	3,194	20	48	253	4,604	3	—	40,360
1902	7,796	18,252	10,731	3,407	4	47	311	5,536	1	2	46,087*

In the City of Westminster.

1890	1	402	150	79	—	9	—	128	1	—	770
1891	2	379	174	100	—	7	9	144	1	—	817
1892	14	864	349	99	—	8	7	191	2	—	1,534
1893	165	1,368	353	148	—	5	11	230	4	—	2,284
1894	21	535	269	106	—	9	2	134	—	—	1,134
1895	195	715	383	114	—	4	4	138	—	—	1,297
1896	7	846	323	121	—	5	7	178	—	—	1,487
1897	13	658	336	104	—	5	6	175	1	—	1,298
1898	2	409	338	112	—	2	5	131	—	—	999
1899	—	534	283	143	—	1	3	176	—	—	1,140
1900	2	453	287	118	—	4	5	129	—	—	998
1901	102	475	253	104	—	2	6	117	—	—	1,059
1902	232	475	285	132	—	1	6	144	—	—	1,275

* In addition there were 25,698 notifications of chicken-pox.

Case-rates per 10,000 Living in London.

Year.	Smallpox.	Scarlet Fever.	Diphtheria.	Enteric.	Typhus.	Other Continued Fevers.	Puerperal.	Erysipelas.
1891 ...	0.3	27.1	15.2	8.0	0.1	0.5	0.5	11.3
1892 ...	1.0	63.8	19.6	5.8	—	0.3	0.8	16.3
1893 ...	6.5	86.1	32.0	8.5	0.1	0.5	0.9	22.6
1894 ...	2.7	42.5	25.9	7.7	0.0	0.4	0.6	14.0
1895 ...	2.2	45.2	25.7	8.0	0.0	0.2	0.5	12.9
1896 ...	0.5	57.0	30.7	7.1	0.0	0.2	0.6	14.3
1897 ...	0.2	51.2	29.6	7.0	0.0	0.1	0.6	13.0
1898 ...	0.1	37.6	26.3	6.7	0.0	0.1	0.5	11.5
1899 ...	0.1	39.9	30.1	9.8	0.0	0.2	0.7	12.3
1900 ...	0.2	30.1	26.1	9.3	0.0	0.2	0.6	10.3
1901 ...	3.7	40.4	26.7	7.0	0.04	0.1	0.5	10.1
Average of 10 years 1892–1901...	1.7	49.4	27.2	7.7	0.02	0.2	0.6	13.5
1902 ...	16.7	39.1	23.0	7.3	0.00	0.1	0.6	11.8

In the City of Westminster.

1891 ...	0.1	19.1	8.8	5.0	0.1	0.4	0.5	7.3
1892 ...	0.7	43.9	17.8	5.0	—	0.4	0.4	9.6
1893 ...	8.4	69.7	18.1	7.5	—	0.3	0.6	11.7
1894 ...	1.1	27.4	13.7	8.5	—	0.5	0.1	6.9
1895 ...	1.0	36.9	15.6	5.9	—	0.2	0.2	7.1
1896 ...	0.4	43.1	16.4	6.2	—	0.3	0.4	9.1
1897 ...	0.7	34.3	17.5	5.4	—	0.3	0.3	9.1
1898 ...	0.1	21.5	17.7	5.9	—	0.1	0.3	6.9
1899 ...	—	28.1	14.9	7.5	—	0.1	0.2	9.3
1900 ...	0.1	24.0	15.2	6.2	—	0.1	0.3	6.8
1901 ...	5.5	35.7	13.6	5.6	—	0.1	0.32	6.3
Average of 10 years 1892–1901...	1.8	35.5	16.0	6.3	—	0.25	0.31	8.3
1902 ...	12.6	25.8	15.4	7.1	—	0.05	0.32	7.8

Table XII. shows the number of notifications from the several diseases in each month of the years 1901 and 1902, and the accompanying chart on p. 37 indicates the number of notifications of scarlet fever, diphtheria, enteric fever, erysipelas, and small-pox in each week.

A number of medical men were cautioned for delaying to notify cases, and one was summoned for so doing, and was fined £1 and £3 5s. costs.

Seventeen cases notified as small-pox, twenty-one as scarlet fever, twenty-eight as diphtheria, and three as enteric fever, were eventually stated not to be suffering from the disease notified, but there is an element of doubt in connection with a number of scarlet fever and diphtheria cases, from the mild type which these diseases may assume. In addition, there were one case of small-pox, one of diphtheria, one of puerperal fever, and four of enteric fever, which were not notified; the majority of these occurred in Government buildings, and notification in such case is not required by law.

SMALL-POX.

The history of the 1901-02 outbreak of small-pox, so far as Westminster is concerned, has been given in my Annual Report for 1901 and in my Monthly Reports. In the latter I have shown the number of cases notified in each week in each metropolitan borough, and I have now summarized these in tables XVI. and XVII. The rise and fall of the epidemic in London is also shown graphically in the accompanying chart (p. 40).

In each of the first two quarters of 1901 there were seven cases notified in London, then, in the third quarter, it broke out severely in St. Pancras, and to a less extent in St. Marylebone, Holborn, Hackney, Finsbury, and Islington. In Westminster, a few cases traceable to infection from one or other of these boroughs were notified in this quarter, but it was not until November that a serious rise in the number of cases occurred, and this was due to a Holborn woman, who, while suffering from the disease, went about the neighbourhood of Drury Lane for four days; as a direct result, a very large number of persons were infected in the two districts; she visited nearly every public-house in the district, and from each one into which she had been one or more of the inmates or customers took small-pox. Although 92 cases were notified, we were fortunately able to prevent the disease spreading to the rest of the City, and, eventually, to get rid of it altogether.

At the end of December a fresh invasion occurred in the north-east part of the City, chiefly in common lodging-houses, and 29 cases were notified; this was again overcome when, in the second week of January a new focus of the disease was started in a large common lodging-house in St. John's Ward. Unfortunately, the first case was sent into

CITY OF WESTMINSTER.

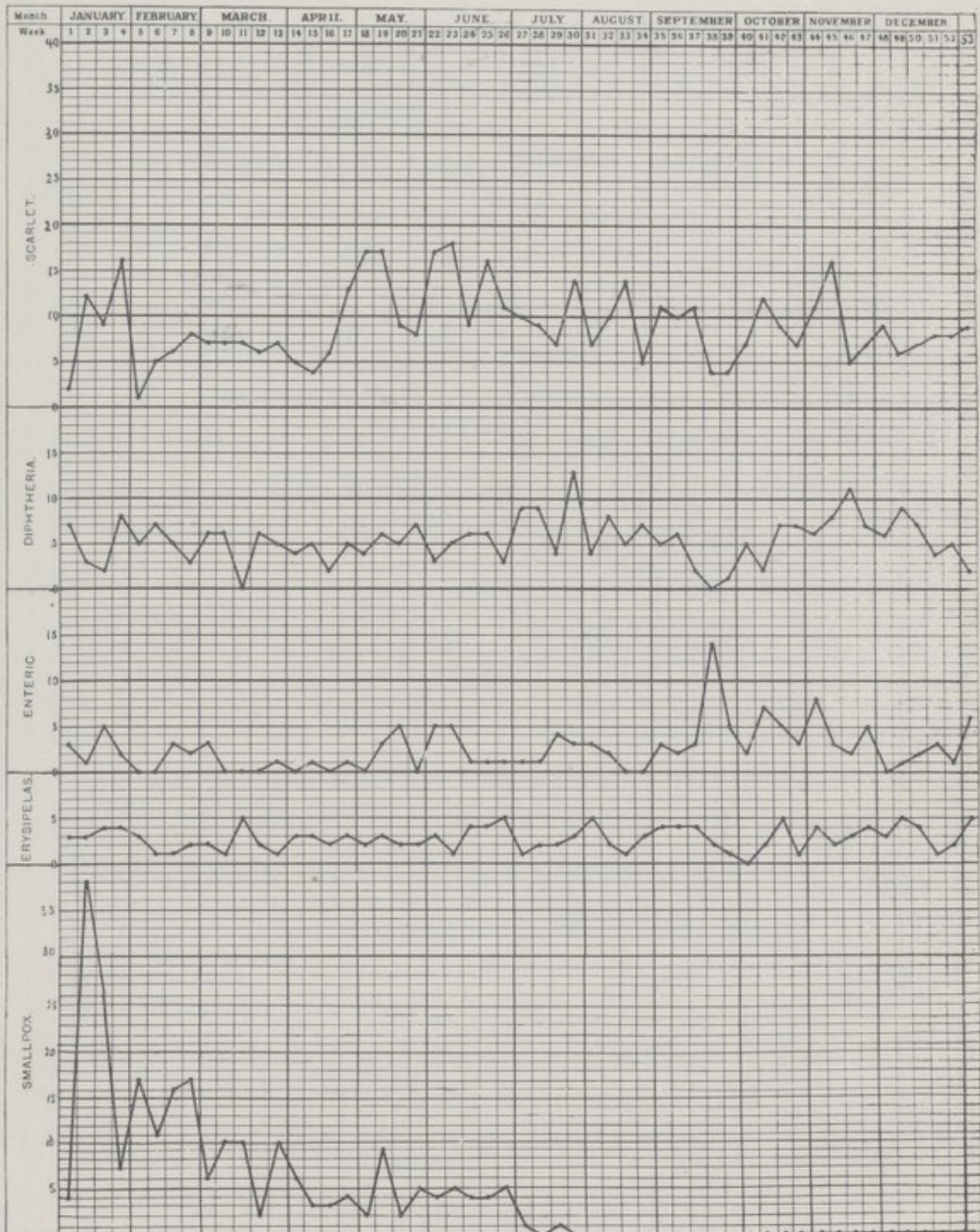
Notifications of Infectious Diseases during the year 1902.

TABLE XVI.—*Cases notified as Small-pox in the Metropolitan Cities and Boroughs during 1901 and 1902, and Sickness-rates for each Year.*

	1901.						1902.						1901 and 1902.	
	Quarters.				Year.	Rate.*	Quarters.				Year.	Rate.*	Total Notifications.	Rate* (mean).
	1	2	3	4			1	2	3	4				
West—														
Paddington ...	—	—	4	17	21	0·14	62	45	6	—	113	0·77	134	0·45
Kensington ...	1	—	4	15	14	0·08	43	47	9	—	99	0·55	114	0·32
Hammersmith ...	—	—	4	41	45	0·39	61	27	8	4	100	0·87	145	0·63
Fulham ...	1	—	—	15	16	0·11	54	31	6	3	94	0·66	110	0·38
Chelsea ...	—	—	2	3	5	0·06	20	18	1	—	39	0·52	44	0·29
City of Westminster ...	—	—	9	91	100	0·54	175	56	2	—	232	1·26	332	0·91
North—														
St. Marylebone... ..	—	2	41	36	79	0·59	111	39	3	1	154	1·16	233	0·87
Hampstead ...	1	—	3	3	7	0·08	10	10	—	—	20	0·23	27	0·15
St. Pancras ...	1	1	101	153	256	1·08	227	118	15	—	360	1·52	616	1·30
Islington ...	—	1	13	48	62	0·18	137	141	16	8	302	0·88	364	0·53
Stoke Newington ...	—	—	7	12	19	0·36	38	11	2	—	51	0·98	70	0·67
Hackney ...	—	1	18	22	41	0·18	196	221	3	5	425	1·91	466	1·04
Central—														
Holborn ...	—	—	18	198	216	3·64	186	29	3	1	219	3·74	435	3·69
Finsbury ...	—	—	14	79	93	0·91	131	31	46	3	211	2·09	304	1·50
City of London...	—	—	2	6	8	0·30	19	11	9	—	39	1·52	47	0·91
East—														
Shoreditch ...	—	—	2	16	18	0·15	313	118	7	4	442	3·74	460	1·94
Bethnal Green ...	—	1	3	28	32	0·24	276	199	39	1	515	3·96	547	2·10
Stepney ...	1	1	4	155	161	0·53	929	417	38	4	1,388	4·61	1,549	2·57
Poplar ...	1	—	2	68	71	0·42	332	282	15	—	629	3·71	700	2·06
South—														
Southwark ...	—	—	7	82	89	0·43	251	260	7	—	518	2·50	607	1·46
Bermondsey ...	—	—	—	107	107	0·81	101	107	15	1	224	1·72	331	1·26
Lambeth ...	—	—	3	47	50	0·16	189	151	23	—	363	1·18	414	0·67
Battersea ...	—	—	—	53	53	0·31	99	66	23	1	189	1·10	242	0·71
Wandsworth ...	1	—	8	23	32	0·13	70	54	7	—	131	0·54	163	0·33
Camberwell ...	—	—	—	54	54	0·20	147	190	17	2	356	1·35	410	0·77
Deptford ...	—	—	—	4	4	0·03	71	62	10	2	145	1·29	149	0·66
Greenwich ...	—	—	—	11	11	0·11	58	34	9	—	101	1·03	112	0·57
Lewisham ...	—	—	2	10	12	0·09	50	33	5	—	88	0·66	100	0·37
Woolwich ...	—	—	1	22	23	0·19	111	116	7	2	236	1·97	259	1·08
Port of London ...	—	—	—	—	1	—	9	4	1	—	14	—	15	—
LONDON ...	7	7	272	1,414	1,700	0·37	4,466	2,924	351	42	7,796	1·67	9,497	1·02

* Annual rates per 1,000 of estimated population.

TABLE XVII.—*Deaths from Small-pox in the Metropolitan Cities and Boroughs during 1901 and 1902, Death-rates for each year, and Mortality per 100 cases.*

	1901.	Death-rate per 1,000 Population.	1902.	Death-rate per 1,000 Population.	Total Deaths.	Rate (mean).	Deaths per 100 Cases.
WEST—							
Paddington	—	—	20	0·13	20	0·06	14·9
Kensington	1	0·01	11	0·06	12	0·03	10·5
Hammersmith	15	0·13	13	0·11	28	0·12	19·9
Fulham	3	0·02	13	0·09	16	0·05	15·5
Chelsea	1	0·01	7	0·09	8	0·05	18·2
City of Westminster ..	16	0·09	39	0·21	55	0·15	16·4
NORTH—							
St. Marylebone	7	0·05	24	0·18	31	0·11	13·3
Hampstead	2	0·02	3	0·03	5	0·02	19·2
St. Pancras	41	0·17	81	0·34	122	0·25	19·8
Islington	8	0·02	54	0·16	62	0·09	17·7
Stoke Newington	3	0·06	8	0·15	11	0·10	14·7
Hackney	5	0·02	70	0·31	75	0·16	16·3
CENTRAL—							
Holborn	30	0·51	46	0·78	76	0·64	17·5
Finsbury	7	0·07	36	0·35	43	0·21	14·3
City of London	2	0·08	7	0·27	9	0·17	19·2
EAST—							
Shoreditch	5	0·04	76	0·64	81	0·34	17·8
Bethnal Green	2	0·02	64	0·49	66	0·25	12·1
Stepney	22	0·07	260	0·86	282	0·46	18·3
Poplar	10	0·06	93	0·54	103	0·30	14·7
SOUTH—							
Southwark	14	0·07	78	0·37	92	0·22	15·2
Bermondsey	14	0·11	31	0·23	45	0·17	13·6
Lambeth	4	0·01	60	0·19	64	0·10	15·5
Battersea	2	0·01	27	0·15	29	0·08	12·0
Wandsworth	3	0·01	25	0·10	28	0·05	17·4
Camberwell	7	0·03	63	0·23	70	0·13	16·9
Deptford	1	0·01	33	0·29	34	0·15	23·1
Greenwich	3	0·03	22	0·22	25	0·12	22·3
Lewisham	—	—	12	0·09	12	0·04	12·0
Woolwich	1	0·01	38	0·31	39	0·16	15·2
LONDON	229	0·05	1,314	0·28	1,543	0·16	16·3

St. George's Infirmary, where, on further development, it was found to be malignant small-pox, and a number of the inmates of the ward in which he had been placed became infected. One of these, who discharged himself from the Infirmary before the diagnosis of this first case had been made, was a means of introducing the complaint into Mayfair, Chelsea, and to Tonbridge in Kent, through persons visiting him.

Infection was introduced on several other occasions from various points, but only a few persons were infected therefrom, and no further actual cases occurred in the City after the end of June, 1902 (two were notified in July, but they were found not to be suffering from that disease). There were thus 334 notifications of citizens, but 35 of these proved not to be small-pox; two cases were discovered and not notified, one not being diagnosed until after death, the other not until after recovery. There were thus 301 actual cases,* and these were chiefly connected with the Strand, Covent Garden, and St. John Wards.

Westminster being so centrally situated and the resort of so many persons, for work and pleasure, it necessarily followed that it was specially prone to attack, and while on the one hand persons brought infection into it from outlying districts, on the other hand there was also the great opportunity for such persons to communicate infection to those with whom they associated, and who, in the majority of instances, did not reside in the City. From this cause the work of the Health Department was considerably increased, and constant communication (telephonic and otherwise) had to be maintained with the medical officers of metropolitan and suburban boroughs. During the course of the outbreak it became necessary to correspond about cases or persons who had been in contact therewith, with officials in Liverpool, Brighton, Southend, Gravesend, Southampton, Merthyr Tydvil, Glasgow, Perthshire, Yorkshire, Essex, Surrey, Suffolk, &c.

The list of "contacts" was a very large one, and included names of persons employed in the City, and living either in the City or in other boroughs, and of persons living in the City but employed elsewhere. In almost every instance employers of labour readily submitted lists of persons in their employ, and gave every assistance in preventing the spread of the disease.

As it takes twelve to fourteen days after a person has received the infection of small-pox before any signs of the disease appear, observation

* The Metropolitan Asylums Board Authorities at the Small-pox shelter were of opinion that in three of these instances the patients were not suffering from small-pox, and sent them home; but, having kept them isolated and under observation, I am satisfied that they had been so suffering. The attack, however, in two of the cases aborted and was checked by re-vaccination, which had been performed within a couple of days after receiving infection. The third case was insusceptible to vaccination after the attack, and had not been vaccinated previously.

had to be kept on persons who had been exposed thereto for about sixteen days, unless such persons had been protected by successful recent vaccination before exposure to infection, in which case no observation was necessary. By means of the system which was inaugurated by the Metropolitan Medical Officers of Health, lists of such "contacts" were daily exchanged, generally by telephone as well as in writing, and thus many cases were detected which might otherwise have escaped notice, and would have acted as fresh centres for the diffusion of the complaint. I find that the names of no less than 5,785 persons have been recorded as "contacts," and, in addition, there have been a vast number of persons with whom infected persons must have come in contact in shops, streets, and places of assembly; 55 of the above were notified from port sanitary authorities, and 57 were persons who had been visitors to the Small-pox Hospital. In all but two instances these were re-vaccinated at the time of their visit, and none of them contracted the disease.

The Public Health Committee were of opinion that it should be a condition that persons allowed to visit patients in the Small-pox Hospital should have been recently re-vaccinated. This view was considered by the Metropolitan Asylums Board on January 25th, but they did not feel themselves strong enough to adopt it. They explained that every visitor to a patient was strongly pressed to be vaccinated, and that they would in future take the precaution of forwarding the names and addresses of all visitors, whether they accepted vaccination or not, to the Medical Officer of Health of the district in which they resided.

A certain proportion of persons who had been in "contact" with cases of small-pox were found to be unvaccinated; as promptly as possible they were vaccinated if they would permit it to be done, and a considerable number of persons must have been protected thereby, as in no case did an unvaccinated person who had been exposed to infection escape, and 64·7 per cent. of them died. Among those who were vaccinated some days after receipt of infection little good was expected to ensue, but the death-rate among such was 40 per cent., and the disease ran a milder course.

As the question had arisen as to the action which local authorities should take in order to deal effectively with the inmates of dwellings invaded by small-pox, the Local Government Board thought it desirable to state (22nd February, 1902), that "they are advised that, under ordinary circumstances, the quarantining at their homes of inmates of such dwellings is not necessary in districts in which sanitary matters are properly administered, and vaccination and re-vaccination are efficiently carried out. If, on a dwelling becoming invaded by small-pox, the actual patients are at once removed to hospital, the dwelling and all articles in it that have been exposed to infection, including the

clothes worn by the other inmates, are properly disinfected, and the other inmates of the house are immediately vaccinated or re-vaccinated (as the case may be), there is no material advantage to be gained by keeping these other inmates at home. They are not likely to infect other people unless they themselves develop small-pox; and all that is required is to keep such persons under medical observation for a fortnight, and particularly to examine them carefully day by day towards the end of the second week from their exposure to infection, in order to ascertain whether any of them are developing small-pox. If none of them do so by the beginning of the third week from exposure, the re-vaccination (or vaccination) to which they were submitted on the occurrence of the first case in the invaded house should secure them from attack by the disease.

"The Board consider that in ordinary circumstances the course of action indicated above is the correct one. Occasions, however, may arise in which additional precautions may be necessary, as, for example, when laundries are in question, or where the business or habits of the inmates of the invaded house are such as to make it difficult for proper medical observation of them to be maintained. In exceptional cases of this kind in which the City Council are advised by their Medical Officer of Health, that in the special circumstances it is essential that the inmates should remain in their own houses, the Board would be prepared to sanction a reasonable expenditure in securing such a result."

Conference of Metropolitan Sanitary Authorities.—A conference took place at the offices of the Metropolitan Asylums Board on February 7th, 1902. It was well attended, and the following resolutions were agreed to:—

1. "That, in the opinion of the Conference, the powers and duties at present vested in Guardians of the Poor with regard to vaccination and re-vaccination should be transferred to and enforced by Borough Councils."

(An amendment suggesting that the administration of the Vaccination Acts should be vested in a Central Authority, so as to secure uniform and consistent action, was lost by 26 to 16.)

2. "That, in the opinion of the Conference, an amendment of the law is necessary, to ensure compulsory vaccination and re-vaccination of all persons in a dwelling house wherein Small-pox has broken out."
3. "That, in the opinion of the Conference, it should be declared an offence, under the Public Health (London) Act, 1891, to refuse or withhold information, or give false information, with respect to persons living in a house in which Smallpox has broken out,

with regard to (a) their names, (b) employment or occupation, (c) schools attended by their children, or (d) as to any persons not living in such house, but employed therein."

4. "That, in the opinion of the Conference, all disinfections should be carried out by the Sanitary Authority."
5. "That, in the opinion of the Conference, the provisions of the Public Health (London) Act, 1891, with regard to the prevention of infectious diseases, require amendment by (a) shortening the period of twenty-four hours, allowed by Section 60, for the master of a house to decide whether he will undertake the disinfection or allow the Sanitary Authority to do so—[*For, 23; Against, 12*]; and (b) extending the provisions of Section 64 to the taking of any house, or part of a house, by a person suffering from an infectious disease, or who has been exposed to infection."
6. "That, in the opinion of the Conference, it is advisable that application be made to the Metropolitan Asylums Board to send out, to every Medical Officer of Health in London, *daily* lists of Smallpox cases only, with age and addresses of patients, as is done *weekly* in the case of all infectious diseases."
7. "That the Conference approve the communication addressed by the Town Clerk of the Royal Borough of Kensington to the Local Government Board, requesting them to undertake the supply of lymph to any registered medical practitioner who may apply for the same, instead of to Public Vaccinators only."
8. "That, in the opinion of this Conference, an amendment of the law is necessary to the effect that any person inhabiting any part of a house which has been infected by Smallpox, and who, knowingly, associates with other persons without having his person and clothes cleansed and disinfected to the satisfaction of the Sanitary Authority, shall be liable to a fine not exceeding £20."
9. "That, in the opinion of this Conference, Borough Councils should be allowed to make provision for contacts for whom they may have no accommodation available in their shelters."

The Council was represented at the Conference by the Chairman (Mr. Councillor R. Woolley Walden), the Vice-Chairman (Mr. Councillor C. L. Cribb) of the Public Health Committee, and the Medical Officer of Health.

Doubtful Cases.—In view of the difficulty many medical men had in recognising cases of small-pox, I issued a letter asking them to inform

me of any suspicious case, so that I might see the patient with them. As a result of this I was enabled to see many cases suspected to be small-pox. Subsequently (27th February) the Council temporarily appointed Dr. P. J. Wilkinson to act as "consultant in doubtful cases of small-pox where the Medical Officer of Health is unable to attend personally," and the County Council also appointed him one of their consultants for a like purpose. Dr. Wilkinson had previously been appointed one of the Deputy Public Vaccinators for the Strand Union, and the combination of offices proved of great value, and enabled the offer of vaccination to be made to persons in contact with a case within a few moments of its discovery. Of the 302 actual cases notified, 220 were seen by Dr. Wilkinson and myself, and in addition, 43 persons were seen who were not suffering from small-pox; these were:—18 cases of chicken-pox, 14 some form of skin disease, 4 influenza, 3 measles, 2 pneumonia, 1 German measles, and 1 vaccinia. These cases were consequently retained at home.

Notification of Chicken-pox.—On the 27th December, 1901, the Local Government Board suggested that as many cases of small-pox have been regarded merely as cases of chicken-pox, this latter should be made notifiable. This the Council agreed to do, and their action received the approval of the Board and came into force on the 24th January. Subsequently the County Council resolved to make such notification general for all London, and extended the period to the 6th January, 1903. During that period 25,698 cases have been notified in London, at an approximate cost of £3,000; of these, 746 cases (499 private, 271 public certificates) were notified in Westminster, at a cost of £75 18s. 6d. In my tenth Monthly Report I wrote that, "From the intimate relations which have been established between the medical practitioners and your Medical Officer, by which his services were at their disposal, so far as practicable, doubtful cases were at once brought to his notice, hence notification of chicken-pox has been of little use in Westminster. However, it appears from the report of the London County Council that in one or two boroughs it proved of great value."

Removal of Cases to Hospital.—The Metropolitan Asylums Board deserve great credit for the prompt manner in which cases were removed at all hours of the day and night. In Westminster only five cases* were isolated at home, the remainder, except three—who died before recognition of the nature of the disease, or removal could be effected—were treated in hospital.

* Three of these were sent to hospital but returned as not small-pox, and were subsequently isolated at home. (See above.)

Temporary Shelter.—The Local Government Board wrote (22nd February, 1902) that "It is competent for the City Council to supply necessary food to any inmate of a temporary shelter provided by them under Section 60 (4) of the Public Health (London) Act, 1891 (54 & 55 Vict. c. 76), while such person is residing in the shelter for the purpose of enabling his dwelling to be disinfected by the Council."

Four families, consisting of 9 adults and 11 children, were lodged in the temporary shelters of the City. Their stay extended over 8 days for 3 families, 12 days for the remaining one. Total number of days during which the 20 persons were lodged was 172; £5 6s. 3d. was expended in supplying food.

Disinfection.—In connection with the outbreak a large amount of work was thrown upon the disinfecting staff, and besides rooms occupied by patients, many offices, public and private, and business premises in which persons affected had been employed were disinfected. In the majority of instances rooms were sprayed with formalin, and the saving of time which this method effected made the process a more economical one than the old way of shutting up a room for twenty-four hours under gas, as it enabled people to return to their houses to sleep and did not necessitate employing so many extra disinfectors. All articles of clothing, carpets, bedding, &c., were disinfected at one of the four stations. The disinfectors worked well and were frequently engaged until 2 and 3 o'clock in the morning disinfecting offices, lodging-house kitchens, and other places which had to be occupied again during the day. The extra cost for disinfecting occasioned by the epidemic was £94 9s. for extra men and for overtime, and £1 7s. for articles destroyed.

Vaccination.—As small-pox appeared first in the Strand Union, greater activity was necessary at first in that part of the City, but the Westminster Guardians also, from the closeness of that Union to St. Marylebone and St. Pancras on the north, and Holborn on the east, early took steps in the matter of vaccination. The St. George's Guardians were somewhat dilatory in supporting the efforts of the Vaccination Officer, but eventually fell into line with their colleagues in the other two Unions of the City. The Council issued notices to employers of labour, hotels, clubs, &c., throughout the City, advising them to get their staffs protected by re-vaccination, but the St. George's Guardians found that by the strict meaning of the law they could not pay for the vaccination of persons not resident in the area of their Union, and therefore they refused to do so; this proved a considerable hardship to persons employed in the City all day, who desired to be vaccinated, and, as the cost of vaccination is spread over all London, steps were taken to bring the matter under the notice of the Local

Government Board, with the result that they wrote to the St. George's Board of Guardians stating that if the Guardians decided to make a payment to the Public Vaccinators of the Union in respect of each person not residing in the Union who has been re-vaccinated at a factory or workshop, and, after payment, apply to the Board for sanction under the Local Authorities (Expenses) Act, 1887, the Board will, in the circumstances, be prepared to favourably consider the application. A vaccination station was opened in Victoria Street once a week.

In the Strand Union the Public Vaccinator was ill and unable to do anything, but three Deputy Vaccinators were appointed. The St. Clement Danes hall was opened as a vaccination station every evening for 122 days, viz., from October 29th to December 23rd, 1901, and from January 24th to April 11th, 1902.

From the last report of the Local Government Board I find that the percentage of children (after deducting deaths) who were not vaccinated either from postponement, removal, or otherwise was as follows:—

Union.	Average Percentage.			
	Percentage.			
	1893-97.	1897.	1898.	1901.*
St. George	5·3	5·8	8·3	6·5
Westminster	19·9	11·5	15·6	15·4
Strand	15·4	18·6	23·8	21·5
The Metropolis	23·9	29·1	33·0	—

* From information supplied by Vaccination Officers.

From 1872 to 1887 in all London the percentage of children born unaccounted for by the Vaccination Officers averaged 7·4 per cent., but from 1888 to 1892 this percentage rose to 14·1, and from 1893 to 1897 to 23·9, and in 1898 (the last year with which the Report deals) it had risen to 33 per cent. The rise appears to have begun in 1886 and to have gone steadily on each year. This has been particularly the case in certain Metropolitan Unions, thus the ten-yearly average percentage from 1893 to 1897 for Bethnal Green was 68·2, for Hackney 61·5, for Mile End Old Town 57·1, for Shoreditch 43·9, and others in less proportion, but some of these were much higher in the later years of the decade and 1898 showed still further increases in these and other Unions, formerly ranking as well vaccinated, such as Holborn, St. Pancras, Poplar. Union and metropolitan borough areas do not coincide, but reference to Table XVI. shows that the boroughs containing the unions with the largest percentage of unvaccinated had also the largest percentage of cases of small-pox. If the burden of paying the cost of

the epidemic were laid on each borough in the same proportion the inhabitants would probably appreciate the value of vaccination better than they have done, but the bulk of the charges are spread over the whole of London, and as Westminster has the largest rateable value and is one of the few whose equalisation charge is in excess of the grant, it will have to find about one-seventh of the total general expenses besides its own. The Metropolitan Asylums Board reckon that their extra expenses will amount to £800,000 (£596,000 of which has been charged to the loan account, and will thus be spread over a number of years), the County Council have spent on fees for diagnosis, gratuities to inspectors of lodging houses, &c., about £700. Poor Law charges for vaccination and re-vaccination will amount to a considerable item, but as those for primary vaccinations have not been paid in full since 1886 (through the neglect of several Boards of Guardians to enforce vaccination), these, at least, should not be reckoned as special expenses of the epidemic.

The following (Table XVIII.) is a summary of the total primary vaccinations performed in the City during 1901 and 1902, and of re-vaccinations, in so far as these were made by the Public Vaccinators from particulars kindly furnished me by the Vaccination Officers.

TABLE XVIII.

Union.	Primary Vaccinations under 14 years of Age.			Re-vaccination.		
	1901.	1902.	Total.	1901.	1902.	Total.
St. George ..	2,467	2,893	5,360	4,039	7,453	11,492
Westminster ..	1,491	715	2,206	3,317	6,226	9,543
Strand ..	725	450	1,175	2,201	3,910	6,111
The City ..	4,683	4,058	8,741	9,557	17,589	27,146

In addition, there were many persons re-vaccinated by private medical practitioners. In a number of instances these persons were not residents in the City, but were employed therein, but as payment is made from a common fund it is immaterial in which part of London a person is vaccinated.

As there were 3,237 children born in 1901 in the City, only 206 children were unaccounted for at the end of 1901 (and a like number in the previous year), the above figures indicate that there was a considerable surplus of unvaccinated children in the City. Some of these were those left over from previous years, but 861 were children who had

come into the City from other parts,* in many instances (81) from abroad. These latter were chiefly in St. George's and Westminster Unions, as the following particulars show:—

Mr. Elkerton, the Vaccination Officer of St. George's Union, noted that 603 of the children vaccinated in 1902 were born in other districts of England and Wales, while 38 were born abroad. In Westminster Union Mr. Penfold found there were 79 and 41 children similarly circumstanced, and in the Strand Union Mr. Hickman gives the numbers as 98 and 2 respectively. The majority of these cases were discovered during the inspection of children in schools. The complete return showing how many of the children were vaccinated in 1901 is now available. It is as follows:—

TABLE XIX.

1901, Union	Births.	Died Unvaccinated.	Successfully Vaccinated.	Insusceptible.	Vaccination Postponed.	Conscientious Objectors.	Removed and Vaccination Officer informed.	Not Found. Removed to Address Unknown.
St. George.. ..	2,243	199	1,900	11	12	10	16	95
Westminster	672	50	526	1	3	5	16	71
Strand	322	29	230	1	15	3	4	40
The City	3,237	278	2,656	13	30	18	36	206

The large number of removals is largely due to the demolition of houses in connection with the various improvements being carried out. It is evident from the figures already quoted that while old residents are leaving the city new ones are coming in from other parts to occupy the dwellings lately erected on the Millbank site and elsewhere.

Examination of Children at Schools.—The School Board for London, on September 23rd, 1901, in reply to a letter from the Local Government Board and to letters from other public bodies, passed the following resolution:—

“That facilities be given to the Public Vaccination Officers of the Metropolis, on the application of the Proper Local Authority (*i.e.*, Borough Council) to enter the schools in infected areas for the purpose of examining the arms of the children, with a view to advising the parents to allow their children to be vaccinated; providing that the School Board issues a circular to the parents of the children asking if they have any objection to this exami-

* See statistics on this point under “Housing,” p. 76.

nation, and, in case of such objection in any particular case, that such examination shall not take place, and that the Local Government Board and the Public Vaccination Officers be informed accordingly."

Advantage was taken of this grudgingly granted permission, and the seven Board schools in the City were visited by the Vaccination Officers. Facilities were readily afforded by the Managers of most of the Voluntary schools for like purpose, and the following represents the condition of things they found:—

In St. George's Union Mr. Elkerton discovered 780 unvaccinated children in the schools, the percentage of unvaccinated to children examined varying from 4 to 23 per cent.

Mr. Penfold, of the Westminster Union, found 738 unvaccinated children among 2,994 inspected in six schools. The parents of 168 children in Board schools objected to have their children's arms inspected, and presumably these were unvaccinated, as subsequently 76 of them were vaccinated.

Mr. Hickman had only 88 unvaccinated children in the schools of the Strand Union, but the arms of 116 children were not permitted to be inspected.

From observations made at the various schools, the officers were struck by the number of children stated to have been vaccinated in infancy, yet showing no marks of vaccination. The correctness of their statement has been verified in a number of instances by reference to the Registers of Vaccination, where certificates of successful vaccination had been sent in. Unfortunately, a record of the exact number of such cases was not preserved, but I find in one school that 16 per cent. of the vaccinated children were not well vaccinated. The importance of this may be seen in the tables below, where it is shown that if the 76 persons who had only one or two marks had been properly vaccinated, the lives of 10 out of the 15 who died would have been saved; and of the 27 who stated that they had been vaccinated but had no marks, the lives of 9 of the 11 who died would have been saved. The Public Vaccinator is required to make a certain number of insertions, but the same rule does not apply to the private practitioner, and he, to please the mother, may vaccinate in one place only, or if he is careless may certify to successful vaccination when such has not taken place, there having been perhaps only some slight swelling produced. Such conduct is highly culpable, and future legislation ought to require a certificate of vaccination in which the actual result should be stated in detail.

Resolution as to Re-vaccination of Council's Staff.—The City Council required the Staff to be re-vaccinated, and adopted as a Standing Order that "No pecuniary compensation of any kind shall be given to any

servant or officers of the Council who may contract smallpox in the execution of his duties who shall not have taken the precaution of protecting himself by re-vaccination." (Council Minutes, 20th March, 1902, p. 284 (23)).

Occupations.—Males were more exposed to infection than females, with the result that 203 males and 99 females were affected. The occupations of these were:—

MALES	203	FEMALES.. .. .	99
Publicans, barmen, potmen, billiard markers	10	Publicans' wives, manageresses, barmaids	12
Waiters	3	Servants at restaurants, &c... ..	6
Cooks and kitchen men	5	Domestic servants	5
Coachmen, cabdrivers, carmen	12	Dressmakers, tailoresses	8
Cab attendants, ostlers, stablemen ..	6	Draper	1
Street hawkers, sandwich men	53	Charwomen	4
Porters	11	Laundry women	2
Labourers	19	Nurses.. .. .	2
Attendants at common lodging-houses, casual wards	5	Governess	1
Shopmen	15	Dancer.. .. .	1
Mechanics	12	Bookfolder	1
Tailors.. .. .	6	Machine ruler	1
Printers and publishers	4	Shopwoman	1
Window cleaners	2	Street hawkers	7
Messengers, watchmen	6	No occupation, married	26
Indoor servants	2	Children and others	21
Undertaker	1		
Journalist	1		
Milkmen	2		
Clerk	1		
Inmates of infirmaries, occupations unknown	19		
Children	8		

It is evident from the above list that it was in the class of persons engaged in casual work that the danger existed, and from them spread to unprotected persons with whom they were brought in contact. This is further brought out by examining the list of houses in which cases occurred. Thus 74 cases occurred in nine common lodging houses, 46 in Poor Law institutions, and 2 were homeless.

Houses in which cases of Small-pox occurred.

				Cases.	Total Inmates.
<i>Common lodging houses :—</i>					
3 houses with 1 case each	..	..	..	3	112
3 houses with 2 cases each	..	..	..	6	217
1 house with 8 cases	..	..	..	8	224
1 house with 25 cases	..	..	..	25	180
1 house with 32 cases	..	..	..	32	434
				74	1,167
<i>Poor Law institutions :—</i>					
Cleveland Street	..	..	..	1	—
Wallis's Yard	..	..	..	6	—
Bear Yard	..	..	..	16	—
St. George's Infirmary	..	..	..	23	—
				46	—
Homeless	..	..	..	2	—
<i>In private and business houses :—</i>					
114 houses with 1 case each	..	..	..	114	1,124
12 houses with 2 cases each	..	..	..	24	160
6 houses with 3 cases each	..	..	..	18	95
2 houses with 4 cases each	..	..	..	8	49
3 houses with 5 cases each	..	..	..	15	82
				179	1,510
Total	..	..	..	301	2,677

Many of those in Poor Law institutions had been inmates of or owed the origin of their attack to inmates of common lodging houses. In the largest common lodging house a dormitory was set aside as an isolation ward, and anyone found to be ailing was at once isolated. By this means a number of cases were removed at the early stage from among their fellows before there was so much danger of communicating infection. Had these persons been re-vaccinated on the occurrence of the first case, there is no doubt that not only would there have been no more cases in these establishments, but many cases throughout Westminster and throughout London would also have been prevented. Re-vaccination was urged upon the inmates, but the proportion who accepted it was not large, except in the smaller houses, and in one large house where the owner guaranteed each man a shilling when the operation was performed and a week's free lodging if the man was unable to work because of it; the inmates, who were all regular users of this house, took advantage of the offer, and there were no further cases of small-pox among them.

It is interesting to note that small-pox did not spread among the women as it did among the men; there were only three cases in two women's lodging houses with 120 inmates, while in another on the opposite side of the street from the men's lodging house, which had the greatest number of cases, had no person affected.

The lodging houses were regularly visited by myself, the Chief Sanitary Inspector, Inspectors Sanderson and Martinson, and Dr. Wilkinson, both in the morning and late at night. Great assistance was also rendered by Mr. Albert Garner, the County Council's Inspector of Common Lodging Houses.

Type of the Disease and Mortality.—Although 301 persons in Westminster suffered from small-pox, there were some who had it so mildly that they were in no way inconvenienced, and continued going about their usual avocations; others had it in a little worse form (Discrete Type), but still a very modified type of the disease. There were 231 cases in these two groups, with 8 deaths; 6 of the persons who died were debilitated persons in the Infirmary suffering from other complaints, and 2 were young children.

Fifty-one persons suffered from the disease in confluent form, a more severe type, and 30 died.

Eighteen persons suffered from the hæmorrhagic form ("the black pox"), and all of them died. Nearly all these persons died in the early stages of the disease before the usual eruption appeared, and there was considerable difficulty in diagnosing the nature of the cases. In three of the cases the hæmorrhage into the pustules and various organs of the body came on at a later stage. It has been suggested that this type of the disease results from the combined action of the small-pox organism with that of septic organisms, which cause blood-poisoning.

Dividing the cases into groups according to their relation to vaccination, it appears that 241 had been vaccinated more or less effectively in childhood, but it must be kept in mind that some of these persons had been very ineffectually vaccinated, and that therefore the degree of protection afforded was much less than it ought to have been had vaccination been properly performed. This is brought out in Tables XX. and XXI., which shows the ages of vaccinated persons and the number of marks.

The total death-rate was 18·6 per cent.; among the vaccinated, good and bad, it was 10·7 per cent.; of the vaccinated who had 3, 4, or more marks the death-rate was 6·6 per cent.; while those who had only 1 or 2 marks died at the rate of 19·7 per cent. The mortality of the unvaccinated was (a) 64·7 per cent.; (b) (vaccinated after infection), 40 per cent.; of those who stated they had been vaccinated, but showed no signs of it, 42·8 per cent.; and of those with no statement, 50 per cent. These figures, although calculated on a small number of cases, are in accord with those derived from other outbreaks.

Table XX. shows the ages of small-pox patients, and it is instructive to observe the ages of the various classes of patients, and the ages of the fatal cases in their respective classes. Except two cases in badly

TABLE XX.

	AGE PERIODS.																							
	Under 1 Year.		Between 1—5.		Between 5—10.		Between 10—15.		Between 15—20.		Between 20—25.		Between 25—35.		Between 35—45.		Between 45—55.		Between 55—65.		Between 65—75.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
1. Unvaccinated cases, and cases not vac- cinated until after date of infection ...	5	3	7	3	1	1	3	1	5	3	3	1	1	1	—	—	2	2	—	—	—	—	27	15
2. No statement ...	—	—	—	—	—	—	—	—	—	—	1	—	2	1	1	1	1	1	1	1	—	—	6	4
3. Stated to have been vaccinated, but no marks or other evi- dence ...	—	—	—	—	1	—	1	—	1	1	1	—	8	3	4	2	8	5	2	—	1	—	27	11
4. Stated to have been vaccinated, and having 1 or more marks ...	—	—	1	—	—	—	5	—	18	—	32	—	78	6	63	11	28	7	13	1	3	1	241	26
Details of Class 4.																								
Cases showing—																								
4 or more marks ...	—	—	—	—	—	—	3	—	5	—	15	—	42	4	12	2	11	1	6	—	—	—	94	7
3 marks ...	—	—	—	—	—	—	1	—	2	—	9	—	22	1	25	1	7	1	4	—	1	1	71	4
2 " ...	—	—	—	—	—	—	—	—	7	—	6	—	8	—	18	6	7	3	1	—	1	—	48	9
1 " ...	—	—	1	—	—	—	1	—	4	—	2	—	6	1	8	2	3	2	2	1	1	—	28	6

vaccinated children, none of those stated to have been vaccinated were under 10 years of age, and there were no fatal cases among the vaccinated under 25 years of age, whereas among the unvaccinated, cases appeared at all ages, from infants of a few days old to persons of 54 years.

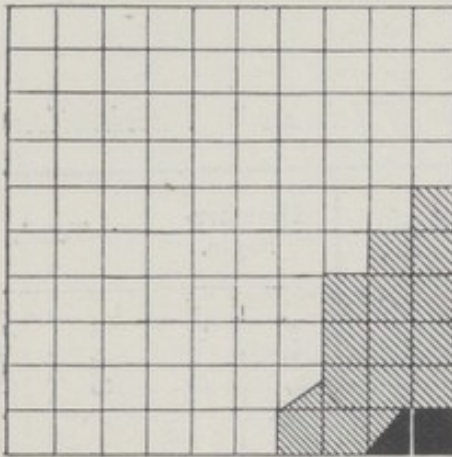
TABLE XXI.—*Showing Relation of Type of Disease to Vaccination.*




Vaccinated.	Discrete.		Confluent.		Hæmorrhagic.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
One or more marks	202	5	35	17	4	4	241	26
Stated to have been vaccinated, but no marks visible	14	1	7	4	6	6	27	11
(a.) Unvaccinated	7	1	7	7	3	3	17	11
(b.) Not vaccinated until after date of infection	7	1	2	2	1	1	10	4
No statement,	2	—	—	—	4	4	6	4
	232	8	51	30	18	18	301	56

The influence of vaccination on the disease is shown graphically in the subjoined diagrams. Nos. 1 and 2 represent the type of disease, (No. 1) in more or less vaccinated persons and (No. 2) in unvaccinated persons. Each square represents 100 cases; severity of case is shown by darker shading. Nos. 3 and 4 show the percentage of deaths in vaccinated and unvaccinated. Cases about which there was no statement or no evidence of vaccination, and those who were vaccinated after receiving the infection, have been excluded.

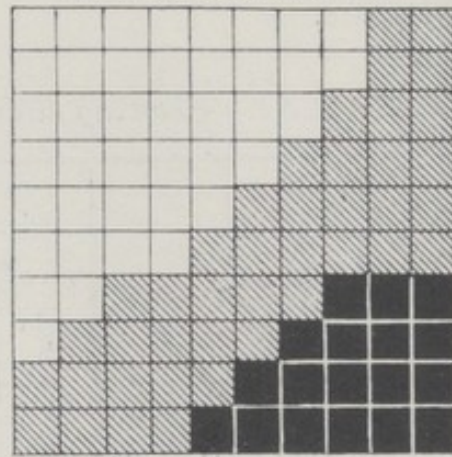
Re-vaccinated Persons.—I am indebted to Dr. Ricketts, Superintendent of the Small-pox Hospital Ships, for information relating to the condition as to vaccination and re-vaccination of persons admitted to the ships from Westminster, and I find that 41 persons stated that they had been re-vaccinated at one time or another. Some knew it was unsuccessful, and in others (23) there was little or no evidence that it had been so; in fact, in one instance out of the twenty-three there were no marks of vaccination visible at all, in two they were very doubtful, and in nine there were only one or two marks. All the cases were modified small-pox, except in one instance, in which it was confluent and fatal; this was a man aged 50 with two marks. There were eighteen in whom there was some evidence that re-vaccination had been successful, one (a fatal case) had a total of two marks only, five had a total of three marks, three had four marks, and ten had more.




VACCINATED.



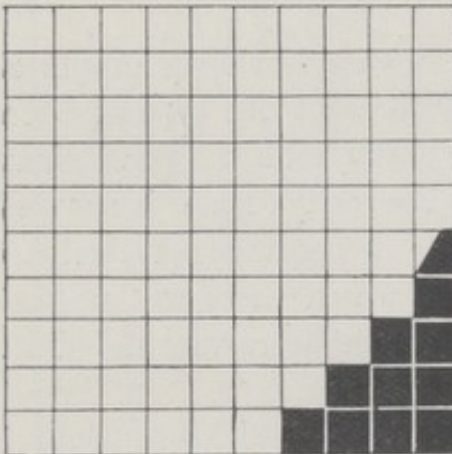
Discrete.....
Confluent.....
Hæmorrhagic.....

UNVACCINATED.

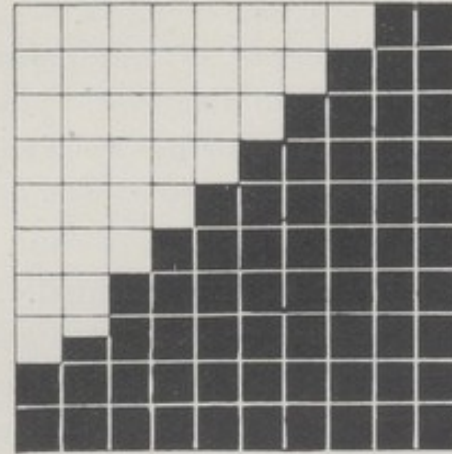


Discrete.....
Confluent.....
Hæmorrhagic.....

VACCINATED.



UNVACCINATED.



Deaths.....*Black.*
Recoveries.....*White.*

The two upper figures represent the mildness or severity of the cases, the white squares representing mild attacks, the shaded more serious, and the black the worst type.

The two lower figures show the percentage of recoveries and deaths.

The dates when such re-vaccination took place were two in the fifties, four in the sixties, three in the seventies, seven in the eighties and two in the nineties, viz., in 1892, male aged 53 with total of four marks, and in 1896, male aged 41, total of five marks. Two fatal cases occurred among this group, viz., male age 50, re-vaccinated, five marks, in 1866, from hæmorrhagic small-pox, and a male age 38, re-vaccinated, two marks, in 1878, from confluent small-pox, both common lodging house cases.

I find also that twelve persons had been re-vaccinated within the infected period (twelve days); of these three were less than four days before the patient began to feel ill, and probably therefore eight days after receiving the small-pox infection; six were between four and six days, and three were between eight and ten days. With one exception all these were modified cases; the exception was a female with one mark, who developed confluent small-pox caught from her husband who had the hæmorrhagic type, in which possibly the incubation period is shorter than in ordinary small-pox.

In none of the cases does there appear to have been a previous attack of small-pox.

I cannot conclude my report on this outbreak, without expressing my high appreciation of the splendid manner in which the whole of my staff (inspectors, clerks, and disinfectors) worked to prevent the spread of this disease. Many of them gave up their evenings, Sundays and Saturdays in order that cases might be discovered and promptly dealt with, and it is certain that if it had not been for their united exertions the outbreak would have been more serious. This devotion on their part was recognised by the Public Health Committee, and in the following vote of thanks which was afterwards adopted by the Council.

"In consequence of the outbreak of small-pox a very considerable amount of extra labour has been put upon the Staff of this Department. We have not failed to notice the cheerful and unflinching manner in which the staff referred to have met the extra labour, and we have thought fit to recognise it by unanimously passing a vote of thanks to the Medical Officer of Health, and the other members of the Staff of the Department."

Eventually the Council awarded extra remuneration to such of the inspectors and clerks as had performed extra duties, as a recognition of such services; the total sum amounted to £69 14s. The members of the disinfecting staff were paid for "overtime" weekly.

SCARLET FEVER.—There were 25·8 cases per 10,000 population notified in 1902, as compared with 25·7 in 1901. The London rate was for 1901 40·4, and for 1902 39·1. Fifteen deaths occurred, giving a case mortality of 3·3 per cent., as compared with 1·8 per cent. in 1901; 3·3

is the average rate during the previous eleven years. The London case mortality was 3·2 in 1901, 3·0 in 1902.

DIPHTHERIA.—280 cases of diphtheria and 5 of membranous croup were notified during 1902, equal to a rate of 15·4 per 10,000 inhabitants, as compared with 13·6 in 1901, with 16·0 the rate in the previous ten years, and with 23 the rate for all London for 1902. There were thirty-one deaths, equal to a mortality of 11 per 100 cases, as compared with 8·3 per cent. in 1901, and 10·8 for all London for 1902.

Bacteriological Diagnosis.—The arrangements made with the Jenner Institute for the bacteriological examination was taken advantage of with regard to 179 persons who were suffering from throat affection or had been exposed to infection; 204 examinations and re-examinations were made by the Jenner Institute, but many others were made at hospitals and in private laboratories. In sixteen of the above instances the bacillus was found, and in thirteen the pseudo-diphtheria bacillus (a modified, less virulent organism) was present on first examination; thirty-six subsequent examinations were made in cases treated at home, and a positive report was obtained in seventeen instances, negative in nineteen. The longest period of the persistence of the organism from the beginning of illness was fifty-seven days. There are, however, many cases which are at the other extreme, and yield readily to treatment, and it is probable that this was so in a considerable proportion of the twenty-eight cases returned from hospital as not suffering from this disease; most of these were out-patients at general hospitals, and had their throats examined bacteriologically there. By the time the Report was ready and the cases admitted into an isolation hospital, the treatment under which they had been put proved sufficient to remove the cause of the disease, and thus a second examination proved them not to be then suffering.

It has been found in families in which a case occurs that, not infrequently, other members get the diphtheria organism in their throats, and may or may not develop symptoms according to their susceptibility and the state of their health; but if they do not develop symptoms they may pass the organism on to other persons. If diphtheria is to be got rid of, it will be necessary to examine children and others in affected families, especially in tenement houses, so that they may not go about spreading the disease.

A large number of the above examinations were necessitated by the outbreak of diphtheria in one of the boarding houses of the Westminster School. Every master, boy and servant was examined, and the school was closed for fourteen days. No pupil was allowed to return without a certificate certifying that a bacteriological examination had been made and no infectious organism found.

PUERPERAL FEVER.—There were six cases notified, and one not notified, with four deaths. It is difficult in such cases to find out the exact source of the blood poisoning which occurs, but in one instance it was found that the basement of the house occupied by the patient had been flooded with sewage from an obstruction in the drain; and in another a relative was suffering from a septic wound at the time.

ENTERIC OR TYPHOID FEVER.—132 cases were notified, with 22 deaths, but there were four cases not notified, and three of the cases notified were subsequently found not to be typhoid fever.

There was also a fatal case of continued fever, which was probably typhoid. Assuming this to be so, there were 134 cases altogether, with 23 deaths, as compared with 102 and 20 deaths in 1901. Thus, although the cases were more numerous, the case mortality was less (17·1 per cent. compared with 19·6 per cent). Table XIV. shows that these were distributed all over the City, but that there was a special incidence on the Strand Ward. Over the whole City the cases were in the proportion of 7·1 per 10,000 inhabitants, but in the Strand it was equal to 37·0 per 10,000, in Conduit Ward 10·1, in St. John's 9·0, and in Victoria 8·3; the following Wards were below the City, Covent Garden 7·0; St. Margaret 6·5, St. Anne 6·1, Pall Mall 4·6, Charing Cross 4·0, Grosvenor and the Hamlet 2·6, Knightsbridge St. George 2·5, Regent and Great Marlborough 1·0. 39 of the 134 cases were undoubtedly contracted outside the City, and I have been informed of one case which occurred in the Isle of Wight which was probably contracted in the City.

In many cases it is very difficult to discover the manner in which the disease was contracted. This is due to several reasons, such as the long period between the inception of infection and the appearance of symptoms, and the removal of patients to Metropolitan Asylums Board hospitals, so that information cannot be obtained from them. I have gone over the list of cases, and so far as possible I have divided them into classes. In fifty-two instances no sufficient cause was discoverable, twenty-three cases probably contracted the disease from other cases, seven of these were nurses and seven soldiers. Many soldiers returned from South Africa convalescent from this disease, and it is quite possible that some of them brought back infection with them.

In ten houses (eleven patients) serious drainage defects were discovered; five of these were public-houses.

Shellfish.—Thirty persons are believed to have contracted the disease from eating shellfish; twenty-two of these were persons in the Strand and Covent Garden Wards who had been to Southend and to Southwick, at one or other of which places they had eaten cockles or mussels from sources known to have been sewage polluted. A further report on this is given below. One other had eaten

cockles brought from Southend. Another had eaten oysters while yachting off Poole, the oysters having been gathered by himself. Six others had eaten shellfish from stalls in London or on day trips to sea-side places, on dates which would correspond with the periods of infection. In some instances the patients themselves attributed the attack to such cause, as they had had some stomach or bowel trouble soon after eating the shellfish.

Fish. — It is now known that infection may sometimes be communicated through fish where not thoroughly cooked, and in this connection a small group of cases which occurred is interesting. One patient was a fishmonger, and three others were regular customers buying fresh fish; the fishmonger and two of the customers were probably infected about the same date, but in the fourth case symptoms did not appear till a month later and the patient is inclined, for reasons mentioned above, to attribute his illness to oysters eaten off a barrow in the East End. The drainage of the fishmonger's house was bad. Another case is believed to have been contracted from eating fried fish while staying at Old Ford.

In addition to the above, two persons contracted the disease through polluted water—one in England and one in the United States; fourteen persons came to Westminster ill, five from other parts of London, three from Brighton, one from Margate, one from Worthing, one each from Germany, Holland, France and Italy. It is quite likely that some of these acquired the complaint from one of the causes already specified.

I find that there were six cooks among the patients, all of them in connection with hotels, clubs, or eating-houses; nine other persons lived or worked in the same kind of house.

In connection with the outbreak of typhoid fever from shellfish it may be interesting to quote what I wrote in my Report for September:—

“The marked decline which took place in enteric fever cases in London in August was not maintained, the cases rising from 287 to 473, a figure in excess of that recorded last year. In Westminster there have been no less than 26 cases, and the manner in which a number of these contracted the disease suggests a possible explanation of the increase in London generally. It will be observed that 14 of the cases were notified in the Wards of Covent Garden and Strand. Two other cases were notified at the end of the month subsequent to the date of this Report, and I am informed that a case has also occurred in the Borough of Holborn, and is connected with this group; a fourth case of bowel complaint in a brother of one of the above patients came to my

knowledge, but the medical men in attendance did not feel justified in notifying it as a case of typhoid fever.*

"All those attacked were young persons, and on enquiry it was elicited that all of them had been to Southend-on-Sea or Southwick (a small seaside village between Brighton and Worthing) for a fortnight. Of these eighteen cases, seven had been to the former place only, one to Southwick only, and ten to both places. All those who went to Southend bought and ate cockles from itinerant vendors, and, with one exception (a boy who went to Southend also), those who went to Southwick picked up mussels and ate them—in some cases taking them to their lodgings to be cooked, but in a good many instances the mussels were eaten raw. In the one exception, although the boy did not eat mussels at Southwick, he had eaten cockles at Southend, and the interval between so doing and falling ill was not too long to preclude the cockles as the source of the disease, but he had been constantly in the water bathing or paddling at Southwick, and had assisted other boys in collecting mussels. From enquiries I have made, there is no doubt that infection through the medium of infected shellfish might be contracted at both the places mentioned. The cockles sold in Southend came from Leigh, and I described in my Annual Report for 1901 the condition under which this industry is conducted, and the Jenner Institute was able to demonstrate in cockles brought from Leigh the presence of the bacillus which causes typhoid fever. Dr. Nash, the Medical Officer of Health of Southend, attributes cases in that borough to the same cause, and in a paper read at the recent Congress at Manchester stated that he had ascertained that several cases of typhoid fever had occurred in the district supplying the sewage which falls into the creek, on the banks of which the cockles are laid. Dr. Nash informs me that steps are being taken to move the site of the cockle-layings to another part of the foreshore at Leigh where there is less chance of pollution.

"Dr. Klein has made some investigations on behalf of the Local Government Board, and he reports (30th Annual Report of the Local Government Board, Medical Officer's Supplement for 1900-1) that the recovery of the typhoid fever bacillus was easily achieved from the *interior* of cockles that had been subjected to water infected therewith, even when this infected water had been replaced for three days by clean sea water, and that, moreover, this was the case even with cockles, of which the shell and outer surface of the animal itself had been subjected to the influence of boiling water, as in the method of preparing them

* Two other notified cases also form part of this group, and a non-notified one in a married sister of a patient, both of whom had eaten cockles purchased in Southend and brought home by their mother. The sister was confined, and subsequent thereto had a high temperature for some time without any puerperal cause for it.

adopted at Leigh. Dr. Klein infers from further investigations that these bacilli undergo multiplication within the body of the cockle.

"At Southwick and Shoreham a very imperfect effluent is turned into the estuary at a point near to which mussels are to be found in quantity (see Oyster Report by Dr. Timbrell Bulstrode). I learn that many cases of typhoid fever in neighbouring towns have been traced to shellfish from this source.

"It has been found that persons handling infected shellfish may convey the typhoid bacillus accidentally to their mouths, and so infect themselves, and it is therefore probable that children bathing or paddling in polluted water, or playing on a polluted foreshore, may similarly become infected.

"It is somewhat difficult to determine at which place each of the present group of patients became infected, as the period which elapses between receiving infection and the appearance of illness varies from a few days to several weeks—perhaps as many as five weeks—and the preliminary symptom being often merely a feeling of malaise, it is not easy to fix the date of its appearance. However, 6 of the children who had been to Southend only, took ill, so far as can be ascertained, within 18 days of their visit, 3 being at that limit, 2 at 13 days, and 1 at 10. In the case of the seventh patient in this group, 36 days elapsed, but I found that his mother had been to Southend on a later date, and brought back a quantity of cockles with her, and he partook of them freely, and dating from that day would give 18 days as the incubation period. As none of these 7 children had been to Southwick, they could not have been infected there. Of those who went to both places there are two divisions, as 4 of the 10 were at Southwick for a fortnight ending three days before going to Southend for the day, and 6 went to Southwick two days after the Southend excursion. The length of the incubation period for the first four would be, dating from Southend, 9, 15, 18 and 18 days respectively, dating from Southwick, 12, 18, 21 and 21 at the earliest, 26, 32, 35, 35 days at the latest. They may thus have been infected at either place, and in support of the possibility of infection at Southwick at this period, viz., from the 2nd to the 16th August, is the case of the girl R. D., who did not go to Southend, as she was not feeling well on her return from Southwick, and the incubation period in her case was therefore less than 16 days. The second division were at Southwick from the 21st August to 4th September. Two of this party took ill before their return, and 2 two days after. The incubation periods of the 6 cases were, after Southend 14, 16, 18, 18, 27 and 31 days respectively; dating from 21st August, the first day at Southwick, 12, 14, 16, 16, 25 and 29 days, dating from the 4th September, 2, 2, 11 and 15 days for the last 4 of the group. It is therefore possible for the

members of this group to have acquired infection at either place, and it might be that some of them were infected at one place and some at the other. I find that in 1897 a number of cases occurred after a day trip to Southend among children from this same district. It would be well for those responsible for excursions to seaside places to warn those in their charge of the danger they run in eating shellfish. This is done in some instances, and I know of one large party of children who went to Southend about the same time as those mentioned above. None of the children were allowed to pick up or buy shellfish, and none subsequently suffered.

"As there is a Commission sitting to enquire into the best means for the disposal of sewage, it would be well to draw their attention to the matter."

Similar experiences have been reported from other parts of London. The Corporation of the City of London had their attention directed thereto, as the cockles were sold at markets in the City and were also obtained and relaid within the jurisdiction of the City as Port Sanitary Authority. Instructions were thereupon given to Professor Klein to examine cockles coming from Leigh, and he found that they all gave evidence of sewage pollution, and in certain samples he also isolated the typhoid organism. Dr. Collingridge, the Medical Officer of Health for the City of London, then reported* as follows:—

"The question then arose as to dealing with an obviously dangerously infected source of food supply.

"Under the Public Health (London) Act, 1891, it is possible to obtain a Justice's Order to destroy 'any article, whether solid or liquid, intended for the food of man, and sold, or exposed for sale, or deposited in any place for the purpose of sale, or of preparation for sale, if it appear to such Justice that the same is diseased or unsound, or unwholesome, or unfit for the food of man.'

"There is no question that the cockles would come under the above section, and could be so dealt with if the fact were at once evident.

"But the necessary examination involves the lapse of a considerable time, in most cases five or six days, and before the results of such examinations could be known in the case of any one sample, the whole quantity from which such sample was taken would have been consumed.

"Further, even if practicable, such action would only be applicable to such cockles as were brought within the jurisdiction of the Corporation, and the owners, if they were so disposed, would be at liberty to send them to any other part of the country.

* Monthly Report, No. 54.

"Under these circumstances the whole of the facts were reported to the Worshipful Company of Fishmongers, which has extensive powers over the fishing industry throughout the country.

"The Company at once put their powers into force, and issued instructions that they, having previously sent down one of the Company's Inspectors to inspect the site, and receiving from him a report to the effect that the relayings of cockles were in close proximity to the out-fall of sewage, gave the cocklers to understand that they would not on any account whatever allow any more cockles than were then actually ready for the market to be relaid in the Leigh Estuary and subsequently boiled, but that if they were to undertake faithfully that they would only take cockles from the parent beds on the Maplins and elsewhere, and boil them directly they were landed without in any way allowing them to be contaminated by any sewage, they would allow their consignments to be sold in London.

"This action was taken on the assumption that the original source of collection, viz., the Maplin and Blythe Sands, were uncontaminated with sewage, as it was clearly unjustifiable to condemn any cockles until they had been actually proved to be polluted. It was, however, obviously necessary to establish this fact beyond doubt, and samples were obtained by the officers of the Fishmongers' Company from the gathering grounds, with the result that cockles from these sources were already polluted before being brought to Leigh.

"The results of Professor Klein's experiments clearly point to extensive pollution of the whole estuary of the River Thames, and the consequent contamination of such shellfish and fish as are found therein. The extent to which such pollution affects the food supply is one that can only be determined by a complete investigation. It is most desirable that such an investigation should be put in hand at the earliest possible moment, as undoubtedly the whole of the Thames fishery is under grave suspicion. All shellfish should certainly be examined, and, in addition, all sprats, whitebait and smelts, these latter being eaten "uncleaned," and the cooking being of such a nature as not to ensure a high temperature throughout the whole fish."

Serious outbreaks of typhoid fever and other illness having arisen from oysters eaten at Winchester and Southampton, an examination was made by Dr. Klein of oysters from Emsworth, Bosham, Mumbles, and Southwick, and they were found to be contaminated with sewage, as were also some taken from a storage pit (since closed) at Whitstable. Whitstable oysters taken direct from beds were found unpolluted.

The Council of the City of Westminster adopted a resolution that "in the interests of the public health, the laying down of all edible forms of shellfish in sewage polluted creeks or other dangerous localities

should be prohibited by law under heavy penalties, and that all unpolluted layings, fattening beds and storage ponds at present in use should be protected by law from pollution by sewage by any person or sanitary authority; and that a letter embodying this opinion be sent to the Local Government Board and the London County Council; also that the co-operation of the several Metropolitan Borough Councils be invited."

The Council has since received replies from the London County Council and twenty-three Borough Councils that they concurred with the action of the City, and had addressed the Local Government Board on the subject. That body has forwarded the resolutions, together with copies of reports made by various medical officers, including that of this City, to the Commission on Sewage which is at present sitting.

Bacteriological Diagnosis.—Advantage was taken of the Council's offer in twenty-five instances, and in twelve of these a positive Widal reaction was obtained on the first trial, in two the reaction was obtained on a subsequent examination; in two cases in which the first trial gave a feeble reaction, the second gave a negative. One case which gave a negative reaction twice was notified, although the medical man in attendance had some doubt as to the true nature of the case, but eventually the wife of the patient developed similar symptoms.

There are a number of cases which simulate typhoid fever very closely, and are due to some modified or allied form of organism; probably the typhoid organism is one of a group (the bacillus coli group) of organisms, any one of which may produce symptoms of greater or less severity, according to the nearness of the relationship to the typhoid organism.

PLAGUE.—12 intimations were received from Port Sanitary Authorities that persons from ships on which cases of plague had occurred, or which came from infected ports, were on their way to this City, the persons were kept under observation, but fortunately no cases resulted.

(2) OTHER COMMUNICABLE DISEASES.

Besides the diseases which are legally notified, there are others which add materially to the death-rate, or which interfere seriously with educational work. Measles and whooping-cough belong to both divisions, diarrhœa to the former, chicken-pox and mumps to the latter.

Diarrhœal Diseases.—55 deaths were ascribed to diarrhœa or zymotic enteritis, in addition to which 27 deaths were ascribed to simple enteritis, and 6 to colitis. The diarrhœa rate per 1,000 inhabitants was 0·48, compared with 0·53 for London.

These rates were considerably below those for 1901, owing to the more favourable climatic condition.

Dysentery.—Six deaths are again recorded under this heading, all being inmates of lunatic asylums. Ulcerative colitis, to which cause these deaths were attributed, is believed to be identical with dysentery, and has been prevalent in certain asylums in which overcrowding exists.

Measles.—This complaint is popularly regarded as a simple and harmless one, yet during 1902 no less than 2,360 deaths occurred from it in London, four times as many as from scarlet fever, twice as many as from diphtheria; and probably this does not represent the total, as deaths due to measles are not infrequently assigned to other causes resulting therefrom. The deaths in London were equal to 0·50 per thousand persons, as compared with 0·43 in 1901. It was most fatal in Shoreditch, Southwark, Bermondsey, Fulham, Chelsea, and Finsbury. In Westminster forty-three deaths occurred, giving a rate of 0·23 per thousand, as compared with 0·32 in 1901.

With one exception all the deaths in Westminster were in children under five years of age. Reckoned on this basis the death-rate was equal to 4·6 for London, as against 3·7 in 1901, 3·3 for the City as against 4·6 in 1901.

In watching the course of measles and other infectious diseases, it is found that they have a tendency to be much more prevalent in certain years than in others. This is due to persons at certain ages being more susceptible to the disease, so that when available material has been used up no more cases appear until that has been replenished, when on infection being again brought into a district a new outbreak occurs. It does not therefore attack the whole of a town or district at once, but gradually passes through it like a wave. Thus an infectious disease like measles may begin in Soho and take a year to pass on from one ward to another until it has gone all over the City.

Information has reached me during the year from schools of 294 cases. 144 children, in addition, were excluded from school on account of there being cases in their homes. The figures are shown on p. 67.

The Infants' Department of St. Paul's School, Wilton Place, was closed on my certificate for a week in the end of December, the shortness of the period being accounted for by the fact that the usual Christmas holidays began at the conclusion of that time.

Whooping-cough caused 1,876 deaths in London (0·40 per 1,000), 34 in Westminster (0·18 per 1,000). The rates in 1901 were 0·35 for London, 0·26 for the City. All the Westminster deaths were in children under five years of age. Compared with the population living under that age, the rates per thousand were: London 3·65 (3·23 in 1901), Westminster 2·65 (3·67 in 1901).

Information reached me through schools of 145 cases, and 6 children were excluded on account of cases in their homes.

SCHOOLS AND INFECTIOUS DISEASES.

The teachers of Board Schools are required to notify me when they exclude children on account of infectious disease; the teachers of Voluntary Schools have been invited to do likewise, so that they may not lose the grant by the absence of such children. The following list shows how far this has been carried out and the cases notified:—

School.	Actual Cases.				Infection in House.				Other Causes.
	Chicken-pox.	Measles.	Mumps.	Whooping-cough.	Chicken-pox.	Measles.	Mumps.	Whooping-cough.	
<i>Board schools:—</i>									
Charing Cross Road Board ...	1	6	7	6	—	1	—	—	2 ophthalmia.
Horseferry Road Board ...	8	38	3	26	1	18	1	—	6 ringworm.
James Street Board ...	11	52	2	13	—	—	—	—	
Pulteney Board... ..	3	12	16	11	2	3	—	—	
Millbank Board... ..	8	38	22	31	3	19	1	—	5 ringworm.
St. George's Row Board ...	33	5	3	—	13	3	1	—	2 „
Vere Street Board ...	—	8	—	1	1	26	—	5	
Tower Street Board ...	1	13	—	—	—	3	—	—	
<i>Voluntary schools:—</i>									
Brompton Higher Grade ...	18	15	—	—	—	—	—	—	{ 7 ringworm. 3 eczema. 2 ophthalmia. 4 influenza.
Holy Trinity, Vauxhall Bridge Road	1	14	39	22	2	31	—	—	
St. Anne's, Dean Street ...	—	37	—	—	—	4	—	—	
St. Anselm's	1	—	—	—	—	1	—	—	
St. Clement Danes	—	—	—	15	—	11	—	—	{ 12 ringworm. 5 ophthalmia. 17 ringworm. 1 ophthalmia. 1 ringworm.
St. Gabriel's	43	9	6	8	9	5	—	1	
St. John's, Tufton Street ...	—	6	—	12	—	—	—	—	
St. Mary's, Hide Place ...	—	5	—	—	—	3	—	—	
St. Matthew's	—	—	—	—	2	6	—	—	
St. Paul's, Wilton Place ...	—	27	—	—	—	—	—	—	
St. Paul's Mission	3	—	—	—	1	—	—	—	
St. Peter's, Lower Belgrave Street	6	6	—	—	5	5	—	—	
St. Stephen's	—	3	—	—	—	5	—	—	
St. Vincent	—	—	—	—	—	—	—	—	
	137	294	98	145	39	144	3	6	

The School Board have opened a new school on the Millbank Estate to accommodate 794 children, including a special school for 60 children and a manual training centre for 40 boys. The cost of the site was £6,245, building £30,846, and furniture £574, a total of £37,665. From the report of the School Board for the year ending Lady Day, 1902, I find that the Pulteney School had its sanitary arrangements overhauled at a cost of £1,764 18s. At no distant date Vere Street School will be pulled down in connection with the Holborn to Strand Street. In the Westminster Division there was in the spring of 1902 an excess of 373 school places over scholars. The figures were:—

Number of Children of the Elementary School Class Scheduled.

Ages.		Over 14 Attending School.	Total.	Existing Accommodation.
3 to 5.	5 to 14.			
4,146	17,333	342	21,821	22,194

The number of school places estimated to be required in 1902 was 19,136.

Copies of 725 certificates relating to the various notifiable diseases were sent to school teachers during 1902.

DISINFECTION.

During 1902, 1,836 rooms in 1,097 houses were disinfected by the staff of the Department, and 39,965 articles were subjected to steam disinfection in the City Disinfecting Stations. In addition a number of rooms and their contents were disinfected to the satisfaction of medical men by private firms. Thirty-seven articles were destroyed by fire at the request of the owners; twenty-four books were destroyed at the request of the Libraries Committee, having been in use at houses where small-pox existed. £1 7s. was paid in respect of other articles destroyed.

Disinfection was carried out after all cases of the notifiable diseases, except as regards erysipelas (in which disinfection was only performed where the circumstances of the case required it), and also after 33 cases of measles, 9 chicken-pox, 2 whooping cough, 3 cancer, 2 German measles, 1 mumps, and 10 phthisis. 1,025 books were disinfected.

I had hoped to have been able to report that the Central Disinfecting Station had been erected, but the County Council have as yet taken no further steps to provide a site.

Shelters.—Twenty persons were admitted to the Temporary Shelters (Horseferry Road and Dufour's Place) during 1902, all in connection with the small-pox outbreak.

MORTUARIES.

The number of bodies removed to public mortuaries in the City during 1902 was 398. 380 were taken to Horseferry Road, where the Coroner's Court is situated, 12 (two of these being persons dead of an infectious disease) to Denzell Street, and 6 to Dufour's Place. There were 363 inquests held, all being at Horseferry Road.

PART II.

C. HOUSE PROPERTY INSPECTION, &c.

Inspection of Houses.—A summary of the sanitary work completed during the year 1902 has been prepared, and will be found appended hereto. 5,313 dwelling-houses in the city have been inspected during the year, and in 2,117 instances preliminary notices have been sent calling notice to defects requiring attention. In addition thereto numerous improvements have been effected on the inspector calling attention to the matter. 115 statutory notices were served, and legal proceedings had to be taken to enforce these orders in only six instances, and in each case successfully. Closing orders were obtained in respect of twelve houses (one being in the area required for the new Holborn to Strand street, the remainder in Turner's Court).

Proceedings were taken against builders and others for neglecting to give notice, or for improperly erecting or altering water-closets, drains, &c., in two instances. A penalty was inflicted in one case, and in the other the summons was withdrawn on payment of costs, the work having been reconstructed before service of summons. A number of others were cautioned by the Public Health Committee.

Overcrowding was abated in 59 instances.

The Chief Sanitary Inspector reports:—

The following list shows the aggregate number of complaints received and dealt with, and the number of inspections, visits, and notices served for the abatement in each ward during the year:—

	WARDS.														Totals.
	Conduit.	Grosvenor.	Hamlet of Knightsbridge.	Knightsbridge St. George.	Victoria.	St. Margaret.	St. John.	St. Anne.	Great Marlborough.	Pall Mall.	Regent.	Charing Cross.	Covent Garden.	Strand.	
Complaints received and dealt with	85	76	21	35	199	152	42	47	87	16	86	42	23	16	927
Houses and premises inspected ..	218	302	301	460	851	423	950	333	292	118	562	149	219	136	5,313
Do. re-inspected ..	840	1,352	1,491	2,086	2,445	486	1,333	1,027	1,230	334	1,369	576	1,654	770	16,993
Do. (registered), visits to	—	—	—	7	—	35	—	103	46	—	75	1	31	88	386
Workshops inspected	70	27	24	31	35	24	32	107	176	2	114	9	22	19	692
Do. visits to	122	68	23	31	78	55	10	86	321	15	171	8	56	47	1,091
Bakehouses, visits to	6	7	10	21	32	7	18	25	68	1	9	—	11	13	228
Milkshops, visits to	—	—	30	53	91	48	53	11	15	7	28	14	26	9	390
Notices issued (preliminary) ..	68	94	162	237	338	152	173	121	224	17	157	75	167	132	2,117
Do. (statutory)	—	—	7	3	24	6	4	7	5	5	19	2	15	18	115

The year's work bears favourable comparison with the collective reports of previous years. The statistics for 1901 are given side by side with the details of work performed during last year, and show that the steady progress in matters relating to sanitation has continued with unabated zeal on the part of your Committee and its officers.

The following are the details of the work referred to:—

	1901.	1902.		1901.	1902.
Complaints received and dealt with.. .. .	1,028	912	Workrooms.—Overcrowding abated ..	57	50
Houses and premises inspected	5,085	5,313	„ Protected persons reported to H.O. ..	10	—
„ „ re-inspected	17,165	16,993	„ Outworkers registered ..	1,183	1,655
„ (registered), visits to	487	386	Bakehouses cleansed ..	—	85
Workshops inspected ..	1,115	692	Drains.—Constructed ..	712	757
„ visits to.. ..	1,569	1,091	„ Amended and repaired ..	231	271
Bakehouses, visits to.. ..	—	228	„ Disconnecting traps fixed ..	630	769
Milkshops, visits to ..	425	390	„ Ventilated ..	529	718
Notices issued (preliminary).	2,104	2,117	„ Tested ..	1,643	1,890
„ „ (statutory) ..	212	115	„ Unstopped or cleansed ..	183	130
Sanitary Work completed:—			„ Gully traps fixed ..	2,036	2,882
Houses.—Closed under H.W. Classes Act ..	—	11	„ Inspection chambers built ..	1,344	1,729
„ Closed under P.H. (London) Act..	3	1	„ Inspection chambers repaired or cleansed ..	198	214
„ Cleansed throughout ..	338	321	„ Inspection chambers, cover fixed or sealed ..	1,093	1,640
„ Cleansed partially	626	635	„ Soil pipes fixed or repaired ..	641	871
„ Overcrowding abated	87	59	„ Ventilating pipes fixed or repaired ..	398	594
„ Light or ventilation improved..	49	209	Rainwater Pipes fixed or repaired ..	—	310
„ Roofs repaired..	196	276	„ „ disconnected from drain ..	—	165
„ Floors and staircases repaired..	144	254	Water-closets.—Constructed	867	1,724
„ Underground rooms vacated..	25	13	„ Repaired ..	237	557
„ Yards, areas, paved or repaired ..	348	494	„ Ventilated..	285	725
„ Offensive refuse removed ..	242	243	„ Cleansed or limewashed	464	710
„ Keeping of animals discontinued ..	30	22	„ New pans fixed ..	881	2,100
Workshops.—Newly registered ..	46	86	„ Pans and traps cleansed ..	288	261
„ Measured ..	199	298	„ Obstruction removed ..	76	98
„ Separate w.c.'s for sexes provided..	—	32	„ Traps ventilated ..	594	1,290
Workrooms.—Light or ventilation improved ..	47	98	„ Water supply provided ..	267	652
„ Cleansed ..	279	233			
„ Gas stoves ventilated ..	—	66			

Details of Work—continued.

	1901.	1902.		1901.	1902.
Water-closets.—Flushing apparatus fixed ..	982	2,046	Water Supply.—Cisterns covered	9	232
„ Flushing apparatus repaired ..	326	488	„ Cisterns, old, defective, abolished .	88	150
Waste Pipes.—To sinks, baths, lavatory basins, &c. ..	36	—	„ Disconnected from w.c. supply	146	171
„ Fixed ..	1,006	3,057	Dust Bins.—Provided ..	322	594
„ Repaired or unstopped ..	130	142	„ Repaired ..	77	25
„ Disconnected from drain .	359	511	„ Old, abolished..	139	97
„ Trapped ..	962	2,858	Stables.—Drained ..	104	150
„ Ventilated ..	381	1,822	„ Paved ..	97	153
Water Supply.—Provided ..	115	313	„ Cleansed ..	58	115
„ Reinstated .	87	71	„ Dung receptacles provided ..	64	41
„ Cisterns fixed ..	194	370	„ Dung receptacles repaired ..	7	6
„ Cisterns cleansed ..	486	607	„ Dung pits abolished	49	5
			„ Dung accumulations removed ..	155	126

The following table shows the results of the legal proceedings taken under the Public Health and Factory and Workshops Acts:—

Ward.	Premises.	Offence.	Court and Magistrate.	Result.
Strand ...	7, Drury Court	Premises unfit for human habitation	Bow Street ... (Mr. Marsham.)	Ordered to close premises
Covent Garden	26, Wellington Street	Failing to cleanse workshops	Do. do.	Ordered to do the work within 14 days.
Do.	Do.	Failing to properly ventilate workshops	Do. do.	
Great Marlborough	14 and 15, Marlborough Mews	Defective drainage and ventilation	Great Marlborough Street (Mr. Kennedy.)	Fined £10, and ordered to do the work within 14 days.
St. Anne ...	28, Dean Street	Defective drainage and ventilation, and want of separate accommodation for women	Do. do.	Work completed at hearing. Withdrawn on payment of costs.
Covent Garden	42, Stanhope Street	Failure to cleanse ...	Bow Street ... (Mr. Marsham)	Fined 20s., and ordered to do the work within 14 days.

Infringement of By-laws.—Eight infringements of the by-laws took place. In two instances cautioning letters were sent to the defaulters, and in six prosecutions were ordered, with the following results:—

Ward.	Premises or Street.	Offence.	Court and Magistrate.	Result.
Charing Cross	D. Martin and Sons, 4, Agar Street	Failing to notify alterations to W.C.	Bow Street ... (Mr. Marsham)	Fined 20s. ; 2s. costs.
Conduit ...	F. Hempleman and Co. (West Ham), at Swallow Place	Removing offensive refuse during prohibited hours	Great Marlborough Street (Mr. Denman)	Fined 20s. ; 2s. costs.
Grosvenor ...	J. Laws (Acton), at Brick Street, Piccadilly	Do. Do.	Great Marlborough Street (Mr. Kennedy)	Fined 20s. ; 2s. costs.
Knightsbridge	Chas. Leaver (Merton), at Upper Belgrave Street	Do. Do.	Westminster (Mr. Sheil)	Fined 20s. ; 2s. costs.
Covent Garden	Wm. Muncey (Battersea Park), at Bedfordbury	Do. Do.	Bow Street ... (Mr. Marsham)	Fined £3 ; 2s. costs.
Great Marlborough	J. W. Sealby, 5, Portland Mews	Improperly constructing a dung receptacle	Great Marlborough Street (Mr. Kennedy)	Summons withdrawn on payment of 2s. costs, the work having been done after service of summons.

Supervision of House Drainage.—According to the by-laws of the Council, drainage plans are referred to the Works Committee, but some difficulty arose on account of the reference to that Committee not taking into account the requirements of the By-laws of the London County Council. Reports from the City Engineer, the Medical Officer, and the Chief Sanitary Inspector were submitted, and it was pointed out that, whether the supervision was in the hands of the Works Department or the Public Health Department, eventually they must come under the latter Department. It is therefore advisable and expedient that the supervision of the drainage of new as well as old buildings should be under the Public Health Department.

The Works Committee suggested "That in view of the fact that plans of drainage have to be dealt with by the Public Health Department as well as the Works Department, it appears to the Works, Sewers, and Highways Company desirable that all such plans should, in future, be deposited in duplicate, one copy being kept by each of the said Departments, and that they are further of opinion that drainage plans should be approved by the City Engineer and the Medical Officer of Health."

This suggestion was approved by the Public Health Committee (P. H. Minutes, p. 162, November 26th, 1901), and if carried out is really all that is needed.

A Standing Order (No. 53) was passed by the Council to the effect that "All drainage plans shall, on receipt, be laid before the Medical Officer of Health for examination, as well as the City Engineer and Surveyor, and a reference shall be made to the Public Health Committee on such cases as may be necessary."

The London County Council have subsequently objected to the Local Government Board giving sanction to the appointment of Sanitary

Inspectors, part of whose duty is to be "supervising the original construction of drainage works, carried out under the Metropolis Management Acts," having been advised that the duty referred to is not included in the General Order of the Local Government Board (8th December, 1891) in which the duties of a Sanitary Inspector are laid down. The Local Government Board stated that they had been advised that, from the point of view of uniform sanitary administration, the proposal "(to supervise all drainage works) is one to be commended."

Seeing that the Local Government Board understand the difficulty, it is hoped that they will find a way out of it by enlarging the duties of Sanitary Inspectors so as to cover this work. In the alternative the City Council might arrange to allocate a small part of each Inspector's salary for carrying out this particular work, on which a claim would not be made to the London County Council to pay a moiety.

UNDERGROUND DWELLINGS.

When the City was re-incorporated it was found that, whereas in all the other parts of the City the use of underground dwellings had not been permitted, in St. James's Parish a number existed. In view of the difficulty experienced by the poorer classes in obtaining other more suitable living accommodation in the district, the Council resolved not to turn out the occupants of these dwellings all at once, but ordered a list to be prepared, and an examination made, with a view to prevent the use of such dwellings as, in my opinion, should be closed at once, and, with regard to the remainder, notices were to be served on the owner that, in the event of them being vacant, they were, on no account, to be re-let separately for living purposes. As a result, 25 underground rooms were vacated during 1901, and 13 during 1902.

HOUSES LET IN LODGINGS.

Consequent on the demolition of houses in connection with the Strand to Holborn and Millbank Street improvements, the number of registered houses has decreased. There are a number of houses which might be placed on the Register, but until the Local Government Board signify assent to new by-laws, it is impossible to say if such houses will come under the operations of the new by-laws.

CUSTOMS AND INLAND REVENUE ACT.

Certificates under this Act were granted during the year to the London County Council in respect of their buildings at Millbank and Duke's Court, Drury Lane. Certificates were refused for 15 tenements in a block of buildings in Peter Street, Berwick Street.

HOUSING OF THE WORKING CLASSES.

Clare Market Scheme.—Considerable progress has been made in the work of clearing this area, and three blocks of buildings have been erected in the immediate vicinity, viz., in Duke's Court, at the back of Bow Street as well as those on the Millbank Estate. Siddons and Sterling Buildings, in Russell Court, to accommodate 390 persons, are in course of construction.

Sheridan, Fletcher, and Beaumont Buildings, Duke's Court.—Fletcher Buildings, to accommodate 230 persons, were opened in April; Beaumont, with accommodation for 190, in May; and Sheridan, also with accommodation for 190, in June.

The whole of the tenements in Fletcher, Sheridan, and Beaumont Buildings were at once occupied. The tenements were reserved for the persons who had been disturbed in connection with the Clare Market scheme and Holborn to Strand improvement, and the whole of the rooms have now been occupied by persons actually displaced in connection therewith. The London County Council state that these persons are making good tenants, and are paying their rents regularly, and no disturbance or damage has taken place at the buildings.

The rents of the tenements were fixed 6*d.* per week below those that could have been obtained, and are being paid in the neighbourhood. The rent for a 1-room tenement is 4*s.*; for 2 rooms, 6*s.* 6*d.*; for 3 rooms, 8*s.* 6*d.*; and 4 rooms, 10*s.* 6*d.*; and these consequently compare favourably with the rents paid by the tenants for the same number of rooms in their old homes.

In the old houses rents varying from 2*s.* to 6*s.* were paid in respect of a single room, a large number being let at 4*s.* and over; 2 rooms let for rents varying from 3*s.* to 8*s.* 6*d.*; several being let at 6*s.* and 6*s.* 6*d.*; 3 rooms were let at 7*s.* to 10*s.* 6*d.*, but in the majority of cases 9*s.* and over was paid. Rents varying from 9*s.* to 12*s.* were paid for 4 rooms.

The tenements in Sheridan, Beaumont and Fletcher Buildings are all self-contained, and the accommodation afforded is superior to that of the old houses, although in some of them the rooms were larger than in the new.

In 71 cases tenants have taken more rooms than they previously occupied, and consequently pay more rent than they did formerly. In 8 cases, however, the families being small, they have been able to take a smaller number of rooms than they previously occupied, and in 49 cases they occupy a similar number of rooms, but with the addition in each case of a scullery.

Millbank Estate.—The opening for occupation of Gainsborough Buildings, Millbank Estate, in August, completed the erection of dwellings on that estate by the London County Council. In all, 17 blocks of dwellings have been built, providing accommodation for 4,430 persons. The blocks contain 2 tenements of 1 room, 484 tenements of 2 rooms, 392 tenements of 3 rooms, 16 tenements of 4 rooms, and 1 tenement of 5 rooms.

Lawrence Buildings (296 persons) and Morland Buildings (300 persons), were opened in May; Wilkie (300 persons), in July; and Gainsborough (396 persons), in August.

The Housing Committee of the London County Council think that it may be interesting to know from what districts the tenants on the estate have come. Of the 895 tenements no fewer than 588, or 65·6 per cent., have been occupied by persons who have moved from other parts of Westminster. This number includes 22 tenants who have been displaced from the area of the Westminster Embankment improvement, and 3 who have been displaced from the Clare Market area. As tenements become vacant further tenants are being accepted from the area of the Westminster Embankment improvement. Of the remaining 307 tenants, 97 came from Lambeth, 36 from Battersea, 22 from Camberwell, 20 each from Chelsea and Southwark, 16 from St. Pancras, 14 from Fulham, 12 from Paddington, 9 each from Kensington and St. Marylebone, and 31 from other metropolitan boroughs; while 21 came from districts outside the County of London. These latter were only accepted as tenants at times when there was a dearth of applicants for tenements. The above information has been prepared on information given by the tenants in occupation of the dwellings on October, 1st, 1902.

Perambulator and Bicycle Sheds.—It was represented to the County Council that great convenience would accrue to the tenants by the provision of sheds in which perambulators or bicycles could be kept, and consequently they erected, at a cost of about £250, 50 sheds of such a size as to accommodate either a perambulator or a bicycle. Each shed is let at 3*d.* per week.

A central garden and other smaller gardens have been laid out and planted at a cost of £2,850.

Turner's Court.—The 11 houses on which I reported fully in my

Report for 1901 (see pp. 74-76), were closed by a magistrate's order in April, 1902. Evidence on behalf of the Council was given by Dr. Hamer, Assistant Medical Officer of Health of the London County Council, as well as by Inspector Sanderson and myself. The magistrate (Mr. Fenwick) personally inspected the houses, accompanied by the owner and myself. In making the closing orders, the magistrate, on the suggestion of Counsel (Mr. Bodkin) for the City, allowed each of the 55 tenants £1 towards the cost of removal, under Section 32 Sub-section 3 of the Housing Act, 1890. The owner found premises for many of the 187 dis-housed persons in the vicinity.

It is now proposed to utilise the site of Turner's Court with adjoining property for the purpose of erecting a theatre. This will dis-house 170 persons of the working class, mostly hotel servants, waitresses, theatre employés, office cleaners, and market porters. The Housing Committee of the City Council are taking steps to ascertain in what way the owners propose to provide them with new accommodation.

Regency Street Scheme.—I reported last year that the Council had acquired from the Ecclesiastical Commissioners a piece of ground, 64,000 square feet in extent, for the purpose of erecting buildings thereon, similar to those erected by the Guinness Trust at Hammersmith. Good progress has been made during 1902; the site has been cleared and tenders obtained, the foundations have been laid and the superstructure commenced. The total cost is estimated at £95,000; this includes £32,000 for the site (the Ecclesiastical Commissioners sold it to the City at a reduced price of 4*d.* per foot, the market value being 6*d.*; at 30 years' purchase 10*s.* a foot instead of 15*s.*), £7,500 for foundations, £51,792 4*s.* for superstructure, and the balance for fees and extras.

From a report furnished by the City Engineer, I have extracted the following particulars of the buildings, which I understand are to receive the names of the three first Mayors of Westminster.

The buildings are intended to be six storeys high, including the half-basement and attic storey, the windows of the half-basement being above paving level. The attic storeys will be partly in the roof, but the slope on the roof will be so slight that the cubic area of the tenement on the uppermost floor will be immaterially affected.

The general plan indicates the disposition of the three blocks of dwellings, each 304 feet long, one facing Regency Street, with accesses, and two blocks parallel with same, divided by a road 40 feet wide, level with Vincent Street and Page Street, from which roads these two blocks of dwellings will be entered. At rear of the front block there will be a sunk playground 40 feet wide, and there will be a further sunk playground, average 29 feet wide, at the rear of the eastern block.

These playgrounds and roadway are sufficiently wide, and the cardinal disposition of the blocks of dwellings is such as to ensure each tenement a fair amount of sunshine and ample lighting and ventilation.

The accommodation provided by the scheme is as follows;—

45 single-room tenements, 161 two-room tenements, 126 three-room tenements, and 12 four-room tenements, all being of the description known as "associated," with the exception of the 12 four-room tenements, which, being for a superior class of tenant, are arranged as self-contained, *i.e.*, each having its own separate laundry, lobby, and w.c. The associated tenements are all so arranged that no more than four on a floor are approached from one staircase, and in this respect they are superior to the Hammersmith Buildings. One laundry, one outside sink and two w.c.'s are provided for each group of four tenements, and in this respect they are superior to the Guinness Dwellings, where no fewer than five possess the like accommodation in common. The three-room tenements are all provided with an outside lobby to give them greater privacy.

The staircases are all arranged with ample means of ventilation directly into the outer air upon each storey, and every tenement has ventilation from front to rear, which ensures through draught.

The Architects have supplied the following comparative figures of the superficial areas of tenements:—

	Living Room.	Bed Room.
Regency Street	154 feet super.	98—126 feet super.
Guinness Trust (Hammersmith) ..	140—150 "	100—126 "
London County Council	154 "	95—126 "

In the basement of the north-east block provision has been made for a group of nine bath rooms, hot water room for the supply of boiling water, and a drying room, all fed by a boiler in a fire-proof compartment adjoining Page Street, upon similar lines to those in use at the Guinness Buildings at Hammersmith. These are planned with separate access to, thus obviating possible interference with the comfort of the occupiers of the tenements over them.

At the south-east end of the rear playground provision is made for a coal-store for retailing coal to the tenants, and a store room and workshop for the necessary small repairs that may be needed from time to time. There is also a long range of perambulator sheds which are proposed to be let to the tenants at a nominal rent.

With respect to the architectural features of the fronts, these are sufficiently elaborate as regards treatment without being unduly costly

HEALTHINESS OF BLOCK DWELLINGS.

In order to ascertain the relative healthiness of dwellings erected in blocks, I have extracted from the Registrar's Weekly Returns the deaths of persons residing therein, and have compared the figures with the officials of nearly all the companies owning such buildings in the City, to whom I am indebted for the trouble they have taken.

The population at the time of the Census has now been obtained from the Registrar-General for each block of industrial dwellings in the City, from which it appears that at that date 16,526 persons lived in such dwellings. This has been considerably increased by the opening of additional dwellings at Millbank and Drury Lane, so that the present population is probably about 20,000.

The accompanying Table XXII. shows the population at the Census, the number of births and deaths in 1902, with the causes of death, and the number of deaths of infants and persons over 65.

I have calculated the rates on the larger populations, and I find that:—

The Peabody Buildings have a birth-rate of 30·4, but this varies in the different groups of buildings, Old Pye Street having 17·6, Orchard Street 48·2. The total death-rate is 15·7, the lowest being 10·7, the highest 20·0.

The Industrial Dwellings Company have a birth-rate of 15·4, the extremes being as low as 4·1 and as high as 75·3. The death-rate is 8·0, varying from 0 to 17·5.

Some of the *London County Council Buildings* have not been occupied during the whole year; but, calculated proportionately, the birth-rate on the Millbank Estate works out at about 50, the death-rate about 15 per 1,000.

The Soho, Clerkenwell and General Industrial Dwellings Company had a birth-rate of 29·5 and a death-rate of 12·6.

The Metropolitan Association's birth-rate is 39·6, the death-rate 11·8.

COMMON LODGING-HOUSES.

101 deaths occurred in 1902 in the common lodging-houses in the City. 59 of these were attributed to St. John's Ward and 22 to the Strand Ward, thereby raising the death-rate of these wards; the remaining 20 deaths were distributed to—Regent Ward 6, St. Margaret 4, Covent Garden 7, and St. Anne's 3. 87 were men, and the causes of death were—consumption 28, respiratory diseases 24, heart, &c., diseases 9, kidney diseases 4, small-pox 14, and other complaints 8. 11 were women, and death was due to—consumption 4, respiratory disease 4,

TABLE XXII.—*Vital Statistics relating to Blocks of Dwellings in the City of Westminster, 1902.*

Buildings.	Population.	Births.	Deaths.	Infectious Diseases.	Tubercular Diseases.	Respiratory Diseases.	Digestive Diseases.	Circulatory Diseases.	Nervous Diseases.	Kidney Diseases.	Violence.	Cancer.	Other Causes.	Deaths Under 1.	Deaths Over 65.
Peabody	6,761	206	107	8	22	20	5	21	3	1	3	8	16	22	18
London County Council—															
Millbank	3,043*	136	41	11	5	6	1	3	1	1	1	3	8	16	1
Drury Lane	591†	3	19	3	2	7	—	—	3	2	1	—	1	4	4
Improved Industrial.. .. .	6,878	106	55	5	7	11	3	2	6	1	—	4	16	10	14
Metropolitan Association	757	30	9	1	2	1	1	2	1	—	—	1	—	2	1
St. George's Model Dwellings	419	11	15	1	—	4	2	2	—	—	2	3	1	2	5
Clerkenwell and Soho Company (Newport Market)	1,184	29	17	3	—	7	2	2	2	—	—	—	1	5	3
St. James Residences	494	20	5	1	1	2	1	—	—	—	—	—	—	2	—
„ Dwellings	71	2	—	—	—	—	—	—	—	—	—	—	—	—	—
Westminster	187	4	4	—	—	2	—	—	—	1	—	—	1	—	2
Lion	197	6	11	3	3	3	—	—	—	—	—	—	2	3	—
Greencoat	119	2	1	—	—	—	—	—	—	—	—	—	1	—	—
Spencer	99	1	1	—	—	—	1	—	—	—	—	—	—	1	—
Chapter Chambers	175	—	4	—	—	2	—	—	—	—	—	1	1	1	—

* For part of year only.

† Includes Eversley Buildings.

kidney disease 1, and other complaints 2; 3 young children born to inmates of these houses died, death being due to syphilis in 2 instances, tuberculosis in 1.

The supervision of common lodging-houses is one of the duties of the London County Council, and in their General Powers Act of 1902, they obtained powers to secure the annual licensing of such houses. Hitherto it was only on a third conviction under the Common Lodging Houses Act, 1853 (Section 12), that a keeper could be prevented carrying on his business. Under the powers obtained it will be possible to raise the standard of these houses. There is room for much improvement in most of the houses devoted to this purpose.

Three lodging-houses, accommodating 90 men and 115 women, have been closed during the year in the Strand Ward, consequent on street improvements; two others, in St. John's Ward, accommodating 7 men and 17 women, have been discontinued to be used as lodging-houses.

Common Lodging-houses.

	Ward.	Deaths.	Authorised Number of Lodgers.
WOMEN.			
17, St. Ann's Street *	St. John	—	17
14 and 15, White Horse Yard *	Strand	8	81
25, Stanhope Street *	Do.	—	34
			— 132
WOMEN AND MARRIED COUPLES.			
40, Great Peter Street	St. John	6	86
MEN.			
11, 12, and 13, Hanover Court ..	Covent Garden ..	6	118
2, Harvey's Buildings	Do.	1	52
107, Wardour Street	Regent	6	87
26, Lichfield Street	St. Anne	3	54
6, 6A, 6B, and 6C, Great Smith Street	St. John	13	218
33, Great Peter Street	Do.	28	424
108, Regency Street	Do.	—	18
16, Strutton Ground	Do.	10	228
45 and 47, Tufton Street	Do.	2	105
30, Romney Street *	Do.	—	7
10 and 11, Monck Street	Do.	—	64
16, Snow's Rents	St. Margaret ..	4	86
1 and 2, St. Mary's Buildings *	Strand	—	90
22, Vere Street	Do.	2	48
29 and 30, Vere Street	Do.	10	176
26 and 28, Vere Street	Do.		48
			— 1,823
			2,041

* Not so occupied at end of year.

D. WORKSHOPS.

During 1901 Parliament was engaged in amending and codifying the numerous Acts dealing with factories and workshops. The Act was passed on the 17th August, and came into force on the 1st January, 1902, with the exception of Section 101 (1) relating to underground bakehouses not in use on the passing of the Act.

Section 132 of the Act directs that "The Medical Officer of Health of every District Council shall in his annual report to them report specifically on the administration of this Act in workshops and workplaces and he shall send a copy of his annual report or so much of it as deals with this subject to the Secretary of State."

The Act requires to be read with the Public Health (London) Act, 1891, parts of which replace sections in the Factory Act, so far as the metropolis is concerned. Additional power of entry, similar to that possessed by Factory Inspectors, is given to Sanitary Authorities, and special duties are cast on them with regard to bakehouses, laundries and outworkers.

The Council will recollect that, on my recommendation, the Home Secretary was asked to incorporate in the Act a clause giving him power to alter the amount of cubic space allowable in the case of a workshop which is occupied by night as a sleeping apartment, and that, on the motion of Captain Jessel, such a clause was added to the Bill, and now stands as Section 3 (3). In pursuance thereof the Home Secretary has made an Order increasing the amount of cubic space in such cases from 250 to 400 cubic feet for ordinary working hours.

The following is a copy of the Order:—

Statutory Rules and Orders, 1902.

No. 23.

Order of the Secretary of State, dated January 17, 1902, modifying the proportion of cubic feet of space to be provided in a workshop used as a sleeping place.

"In pursuance of the power conferred on me by sub-section (3) of section 3 of the Factory and Workshop Act, 1901, I hereby direct that, where a workshop other than a domestic workshop is occupied by day as a workshop and by night as a sleeping place, the proportion of cubic feet of space prescribed in sub-section (1) of the said section shall be modified by substituting 'four hundred' for 'two hundred and fifty,' and accordingly such workshop shall, for the purposes of the law relating to public health, be deemed to be so overcrowded as to be dangerous or injurious to the health of the persons employed therein if

the number of cubic feet of space in any room bears to the number of persons employed at one time in the room a proportion less than four hundred cubic feet to each person."

Sanitary Authorities are required to keep a register of all workshops situate within their district.

A summary of the requirements of the Factory and Workshop Act and the Public Health Act was submitted to the Council, and reference to the steps taken in anticipation of the coming in force of the Act will be found in my Annual Report for 1901.

I suggested then that, from the large number of workshops employing women in the City, it was desirable that women should be employed to inspect them, as from the reports of H.M. Factory Inspectors, constant supervision seems to be required. I also pointed out that the clerical staff at my disposal was insufficient, and the Council appointed a boy clerk and a messenger, besides re-arranging the clerical staff generally, whereby committee work and the preparation of minutes, &c., was carried out by clerks in the Town Clerk's department.

The Home Office Inspectors sent to the City Council, during 1902, 160 complaints relating to 188 matters. The natures of the complaints were:—

Repairs or cleansing required	...	...	...	...	98
Insufficient, insanitary, or unsuitable accommodation	...				28
Overcrowding	...	...	...	...	25
Defective ventilation of workroom		...	...	...	19
Gas iron heaters without flue	...	...	...	...	16
Absence of card in workroom	...	...	...	...	2

Eighty-nine of the complaints related to men's workshops, 71 to women's.

During the year, 692 workshops have been inspected and 1,091 have been visited; 86 new workshops have been added to the register, which now contains 2,037 entries.

Inclusive of the complaints received from the Home Office, 233 workshops were cleansed, light and ventilation improved in 98 cases, 66 gas stoves ventilated, and overcrowding was abated in fifty instances. 298 workshops were measured up, and the particulars entered on the "Abstract," which is required to be posted in each workplace. In many cases parts of the houses are used as workshops, and therefore it is impossible to separate out other sanitary defects which may have been remedied (see pp. 70-71).

Sanitary Accommodation.—In dealing with the provision of sanitary accommodation, we have been guided by the Order of the Home Office, August, 1902. It does not apply to London, but it sets up a convenient standard. The Order is:—

"In pursuance of Section 9 of the Factory and Workshop Act, 1901, the accommodation in the way of sanitary conveniences provided in a factory or workshop shall be deemed to be sufficient and suitable within the meaning of the said section if the following conditions are complied with and not otherwise :—

"1. In factories or workshops where females are employed or in attendance there shall be one sanitary convenience for every 25 females.

"2. In factories or workshops where males are employed or in attendance there shall be one sanitary convenience for every 25 males; provided that—

"(a) In factories or workshops where the number of males employed or in attendance exceeds 100, and sufficient urinal accommodation is also provided, it shall be sufficient if there is one sanitary convenience for every 25 males up to the first 100, and one for every 40 after ;

"(b) In factories or workshops where the number of males employed or in attendance exceeds 500, and the District Inspector of Factories certifies in writing that by means of a check system, or otherwise, proper supervision and control in regard to the use of the conveniences are exercised by officers specially appointed for that purpose, it shall be sufficient if one sanitary convenience is provided for every 60 males, in addition to sufficient urinal accommodation. Any certificate given by an Inspector shall be kept attached to the general register, and shall be liable at any time to be revoked by notice in writing from the Inspector.

"3. Every sanitary convenience shall be kept in a cleanly state, shall be sufficiently ventilated and lighted, and shall not communicate with any work-room, except through the open air or through an intervening ventilated space.

"4. Every sanitary convenience shall have a proper door and fastenings, and be so enclosed as to secure privacy.

"5. The sanitary conveniences in a factory or workshop shall be so arranged and maintained as to be conveniently accessible to all persons employed therein at all times during their employment.

"6. Where persons of both sexes are employed the conveniences provided for each sex shall be completely separate with separate screened approaches."

Legal proceedings were taken in three instances, but one set of premises was the subject of two summonses, viz., to cleanse a ground-floor workshop and to properly ventilate an underground workshop. In these cases orders were made by the magistrate, and were complied with. The third summons was to provide separate w.c. accommodation for

women, and the work having been carried out between the service of the summons and the hearing, costs only were ordered to be paid (p. 72).

It is a defect in the Act that a certain amount of floor space is not required as well as a certain amount of cubic space for each worker, for it sometimes happens that very high rooms may give the requisite amount of cubic space to comply with the law, and yet, as the organic matter exhaled in the breath does not, as a rule, rise above 14 feet, the condition of the cubic space under that limit may be such as to produce the effects of overcrowding. The insertion of a floor space limit, as is done in the requirements for schools and hospitals, would obviate this difficulty.

Underground Workrooms.—On the question of underground workrooms, the Chief Sanitary Inspector states:—

“One of the difficulties the staff has to contend with is the ventilation of underground workrooms. These, as I pointed out last year, are steadily increasing, and in the majority of such cases the ceilings are on a level with the street paving, rendering it impossible for the light of day to enter, sunlight never penetrates, and natural ventilation is unobtainable. Artificial light is always necessary, mechanical means of ventilation have to be provided, and the air must be polluted by exhalations from horse droppings and dirt when it is brought in from the street levels. Some higher standard ought to be fixed as the minimum space allotted to each worker in these underground rooms, the cubic air space now allowed by the Factory and Workshop Act, 1901, being altogether inadequate in such places.

“Your sanitary staff is somewhat hampered in its efforts to ameliorate this state of things, because it has often happened during the past year that architects, surveyors, owners of workshops and other ratepayers call at the Inspector's Office for information and hints respecting any notices requiring ventilation to a workshop, etc., and on entering the Sanitary Offices find them to be worse off in these respects than the premises occupied by the workers the Sanitary Inspector seeks to benefit.”

Outworkers.—Notices were published in the newspapers calling the attention of persons in trades specified in the Home Secretary's Order that a copy of a list of outworkers employed by them must be sent to the City Council twice a year, but although a considerable number of names have been received from employers and from other Borough Councils there must be many more whose names have not been sent in. The keeping of the Register of Outworkers entails a good deal of work, as, where the place of employment or home of an outworker is in another district, the Council of that district must be so informed. Outworkers are constantly changing their addresses and their employer, so

that it is difficult to maintain a correct register, and special inspection of outworkers' homes has not been made except in so far as the District Inspectors have been able to include it in their ordinary work.

It is important that special inspection of such places should be made, as, if the Council considers any of them to be in a state "injurious or dangerous to the health of persons employed therein," steps may be taken to prevent work being given out to persons using such places (Section 118).

The number of outworkers on the register is now 1,532, the names of 349 having been added during 1902. 196 lists have been sent to 36 other authorities of persons living in their districts receiving work from Westminster.

Infectious Disease and Workshops.—The small-pox outbreak necessitated a considerable amount of supervision of workshops, especially such engaged in tailoring and dressmaking. Work had to be stopped in a number of instances, notices being served under Section 109; in no case was there any infringement; on the contrary, employers willingly co-operated, and several large firms sent daily lists of employés absent from work, so that the reason for such absence might be investigated; in most instances the illness was of a non-infectious nature, but several cases of small-pox were thus detected.

Causes of Death and Occupation.—The accompanying Tables XXIII. and XXIV. show the causes of death among males and females engaged in occupation. For males the list is fairly reliable, but for women it is not so, as the occupation may not be stated in the death certificate, but wherever it has been given it has been recorded. The tables show also the number of persons engaged in the various groups of occupations. After a number of such tables have been compiled it may be possible to gather from them whether any special fatality affects those engaged in each trade, and, of course, in so doing it will be essential to compare the population and deaths at various age periods.

BAKEHOUSES.

In consequence of the bad condition of bakehouses, the Legislature in 1863 passed the "Bakehouse Regulation Act," for the purpose of limiting the hours of labour in bakehouses, making regulations with respect to their cleanliness and ventilation, and placed them under the supervision of the Local Authorities of the Metropolis.

From the reports of the Local Authorities, subsequent to the passing of that Act, it appears that they caused inspection to be made of the bakehouses within their districts, and served notices requiring them to be brought into conformity with the Act. For some reason, probably

TABLE XXIII.—*Grouped Occupations of Males aged 10 Years and Upwards, with Causes of Death, in 1902.*

	Population.	Total Deaths, 1902.	CAUSES OF DEATH.																				
			Infectious Diseases.	Septic.	Phthisis.	Other Tubercular.	Bronchitis.	Pneumonia.	Other Respiratory.	Alcoholism.	Cirrhosis of Liver.	Other Digestive.	Rheumatic Fever.	Valvular Disease.	Other Circulatory.	Insanity.	Other Nervous.	Cancer.	Diabetes.	Bright's Disease.	Suicide.	Accident.	Other Causes.
Total Occupied and Un-occupied	72,811																						
Retired or Unoccupied ...	9,613																						
Engaged in Occupations	63,198																						
General or Local Government	3,010	31	12	—	3	—	2	—	2	—	3	2	—	2	6	—	3	3	—	—	—	—	3
Defence of country ...	4,571	45	—	—	3	—	1	9	1	—	—	—	—	1	5	1	—	—	—	—	—	—	3
Professional ...	3,750	56	4	1	5	—	5	7	—	—	—	—	—	6	6	—	5	—	—	—	—	—	3
Commercial ...	4,605	52	1	13	—	—	7	4	—	—	1	5	1	1	6	1	3	—	—	1	12	3	1
Domestic service ...	12,276	69	2	—	12	—	10	5	1	—	1	4	1	4	4	—	3	3	—	3	3	4	4
Conveyance of men, goods, or messages	8,275	170	5	5	43	2	25	12	1	—	3	3	—	5	18	—	—	11	—	12	12	8	7
Gardeners, florists, &c. ...	178	4	—	—	—	—	—	2	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—
Dealing in coal, stone, &c. ...	107	9	1	—	—	—	1	1	—	—	—	—	—	—	1	1	—	—	—	1	—	—	3
Jewellers, watchmakers, &c. ...	1,283	13	2	—	—	—	1	—	—	—	—	1	—	3	1	—	4	—	—	—	—	—	—
Engineering and machine making	1,948	41	2	2	4	1	7	4	—	—	1	1	—	—	3	—	1	1	1	3	1	1	8
Building and works of Construction	3,651	90	2	2	13	1	15	5	1	—	—	2	—	1	11	—	10	11	1	7	1	3	4
Wood, furniture, fittings, and decorations	1,155	19	—	—	4	1	5	1	—	—	—	—	—	1	2	—	—	1	—	2	2	—	—
Brick, cement, pottery, and glass	141	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chemicals, oil, grease, &c. ...	471	4	—	—	1	—	1	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—
Skins, leather, hair, and feathers	406	14	—	—	1	—	1	2	—	—	—	—	—	—	4	—	1	—	1	1	—	—	3
Paper, books, prints, and stationery	1,731	26	—	—	4	—	2	—	1	1	—	1	—	1	1	1	2	3	—	1	—	2	6
Textile fabrics ...	990	11	—	—	7	—	—	—	—	1	—	—	—	—	2	—	—	1	—	—	—	—	—
Tailors ...	2,568	67	3	1	10	—	12	4	—	—	3	2	—	—	14	1	3	3	—	1	1	3	6
Boot and shoe makers ...	670	35	1	1	2	—	3	3	3	—	—	1	—	2	7	—	1	4	—	—	—	1	6
Other workers in dress ...	830	4	—	—	—	—	1	—	—	—	—	—	—	—	3	—	—	—	—	—	—	—	—
Food, tobacco, drink, and lodging	7,556	136	7	3	39	1	8	11	—	4	6	4	1	2	22	—	7	4	—	6	4	2	14
Gas, water, electricity, &c., supply	400	5	—	—	1	—	—	1	—	—	1	—	—	—	—	—	1	—	—	—	—	—	1
General dealers, hawkers, &c.	3,247	165	13	1	31	1	18	21	6	1	2	7	—	2	21	2	7	6	—	8	—	5	13

TABLE XXIV.—*Grouped Occupations of Females Aged 10 Years and Upwards, with Causes of Death in 1902.*

	Population.			Total at Census.	Total Deaths, 1902.	CAUSES OF DEATH.																			
	Un-married.	Married or Widows.	Infectious Diseases.			Septic.	Phthisis.	Other Tubercular.	Bronchitis.	Pneumonia.	Other Respiratory.	Alcoholism.	Cirrhosis of Liver.	Other Digestive.	Rheumatic Fever.	Valvular Diseases.	Other Circulatory.	Insanity.	Other Nervous.	Cancer.	Diabetes.	Bright's Disease.	Suicide.	Accident.	Other Causes.
Total Occupied and Un-occupied	49,110	36,748																							
Retired or Unoccupied ...	12,537	26,933																							
Engaged in Occupations, Unmarried	36,573	9,811																							
National, Local Government, commercial	997	114	1,111	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	
Professional teaching, &c. ...	1,964	591	2,555	11	—	—	1	—	1	—	—	—	—	—	—	3	—	1	1	—	—	—	—	4	
Domestic indoor servants ...	22,539	2,438	24,977	115	3	5	9	1	21	6	—	—	—	6	—	6	9	11	6	5	—	—	—	15	
Charwomen ...	264	1,355	1,619	48	—	—	8	1	7	5	—	—	—	1	—	—	3	6	5	—	—	3	—	5	
Laundry, washing service, &c.	921	1,437	2,352	27	—	—	5	1	6	12	—	—	—	—	—	—	5	—	1	12	—	—	—	3	
Paper, prints, books, and stationery	506	146	652	3	—	—	2	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	
Upholsterers, &c. ...	113	71	184	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	
Textile fabrics ...	971	75	1,046	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Hair and feather workers ...	17	9	26	2	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Tailoresses ...	1,366	1,024	2,390	41	1	—	6	—	10	4	—	—	—	1	1	—	1	—	3	3	1	1	—	6	
Milliners, dressmakers, &c. ...	3,927	1,372	5,299	39	—	—	9	—	5	12	—	—	—	—	—	—	8	—	12	—	—	—	—	4	
Eating and lodging house keepers and dealers in food	598	564	620	9	—	—	4	—	—	—	—	—	—	—	—	—	12	—	1	—	—	—	—	1	
Inn and hotel service	1,391	202	1,593	25	12	1	3	—	—	1	—	—	12	3	3	—	—	12	1	—	1	12	—	2	
General dealers, &c. ...	294	243	537	20	1	—	3	—	3	12	—	—	1	1	—	—	—	1	—	—	1	—	—	4	
Others ...	705	415	1,120	2	—	—	12	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

political, Parliament, in 1878, when dealing with the Factory and Workshop Act of that year, transferred the duty of supervising these establishments to the Factory Inspectors. The Factory Inspectors were too few in number to perform the duty imposed upon them, so that practically supervision of bakehouses came to an end, except in some districts where the Local Authorities directed their officers to continue inspecting bakehouses, and to take such steps as were possible under the existing law to secure the best conditions. London bakehouses fell into a most unsatisfactory state when the duties of the Sanitary Officials ceased, and the Chief Factory Inspector recommended, in 1881, that the duty of supervising bakehouses should be taken away from the Factory Inspectors, and, in 1882, the Local Authorities themselves, through their Medical Officers, memorialised the Home Secretary to the same effect, and asking for power to make by-laws regulating the construction, cleansing, &c., of bakehouses.

In 1883 the Government brought in and carried a Factory and Workshop Bill, one of the clauses of which restored to the Sanitary Authorities their former position, so far as related to the cleanliness, ventilation, overcrowding and other matters affecting the sanitary condition of bakehouses, but no power was given to prevent the use of existing, or the building of new, bakehouses underground, and no power was given to make by-laws. In 1891 the Public Health (London) Act and the Factory Act of the same year further increased the powers of Sanitary Authorities in respect to measures for securing such improved sanitary conditions of bakehouses as are practicable, having regard to the underground position of the premises. In the 1895 Factory and Workshop Act, the law relating to bakehouses was again made more stringent, and at that time the London County Council attempted, but unsuccessfully, to influence Parliament to confer upon that body the power of licensing and inspecting bakehouses. While it might be desirable, for the sake of uniformity, that the framing of by-laws should be in the hands of a Central Authority, the duty of inspection and of carrying them out must be left to the Local Authorities.

In the Factory and Workshop Act of 1901 provisions are laid down whereby Local Authorities may effect considerable improvement in the condition of all bakehouses, especially such as are underground, as, after the first day of 1904, no underground bakehouse may be used unless certified by the District Council to be suitable as regards construction, light, ventilation, and in all other respects. After the passing of the Act, I reported to the Public Health Committee as follows:—

“It is apparent that serious duties will devolve on the Public Health Committee and on the Medical Officer of Health during the next two years. I say the ‘next two years’ because it will be clearly essential

that the examination and certification of the bakehouses should not be left until the moment when, according to law, they should be closed if not suitable, or so altered as to comply with the very stringent conditions laid down in the Act. I would suggest that a Sub-committee, who would from time to time report to the Public Health Committee, should be at once formed, so that they may be able to complete their work sufficiently early in 1903, and thus enable bakers to erect suitable bakehouses or to make such alterations as may be required for the purposes of a certificate, and also at the same time to leave sufficient time for the Sub-committee to re-visit the bakehouses for the purpose of satisfying themselves that the improvements will enable them to grant the certificate to each bakehouse as to its suitability as regards 'construction, light, ventilation, and in all other respects.' This is a comprehensive certificate, for the words 'in all other respects' are far-reaching, and may be difficult for the occupiers of existing bakehouses to satisfy when all their sanitary circumstances are carefully enquired into."

The Public Health Committee adopted the suggestion, and the following letter and memorandum were sent to each baker in the City:—

CITY OF WESTMINSTER.

CITY HALL, W.C.,

November 4th, 1902.

SIR,

The Public Health Committee of the Council of the City of Westminster have appointed a Sub-Committee to consider applications for certificates for underground bakehouses, which are required by the Factory and Workshop Act, 1901, Section 101, to be obtained before the 1st January, 1904.

In order that the Sub-Committee may know which underground bakehouses the owners or occupiers desire to continue in use after that date, the Sub-Committee enclose herewith a form of application which they will be glad to have filled up and returned at an early date, in order that they may view the premises.

As a guide to owners or occupiers, the Sub-Committee have drawn up a Memorandum embodying the requirements which will guide them in their consideration of the fitness of underground bakehouses, and a copy is enclosed herewith, but it is suggested that bakers should not proceed with structural or other alterations until the Sub-Committee has had the opportunity of seeing the bakehouse, and of expressing an opinion as to the likelihood of a certificate being granted on completion of the suggested alterations.

It will facilitate the work of the Sub-Committee if a plan of the bakehouse and of any suggested improvements be submitted with the application for the certificate.

I am, Sir,

Yours obediently,

FRANCIS J. ALLAN, M.D.,
Medical Officer of Health.

CITY OF WESTMINSTER.

Memorandum on Bakehouses.

In addition to the general provisions of the Factory and Public Health Acts applying to workshops, special sanitary regulations are contained in the former Act and are to be enforced in the City of Westminster by the City Council in every bakehouse (whether retail or not) which is a workshop (Public Health (London) Act, 1891, Section 26). A "Bakehouse" is defined (Public Health Act, Section 141) as "any place in which are baked bread, biscuits, or confectionery, from the baking or selling of which a profit is derived."

The provisions of the Factory Act require that:—

- (1). Every room or place used as a bakehouse to be in such a state as to be, on sanitary grounds, fit for use in occupation as a bakehouse. (Section 98).
- (2). No water-closet, earth-closet, privy or ash-pit to be within, or communicate directly with, the bakehouse. (Section 97*a*).
- (3). Every cistern for supplying water to the bakehouse to be separate and distinct from any cistern for supplying water to a water closet. (Section 97*b*).
- (4). No drain or pipe for carrying off fæcal or sewage matter to have an opening within the bakehouse. (Section 97*c*).
- (5). All the inside walls of the rooms of a bakehouse, and all the ceilings or tops of the rooms (whether those walls, ceilings or tops are plastered or not), and all the passages and staircases of a bakehouse, to be either painted with oil or varnished, or be limewashed, or be partly painted or varnished, and partly limewashed; and
 - (*a*) Where the bakehouse is painted with oil or varnished, there must be three coats of paint or varnish, and the paint or varnish must be renewed once at least in every seven years, and must be washed with hot water and soap once at least in six months; and
 - (*b*) Where the bakehouse is limewashed the limewashing must be renewed once at least in every six months. (Section 99).

- (6). No place on the same level with a bakehouse, and forming part of the same building, to be used as a sleeping place, unless it is constructed as follows, that is to say:—

(a) is effectually separated from the bakehouse by a partition extending from the floor to the ceiling ; and

(b) has an external glazed window of at least nine superficial feet in area, of which, at the least, four and a half superficial feet are made to open for ventilation (Section 100);

and unless such sleeping room (if separately occupied) comply with the requirements as to underground rooms laid down in the Public Health (London) Act, Section 96.

The Public Health (London) Act, 1891, Section 2, requires:—

- (1). That a bakehouse shall be kept in a cleanly state and free from effluvia arising from drains, water-closets, urinals or other nuisance.
- (2). That it be properly ventilated.
- (3). That no overcrowding be allowed at any time.

Underground Bakehouses.

The Factory and Workshop Act of 1901 makes an important alteration in the law with regard to "Underground Bakehouses." Section 101 states that:—

"An underground bakehouse not in use as a bakehouse at the passing of the Factory Act—*i.e.*, on August 17, 1901—shall not be again used as a bakehouse, and no new underground bakehouse can be opened after that date. After January 1, 1904, no underground bakehouse may be used 'unless certified by the District Council to be suitable' for such use.

"An underground bakehouse shall not be certified as suitable unless the District Council is satisfied that it is suitable as regards construction, light, ventilation, and *in all other respects*."

An "underground bakehouse" is defined as "a bakehouse any baking room of which is so situate that the floor is three or more feet below the surface of the footway of the adjoining street, or of the ground adjoining or nearest to the room."

A "baking room" is "any room used for baking or for any process incidental thereto." (Factory Act, Section 101, 3.)

The Council of the City of Westminster is the authority to grant the certificate referred to, and the Public Health Committee have

appointed a special Sub-committee to deal with this matter. The Committee are of opinion that it is important for the protection of the public health, as well as for that of the persons employed, that bakehouses should be light, airy, clean and free from nuisance of any kind, and in order to guide them in recommending a grant of a certificate in respect of any bakehouse, they consider the following *minimum* requirements, in addition to those specially mentioned in the Act, as essential :—

A.—Construction.—

- (1) The bakehouse shall be of a minimum capacity of 1,000 cubic feet, shall have a floor space of at least 100 feet, and shall be in every part thereof at least 8 feet high, measured from the floor to the ceiling.
- (2) The walls shall be smooth and impervious throughout.
- (3) The ceilings shall be properly ceiled with smooth and impervious material.
- (4) The floors shall be of smooth and impervious material throughout.
- (5) Any drain or sewer under the bakehouse shall be constructed of gas and water-tight pipes. No gully shall be within the bakehouse, unless the drain connected therewith be made to discharge into a trapped inlet outside the bakehouse.
- (6) Provision shall be made for safe and suitable means of access to the bakehouse.

B.—Light.

- (7) (a) The bakehouse shall be sufficiently lighted by daylight, by means which shall exclude the entrance of street dust.
- (b) That where possible artificial lighting shall be by electric light.

C.—Ventilation.

- (8) The bakehouse shall be properly and effectually ventilated by permanent inlets and outlets, communicating directly with the open air, in such a way, and at such a height above the street level, as to prevent the entrance into the bakehouse of street dust and dirt. Where natural ventilation is not effective, or in the opinion of the Medical Officer of Health insufficient, ventilation by fans, or other artificial means, shall be provided.

D.—All other Respects.

- (9) Dough troughs, and other furniture or fittings (if any) shall be mounted on strong castors, or wheels, so as to be readily movable for cleansing purposes, or, where fixed, shall be

raised, at least 1 foot from the floor, and set sufficiently away from all walls, so as to allow of access to all parts.

(10) There shall not be in direct communication with the bakehouse, any coal or other cellar, room, unpaved yard, or area, which may be a nuisance, or cause contamination by foul air, dust or dirt. Where possible, the stoke-hole to the oven fires should not be inside the bakehouse.

(11) Provision shall be made for the proper storage of flour elsewhere than in the bakehouse itself.

Section 101, Sub-section 8, of the Factory and Workshops Act, 1901, states that:—

“Where any place has been let as a bakehouse, and the certificate required by this section cannot be obtained unless structural alterations are made, and the occupier alleges that the whole or part of the expenses of the alterations ought to be borne by the owner, he may by complaint apply to a court of summary jurisdiction, and that court may make such order concerning the expenses or their appointment as appears to the Court to be just and equitable, under the circumstances of the case, regard being had to the terms of any contract between the parties, or in the alternative the Court may, at the request of the occupier, determine the lease.”

WESTMINSTER CITY HALL, W.C.

October 22nd, 1902.

Copies of the Factory and Workshops Act, 1901, may be purchased, either directly or through any bookseller, of Messrs. Eyre and Spottiswoode, East Harding Street, Fleet Street, E.C. Price 11d.

Application for a Certificate for an Underground Bakehouse.

CITY OF WESTMINSTER.

Factory and Workshop Act, 1901.

To the Westminster City Council.

I _____ being the occupier of an underground bakehouse situate at No. _____ hereby apply for a certificate for the same, under Section 101 of the above Act that it is suitable for the purposes of a bakehouse.

Signature of Applicant
Address

Date

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There were at the end of 1902, 107 bakehouses, of which 97 were reckoned as underground and 10 above ground. 48 applications were made for certificates during 1902, and the Sub-committee were able to visit 20 of these underground bakehouses before the end of the year, and eventually recommended that certificates be granted in respect of 4 of them. Works required in connection with the others had not been carried out by the end of the year. At the end of 1903 I shall probably be able to report that the number of bakehouses in the City has been considerably reduced, due partly to the increase in the stringency of the requirements, and to the tendency to build bakehouses which will serve several shops, and to provide mechanical power in the place of hand labour.

E. FOOD SUPPLY.

Milk.

Under the powers transferred to the City Council from the County Council in November, 1900, 14 dairies and milkshops have been registered, and 390 visits have been paid to them. There are 3 cow-keepers in the City licensed by the County Council, viz., at 13, Marsham Street (19 cows), 7, Arthur Street (12 cows), and 28, Winchester Terrace (3 cows). These have been visited regularly.

Legal Powers.—The London County Council sought in a General Powers Bill to obtain power to deal with outbreaks of infectious disease in connection with milk supplies, and also to take samples of milk for examination as to tuberculosis. The Bill was opposed by the City, and I gave evidence against it before the Committees of the Houses of Parliament. It was generally regarded as an attempt on the part of the County Council to get back the power taken from that body by the London Government Act, so far as milk supply was concerned. The House of Commons Committee eliminated the tuberculosis clauses at an early stage, and the House of Lords threw out the rest of this part of the Bill.

The evidence put forward on behalf of the City of Westminster was on the following lines:—

“The opinion of the Westminster Council is that the powers sought for by the London County Council, in Part 8 of the General Powers Bill, are unnecessary, as the Medical Officer of Health of each borough has power under the Public Health Act to take all the necessary steps to stop the supply of milk to his borough.

“The Medical Officer of Health is the person to whom notifications of infectious disease are sent, and he is in a position to ascertain, from the enquiries made by him, whether the milk supply is spreading

infection, and as all the Medical Officers of Health in London are in close touch with one another, combined action can be taken readily and promptly, whereas the London County Council have no means of ascertaining whether any localised outbreak of infectious disease is due to milk or other cause, except from information which the local Medical Officer of Health may voluntarily give them.

"The Westminster Council is further of opinion that the Bill suggested by the London County Council is wrong in principle, and that this is a question which should be met by general legislation if required. If the supply of milk were stopped from being sent to London there is no guarantee that it would not be disposed of in some other part of the country. I am therefore of opinion that it would be better to require the Metropolitan Medical Officer of Health who had reason to believe that infectious disease was being conveyed by milk, to notify the Medical Officer of the district or county in which the dairy might be situated, and to require him to make such enquiries as were necessary and to stop the milk at its source.

"In order to ascertain whether there would be any difficulty in effecting this, I have addressed the following letter to the Medical Officers of the various counties and large combined sanitary districts. Replies have been received from 24 of them, and 21 of these oppose the London County Council's Bill, 2 agree with it, and 1 agrees with certain modifications. I append a summary of the replies.

"As an alternative of the suggestions of the London County Council, the Westminster Council are of opinion that it is quite unnecessary for the County Council to make enquiries as suggested by the Bill. That the Public Health (London) Act is sufficient to protect each Metropolitan Borough.

"A difficulty was raised that if a milk supply was sent to all of the different metropolitan boroughs, an enquiry would have to be made by the officers of each borough, and this would be a great hardship to the farmer. While disputing that it is not at all likely that 29 boroughs would be affected by one milk supply, the Westminster Council is of opinion that if any further power is required, it would be made by the insertion of a clause giving the County Council power, where an order has been obtained by a Borough Medical Officer, to extend the order to all the rest of London."

ICE-CREAMS.—The County Council (General Powers) Act contains sections dealing with places where ice-creams are made. The City Council considered it would have been of value if the Act had provided that no place should be used for the making, storage, or sale of ice-creams unless certified as to its suitability; but it appears to be difficult

to get Parliament to consider such a clause. The provisions of the Act have been brought to the notice of interested persons within the City by the following notice:—

“The Westminster City Council hereby give notice that Part VIII of the London County Council (General Powers) Act, 1902, which will come into operation on 1st November, 1902, provides as follows:—

“Any person being a manufacturer of or merchant or dealer in ice-creams or other similar commodity who within the City—

- (a) Causes or permits ice-creams or any similar commodity to be manufactured sold or stored in any cellar shed or room in which there is any inlet or opening to a drain or which is used as a living room or sleeping room ;
- (b) In the manufacture sale or storage of any such commodity does any act or thing likely to expose such commodity to infection or contamination or omits to take any proper precaution for the due protection of such commodity from infection or contamination ; or
- (c) Omits on the outbreak of any infectious disease amongst the persons employed in his business or living or working in on or about the premises in or on any part of which any such commodity as aforesaid is manufactured sold or stored to give notice thereof forthwith to the Medical Officer of the City of Westminster in which such business is carried on or such premises are situate ;

shall be liable for every such offence on conviction in a court of summary jurisdiction to a penalty not exceeding forty shillings.

“Every itinerant vendor of any such commodity as aforesaid shall if not himself the manufacturer thereof exhibit in a legible manner on a conspicuous part of his barrow a notice stating the name and address of the person from whom he obtains such commodity and if such vendor is himself the manufacturer of such commodity he shall in the same manner exhibit his own name and address. Every such itinerant vendor who shall fail to comply with the provisions of this section shall be liable for each offence on conviction as aforesaid to a penalty not exceeding forty shillings.

“JOHN HUNT,
“Town Clerk.

“WESTMINSTER CITY HALL, W.C.,
“10th October, 1902.”

Proceedings for the recovery of the penalties imposed by the two last preceding sections of this Act shall be instituted by the Sanitary Authority for the district in which the offence was committed, or of the district to the Medical Officer of which such notification as aforesaid

ought to have been made, or in which such itinerant vendor as aforesaid shall offer any such commodity as aforesaid for sale, as the case may be.

Provided always that if any Sanitary Authority omit to institute such proceedings, the Council may institute the same, as if such omission were a default within the meaning of The Public Health (London) Act, 1891, and the provisions of that Act relating to any such default and the consequences thereof shall apply with respect to such proceedings.

SLAUGHTER-HOUSES.—There is now only one slaughter-house in the City, viz., at 14, Regency Street, two others having relinquished the use of their premises.

TRIPE BOILERS.—Two places are licensed in the City; one in St. Margaret's Ward, the other (shortly to be closed) in the Strand Ward.

RESTAURANTS.—The County Council forwarded a copy of a Report by their Public Health Committee on the subject of inspection of kitchens at hotels and restaurants, and expressing the hope that the City Council, unless it has already done so, will cause such kitchens in the City to be inspected, and will exercise its powers under The Public Health (London) Act, 1891, for the removal of any insanitary conditions that may be found as a result of the inspection.

The Council informed the County Council that inspection of the premises referred to was carried out in the ordinary way by the Health Department.

FOOD AND MARKET INSPECTIONS.

The markets and places where food is sold have been inspected every day (including Sundays), and the vigilance displayed by the Inspectors in previous years has been maintained. The following list shows the quantity of food seized, condemned, and destroyed as unfit for food during the year:—

Apples	20 barrels	Mutton	1 piece
Asparagus	78 bundles	Ox tongues	2
Bananas	1,494 crates	„ livers	2
Beans	392 baskets	Oranges	92 cases
„ Madeira	269 „	Plaice	6 cwt.
Black Currants	80 bushels	Pears	42 cases, and 73 baskets
Beef	88 stone, and 1 piece	Persimmons	54 boxes
Caviare	25 gross of tins	Plums	32 cases, and 400 sieves
Cod	1 barrel	Potatoes	9 bags
Cherries	43½ bushels	Rabbits	13
Greens	26 bags	Strawberries	25 bushels
Haddocks	5	Salmon	63 tins
Herrings	201 tins	Sloes	17 boxes, and 40 pecks
Lamb	7½ lbs.	Tomatoes	219 boxes, and 1 tin
Lemons	6 cases	Turnip tops	26 bags
Mangoes	6 bushels		
Mushrooms	30 „		
Milk, condensed	1 tin		

In addition to the above, large quantities of unsound fruit and vegetables are removed as refuse from Covent Garden market by the Council. Special carts are provided in the market, so that dealers may throw into them "waste fruit."

Among the articles seized was a tin of tomatoes, taken from a consignment sent to a retailer in the City. Their appearance attracted the attention of the Food Inspector, who examined the contents of one tin, and finding the fluid in which the tomatoes were peculiar looking he submitted the sample by my instructions to one of the public analysts, who reported the presence of tin in soluble form to the amount of 2 grains of metal to the pound. The amount present in the whole sample was 5 grains of metal, equivalent to 8 grains of tin chloride. As the consignment had been sent from a wholesale grocer in the Borough of Islington, I communicated with the Medical Officer of Health of that borough, with the result that the remainder of the consignment was taken back and the whole of this stock of tomatoes destroyed.

Complaints were received from persons who were ill after dining at a certain restaurant. An examination of the copper saucepans in use was made, and it was found that they required to be retinned, and some tomato soup which was being cooked in one of them was analysed by Mr. C. H. Cribb and found to contain metallic copper to the amount of 0.227 grains per pint, equivalent to 0.897 grains of copper sulphate.

The Chief Sanitary Inspector says: "Your Inspectors are fully alive to the great importance of exercising the keenest vigilance over the soundness of all foodstuffs exposed for sale and of materials used in the preparation of food. During the past year there have been many terrible instances of poisoning by unsound food, notably at Derby, &c., where in all several hundreds of persons suffered, and it is satisfactory to note that no cases of food poisoning occurred in the City of Westminster. In view of certain allegations anent oysters and shellfish made during the past few months, your Sanitary Officers have thoroughly inspected all premises within the district, the utensils used, &c., and in every case have found that the greatest care is taken by the vendors of these articles of food to secure cleanliness, &c.

"In two instances legal proceedings were taken.

"Against Mr. W. G. White, 10, James Street, Haymarket, in respect of 201 tins of filleted herrings. From information which reached me, Inspector McNair was instructed to examine the foodstuffs exposed for sale at 10, James Street, and on a shelf at the back of the counter, and among other articles of food, he found 201 tins of filleted herrings in a putrid condition. They were taken to Great Marlborough Street Police Court, and ordered by the magistrate to be destroyed. Your Committee ordered proceedings to be taken. The case was heard before Mr. Kennedy on December 4th, 1902, and a fine of £100 and 2s. costs was imposed.

The defendant was previously prosecuted in 1901 for having in his possession for the purpose of sale 1 cask and 7 tins of caviare in a putrid state, and was then sentenced to imprisonment.

"Against Joseph Burge, of 4A, Berwick Street, Soho. Inspector McNair seized 13 rabbits which were exposed for sale on a stall, and they were ordered by a magistrate to be destroyed. The defendant having been previously cautioned for a similar offence by the Committee, proceedings were ordered, resulting in a fine of £20 and 2s. costs being imposed."

SALE OF FOOD AND DRUGS ACTS.

1,800 samples were purchased during 1902 and submitted to the Public Analysts for the City. The following is a list of the samples, with the proportion found adulterated, but a number of those reported genuine were of inferior quality:—

Return of Samples Purchased under the Sale of Food and Drugs Acts, with the Number Found Adulterated, made to Local Government Board.

Articles of Food.	Number of Samples Purchased.	Adulterated.	Genuine.	Inferior.
Milk	491	58	433	(40)
Separated milk	2	1	1	—
Condensed „	53	10	43	—
Cream	26	17	9	—
Butter	227	8	219	(2)
Margarine.. .. .	23	5	18	(1)
Cheese	71	—	71	—
Coffee	144	10	134	—
„ beans	18	—	18	—
Bread	54	—	54	—
Arrowroot.. .. .	36	1	35	—
Sago	36	5	31	—
Beer	53	1	52	—
Golden Syrup	26	2	24	—
Whisky	81	10	71	(7)
Rum	30	6	24	—
Gin	60	5	55	(4)
Brandy	9	1	8	—
Sweets	1	—	1	—
Mustard	26	2	24	—
Vinegar	75	—	75	(9)
Ground cinnamon	15	1	14	(1)
Ginger	33	—	33	(1)
Lard	8	—	8	—
Baking powder	11	2	9	(1)
Custard „	16	—	16	(2)
Ice cream	53	5	48	(7)
Cornflour	42	1	41	—
Cocoa	24	4	20	—
Olive oil	12	1	11	—
Preserved pineapples	1	—	1	—
„ pears	8	—	8	—
Tinned peas	8	8	—	—
„ haricots	1	1	—	—
„ tomatoes	1	—	1	—
Gherkins	1	—	1	—
Boracic acid ointment	12	—	12	(1)
Tincture of iodine	12	1	11	—

Prosecutions were ordered in the following cases, but in addition in 109 instances cautionary letters were sent to the vendors:—

Articles of Food.	No. of Samples.	Adulterated.	Prosecutions.	Convictions.	Warranty or Disclosure.	Fines.	Costs.
						£ s. d.	£ s. d.
Milk	491	58	24	18	6	52 10 0	12 5 0
Separated milk ..	2	1	1	1	—	0 10 0	0 14 6
Cream	26	17	3	2	1	2 0 0	1 9 0
Butter	227	8	6	6	—	27 0 0	4 5 0
Margarine	23	5	1	1	—	2 0 0	0 12 6
Rum	30	6	4	4	—	8 0 0	2 18 0
Whisky	81	10	2	2	—	0 10 0	1 9 0
Gin	60	5	1	1	—	0 10 0	0 14 6
Coffee	144	10	6	5	1	14 10 0	3 10 6
Sugar*	—	—	1	1	—	5 0 0	0 14 6
Raspberry jam*..	—	—	1	1	—	—	0 14 6
Golden syrup ..	26	2	1	1	—	1 0 0	0 14 6
Mustard	26	2	2	2	—	6 0 0	1 5 0
Cinnamon	15	1	1	1	—	0 10 0	0 12 6
Milk of sulphur*	—	—	1	1	—	2 0 0	0 14 6

* Samples taken in the year 1901.

Milk.—19·9 per cent. of the milks were of such a quality as to justify the Analyst in returning them as adulterated, but in only 24 was the defect above the limit fixed by the Council for prosecution. That is to say, there was added water of at least 5 per cent. or fat abstracted of more than 5 per cent. In 12 instances boracic acid was present; this varied in amount from a few grains to 70 grains per gallon; proceedings were taken in 5 cases. It is now generally understood that the presence of preservatives in milk implies that the milk has not been obtained or kept under cleanly conditions, and as a rule the greater the amount of preservatives the dirtier is the milk, and the more unfit it is for human consumption. It is sometimes argued that it is better to have milk containing a preservative than one which has gone sour, but the fallacy of this is readily understood when it is recognised that the cause of the sourness or badness of the milk is due to the impurities it contains, and that these are temporarily masked by the presence of a preservative. It is better that the public should be able to recognise such impure milk than that its qualities should be concealed by a preservative. In the latter case not only does the consumer swallow manure and other filth, but at the same time gets a dose of a drug which is deleterious to him. The large dairy companies now forbid the addition of preservatives to milk supplied to them, preferring to insist on cleanliness and prompt cooling of the milk after it has been drawn.

That preservatives were only present 12 times in 491 samples is evidence that in the vast majority of cases neither the farmers or the retailers have found any difficulty in disposing of their milk without the use of so-called preservatives.

Separated Milk.—In one instance 62·09 grains of boracic acid per gallon were found, and a conviction was obtained.

Cream.—In 25 instances boracic acid was detected, the amounts were a few grains in 8 samples, and varied from 14·95 to 53·56 grains per pound in 17 samples, the average of these being 36 grains. Three prosecutions took place, and convictions followed in 2 cases; in the third, the magistrate held that a sufficient disclosure had been made on the label, and this prevented further action being taken with regard to other samples.

Ice Creams.—5 samples were found to contain boracic acid, derived probably from milk; the amounts were all small, varying from 1 or 2 grains to 8·53 per pound.

Butter and Margarine.—In 80 of the 227 samples of butter, and in all of the 23 samples of margarine, boracic acid was present. This drug is evidently taking the place of salt to a certain extent.

Condensed Milk.—10 of the 53 condensed milks were reported to be adulterated, but sufficient legal disclosure was made on the tins to prevent prosecution, although the protection to the public is extremely slight. Most of these were condensed skimmed-milks, quite unsuitable for infant nurture,

Spirits.—The adulteration in these cases was the addition of water. The whisky, gin, or rum asked for by the purchaser may have been, and in a number of cases undoubtedly was, an article made up from potato spirit flavoured with various chemicals, but, apparently, the manufacturers and sellers of such cannot at present be brought under the Food and Drugs Acts.

Tinned Vegetables.—Copper was found in a number of these, but action in regard to them was not taken until after the end of the year, when successful prosecutions took place.

The following is a list of the prosecutions, most of which were conducted by the Chief Sanitary Inspector, Mr. Strutt:—

Ward.	Name and Address of Defendant.	Court and Name of Magistrate.	Offence.	Result.
St. Margaret	Charles Adams, 39, Dartmouth Street.	Westminster (Mr. Horace Smith.)	Selling rum 4·19 per cent. below strength laid down.	Fined £4 and 14s. 6d. costs.
St. Margaret	William G. Merritt, 27, The Broadway.	Do. do.	Selling mixed spirit for rum 3·52 per cent. below strength laid down.	No fine; 14s. 6d. costs.
Regent	R. W. Evans, 8, Green's Court ..	Great Marlborough Street.. (Mr. Kennedy.)	Selling milk with 6 per cent. added water.	Fined £4 and 14s. 6d. costs.
St. Anne's	Alice Crokhard, 46, Gerrard Street, Soho.	Do. do.	Selling butter 80 per cent. margarine.	Fined £3 and 14s. 6d. costs.
Great Marlborough ..	J. R. Sharlow, 15, Broad Street, Soho.	Do. do.	Selling milk of sulphur consisting entirely of sublimed sulphur.	Fined £2 and 14s. 6d. costs.
Great Marlborough ..	G. Hammond, 51, Lexington Street	Do. do.	Selling milk 10 per cent. of added water.	Fined £2 and 14s. 6d. costs.
Regent.. ..	H. Hall, 31, Rupert Street ..	Do. do.	Selling raspberry jam containing 80 per cent. of red currant jam.	No fine; 14s. 6d. costs.
Covent Garden ..	Michael J. Atkins, 10, James Street, W.C.	Bow Street (Sir A. de Rutzen).	Selling rum 3·5 per cent. below strength laid down.	No fine; 14s. 6d. costs.
Covent Garden ..	Thomas Bullock, 41, Maiden Lane, W.C.	Do. do.	Selling whisky 7 per cent. below strength laid down.	No fine; 14s. 6d. costs.
Covent Garden ..	Harriet Burrows, 9, Bedfordbury..	Do. do.	Selling coffee 50 per cent. chicory	Fined £2 and 14s. 6d. costs.
Pall Mall	Alfred F. Jackson, 6, St. Alban's Place, S.W.	Great Marlborough Street.. (Mr. Kennedy.)	Selling rum 4 per cent. below strength laid down.	Fined £4 and 14s. 6d. costs.
St. John	Joseph Matthews, 57, Grosvenor Road.	Westminster (Mr. Sheil.)	Selling butter 81·9 per cent. of foreign fat.	Fined £2 and 14s. 6d. costs.
St. John	William Hewitt, 6, Edward Street.	Do. do.	Selling milk 8 per cent. added water.	Fined £5 and 14s. 6d. costs.
St. Margaret	Piper's Limited, 44, Warwick Street.	Do. do.	Demerara sugar; 100 per cent. of sugar dyed with organic colouring matter.	Fined £5 and 14s. 6d. costs.
Knightsbridge St. George.	William Baker, 15, Westbourne Street.	Do. do.	Selling coffee 60 per cent. chicory	Fined £3 and 14s. 6d. costs.

Ward.	Name and Address of Defendant.	Court and Name of Magistrate.	Offence.	Result.
Victoria	Charles Paine, 189, Ebury Street..	Westminster.. .. (Mr. Sheil)	Selling coffee 15 per cent. chicory	Fined £5 and 14s. 6d. costs.
St. John	Elizabeth Reeve, 110, Regency Street.	Do. do.	Selling coffee 10 per cent. chicory	Fined 10s. and 14s. 6d. costs.
St. Pancras Station ..	Arthur W. Cave, Shottle, Derbyshire.	Clerkenwell (Mr. D'Eyncourt)	Consigned milk to Craven Yard, Westminster, 20 per cent. added water.	Summons dismissed. Magistrate held Inspector had no jurisdiction outside the district for which he is appointed.
St. Anne	Edward Owen, 5, Bateman Street	Great Marlborough Street .. (Mr. Kennedy)	Selling milk 10 per cent. added water.	Fined £3 and 14s. 6d. costs.
St. Anne	Ernest Moroni, 12, Great Chapel Street.	Do. do.	Selling milk 7 per cent. added water.	Fined £1 and 14s. 6d. costs.
St. Anne	Philip Goldstein, 4, Old Compton Street.	Do. do.	Selling milk 16 per cent. added water.	Fined £4 and 14s. 6d. costs.
St. Anne	Alice Crockhart, 46, Gerrard Street	Do. do.	Selling milk 14 per cent. fat abstracted.	Fined £5 and 14s. 6d. costs.
Victoria	Emily Gledhill, 17, Commercial Road.	Westminster.. .. (Mr. Sheil)	Selling milk 20 per cent. added water.	Fined £5 and 14s. 6d. costs.
Victoria	Frost and Co., 105, Lupus Street	Do. do.	Selling butter 83 per cent. of foreign fat.	Fined £5 and 14s. 6d. costs.
St. John	William Hewitt, 6, Edward Street	Do. do.	Selling milk 12 per cent. added water.	Warranty proved. Summons withdrawn.
St. John	J. G. Hughes, 13, Regency Street..	Do. do.	Selling golden syrup containing 45 per cent. of starch glucose.	Fined 20s. and 14s. 6d. costs.
Victoria	Herbert and Co., Victoria Station..	Do. do.	Selling coffee 25 per cent. of chicory.	Summons dismissed. (Coffee served in tin labelled "Coffee and chicory," but handed to purchaser in plain wrapper. Magistrate held sufficient disclosure had been made.)
Regent	John Gay, 85, Berwick Street ..	Great Marlborough Street .. (Mr. Kennedy)	Selling milk, from which 16 per cent. of original fat had been abstracted.	Warranty proved. Summons withdrawn.

St. Anne	..	..	E. Owen, 5, Bateman Street	..	Do.	do.	..	..	Selling margarine, with 78 per cent. of foreign fat.	Fined £2 and 12s. 6d. costs.
St. Anne	..	..	Rowland Evans, 62, Charing Cross Road.		Do.	do.	..	..	Selling coffee containing 85 per cent. of chicory.	Handed to Inspector in a paper, on which was printed:— "This is sold as a mixture of chicory and coffee." The printed matter was covered in the folding of the wrapper, and not visible to the purchaser. The Magistrate convicted the defendant. Fined £4 and 12s. 6d. costs.
St. Anne	..	..	Carter and Son, 50, Old Compton Street.		Do.	do.	..	..	Selling mustard containing 30 per cent. wheat flour covered with turmeric.	Fined £3 and 12s. 6d. costs.
Great Marlborough	..		Taylor and Son, 16, Dorset Street, Portman Square.		Do.	do.	..	..	Selling milk with 16 per cent. fat abstracted.	Warranty proved. Summons dismissed.
Charing Cross	..		Stephen May, 4, York Place	..	Bow Street	..	..	..	Selling mustard with 7 per cent. wheat flour.	Fined £3 and 12s. 6d. costs.
Strand	..	..	John Morgan, 13, Drury Court	..	Bow Street	..	..	..	Selling butter containing 25 per cent. of margarine	Fined £10 and 14s. 6d. costs (second offence).
St. Anne	..	..	H. Harris, 23, Meard Street, Soho		Great Marlborough Street	..	..	..	Selling milk with 26 per cent. of fat extracted	Fined 40s. and 12s. 6d. costs.
St. John	..	..	A. Newland, 25, Vincent Street	..	Westminster..	..	..	..	Selling separated milk to which 0·04899 per cent., or 62·09 grains per gallon, of boric acid had been added	Fined 10s. and 14s. 6d. costs.
St. Margaret	..	..	F. Gillett, 19, Tachbrook Street	..	Do.	do.	..	..	Selling coffee adulterated with 90 per cent. of chicory	The magistrate held that the label was sufficiently disclosed, and stated that he dismissed the case with regret.
Great Marlborough	..		Morris Weiner, 9, Poland Street		Great Marlborough Street	..	..	..	Selling ground cinnamon containing 8 per cent. of extraneous mineral matter	Fined 10s. and 12s. 6d. costs.
Great Marlborough	..		Elizabeth Cohen, 49, Brewer Street		Do.	do.	..	..	Selling whisky 5 per cent. under legal limit	Fined 10s. and 14s. 6d. costs.
Pall Mall	..	..	Letitia Maud Purdy, 16, Duke Street, St. James		Do.	do.	..	..	Selling gin 4 per cent. under legal limit	Fined 10s. and 14s. 6d. costs.

Ward.	Name and Address of Defendant.	Court and Name of Magistrate.	Offence.	Result.
Great Marlborough ..	John Jenkins, 24, Upper Marylebone Lane, W.	Great Marlborough Street (Mr. Plowden)	Selling milk from which 20 per cent. of fat had been abstracted	Fined 10s. and 14s. 6d. costs.
Strand.. ..	Howard Kowin, 77, Lupus Street..	Bow Street (Mr. Fenwick)	Selling milk from which 15 per cent. of fat had been abstracted	Fined £5 and 12s. 6d. costs.
Charing Cross ..	Charles Leonard, 28, Villiers Street, W.C.	Bow Street (Mr. Marsham)	Selling milk from which 33 per cent. of its fat had been abstracted	Fined £2 and 12s. 6d. costs.
St. Anne	Carlo Negrotti, 25, Little Newport Street	Great Marlborough Street (Mr. Plowden)	Selling milk containing 70 grains per gallon of boric acid	Fined £1 and 12s. 6d. costs.
St. Anne	Annie Brown, 4, Bateman Street ..	Do. do.	Selling butter containing 46 per cent. of margarine fat	Fined 5s. and 12s. 6d. costs.
Conduit	Cadbury, Pratt, and Co., 24, New Bond Street	Great Marlborough Street (Mr. Denman)	Selling cream containing 51·02 grains per lb. of boric acid	Magistrate held that label sufficiently disclosed contents, and dismissed summons with £3 3s. costs.
Knightsbridge St. George	Chas. Coton, 3, Westbourne Street	Westminster (Mr. Sheil)	Selling milk from which 10 per cent. of fat had been abstracted	Warranty proved, summons withdrawn.
St. John	T. Richards, 146, Horseferry Road	Do. do.	Selling milk containing 48·34 grains per gallon of boric acid	Warranty proved, summons withdrawn.
St. Margaret ..	Elizabeth Day, 47, Buckingham Palace Road	Do. do.	Selling milk containing 43·99 grains per gallon of boric acid	Fined £1 and 14s. 6d. costs.
St. John	Thos. Gannaway, 22, Regency Street	Do. do.	Selling milk containing 44·57 grains per gallon of boric acid	Fined £1 and 14s. 6d. costs.
Regent	R. W. Evans, 8, Green's Court ..	Great Marlborough Street.. (Mr. Kennedy)	Selling milk containing 7 per cent. of added water.	Fined £5 and 12s. 6d. costs.
Great Marlborough ..	Henry Davis, 28, Portland Street..	Do. do.	Selling milk from which 25 per cent. of fat had been abstracted.	Fined £1 and 12s. 6d. costs.
Great Marlborough ..	John Gay, 85, Berwick Street ..	Do. do.	Selling milk containing 8 per cent. of added water.	Fined 5s. and 10s. 6d. costs.
Knightsbridge St. George.	London and Provincial Dairy Co., 4, West Halkin Street.	Westminster.. .. (Mr. Sheil)	Selling cream containing 52·09 grains per lb. of boracic acid.	Fined £1 and 14s. 6d. costs.
Victoria	W. M. Davies, 95, Charlwood Street.	Do. do.	Selling cream containing 53·56 grains per lb. of boracic acid.	Fined £1 and 14s. 6d. costs.
Victoria	Ellen Ward (Mrs. Ely)	Do. Do.	Selling butter 38·5 per cent. foreign fat.	Fined £2 and 14s. 6d. costs.

The Chief Sanitary Inspector writes :—

“ I would draw your attention to the case of *McNair v. Cave*, reported above, the facts of which are as follows :—

“ Information was given at the City Hall by a milk contractor whose business premises are within the City, that milk supplied to him by a farmer named Cave, of Shottle, Derbyshire, was arriving heavily adulterated with water, and that the milk was for customers within the City of Westminster.

“ The place of delivery to him was at the St. Pancras Railway Station ; there the liability of the farmer ended. The contractor asked that samples of the milk might be taken at the place of delivery and submitted for analysis. Section 3 of the Sale of Food and Drugs Amendment Act is as follows :—

“ ‘ Any medical officer of health, inspector of nuisances, inspector of weights and measures, or any inspector of a market, or any police constable, under the direction and at the cost of the local authority appointing such officer, inspector or constable, or charged with the execution of this Act, may procure “ @,” at the place of delivery any sample of any milk in course of delivery to the purchaser or consignee in pursuance of any contract for the sale to such purchaser or consignee of such milk ; and such officer, inspector or constable, if he suspect the same to have been sold contrary to any of the provisions of the principal Act, shall submit the same to be analysed, and the same shall be analysed, and proceedings shall be taken, and penalties on conviction be enforced in like manner in all respects as if such officer, inspector, or constable had purchased the same from the seller or consignor under Section 13 of the principal Act.’

“ Under this section Inspector McNair was instructed to go to the place of delivery of the milk in question, viz., St. Pancras Station, and procure a sample of the milk on arrival by the train. Samples were duly obtained (one from each of two churns) and submitted to the Police Analyst, who reported that they contained 20 and 21 per cent. respectively of added water, whereupon summonses were issued and heard at Clerkenwell Police Court. The Magistrate, however, dismissed the case, on the ground of jurisdiction, and held that the Inspector had no power outside the district for which he is appointed ; he, however, promised to state a case on the point, for the opinion of a higher Court.

“ Your Committee unanimously decided to appeal, and the following is the report of the Lord Chief Justice’s judgment :—

“ The Lord Chief Justice : ‘ This case is to my mind by no means free from difficulty ; but the point, when the matter is threshed out, is

really a narrow one, namely—what were the extended powers given to Inspectors under Section 3 of the Act of 1879? The previous legislation may be summarised very briefly. The Analysts undoubtedly were intended to act locally, and the Inspectors were certainly intended to act locally, because any person who is authorised to act in the place of a person charged with the duty of administering the Act is to get authority from his superiors so to act—the Police Constable or the Inspector of Nuisances, and so on—in the particular district where there may not be a person actually charged with the administration of the Act, therefore, I think all the earlier legislation points to the local action of the Inspector and of the Analyst. The 13th Section did at first strike me as indicating that the Inspector might act outside his district, because he was told to take it to the Analyst of the district for which he acts, but I think I was probably wrong, and that I drew an incorrect inference from that argument.

“‘I think that section was also required for the purpose that my Brother has pointed out—that he is allowed to go there, but is to go for another Analyst if there is no Analyst to that place. It is quite clear that Section 3 of the Act of 1879 does give important increased powers to the Inspectors.

“‘Previously there must have been a sale, and the person must have taken a sample at a time when a sale was going on, or at the place of sale, or contemplated sale.

“‘Now, the Inspector is allowed to procure, at the place of delivery, a sample of any milk in course of delivery to the purchaser or consignee in pursuance of any contract of sale to such purchaser or consignee of such milk. I must say that I am not pressed by the extravagant suggestions made by Mr. Morton Smith as to what the consequences of the construction contended for by Mr. Horace Ivory would be, because it seems to me that there are words which would limit any extravagant or improper act of the Inspector. There are the words that he is to take a sample of milk which is in course of delivery to the purchaser or consignee in pursuance of any contract of sale to such purchaser, and even if we assume, as I do assume, the intention was that the Inspector should act with respect to milk that was either being sold in Westminster, or was going to be sold in Westminster, then those are words which would limit the possibility of the Inspector going to inspect any milk on some allegation that it might some day be sold in Westminster, or was coming to London. But I think Section 3 was necessary in the districts in which the inspectors were acting in order to get over the necessity of the sample being taken at the place of sale. Accordingly the words “at the place of delivery in course of delivery to the purchaser” are necessary and desirable in order to enable the Inspector of the district to

take the sample at an early stage. I quite agree if this particular point had been thought of it probably might have been desirable—certainly with reference to a place like London—to deal with the common case of milk coming up by rail, the delivery being at the railway station, and then going to be used in some other part of London than the particular area in which the railway station is placed or happens to be; but I think, having regard to the previous legislation and the obligation which previously existed on the Inspectors to act locally, if it had been intended to give the Inspector of one district power to take compulsory samples in another district, other language is required to give them that power. I think we cannot say that by the mere use of the words “place of delivery” in Section 3 power is implied to be given to an Inspector to go to any place of delivery under a contract, whether it is within his district or not. Therefore I come to the conclusion, somewhat reluctantly, having regard to the consequences in this particular case, that the decision of the Magistrate was right. Of course, it is plain that if the Inspectors do their duty, on information being given to the Inspector of St. Pancras he will no doubt act, and there is that practical remedy against the consequence of our decision preventing the Act being put in force.

“The ground of our decision is that it would require special language to give the Inspector power to act compulsorily outside his district, and I do not think the words of Section 3 are sufficient by the mere introduction of the words “place of delivery,” as we can see an object for those words being inserted without holding that they are necessarily to imply that he was to act outside his district. Therefore I think the decision of the Magistrate was right and the appeal must be disallowed.’

“It will be seen that the Lord Chief Justice stated that he came to this conclusion somewhat reluctantly, and hoped the decision would not retard the operation of the Act.

“This is a point on which a strong representation might be made to the proper authority, with a view of so altering the law that it would enable the Inspector to go to the place of delivery (if such place is outside his district) and take samples of any milk or foodstuffs consigned to and to be sold within his district. Milk dealers have considerable difficulty in getting samples taken at the railway station by the Local Authority, and it is obvious that other authorities are not interested in articles of food merely passing through their district to be consumed in another; therefore the Inspector should be armed with such powers as would enable him to protect the inhabitants of his district by getting at the very fountain head of adulteration. Milk especially, owing to the extremely low standard fixed by the Board of

Agriculture, was never so grossly adulterated as it is at present, and often as many as three separate doses of preservative drugs are added to it before it reaches the consumer. The purchaser has no guarantee that the water added in the country districts is pure and free from disease germs."

WATER SUPPLY.

The maximum pollution in the Thames supplies occurs generally in the winter months, when the river is in flood, but in June of 1902 heavy rains occurred, and the organic matter present in the water rose considerably. It is 23 years since such a high proportion of organic matter had been discovered in the month of June.

Taking the average amount of organic impurity in a given volume of the Kent Company's water, during the 9 years ending December, 1876, as unity, the proportional amount contained in an equal volume of water supplied by each of the Metropolitan Water Companies, during each month of 1902, is shown in the following table extracted from the monthly reports of the Analyst (Dr. Thorpe) of the Local Government Board:—

Proportional Amount of Organic Impurities in Waters.

	Kent.	New River.	Lambeth.	South-wark.	Grand Junction.	West Middlesex.	East London.	Chelsea.
January 20th	1.1	1.4	3.4	3.6	4.3	4.5	5.0	5.3
February 17th	1.0	1.1	3.0	2.8	3.3	3.7	3.0	3.4
March 17th ...	0.8	1.5	4.6	3.5	4.6	3.8	4.3	3.7
April 14th ...	0.7	1.3	3.2	3.3	3.4	4.1	3.4	4.0
May 21st ...	1.2	1.2	2.7	2.8	2.9	3.1	2.8	2.4
June 9th ...	0.6	1.1 {	2.8 {	2.8 {	2.4 {	2.6 {	2.1 {	2.5
		(21st) 7.3 }	(21st) 7.3 }	(21st) 5.5 }	(21st) 5.5 }	(24th) 7.8 }	(24th) 7.8 }	
July 7th ...	0.8	1.4	4.0	3.8	4.0	3.8	3.9	4.1
August 19th ...	0.6	1.2	2.5	1.7	2.3	2.9	2.6	2.6
September 15th	1.1	1.4	3.7	3.3	2.6	3.0	3.4	2.8
October 13th...	0.9	1.0	2.0	2.1	2.1	2.5	2.2	2.6
November 11th	0.9	1.2	2.7	2.9	2.6	2.6	1.8	2.7
December 8th	0.7 {	2.9 {	5.8	4.7	5.3 {	3.6 {	1.5 {	2.9
	(16th) 1.3 }	(16th) 1.3 }			(25th) 4.6 }	(25th) 4.6 }	(29th) 4.9 }	(29th) 4.9 }

From this table it will be observed that certain of the Companies supply at times a much worse water than do others. This is due chiefly to their want of storage capacity.

Immediately after this increase in the pollution of the water, the number of cases of typhoid fever in London markedly increased as compared with those notified in the preceding year; thus in June and July, 1901, there were 458 cases notified, in 1902 the number of cases was 716; in August the numbers fall again.

Dr. Thorpe, in his report for 1901-02, states "that the organic matter in the raw Thames and Lea waters must be partly of vegetable and partly of animal origin, as the surface and other drainage from the

cultivated land and the effluents from the sewage works of towns situated on or near the rivers are discharged into the streams. Under ideal conditions the use of water subject to such regular pollution would be avoided ; but experience and research has shown in the case of these rivers that, provided certain flood water is excluded, and provided that after proper storage the water is efficiently filtered, the risk of danger to the public health through consuming such water is reduced to a minimum, if not to zero." Unfortunately these provisions do not always exist, some companies have no storage, and all are exposed to the risk of something going wrong with the filters. The provision of increased means of storage is being proceeded with, but from the report of Mr. Perrin, the Official Water Examiner, it would appear that some of the companies which have large storage reservoirs do not make use of them to effect the purification which takes place when water is allowed to stand for some time in a storage reservoir, but "take water direct from the river or merely run it through some of their smaller reservoirs before passing it on to the filter beds. Excellent as the quality of the filtered water usually is, there are undoubtedly occasions when a better result would have been obtained by longer settlement, and it is hoped the companies will keep in view the recommendations of the Royal Commission, and so arrange their system of treatment of the river water that no water which has not been subject to proper settlement shall be passed on to the filters."

It is to be hoped that the new Water Board will take steps at once to see that the method of working is such as will not deserve the same criticism.

Applications were received for 206 certificates that the water supply of new buildings was sufficient, and were granted in each instance ; 446 notices of the withdrawal of water supply were received from the water companies, and in 281 instances it was reinstated ; 45 houses have been pulled down and 120 are still empty. In 607 instances cisterns were required to be cleansed, but it is evident that this is not done so systematically as the by-laws require—viz., "once at least in every six months." 232 cisterns were required to be provided with proper covers, and 370 new cisterns were fixed, 150 being in place of defective cisterns.

F. GENERAL MATTERS.

Smoke Prevention.

2,728 observations have been made by the Inspectors, and besides cautionary letters, 58 preliminary notices and 18 statutory notices have been served. 6 prosecutions have taken place, 4 of these were successful, but 2 failed, the Magistrate holding that the club in question was a

private dwelling house, and therefore specially excluded from the operation of the Act. No appeal was taken, as the Solicitors considered it better to take a fresh case, and the second case, which was similar, was adjourned *sine die* in consequence.

The other cases resulted as follows:—

Café Monico ...	...	Fined £10 and 2s. costs.
Isthmian Club ...	...	Fined £10 and 2s. costs.
11, Bridge Street ...	...	Adjourned to enable owner to carry out extensive alterations which resulted in abatement of the nuisance.
Golden Cross Hotel ...	...	Fined £10 and costs.

Removal of Human Remains.

In the course of making excavations for an extension of buildings at the corner of Clement's Lane and Portugal Street, a number of skulls and bones were found, and the matter coming to the notice of the Home Office, an order was made requiring all human remains to be removed under my supervision.

The graveyard in Portugal Street was purchased by the Parish of St. Clement Danes in 1638 for the use of such of the parishioners who could not be accommodated in the churchyard (which then extended over the space between the present churchyard and the end of Holywell and Wych Streets), and Dr. Juxon, Bishop of London, granted the parish a commission for a rate to wall in the burial ground in the same year.

The fees charged at Portugal Street were lower than those for burial in the churchyard.

About the year 1848 considerable attention was directed to the scandalous way in which burial grounds in London were conducted, and a Committee appointed by the parish reported that this ground contained 14,968 superficial feet, or rather more than one-third of an acre, and that from the parish books it appeared that the number of bodies deposited in this space during the twenty-five years preceding 1848 was 5,518. They calculated that if these coffins had been laid out side by side, without any earth intervening, they would cover an area of 1 acre 5,510 feet, so that in order to get them into one-third of an acre, there must have been several coffins in each grave.

In 1850 Parliament passed an Act prohibiting interments within the limits of the Metropolis, so that probably no further burials took place after that date.

Joe Miller, who died of pleurisy on the 15th August, 1738, aged 54, was buried in this graveyard; and Peter Cunningham, in his "Handbook of London," published in 1850, speaks of Joe Miller's

headstone as then standing, "half concealed in summer by a clump of sunflowers." The stone was subsequently removed to King's College Hospital. The *London Chronicle* of July 12th, 1766, records that:—"On Thursday, July 10th, were deposited in St. Clement's churchyard, in the same grave with her husband, the remains of Mrs. Miller, age 83, relict of the celebrated Joe Miller."

Adjoining the burial ground was the Parish Workhouse. This was pulled down, and its site is now occupied by King's College Hospital; and about 1853 the burial ground was also acquired, and part of it forms the forecourt of the hospital. Part of the ground had already been built over, for so long ago as the year 1674 Bishop Henckman gave permission for houses and shops to be built on the north side (Allen's "History of London," quoted in Diprose's "History of St. Clement Danes"); and probably no graves had been made in that part of the ground. But later it appears as if encroachments had been made upon the burial ground, and a large quantity of human remains, mostly bones, had been removed and placed in two vaults, partly under the western carriage drive up to the hospital, and partly beneath the houses adjoining, which were on the site now being excavated.

During the progress of the work these vaults were found, and as half of the vault had been removed, it was broken into, and the bones discovered. A strip of ground a few feet in breadth, adjoining the hospital property, had not previously been interfered with, and three coffins protruded from this into the open site. Besides, the earth contained many bones, and was in parts strongly polluted with the results of decomposition.

Acting on the Home Secretary's order, I required the owners to remove the three coffins which were partly exposed. In doing this two of the coffins collapsed, and they were found to contain only bones, but in the third, which was broken, was the body of a man. This coffin was about 15 feet from the surface, and evidently it had been filled with lime. The remains were in an offensive condition, and, after having them well covered with disinfectant powder and charcoal, the coffin was placed in a separate shell, and removed to Woking with the other remains from the vaults.

The owners of the site employed the London Necropolis Company to remove the remains, and I laid down the following for their guidance, in accordance with the Home Secretary's instructions:—

"18th July, 1902.

"All human remains proposed to be removed from the site of the new offices of the *Church Times* to be placed in cases 6 ft. × 1 ft. 6 in. × 1 ft. 6 in., made of wood 1 inch thick, properly battened and pitched at the seams,

together with proper disinfectants or vegetable charcoal, as required. Remove such cases of human remains, in conveyance duly screened from public view, to the Necropolis Private Station, 121, Westminster Bridge Road, and then per funeral train to Brookwood cemetery. The whole work to be carried out in a proper and reverential manner, under my personal supervision."

The remains removed are estimated to be those of about 6,500 persons. In only one instance was the inscription on the coffin plate legible, viz., that of Mrs. Martha Ibbott, who died on the 9th February, 1818, aged 76 years.

