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County Council of Middlesex.

# REPORT

FOR THE

YEAR 1898,

UPON THE

VITAL & SANITARY CONDITION

OF THE

ADMINISTRATIVE COUNTY OF MIDDLESEX,

BASED UPON THE

REPORTS OF THE DISTRICT MEDICAL OFFICERS  
OF HEALTH, REGISTRAR-GENERAL'S  
RETURNS, ETC.

BY

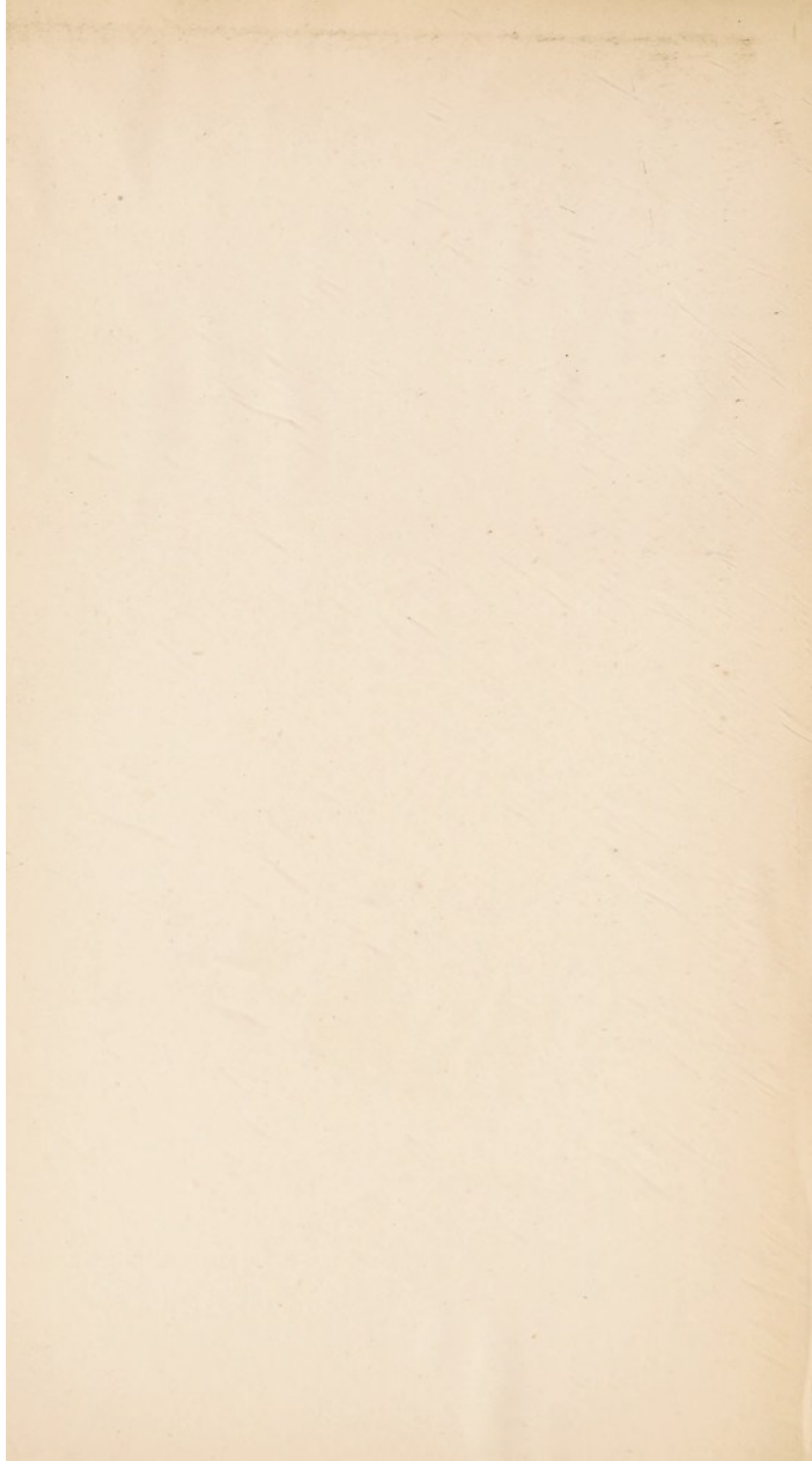
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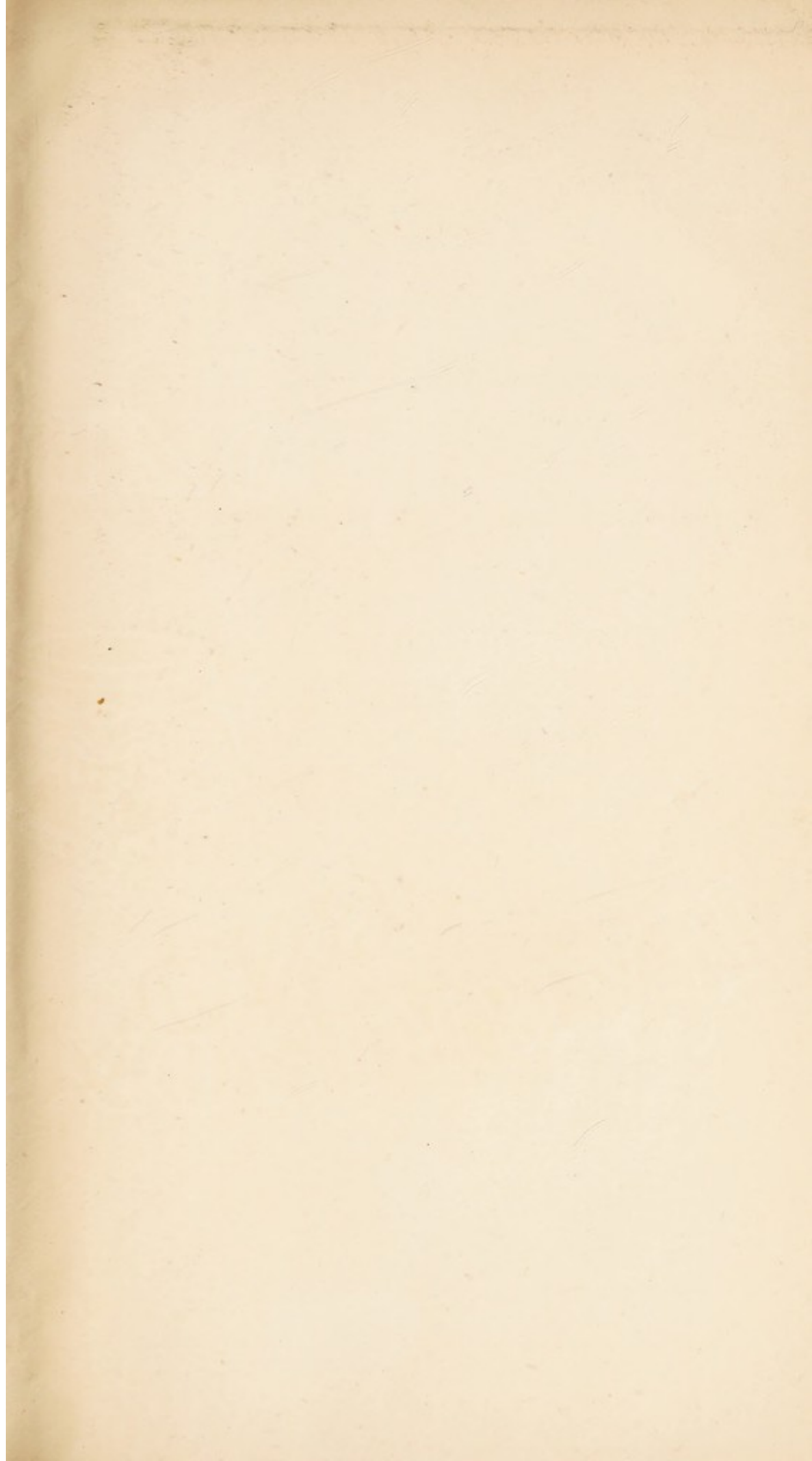
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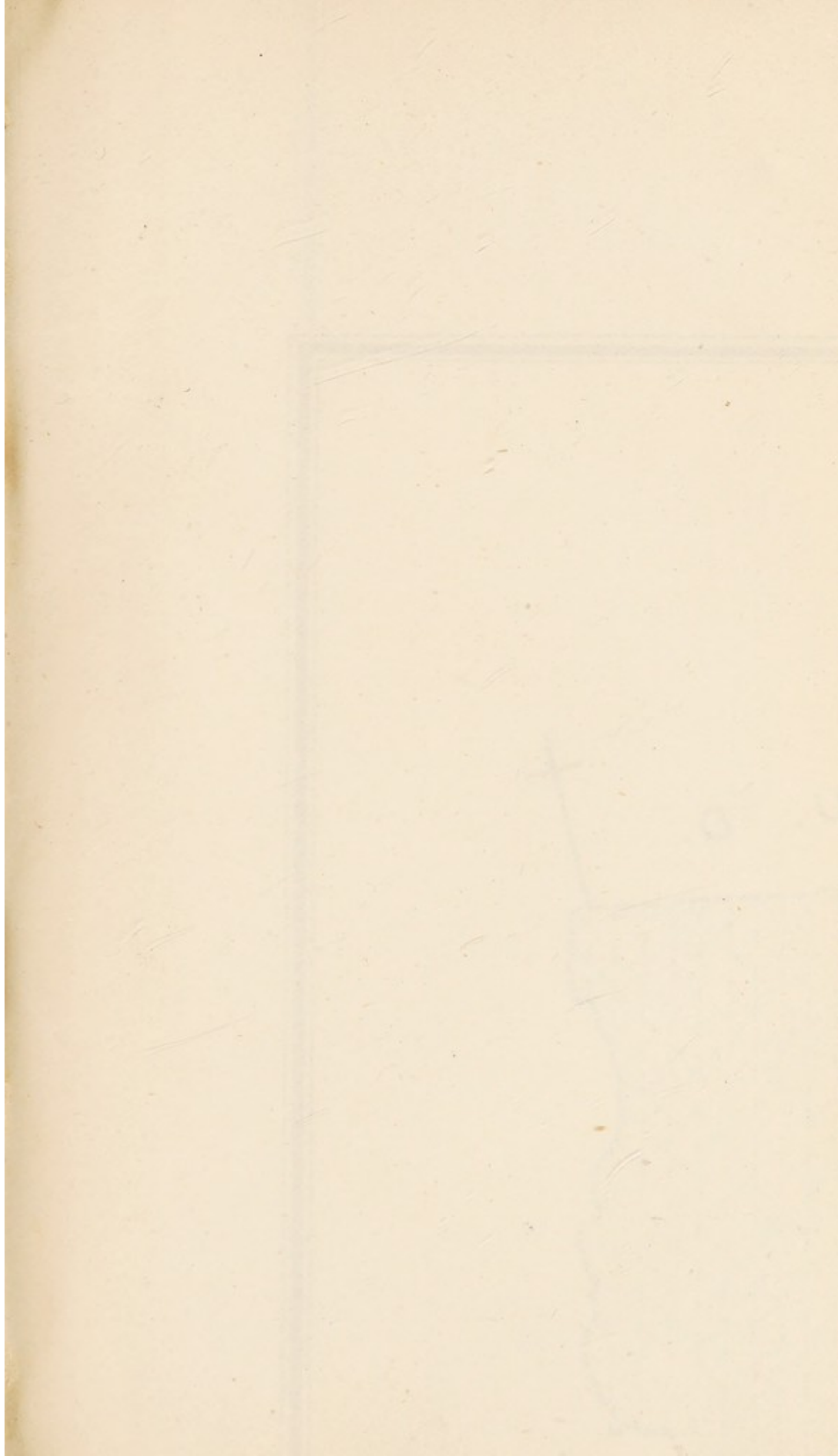




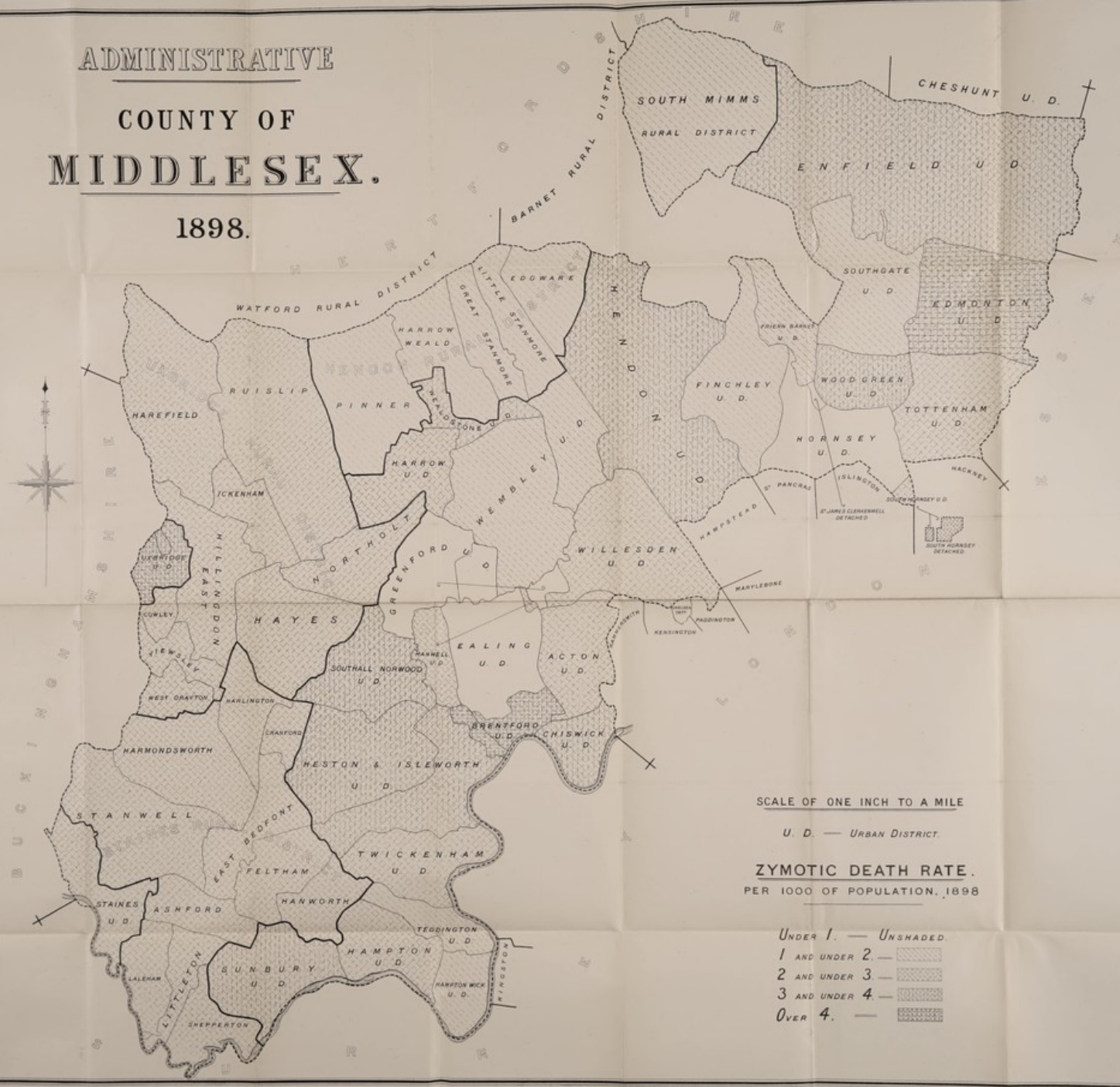


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ADMINISTRATIVE  
 COUNTY OF  
 MIDDLESEX.  
 1898.



SCALE OF ONE INCH TO A MILE

U. D. — Urban District.

ZYMOTIC DEATH RATE.  
 PER 1000 OF POPULATION, 1898

- Under 1. — Unshaded
- 1 and under 2. — [diagonal lines]
- 2 and under 3. — [cross-hatch]
- 3 and under 4. — [horizontal lines]
- Over 4. — [vertical lines]

County Council of Middlesex.

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REPORTS OF THE DISTRICT MEDICAL OFFICERS  
OF HEALTH, REGISTRAR-GENERAL'S  
RETURNS, ETC.

BY

JOHN F. J. SYKES,

*D.Sc. (Public Health), M.D., etc., Pres. Metr. Br. Incorpor. Soc. Med. Offs. Health, Mem. Counc. and Mem. Bd. of Exam. San. Inst., Mem. Epidem. Soc., For. Mem. Soc. Franc. d'Hygiène, Mem. Deutsch Ver. f. Öffentl. Gesundheitspf., Med. Off. Health St. Pancras, Lect. on Public Health, Guy's Hosp., late Assist. Exam. Hygiene, Sc. and Art. Dept., Author of various Works, Contributions, and Official Reports upon Public Health subjects.*

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1899.



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County Council of Middlesex

REPORT

YEAR 1881

RESPECTING THE SANITARY CONDITION

OF THE COUNTY OF MIDDLESEX

IN ACCORDANCE WITH THE ACTS OF PARLIAMENT

PASSED IN THAT BEHALF

BY THE COUNTY COUNCIL OF MIDDLESEX

IN THE YEAR 1881

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## County Council of Middlesex.

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TO THE CHAIRMAN AND MEMBERS OF THE  
GENERAL PURPOSES COMMITTEE.

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GENTLEMEN,

I have the honour to present to you the Report for the year 1898, upon the health conditions of the Administrative County of Middlesex.

The number of Annual Reports received from the Medical Officers of Health of the Urban and Rural Districts of the County is 33, all being printed except that of Greenford, which is type-written.

The forms supplied by the Local Government Board (Tables A and B, Part III) accompany, or are inserted into the text of all of the Reports, although in one or two cases they are so subdivided as to add to the difficulty of extraction.

The Tables C (I), (II), (III), (IV), [Part III] of sanitary work accomplished, either in full or abbreviated, in manuscript or in print, accompany or are appended to nearly all of the Reports, as seen by reference to the tables in Part III appended hereto. In some, different forms or classifications are adopted that are difficult to extract, and in one or two, impossible, and one or two Reports furnish no Returns.

A new table, lettered D, has been added to Part III, at the end of the Report, for the purpose of placing on record and showing at a glance the Adoptive Acts, By-laws, and Regulations in force in each of the Districts of the County. The information up to the present is scanty, but the blanks will be filled in in the course of time, and the table will ultimately prove valuable.

The tables in the text relating to the notification of infectious diseases, isolation hospitals, ambulances, and disinfecting chambers have been brought up to date.

The map prefacing the Report shows, in a graphic form, the incidence of the mortality of the principal zymotic diseases during the year in each of the Districts of the County.

As in previous years, the Report has been divided into three parts: the first relating to the County as a whole, the second containing the summaries of the Reports of the Medical Officers of Health of the Districts, and the third containing the statistical tables.

I have the honour to be,

Gentlemen,

Your obedient Servant,

JOHN F. J. SYKES.

40, Camden Square. N W.

## PART I.—THE COUNTY.

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### CHAPTER I.—VITAL STATISTICS.

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#### SECTION 1.—PUBLIC INSTITUTIONS.

As in previous years, it is necessary in the first place to take account of the public institutions, and for the purpose of reference to repeat what has before been said in regard to them. These institutions give rise to many troubles and complications. The diverse manner in which they are treated is confusing. In one District the population, births, and deaths in the workhouse are all included in the statistics, in another all excluded, in a third, part included and part excluded, in a fourth, the population and births are included, and the deaths excluded, but although no uniform method is adopted much greater care is exercised in dealing with the figures.

To the Report for the year 1892 was appended a list of those public institutions in the County of Middlesex taken into account by the Registrar-General in the Returns of the Census of 1891. In the Report for 1893, a more or less complete account of the public institutions in the County was given, and their effect upon the statistics of the County discussed. In the Report for 1894 the method of treating them, and the effects of public institutions were further discussed, and again further in the 1895 and 1896 Reports.

Briefly, the conclusions come to were that the population, births, and deaths in hospitals, asylums, and workhouses not belonging to the County, or any District of the County, should be altogether excluded. That all schools and homes, and those hospitals, asylums, and workhouses belonging to the County, or any District of the County, should be included.

With regard to exclusion, the course indicated is now generally followed. With regard to inclusion, schools and homes are now generally included, hospitals are wholly or partly included in the Districts to which their inmates belong, the asylum is situated outside the County, but difficulty is experienced in reference to workhouses.

In a few instances the proportion of population, births, and deaths, with their ages and causes, which have been excluded from the District in which the Union Workhouse is situated, have been included in the proper District of the Union to which they belong, but this method is not generally adopted. In fact, the methods are so diverse that it is difficult to reduce them to uniform figures. Some idea may be obtained of this by referring to the accompanying table, which is an attempt to tabulate the population, births, and deaths in the workhouses of the Unions and the Districts to which they should be distributed.

It has been pointed out that the best way to overcome this difficulty of distribution would be for each workhouse to issue at the end of the year a summary of its statistics, on Forms A and B, giving in the forms the figures with regard to each Sanitary District of the Union stated as separate localities, and to supply each of these separate

ocalities, or Districts, with a copy, and if the County Council were also supplied with copies of the Returns from all the Union workhouses, a complete account of the statistics of Unions stated separately and conjointly could appear in the Annual Report.

#### POPULATION IN PUBLIC INSTITUTIONS.

The population of each of the workhouses, as far as they could be approximately ascertained, was stated in the Report of 1893. In the adjoining table and in the summaries in this Report, the populations will be found stated where recorded in the Reports of the Districts for the year 1896.

#### BIRTHS IN PUBLIC INSTITUTIONS.

The number of births that have taken place in workhouses have been recorded where found stated in the District Reports.

#### DEATHS IN PUBLIC INSTITUTIONS.

In a similar manner the deaths in workhouses have been treated, but it must be remarked that to include the population and births and to exclude the deaths does not conduce to accurate statistics. In short, unless the whole facts are stated completely with regard to public institutions, and the necessary corrections made in the District Reports, it is difficult to deal with them in the completest manner, although the results may be regarded as approximately comparable.

At the foot of Table A, table of deaths, on the form supplied by the Local Government Board for the purpose of recording the mortality of a District, are two additional



lines, one for recording the "deaths occurring outside the District amongst persons belonging thereto," and the other for recording the "deaths occurring within the District amongst persons not belonging thereto," and above these two lines, and separating them from the table above them, are the words "the subjoined numbers *have also to be taken into account* in judging of the above record of mortality." Table A becomes a more complete and accurate table if the words italicised are altered to "*have been taken into account*," and the corrections and alterations are actually made in the table above, summarised in the two lines below, and described in detail in the text of the Report. This method affords more complete information, and the corrections are distributed to their proper localities, a transfer which none but the medical officer of health of the District can perform correctly.

# COUNTY OF MIDDLESEX.

## POOR LAW UNION WORKHOUSES AND THE DISTRICTS COMPOSING THE UNIONS.

WORKHOUSES AND DISTRICTS. (W = District in which Workhouse is situated.)	Daily average number of Inmates.	Births.	Deaths.	—	
EDMONTON UNION WORKHOUSE ..	579	32	190	Stated in Edmonton Report.	
Edmonton Urban District (W) ..	158	9	51		
South Hornsey " ..	26	0	15		
Hornsey " ..	42	3	20		
Wood Green " ..	25	1	8		
Tottenham " ..	205	10	66		
Southgate " ..	12	4	2		
Enfield " ..	64	3	16		
(Herts) Cheshunt Urban District ..	22	1	4		
(Essex) Waltham Holy Cross Urban Dist. ..	25	1	8		
HENDON UNION WORKHOUSE ..	336	29	116		Stated in Hendon Urban Report.
Hendon Urban District (W) ..	66	8	29		
Willesden " ..	—	—	—		
Harrow " ..	—	—	—		
Wealdstone " ..	—	—	—		
Wembley " ..	—	—	—		
Hendon Rural District ..	—	—	—	Outside the County.	

Poor Law Union Workhouses and the Districts composing the Unions—*continued.*

WORKHOUSES AND DISTRICTS. (W = District in which Workhouse is situated.)	Daily average number of Inmates.	Births.	Deaths.	—
<b>BRENTFORD UNION WORKHOUSE</b> ..	(?)	(?)	163	Stated in Heston and Isleworth Report.
Heston & Isleworth Urban District (W) ..	(?)	(?)	36	
Greenford Urban District ..	}	(?)	127	
Acton ..				
Ealing ..				
Hanwell ..				
Chiswick ..				
Brentford ..	}	(?)		
Twickenham ..				
<b>STAINES UNION WORKHOUSE</b> ..	194	(?)	36	All stated and included in the Staines Rural District Report.
Staines Rural District (W) ..	—	—	—	
Sunbury Urban District ..	—	—	—	
Staines ..	—	—	—	
<b>UXBRIDGE UNION WORKHOUSE</b> ..	190 (?)	(?)	54	Stated in Report of Uxbridge Rural District, but deaths not all in- cluded.
Uxbridge Rural District (W) ..	—	—	—	
Uxbridge Urban District ..	—	—	—	
Southall-Norwood Urban District ..	—	—	—	

<b>BARNET UNION WORKHOUSE</b> ..	—	—	—	—	—	} Outside the County.
Hertfordshire Districts (W) ..	—	—	—	—	—	
Friern Barnet Urban District	—	—	—	—	—	
Finchley " " ..	—	—	—	—	—	
South Mimms " " ..	—	—	—	—	—	
<b>KINGSTON UNION WORKHOUSE</b> ..	—	—	—	—	—	} Outside the County.
Surrey Districts (W) ..	—	—	—	—	—	
Teddington Urban District ..	—	—	—	—	—	
Hampton " " ..	—	—	—	—	—	
Hampton Wick Urban District	—	—	—	—	—	

NOTE.—It is necessary to mention that, in addition to stating the number of deaths, etc., occurring in the workhouse, it is also necessary to state the ages and causes of the deaths, otherwise they cannot be excluded from, or included in, Table A., as the case may be.]

## POPULATION OF THE DISTRICTS AND OF THE COUNTY.

It will be observed that the changes of areas consequent upon the Local Government Act, 1894, and first introduced into the Report for 1894, are permanent and remain the same in this Report, there being 29 Urban Districts and four Rural Districts in the County. It is unnecessary to detail the changes, as they were fully set out in the Report for 1894.

As in previous Reports, the estimate of population made by the Medical Officer of Health, with his local knowledge, has been taken as the basis for the statistics of each District, and collectively for the County. The difficulty of making such estimates may be illustrated by a quotation:—

Mr. C. A. Patten (Ealing Urban District) reports, "I have given every consideration to arriving at an equitable and fair estimate of our population for the past year. The matter is one which materially increases in difficulty, because the trustworthiness of all calculated estimates diminishes as the interval from the last census increases. One may rely on mere abstruse methods for calculation, but, in a rapidly increasing District, the safer plan when at so distant a period from the last census as is represented by this return, is to be guided in a considerable degree by the number of inhabited houses at a certain date."

## BIRTHS.

The highest birth-rate occurred in the Brentford Urban District, 34·9 per 1,000 of population; followed by the Chiswick Urban, 31·9; Willesden Urban, 31·5; and Edmonton Urban District, 31·0.

The lowest birth-rate per 1,000 of population occurred, as in previous years, in the Ealing Urban District, 16·7; followed by the Greenford Urban, 16·7; the Hornsey Urban, 19·1, and the Teddington Urban District, 20·3.

The birth-rates per 1,000 of population of the Urban Districts, the Rural Districts, the County, England and Wales, and the 33 great towns, are set out in the following table for comparison:—

Localities.	Estimated Population.	Births.	Birth-Rates.
Urban Districts .. ..	683,327	18,432	26·9
Rural Districts .. ..	45,294	1,287	28·4
Administrative County ..	728,621	19,719	27·0
England and Wales ..	31,397,078	922,873	29·4
London .. ..	4,504,766	132,432	29·5
33 great towns .. ..	11,218,378	339,350	30·3

NOTE.—The figures for Middlesex in this and the following similar tables in this chapter are taken from Table A in Part III, to which reference may be made as to what is excluded and what is included.

#### DEATHS.

The highest death-rate was recorded in the Uxbridge Urban District, 21·0 per 1,000 of population; followed by the Sunbury Urban, 17·3; the Chiswick Urban, 16·8; the Edmonton Urban, 16·8; the Uxbridge Rural, 16·6; and the Heston and Isleworth Urban District, 16·0.

The lowest death-rate was recorded in the Hornsey Urban District, 8·4 per 1,000; followed by the Ealing Urban, 8·9; the Wealdstone Urban, 9·4; and the Friern Barnet Urban District, 9·8.

The following table gives the death-rates per 1,000 of population in the Urban Districts, the Rural Districts, the County, England and Wales, London, and the 33 great towns:—

Localities.	Population.	Deaths.	Death-Rates.
Urban Districts .. ..	683,327	9,096	13·3
Rural Districts .. ..	45,294	673	14·8
Administrative County ..	728,621	9,769	13·4
England and Wales ..	31,397,078	552,040	17·6
London .. ..	4,504,766	83,936	18·7
33 great towns .. ..	11,218,378	212,848	19·0

The death-rate of the Urban Districts was ·5 per 1,000 higher; of the Rural Districts, ·6 higher; and of the County, ·5 higher than in the previous year; and of England and Wales, ·2 higher; of London, ·5 higher; and of the 33 great towns, ·1 lower than in 1897.

It will be observed that, in 1898, the death-rate of the Urban Districts was 1·5 per 1,000 of population lower than that of the Rural Districts. If reference be made to the tables further on, showing the infantile mortality rates

per 1,000 births, and the zymotic mortality rates per 1,000 population, it will be seen that in the former the rate of the Urban Districts was 36 per 1,000 births higher than that of the Rural, and that in the latter the rate of the Urban Districts was  $\cdot 43$  per 1,000 deaths higher than that of the Rural; further, that if the deaths under 1 year be calculated at per 1,000 of population, they give a rate of 4.20 in the Urban, and of 3.57 in the Rural Districts, again  $\cdot 63$  higher in the urban than in the Rural Districts. It is usual to expect the urban death-rate to be higher than the rural, and the Registrar-General, in the Return for the fourth Quarter of 1898, summarises the death-rates for the year 1898, and shows the town death-rate in England and Wales as 18.3 per 1,000, and the country death-rate as 15.0, showing an urban death-rate of 3.3 higher than a rural. Why is it that in Middlesex it is 1.5 per 1,000 lower?

Many reasons may be suggested as possible causes, such as age and sex distribution of the population, migration of some of the sick and moribund into institutions in London and elsewhere, errors of estimation of population at this distance of time from the last census, and also that some of the Urban Districts—Greenford, for instance—are more rural than some parts of the Rural Districts—for instance, some of the Parishes in the Uxbridge Rural District. Whatever the reason may be, it would require patient and very careful investigation, in order to avoid the many pitfalls in the shape of fallacies and errors, to arrive at the true cause.

#### AGES AT DEATH.

The infant mortality, or deaths under 1 year of age, to every 1,000 births, is an accurate test of the mortality



of infants, because the correct numbers of births and deaths are known as a true basis.

The highest infantile death-rate was recorded in the Brentford Urban District, 223 per 1,000 births; followed by the Edmonton Urban, 210; the Hendon Urban, 196; the South Hornsey, 187; and the Acton Urban District, 182.

The lowest rate, excluding Greenford Urban, was recorded in the South Mimms Rural District, 74; followed by the Wembley Urban District, 90.

The infantile mortality rates per 1,000 births are shown below, comparing the same localities as in the previous tables:—

Localities.	Births.	Deaths under 1 year.	Infantile Mortality Rate per 1,000 Births.
Urban Districts .. ..	18,432	2,873	156
Rural Districts .. ..	1,287	162	126
Administrative County ..	19,719	3,035	154
England and Wales.. ..	922,873	148,249	161
London .. ..	132,432	22,140	167
33 great towns .. ..	339,350	60,418	178

Mr. Henry Bott (Brentford Urban District), speaking of infant mortality, says:—

“The rate of this mortality, or the proportion of deaths under one year of age to every 1,000 deaths, is 223·7. This is most unsatisfactory, and can only be accounted for by the large number of children who have died during the year from whooping cough, diarrhoea, and diseases of the respiratory organs, all of which are most fatal if neglected. The unfortunate necessity which compels mothers to leave infants in charge of young children, whilst they go to work in the laundry or in the fields, cannot be other than highly dangerous to babies, for they are certain to be neglected, and it is truly a case of survival only of the fittest. The only remedy I can suggest for this sad state of things is education.”

The Acting Medical Officer of Health of South Hornsey (Mr. C. Howard Jackman), in a Report on infantile mortality, says:—

“It is most difficult to reduce the infantile mortality, both in your District or in any District in the Counties of England, but the best means, if they should be properly carried out, would be as follows:—

- “1. By trying to bring home to the parents their great responsibility in regard to the rearing of their infants, by looking after them better both in regard to health and food.
2. By having in the Districts places in which infants could be left when the mother is out at work, so that the infants could be under the management of proper persons who thoroughly understand them.

“3. By the parents or persons having charge of infants seeing that the food is properly prepared, viz. the milk well boiled, the saucepan and the feeding bottle well cleansed.

“4. By having the room well ventilated, so enabling the infant to breathe pure air.”

## ADMINISTRATIVE COUNTY OF MIDDLESEX, 1898.

Districts.	Estimated Population, 1898.	Births, 1898.	Birth-Rate.	Deaths, 1898.	Death-Rate.	Deaths under 1 year, 1898.	Infantile Mortality per 1,000 Births.	Notes.
URBAN.								
Acton ..	32,562	995	30.5	517	15.8	181	182	These figures are taken from the Summaries in Part II., to which reference may be made as to what is excluded and what is included.
Brentford ..	14,974	523	34.9	312	20.8	104	223	
Chiswick..	26,772	856	31.9	450	16.8	132	154	
Ealing ..	34,500	539	15.6	309	8.9	61	113	
Edmonton ..	35,994	1,112	31.0	606	16.8	234	210	
Enfield ..	39,360	1,137	28.0	530	13.4	179	157	
Finchley..	21,007	498	23.7	218	10.3	68	136	
Friern Barnet ..	8,668	217	25.0	85	9.8	31	143	
Greenford ..	777	13	16.7	9	11.5	0	—	
Hampton ..	6,500	141	21.6	80	12.3	20	141	
Hampton Wick..	2,378	60	25.2	33	13.8	10	166	
Hauwell ..	6,872	200	29.1	101	14.6	32	160	
Harrow ..	9,293	195	22.0	109	11.7	20	102	
Hendon ..	20,413	541	26.5	295	14.4	106	196	
Heston and Isleworth ..	29,185	817	27.9	468	16.0	141	172	
Hornsey ..	70,096	1,342	19.1	594	8.4	158	117	

Administrative County of Middlesex, 1898—*continued.*

Districts.	Estimated Population, 1898.	Births, 1898.	Birth-Rate.	Deaths, 1898.	Death-Rate.	Deaths under 1 year, 1898.	Infantile Mortality per 1,000 Births.	Notes.	
<i>URBAN—continued.</i>									
Southall-Norwood ..	8,531	258	30.2	121	14.1	32	112	These figures are taken from the Summaries in Part I I., to which reference may be made as to what is excluded and what is included.	
Southgate ..	14,000	310	22.1	150	10.7	37	122		
South Hornsey ..	17,225	433	25.1	256	14.8	81	187		
Staines ..	5,849	171	29.9	62	10.6	18	105		
Sunbury ..	4,555	134	29.4	79	17.3	21	155		
Teddington ..	14,000	284	20.3	149	10.6	41	144		
Tottenham ..	21,692	2,707	29.5	1,209	14.2	465	171		
Twickenham ..	19,000	466	24.5	266	14.0	69	148		
Uxbridge..	8,802	224	25.4	185	21.0	35	156		
Wealdstone ..	5,000	127	25.2	47	9.4	14	110		
Wembley ..	4,740	100	21.1	48	10.0	9	90		
Willesden ..	99,582	3,142	31.5	1,388	13.9	427	136		
Wood Green ..	31,000	890	28.7	420	13.5	147	165		
<i>RURAL.</i>									
Hendon ..	7,859	194	24.6	90	11.4	26	134		
Staines ..	19,541	570	29.1	299	15.3	77	135		
South Mimms ..	2,571	67	26.0	29	11.2	5	74		
Uxbridge ..	15,323	456	29.7	255	16.6	54	118		

## CAUSES OF DEATH.

As in previous years, it is desirable to set out the two classes of diseases known as the "principal zymotic diseases," and the "scheduled notifiable infectious diseases," in order to avoid error and to show what is embraced in each class and how far they coincide and differ:—

Principal Zymotic Diseases.	Scheduled Notifiable Infectious Diseases.
Smallpox Scarlet Fever Diphtheria or Membranous Croup Typhus Fever Enteric Fever Continued Fever	Smallpox Scarlatina or Scarlet Fever Diphtheria and Membranous Croup Typhus Fever Enteric or Typhoid Fever Continued Fever
----- Measles Whooping Cough Diarrhoea and Dysentery	----- Relapsing Fever Puerperal Fever Cholera Erysipelas

In the following table the deaths and death-rates from each of the two classes of disease in each of the Districts of the County, Urban and Rural, are set out for the purpose of comparison.

## ADMINISTRATIVE COUNTY OF MIDDLESEX, 1898.

Districts.	Estimated Population 1898.	Deaths from scheduled noti- fiable diseases.	Death- Rate per 1,000 Pop.	Deaths from principal zymotic diseases.	Death- Rate per 1,000 Pop.	Notes.
URBAN.						
Acton .. .. .	32,562	13	0·39	78	2·39	These figures are taken from Table A, Part III., to which reference may be made as to what is ex- cluded and what in- cluded.
Brentford .. .. .	14,974	7	0·46	68	4·54	
Chiswick .. .. .	26,772	10	0·37	93	3·47	
Ealing .. .. .	34,500	6	0·17	23	0·66	
Edmonton .. .. .	35,994	13	0·36	181	5·05	
Enfield .. .. .	39,360	21	0·53	122	3·10	
Finchley .. .. .	21,007	3	0·14	39	1·85	
Friern Barnet .. .. .	8,668	2	0·23	17	1·96	
Greenford .. .. .	777	0	..	0	..	
Hampton .. .. .	6,500	4	0·61	15	2·30	
Hampton Wick .. .. .	2,378	1	0·42	3	1·26	
Hanwell .. .. .	6,872	6	0·87	18	2·62	
Harrow .. .. .	9,293	4	0·43	21	2·26	
Hendon .. .. .	20,683	13	0·62	73	3·53	
Heston and Isleworth .. .. .	29,185	10	0·34	109	3·73	
Hornsey .. .. .	70,054	16	0·22	52	0·74	
Southall-Norwood .. .. .	8,531	15	1·75	27	3·16	
Southgate .. .. .	14,000	4	0·28	27	1·92	
South Hornsey .. .. .	17,225	5	0·29	45	2·61	
Staines .. .. .	5,849	0	..	17	2·90	
Sunbury .. .. .	4,555	2	0·43	18	3·95	
Teddington .. .. .	14,000	7	0·50	19	1·35	
Tottenham .. .. .	91,692	45	0·49	187	2·04	
Twickenham .. .. .	19,000	3	0·15	42	2·21	
Uxbridge .. .. .	8,802	23	0·26	44	4·99	
Wealdstone .. .. .	5,000	2	0·40	19	3·80	
Wembley .. .. .	4,740	1	0·21	7	1·47	
Willesden .. .. .	99,180	91	0·91	256	2·58	
Wood Green .. .. .	31,000	28	0·90	105	3·38	
RURAL.						
Hendon .. .. .	7,859	1	0·12	11	1·40	
Staines .. .. .	19,541	12	0·61	44	2·25	
South Mimms .. .. .	2,571	2	0·77	3	1·16	
Uxbridge .. .. .	15,323	12	0·78	37	2·41	

The highest death-rate from the principal zymotic diseases was recorded in the Edmonton Urban District, 5·05 per 1,000 of population; followed by the Uxbridge Urban, 4·99; and the Brentford Urban District, 4·54.

The lowest zymotic death-rate, excluding the Greenford Urban District, was recorded in the Ealing Urban District, 0·66; followed by the Hornsey Urban, 0·74; the South Mimms Rural, 1·16; the Hampton Wick, 1·26; the Teddington Urban, 1·35; the Hendon Rural, 1·40; and the Wembley Urban District, 1·47.

The deaths and death-rates from the principal zymotic diseases in certain localities are shown for comparative purposes in the following table:—

Localities.	Population.	Deaths from Zymotic Diseases.	Zymotic Death-Rate.
Urban Districts .. ..	683,327	1,725	2·52
Rural Districts .. ..	45,294	95	2·09
Administrative County ..	728,621	1,820	2·49
England and Wales ..	31,397,078	69,714	2·22
London .. ..	4,504,766	12,565	2·78
33 great towns .. ..	11,218,378	31,754	2·85

The map prefacing this Report shows the various Districts of the County, shaded to show the incidence of zymotic mortality during the year.



The highest recorded mortality from the scheduled notifiable diseases occurred in the Southall-Norwood Urban District, 1.75 per 1,000 of population; followed by the Willesden Urban, 0.91; and the Wood Green Urban District, 0.90.

In the Staines Urban, and the Greenford Urban Districts, there were no deaths from these diseases.

The number of deaths and the death-rates of the notifiable infectious diseases are shown below, in tabular form, for comparison.

Localities.	Population.	Deaths from Notifiable Diseases.	Notifiable Diseases. Death-Rates.
Urban Districts .. ..	683,327	355	0.51
Rural Districts .. ..	45,294	27	0.59
Administrative County ..	728,621	382	0.52

## CHAPTER II. — INFECTIOUS DISEASES.

### SECTION 1.—NOTIFICATION AND DISEASES.

THE notification of infectious disease is in force in every District of the Administrative County. In the Willesden District compulsory notification has been in force since 1887 under a Local Act, but in all the other Districts the Infectious Diseases (Notification) Act, 1889, was adopted between 1889 and 1892. The date when notification came into force in each District is stated in the table below. The Act was in force in Sunbury in 1890, prior to its separation from the Staines Rural District, and in Wealdstone and Wembley in 1891, prior to their severance from the Hendon Rural District.

It will be observed that, prior to or in 1894, Friern Barnet, Hampton, Hendon, Heston and Isleworth Urban Districts, and Hendon Rural District, added measles to the notifiable diseases scheduled in the Act, and that Hendon Urban District also added whooping-cough; that the resolutions making these diseases notifiable were rescinded or expired in 1894, in the Heston and Isleworth Urban and the Hendon Rural Districts, and, in 1896, in the Friern Barnet Urban, and Hendon Urban Districts; and that they were again adopted, in 1896, in the Friern Barnet Urban, and Heston and Isleworth Urban Districts. In the number of cases notified and quoted in the third column of the table below, measles and whooping-cough have not been included.

To the table below is also added a column in reference to the Infectious Diseases (Prevention) Act, 1890, and a note made where adopted, to which the dates will be added when known :—

## NOTIFICATION OF INFECTIOUS DISEASES, 1898.

Districts.	Since when notification in force?	Cases of scheduled diseases notified.	Diseases added to those scheduled in Act.	Infectious Diseases (Prevention) Act adopted?
URBAN.				
Acton .. ..	Jan., 1890	234		
Brentford ..	Dec., 1889	81		
Chiswick ..	Jan., 1890	167		
Ealing .. ..	Jan., 1890	137		
Edmonton ..	March, 1891	231		
Enfield .. ..	Jan., 1890	218	{ Measles, 1 month in first quarter.	
Finchley .. ..	Jan., 1890	118	{ ..	Yes.
Friern Barnet ..	Jan., 1891	69	{ Measles, Oct., 1894, for 2 years, and again added end of 1896.	Yes.
Greenford .. ..	1892	1		
Hampton .. ..	Nov., 1891	21	Measles.	
Hampton Wick ..	Feb., 1890	18		
Hanwell .. ..	March, 1890	103		
Harrow .. ..	1890	40		
Hendon .. ..	1891	138	{ Measles and whooping-cough, 1894, rescinded Dec., 1896.	
Heston and Isleworth	Jan., 1890	158	{ Measles, Feb., 1891, rescinded 1894, again added Sept., 1896.	
Hornsey .. ..	Jan., 1890	350		
Southall-Norwood	July, 1891	133	..	Yes.
Southgate .. ..	Dec., 1889	79		
South Hornsey ..	Sept., 1892	101		
Staines .. ..	1890	7		
Sunbury .. ..	Jan., 1890	12		
Teddington .. ..	Feb., 1890	41		
Tottenham .. ..	1890	740		
Twickenham .. ..	Jan., 1890	65		
Uxbridge .. ..	Jan., 1890	143		
Wealdstone .. ..	1891	24		
Wembley .. ..	1891	33		
Willesden .. ..	Oct., 1887	835		
Wood Green .. ..	March, 1890	257		
RURAL.				
Hendon .. ..	1891	36	{ Measles, rescinded 1894.	
Staines .. ..	Dec., 1891	118		
South Mimms .. ..	Feb., 1890	23		
Uxbridge .. ..	Jan., 1890	117		

## DIAGNOSIS.

As aids to the carrying out of the Infectious Disease (Notification) Act, 1890, bacteriological examinations of the throat secretion in diphtheria, and of the blood in typhoid fever, are being more generally resorted to.

Dr. Kenwood (Finchley Urban District) reports:—  
“The diagnosis outfits, &c., provided by the Council to the medical practitioners in Finchley, have been appreciated. Every practitioner has been supplied with such an outfit, and has then at his disposal the means of procuring a bacteriological diagnosis of both diphtheria and typhoid fever.”

Mr. G. Hope (Hanwell Urban District) reports:—“The difficulty of diagnosis of this disease (diphtheria), in some cases, was pointed out fully in my last Report, and the Enfield Urban District Council have so far recognised the importance of this, that they issued a circular to the medical practitioners in the District, announcing that arrangements had been made to examine bacteriologically any suspected case of diphtheria, and the result is communicated privately to the medical men who send specimens. The Clinical Research Association and the Institute of Preventive Medicine undertake these examinations, and provide a special apparatus for sending samples to them in. It is practically impossible for the general practitioner to make these examinations himself. Further, there being no doubt as to the case being one of diphtheria, the specific treatment, viz., anti-toxin injection, should at once be resorted to. Unfortunately, this is rather expensive, and there are many cases that cannot well afford to procure anti-toxin themselves. In these cases I

am of opinion the Council should bear the expense of this essential remedy. The statistics of this treatment from English and foreign sources, give an equally reliable indication that anti-diphtheric serum has enormously reduced the death-rate from diphtheria, and emphasize the importance of early or prompt treatment. In 1896, when 71·3 per cent. of the total number of cases were treated with anti-toxin, the death-rate for cases treated in the Metropolitan Asylums Board's Hospitals, on the first and second days of the disease, were respectively 4·7 and 12·8, as against corresponding rates 22·5 and 27·0 for 1894, when only a small number of cases were treated with this remedy."

Mr. H. Hounslow Brind (Heston and Isleworth), in reference to bacteriological examination, says—"In my Report to the Sanitary Committee, on October 31st, I urged the importance of providing some means of having a bacteriological examination of material from suspected cases of diphtheria and enteric fever, when I explained, in detail, my reasons for the adoption of this course. The question was considered at your meeting, and I think it is a cause for congratulation that you decided to accede to my wishes in this matter. Arrangements were then made with the Jenner Institute, whereby suspected material could be sent to the laboratories of the institute for examination. The results, so far, have been eminently satisfactory, and I wish here to place on record my sincere thanks to the medical practitioners of the District for the readiness with which they have made use of the means placed at their disposal for such diagnosis, as, without their support, this innovation would have been useless."

The Medical Officer of Health, Willesden (Dr. D. S. Skinner), also says in regard to bacteriological examination that—"In consequence of a suggestion by a Member of the Council, that facilities should be given for a bacteriological examination of the throat in doubtful cases, the Council supplied the necessary apparatus at the hospital, and I have found it of the greatest assistance. Several specimens have been forwarded, and where the examination has proved the existence of the bacillus, the case has been put under treatment at once, the early treatment being most important. I have also found it of great assistance in cases that have been under treatment in the hospital, in deciding whether the throat is free and the patient ready for discharge."

#### SMALLPOX.

During the year, two cases of smallpox were notified, one in Willesden Urban and one in Staines Rural District. There were no deaths recorded from the disease. In the previous year three cases were notified, with no deaths.

#### SCARLATINA.

The past year appears on the whole to have produced an average amount of scarlatina, and although, in a few districts, the incidence was greater than in the previous year, in some it was less. The type was decidedly milder, as the total deaths from the disease fell from 54 in 1897, to 34 in 1898.

The Medical Officer of Health of Acton (Mr. G. A. Garry Simpson) describes how the disease is spread:—

- “1. Sometimes the disease is kept a secret, no medical practitioner being called in.

- “ 2. The disease may be so mild as to escape the notice of the relatives, and their attention is only called to the child when desquamation has set in.
- “ 3. Ignorance of the parents as to the nature of the illness and neglect to call in medical advice.
- “ 4. In three or four instances children were found peeling freely and playing in the streets with other children; in one case a child had been sent to Sunday school peeling freely. On being censured, the parents invariably pleaded ignorance as to the nature of the illness.
- “ 5. Return cases. During the year there were good grounds for the belief that the infection in two instances was communicated by patients who had been recently discharged, as free from infection, from the Willesden Isolation Hospital. This is a rare occurrence, for every possible effort, in my belief, is taken to prevent it, but the circumstance is worthy of note by parishioners, who will always do well to isolate children for, at least, a few days after return home.

“In my Report of November, 1898, to the Council, on these return cases, I mentioned that possibly the micro-organisms that caused the disease might remain in the throats of the patients after apparent convalescence. The following is Dr. Klein's Report to the Local Government Board, which I have copied from the British Medical Journal of January 21st, 1899:—Microbes association with Scarlatina. Dr. Klein makes a further Report on the streptococcus, named *S. scarlatinae* or *conglomeratus*, isolated by him from the throat and nasal discharge of

patients suffering from scarlatina. It is not found in the desquamating skin, urine, or aural discharge. Dr. Klein expresses the opinion that it is the persistence of this organism in the throat of patients discharged as cured which gives rise to the return cases.' ”

Mr. C. D. Green (Edmonton Urban District) describes how school-teachers may effectually assist in prevention :—  
 “ It is worthy of note, that no group of cases occurred in connection with the St. Barnabas' Schools, and that for, at least, four consecutive years, no group of scarlet fever cases has been referable to them. I learn, on enquiry, that the number of scholars on the school register is 185, and the average attendance 149, and that there is accommodation for 150 other scholars. It appears to be the practice to immediately send home any children showing signs of illness. Whatever may be the explanation of an absence of a group of scarlet fever cases among the children attending these schools for several consecutive years, although other schools in the District did not escape, I think it must point to careful supervision and ample space accommodation, for which the management and staff deserve credit.”

#### DIPHThERIA AND MEMBRANOUS CROUP.

Diphtheria and membranous croup were not more prevalent in the majority of the Districts than in the previous year ; the number of deaths from diphtheria was the same.

The means of obtaining more certain diagnosis and applying a speedier remedy in this disease have already been referred to under the head of diagnosis at the commencement of this chapter.



### TYPHUS FEVER.

This now uncommon disease did not appear in the County during the year.

### ENTERIC OR TYPHOID FEVER.

By referring to Table B, Part III, and dividing the estimated population of each District by 1,000, that is, by omitting the three last figures of the population, the figures that remain, form at a glance, an approximate limit of the number of cases of typhoid fever that may be notified in each District. If the number of cases notified is greater than this number, the prevalence of the disease must be regarded as excessive, if below half this number the prevalence may be regarded as within bounds.

In the following 5 Districts the number of cases notified was in excess of 1 per 1,000 population:—Wealdstone 1·60, Harrow 1·50, Wembley 1·26, Tottenham 1·13, and Staines Urban District 1·02.

In some 13 Districts the rate was below 0·5 per 1,000.

Dr. Fletcher Little (Harrow Urban District) writes:—  
 “The outbreak of typhoid was traced to milk imported from a distant County, and from abroad. It is deplorable that the health and lives of the people should be at the mercy of railway directors, who will not allow the churns to be sealed whilst in transit, and of careless English and French farmers, and of ignorant peasants. No milk should be allowed to enter a District unless brought in sealed vessels and accompanied by a certificate from the Medical Officer of Health of the District where it is produced.

Until this is law, all milk should be boiled before being consumed." The consignor, the consignee, and the public ought certainly to be as well protected against the tampering with milk in station-yard, transit, and depôt, as the Railway Company. Most of the best Milk Companies now require regular inspection of dairy farms and periodical certificates from Medical Officers of Health. Dr. Fletcher Little also suggests that "it would be of great service, not only to the milk trade of the District but to the inhabitants, if the Committee of the Technical School would arrange for courses of lectures on dairying, open to the consumers as well as the producers of milk."

#### CONTINUED FEVER.

Only 3 cases of this vague complaint were notified; 2 in Chiswick, and 1 in Twickenham. Chiswick still returns the highest number of cases.

#### PUERPERAL FEVER.

The total number of cases of this disease notified during the year was 27, as compared with 46 in 1897, and 67 in 1896.

#### CHOLERA.

Only one case of cholera was known, and this was of the infantile English type, in the summer season.

#### ERYSIPELAS.

The number of cases of erysipelas notified was about the average.

## MEASLES.

Judging by the mortality, there appears to have been considerable outbreaks of measles in several Districts, and in Part II, in the Summaries, under the head of Epidemics, these outbreaks will be found mentioned.

Measles tends to be epidemic every two to four years, and the experience of notification of this disease does not appear to have any marked influence upon its epidemicity, on account of the difficulty of applying to this disease the usual methods following upon the notification of some other diseases, especially removal to hospital and disinfection.

In the three Districts where the disease is notifiable the number of cases reported were:—Friern Barnet 142, Hampton 339, and Heston and Isleworth 857.

With reference to the notification of measles, Dr. J. J. Ridge (Enfield Urban District) reports that—“At the commencement of 1898 there was reported a serious epidemic of measles, 31 deaths having occurred in the Eastern District in the course of two months. In consequence of this a resolution was passed, making measles a notifiable disease for a period of one month. The returns showed that the epidemic, in the eastern part of the District, had already come to an end, but many unsuspected cases were revealed in other parts of the Parish. Disinfectants were supplied and children kept from school, but no other measures were adopted. It seems to me that notification at the commencement of an epidemic might be of value, but when fully established little result can be expected, except as notification impresses parents with the danger of the disease and induces them to be more careful.”

## WHOOPING COUGH.

The notification of whooping cough finds little favour at the present moment, the value from a preventive point of view not being very obvious. Judging by the mortality, the disease was less prevalent than usual in most Districts during the past year.

## DIARRHŒA.

The number of deaths from diarrhœa shows that the disease was very prevalent, the effect of the hot summers the bulk of the mortality occurring at that period of the year, and in infants.

Mr. C. D. Green (Edmonton Urban District) reports in reference to diarrhœa, that—"The principal cause of its prevalence is, I think, the defective hygienic conditions under which infants are in many instances placed, and to the want of care shewn in the selection and preparation of their food. It is unfortunate that a considerable addition is made year by year to the number of people in the District who are closely verging on pauperism, but I think it is undoubtedly the case, as in many instances I have known applications for parochial relief to come from houses in new roads which had not been three months in occupation. It is among those in such unfortunate circumstances that the defective conditions of hygiene and general management of infants which pave the way for outbreaks of this disease are prevalent, and the remedying of which presents such great, if not insuperable, obstacles. The great and increasing prevalence of the disease, year by year, is certainly a matter for regret, and one which cannot be regarded with equanimity by those to whom the sanitary administration of the District is entrusted."

On the feeding of infants, and diarrhœa, Dr. Wentworth Tyndale (Hampton Urban District) writes:—On several occasions, in my Annual Reports, I have mentioned the feeding of infants; recommending the duty of parents to boil, or heat up nearly to boiling point (say  $180^{\circ}$ ), all milk used for feeding purposes, and the absolute need for the cleanliness of all vessels used for milk. This recommendation also applies to adults as well as infants; and has lately been confirmed by the remarks of Sir R. Thorne Thorne, as a preventive to the spread of tuberculosis. I would, therefore, strongly suggest to the Council that leaflets be printed and placed in conspicuous positions, in order that this recommendation might be generally known."

Also, in reference to diarrhœa, the Medical Officer of Health, Finchley (Dr. Kenwood), remarks that:—"The chief means of reducing the mortality from summer diarrhœa, is by giving nothing but well-boiled milk liquid food for the first nine months of life, and by keeping all milk vessels and feeding bottles scrupulously clean. For the neglect of these simple precautions, the infants of these islands alone are paying a weekly toll of many hundreds of deaths. Summer diarrhœa is the most fatal of all zymotic diseases, and if the deaths certified as due to gastro-enteritis were included (and at this period of the year they probably all have a common origin), the loss of life from summer diarrhœa would be still further increased to the extent of some 30 per cent."

Mr. C. Dwight Morris, of the Sunbury Urban District, speaking of diarrhœa, says:—"The fact of seven deaths from diarrhœa being returned during the very warm

months of August and September is all the more regrettable, as they occurred in very young children unable to help themselves, and in a large proportion of cases the cause is to a great extent a preventible one. Fermentation of food and its evil consequences, as exhibited in bottle-fed infants, is a factor not sufficiently understood by a large number of parents, but is one of those matters of the highest importance during the hotter months of the year. A more comprehensive knowledge of greater care necessary in the feeding of young children would not only tend to save life, but would render the lives of these helpless little ones much easier."

The following advice, in the form of a leaflet, distributed by Registrars of Births and Deaths, school teachers and others, becomes a valuable means of education:—

*Diarrhœa.*

Diarrhœa is rapidly fatal to infants and young children. The younger an infant, the more liable it is to be attacked by diarrhœa, and the more liable to die when attacked, especially in summer time. As such a large number of children die from diarrhœa, parents are advised in all cases to immediately seek medical advice.

The principal cause of diarrhœa is improper food and feeding.

Until eight or nine months old an infant has neither the teeth to chew nor the juices to digest starchy foods, such as bread, potatoes, biscuits, rusks, oatmeal, arrowroot, wheat flour, and such foods cannot be made digestible by mixing them with milk and water, they should therefore not be given to young infants.

Milk is the proper food for a young infant, and mother's milk the most natural, but, if absent, the best substitute is fresh cow's milk.

Boil half-pint of cow's milk, remove the scum, add a teaspoonful of sugar, and dilute with half-pint of water, or a little more during the first three and a little less water during the last three months of the nine. As stale food is dangerous to an infant, small quantities should be frequently made as required, in the proportions mentioned.

Use a feeder, the old-fashioned boat, or the long slipper-shaped bottle, with an opening at each end, one closed by a cork, the other by a teat. This form of feeder is the most easily cleansed, and an uncleansed feeder is dangerous to an infant.

Cleanse the feeder before refilling by boiling it in water, thoroughly and completely cleansing the cork, and the teat, inside and out. It is convenient to have two feeders in use, the one not in use being placed after boiling in clean cold water, with the teat and the cork loose, until required.

Feed every two hours during the first three months, every three hours during the second three, and every four hours during the third three. Feed also once or twice in the night for the first few months, then gradually discontinue night feeding.

The quantity of milk and water should not exceed one pint a day during the first week, gradually increased to three pints at the ninth month. At the eighth or ninth month a commencement may be made with sops and

porridges, at about the twelfth month pounded meat and soft foods may be given, and by the eighteenth month light solid foods.

Raw hard fruits and vegetables should not be given to children under two years of age, and at no age should unripe or over-ripe fruit and vegetables be allowed to be eaten, particularly in summer time.

### TUBERCULAR PHTHISIS.

This disease is prominently before the public at the present moment, and most Annual Reports contain more or less lengthy references to it, but before quoting any extracts it may be well to briefly state the objects to be aimed at in preventing this disease. They are—

*I. Generally*, the prevention of the deterioration of health, which may be accomplished by public sanitary measures and private hygiene.

*II. Specially*, the prevention of the spread of tuberculosis : (1) by meat, (2) by milk, and (3) by sputa.

*A. The public means* by which these special points may be dealt with, are—

1. By the examination of animals intended for food, the testing by tuberculin, and the inspection of animal carcasses during and after slaughter.

2. By the periodical examination of animals producing milk, the testing by tuberculin, the bacteriological examination of milk for tubercle bacilli, and the sanitary control of places where milk-producing animals are kept.



3. By the prohibition of expectoration upon the internal surfaces of public vehicles, and of public habitable interiors.

*B. The private and individual means* by which the spread of tuberculosis may be prevented are in the hands of the large army of highly educated medical practitioners, acting as private medical attendants or as poor-law medical officers.

It will be observed that all the above could be carried out without compulsory notification, which, being a much-disputed question, is likely to occupy many years before settlement, whereas the above measures could be framed and put into motion in as many months.

Dr. Kenwood (Finchley) thus speaks in regard to tuberculosis:—"Consumption slays over 40,000 individuals every year in England and Wales, and a very large amount of the disease is contracted from preceding cases. The expectoration, especially in the later stages, is loaded with the germs of the disease, and when this is allowed to dry, whether on floors or handkerchiefs, it mingles with the dust of the compartment, gets lifted up into the atmosphere by air currents, and may be finally inhaled by a susceptible individual, who, in time, falls a victim to the complaint.

"This fertile avenue of infection may be easily closed by the simple expedient of carefully collecting all expectoration in spit bottles or handkerchiefs, never permitting it to become dry before it has been disinfected. The disinfection of the spit bottles and handkerchiefs can be readily effected by placing them in boiling water for a few minutes. This form of disease may also be communicated by lip kissing, more especially at the later stages of the malady.

“ The Report of the Royal Commission on Tuberculosis also appeared during the year.

“ Compulsory notification of the cow's udder is recommended, together with powers to inspect cows at all reasonable times, and increased powers to insure healthy cowsheds, byres, &c. The commissioners also recommend that funds be placed at the disposal of the Board of Agriculture to provide for the application of the tuberculin test to detect infected animals at an early stage of the disease.

“ Infected milk is a fertile source of tuberculosis, and it can be clearly shown to give rise to a large mortality from the disease among infants. Sterilised milk can now be purchased, or parents may protect their offspring or themselves in a very great measure by using no milk which has not previously been boiled. There is a great prejudice in this country in favour of unboiled milk, whereas, in Italy, it is quite rare for an adult to touch milk which has not been boiled. Children take to boiled milk just as kindly as they do to the unboiled article, and those adults who do not prefer it at the commencement, very soon acquire the taste for it. But, after all, this sterilization of milk is only a makeshift remedy, and the true aim of the prevention of tuberculosis is in the direction of preventing the germ of the disease being conveyed in raw milk and imperfectly cooked meat.”

Dr. Clothier (Hornsey) also expresses his opinions clearly in regard to tuberculosis :—“ The mortality among children from tuberculous diseases does not diminish, and for the last few years much attention has been paid in order that meat and milk shall be supplied to the public absolutely

free from any suspicion of the tubercle bacilli. Public opinion has been so brought to bear upon this most important matter, that many proprietors of the larger dairies are now prepared to guarantee that their herds are under the supervision of veterinary surgeons, and that any animal showing the slightest suspicion of tuberculosis, is at once submitted to the tuberculin test and condemned if found to react. The milk is also constantly tested both as to its quality and freedom from bacteriae. In the Report on Tuberculosis, issued by the British Medical Association in January of this year, exactly the same line of argument is used as appeared in my Report of last year, viz. :—‘ That although the infection of tuberculosis in milk can be destroyed by boiling or sterilization, that as milk can be obtained free from tuberculous infection if the cows which yield it are ascertained to be free from tuberculosis by the tuberculin test it appears to be undesirable to relieve wholesale and retail vendors of their responsibility in this regard, by recommending the boiling of milk as the only safeguard.’

“ As regards the risk of tuberculosis from eating meat from infected animals, the time will come when the carcasses of all animals slaughtered will have to be passed by competent inspectors as fit for consumption, and all imported meat will have to undergo the same ordeal, but at present, and so long as private slaughter houses are in existence, this inspection can hardly be said to be practicable.

“ The question of notifying phthisis pulmonalis and other diseases of tuberculous nature, can, I think, hardly be recommended from the standpoint of utility ; but it would

be decidedly advisable that the rooms vacated, from any house, by patients suffering from pulmonary consumption should be thoroughly disinfected, and that, during the treatment of a case, due regard should be paid to the disposal of the sputa, and all such other precautions taken as to prevent, as far as possible, the spread of the disease."

Mr. Dodsworth (Chiswick) expresses the following opinions with regard to phthisis and tuberculosis:—

"Quoting from the 'Harben Lectures,' Sir Thorne Thorne states 'that there is abundant evidence, at any rate since 1857 when civil registration of deaths was instituted, of a general and progressive reduction in the mortality from all forms of tuberculosis, and at all ages, with one exception.' The exception referred to being that of children under a year, who are especially liable to a form of this disease known as *tabes mesenterica*. The reduction in the mortality from tuberculosis generally has partly resulted from improved social conditions, such as ventilation of houses and factories, and also demolition of insanitary dwellings.

"Dampness of sites, which is a frequent source of this form of disease, has been considerably reduced since the construction of sewers and drains. On the other hand, the explanation of the increase in *tabes mesenterica* is doubtless due to the bacillus, which is frequently found in the milk supply. Cows are very liable to tubercular disease, induced by their confinement in close and ill-ventilated sheds, infection from the mucus discharge being readily conveyed from one to another.

“Phthisis is now recognised as an infectious and, consequently, a preventable disease. The infection is usually spread through either drinking the milk of tuberculous cows, or by the inhalation of dried excretion. Dampness of subsoil, together with ill-ventilated houses, have a tendency to lower the vitality, and render the dwellers in them less liable to resist the contagion. All such houses should be reported to the Sanitary Authority. The rooms used by phthisical patients should be thoroughly disinfected, under the supervision of our Sanitary Inspector. A patient suffering from this disease should sleep alone, should not expectorate on the floor or about the room; the sputa should be collected in a small vessel containing a disinfectant and afterwards burnt.”

And Mr. Garry Simpson (Acton) enters fully into the same subject:—

“The year 1898 will ever be remembered for the inauguration of the National Society for the Prevention of Consumption and other forms of Tuberculosis. The object of the Society is to educate the public that tuberculosis is a preventable disease, and to establish open-air sanatoria for the treatment of patients. It is now clear that tuberculosis is due to neglect of the simplest sanitary precautions. The idea that consumption is an inherited disease and could not be escaped, has now been disposed of. Persons may inherit a certain delicacy of constitution, and cultivate it further by all sorts of insanitary living, sins against hygiene and the like.

“The chief predisposing causes are those that lower the vitality of the individual, such as bad air (consequent on overcrowding), damp dwellings, insufficient food, and intemperance.

“The immediate and existing cause is the tubercle bacillus, which can only be obtained from some other human being or beast affected by tuberculosis.

“This bacillus may gain entrance into the body by being inhaled with dust, or by being swallowed with food and drink.

“From 30 to 40 per cent. of cows suffer from tuberculosis, so that unboiled milk is the chief offender, and infants and young children frequently get tubercular disease of the glands of the intestines.

“The measures required for the prevention of tuberculosis are—

“1. By individuals:—

“(a) The careful disinfection of all expectoration from a consumptive patient.

“(b) The disinfection of all milk consumed as food by boiling or by Pasteurisation, viz., heating the milk in a special apparatus to a temperature of 158 deg. F., keeping at that temperature for 30 minutes, and rapidly cooling.

“(c) Choice of a house, which should be situated on pure, dry, and well-drained soil.

“2. By Local Sanitary Authorities:--

“(a) Control of buildings, especially with regard to site, soil, subsoil, drainage, dryness, cubic space, &c.

“(b) Prevention of overcrowding.

“(c) Notification of tuberculous disease.

- “(d) Disinfection of rooms, houses, and of clothing, bedding, &c., which have been used by consumptive patients.
- “(e) Registration of all cow-sheds, milk shops, dairies, &c., with regulations as to site, space, lighting, ventilation, and cleanliness.
- “(f) Systematic inspection of all cow-sheds, dairies, and milk shops by competent inspectors.
- “(g) Exclusion and isolation of all animals affected with tuberculosis by the ‘tuberculin test.’ (The tuberculin test can be easily applied by veterinary surgeons. It is made by an injection of a small quantity of ‘tuberculin’ into the animal, and a rise of temperature from three to nine degrees would prove the animal was affected with tuberculosis.)
- “(h) Construction of public slaughter houses, in which all animals should be inspected before and after slaughter.”

## SECTION 2.—ISOLATION AND HOSPITALS.

In the Report for 1895, a full account of the isolation hospitals and ambulances of the County, and of the provision made in each District, was given. Accompanying it were tables, and these tables, brought up to date, are reproduced and here inserted.

The Smallpox and Vaccination Hospital has been removed from Highgate to Barnet, and the word “Barnet” in the column headed “Smallpox Accommodation” in the table below refers to that hospital.

## ISOLATION HOSPITALS.

DISTRICTS.	Since when?	Where situated.	No. of Wards.	No. of Beds.	Diseases admitted.	Smallpox accommodation.
URBAN.						
Acton .. ..	None	.. .. Clay Ponds Lane ..	.. 4	.. 10	.. .. Scarlet Fever ..	20 beds, Barnet. To Barnet.
Brentford (no charge)	Feb., 1892..	.. ..	.. 5	.. 16	.. .. All infectious diseases	7 beds, Barnet. To Barnet.
Chiswick .. ..	Site secured 1884	Near southern boundary (extension proposed) Cases sent to Enfield ..	..	..	.. .. Scarlatina. Permanent Hospital to be erected at World's End.	To Barnet. 5 beds, Barnet (Enteric Fever admitted to Cottage Hospital).
Ealing .. ..	None	.. ..	..	..	.. ..	Site for tent ready. To Barnet.
Edmonton .. ..	None	.. ..	..	..	.. ..	None.
Enfield .. ..	Nov., 1891..	Temporary Hospital, Lincoln Road, Ponder's End	.. 4 .. 1	.. 36 .. 1	.. ..	Smallpox admitted.
Finchley .. ..	April, 1889	Summer's Lane ..	.. 3	.. 12	.. ..	
Friern Barnet .. ..	None	Cases sent to Enfield ..	..	..	.. ..	
Greenford .. ..	None	.. ..	.. 6	.. 26	.. ..	
Hampton .. ..	(?)	Tolworth, Surbiton, Surrey	.. 2	.. 8+4	.. ..	
Hampton Wick .. ..	None	.. ..	.. 2	.. 11	.. ..	
Hanwell .. ..	Plans ready	Site at Sewage Farm ..	.. 2	..	.. ..	
Harrow .. ..	Dec., 1894..	Newton Farm, Roxeth (Typhoid and Diphtheria block required)	.. 2	..	.. .. Such as M.O.H. directs	To Barnet.



ISOLATION HOSPITALS—continued.

DISTRICTS.	Since when?	Where situated.	No. of Wards.	No. of Beds.	Diseases admitted.	Smallpox accommodation.
Hendon .. ..	1890	Renter's Lane (Diphtheria block required)	2 } 1 }	12 { 4 {	Scarlatina, and a new ward added	To Barnet.
Heston & Isleworth ..	July, 1898	Mogden.. ..	(?)	(?)	..	Dockwell Lane Hospital, Heston, near Cranford. To Barnet.
Hornsey .. ..	..	Coppett's Road, Muswell Hill	12	(?)	Scarlatina, Diphtheria, and Typhoid Fever	Joint Hospital.
Southall-Norwood ..	New Hosp. proposed at North Hyde	Joint Hospital, Hillingdon, Uxbridge Road	..	..	Scarlatina and Diphtheria	To Barnet (5 beds).
Southgate .. ..	None	..	..	..	..	..
South Hornsey .. ..	Jan., 1899..	Plans prepared. Warwick Gardens, St. Anne's Road, Finsbury Park.	..	..	..	..
Staines .. ..	None.	..	..	..	..	None.
Sunbury .. ..	None	..	..	..	..	None.
Teddington .. ..	None	..	..	..	..	To Barnet.
Tottenham (no charge for minors)	March, 1894	N.E. Hospital, M.A.B., St. Anne's Road	..	100	Scarlet Fever	..

ISOLATION HOSPITALS--continued.

DISTRICTS.	Since when?	Where situated.	No. of Wards.	No. of Beds.	Diseases admitted.	Smallpox accommodation.
Twickenham ..	..	Cottage Hospital, near Sewage Works	..	..	Scarlet Fever. Provision for Diphtheria required.	Joint Hospital.
Uxbridge ..	..	Joint Hospital, Hillingdon, Uxbridge R.D.	..	..	Scarlatina and Diphtheria.	Joint Hospital.
Waldstone ..	None	Send to Willesden ..	8	42 & 16	Scarlet Fever, Diphtheria, and Typhoid Fever	Iron building of 2 wards and 14 beds.
Wembley ..	None	Dog Lane, Stonebridge, near Neasden (being enlarged)	..	..	..	To Barnet.
Willesden (no charge for residents) ..	Aug., 1892	Site obtained at White Hart Lane.	..	..	..	..
Wood Green ..	None	Site obtained several years ago	..	..	..	..
Hendon ..	None	Site obtained several years ago	..	..	..	..
Staines ..	None	..	..	..	..	..
South Mimms ..	None.	Joint Hospital, Kingstons Lane, Hillingdon	6	20	Scarlatina and Diphtheria	Iron shed at Workhouse, Stanwell.
Uxbridge ..	1882	..	..	..	..	A separate block of the hospital.

It is appropriate here to point out the power that an Authority, that has provided hospital accommodation, has in preventing the spread of infectious disease, by enforcing, in appropriate cases, the isolation of the infectious sick.

In the case of *Warwick v. Graham*, an important point, involving the construction of Section 124 of the Public Health Act, 1875, was decided on appeal from the decision of the Justices of Workington, by a Queen's Bench Divisional Court, consisting of Mr. Justice Day and Mr. Justice Lawrance. The section is as follows:—  
 “Where any suitable hospital or place for the reception of the sick is provided within the District of a Local Authority, or within a convenient distance of such District, any person who is suffering from any dangerous infectious disorder, and is without proper lodging accommodation . . . . may, in a certificate signed by a legally qualified medical practitioner . . . . be removed by order of any Justice to such hospital or place at the cost of the Local Authority.”

It appeared that the respondent Graham and his family, which consisted of seven persons, lived in a four-roomed house. One of his sons, who was suffering from scarlet fever, was kept apart in the parlour on the ground floor, but it was impossible to isolate him, and it was proved that there would be danger of infection to the other people in the house if he continued to occupy the room. The boy was properly nursed and fed, and had adequate medical attendance, and, so far as he himself was concerned, had proper accommodation.

The Workington Corporation applied to the Justices for an order to remove the boy to the hospital, but the Justices

held that the words "without proper lodging or accommodation" must be construed with regard to the wants of the infected person, and dismissed the application.

On the appeal, however, the Court held that the section was clearly directed to the protection of persons from infection, and not only to the protection of the infected person himself, and that the Justices ought to have made an order for the removal of the boy.

("Times," 12th June, 1898.)

In the case of *The Queen v. Davey*, a further point was decided, namely, that an order for removal may be made by a Magistrate *ex parte* as urgent, provided it is made upon a certificate or certificates in proper form. This case was heard in the Queen's Bench Division, before Mr. Justices Darling and Channell, on 2nd May, 1899.

#### THE QUEEN *v.* DAVEY.

This was the argument on a rule for a *mandamus* to Justices of Glamorganshire to state a case for the opinion of the Court, upon the hearing of an information preferred by the Inspector of Nuisances to the Margam Urban District, against Mary Hannah Skryne, for obstructing the execution of an order, based on the certificate of a duly certified medical practitioner, for the removal of Ada Olive Skryne, suffering from a dangerous infectious disorder—to wit, scarlet fever, and being then without proper lodging or accommodation—to a suitable hospital. Section 124 of the Public Health Act, 1875, provides that if it shall appear on the certificate of a medical man that a child is labouring under an infectious disorder, and that

the parents are in want of proper accommodation, a Magistrate may make an order for removing the child to a hospital.

> Mr. S. T. Evars appeared to show cause against the rule, and said it was contended on the other side that an order made *ex parte* without the parents of the child having been heard could not be impeached, and that a magistrate on a formal Report, without any personal examination of the accommodation in the house and without hearing any evidence thereon, could make an order for removal. Such a proposition was contrary to the general principles of law. There was a decision that diseased meat could be condemned on an *ex parte* application, but when it came to condemning the butcher who had it it was then necessary to hear what he had to say. Following that analogy it was possible that, though the child might be removable at once on the *ex parte* order, yet that the parent could not be convicted without a hearing. The facts of this particular case showed how hardly the system might work.

Mr. Ryde, appearing in support of the rule, relied on the case of "Booker *v.* Taylor" (reported in "The Times," November 21, 1882), and contended that the Justices could not inquire into the facts on which the order was made. The following cases were also referred to:—"White *v.* Redfern" (5 Q.B.D., 15), "Vintner *v.* Hind" (10 Q.B.D., 63), "Waye *v.* Thompson" (15 Q.B.D., 342).

The Court, in the result, upheld the principle that the Justices could not go behind the order, but, in their discretion, discharged the rule for the case to be stated.

Mr. Justice Darling said that in this case it appeared that the mother of a child ill with scarlet fever had allowed the child to be taken to a hospital. After a time she made the discovery that the hospital was not, in her opinion, properly managed, and that some of the attendants were drunk. She thereupon removed the child, which had not been sent to the hospital by order of Justices. The mother took the child home and made there very good provision against infection. Thereupon a medical officer procured *ex parte* from a Magistrate, under Section 124 of the Public Health Act, 1875, an order to remove the child again to the hospital. The mother prevented this order being obeyed, and the proceedings against her were taken under Section 124. On the hearing before the Magistrate it was contended that the Justices had no power to go behind the order, and a case reported only in "The Times" was cited to that effect. The case was "Booker v. Taylor," November 21, 1882, which was decided *ex parte*. That case bound the Justices to say that they could not inquire into the facts on which the order was made. It had been pressed upon the Court that this was arbitrary, but the question was, had a person the right to obstruct the execution of the order, and at the hearing of a summons against her for so doing raise the whole question of the facts? The Legislature meant to protect the public from infectious diseases. The whole legislation would be useless if the operations in such cases were dilatory. If persons could obstruct and delay the operation of the order the whole purpose of the Legislature would be defeated. What was meant was to give a summary remedy. In the opinion of the learned Judge the case cited was rightly decided, and the Magistrates had no power to go behind the order. But, as under the circum-

stances it did not appear that anything more than a nominal fine would be inflicted on the mother by the Justices if the case came before them again, it was not worth while to direct the Justices to state a case.

Mr. Justice Channell concurred. He thought "Booker v. Taylor" right. As to a general principle of law an order could not be made in respect of the person or property of any one without his being heard upon the matter. But there were exceptions—namely, when it could be seen from the words of an Act of Parliament that the thing might be done *ex parte*. That was allowed in cases when it was necessary to act promptly, as, for instance, when diseased meat had to be destroyed. The removal of a person suffering from infection was very similar in character. Prompt action was equally necessary. He thought that in strictness the Magistrate making the order of removal ought to satisfy himself not only of the existence of the due medical certificate but also as to the other conditions—namely, that there was a suitable hospital within a convenient distance, and that the person suffering was without proper lodging or accommodation. The matter was one of urgency, however, and the offences charged consisted in a person wilfully disobeying an order for removal under those circumstances. Though *ex parte* orders were often made on insufficient grounds the Justices could not go behind an order such as that in this case. It would seem to have been wrong if the circumstances were such as were described for the Medical Officer to have procured an *ex parte* order against the mother who had removed her child because the attendants were drunk. There must be some mode of questioning such an order, probably by *certiorari*, or by writ of *habeas corpus*, but the

Magistrates were wrong in thinking that they could go behind it. He agreed, however, that it was not worth while to call on them to state a case.

(“The Times,” 3rd May, 1899.)

Dr. Windle (Southall-Norwood) expresses the opinion that—“Home isolation is at best an ineffective measure, since communications between the sick-room and the rest of the house are so necessary, numerous, and varied in character, that, even in better-class houses, it is only by the most propitious combination of circumstances that infection fails to spread either to other susceptible inmates or to the outside. In the poorer houses of streets and alleys it is obviously impossible to effect adequate isolation.”

Acton does not possess an infectious hospital in the District, but 10 cases of scarlet fever and 2 of diphtheria, out of a total of 167 and 35 (less 5 ulcerated throats), respectively, were admitted to the Willesden Isolation Hospital during 1898. It also appears that a district nurse nursed 6 cases of diphtheria and 19 of scarlet fever at their own homes. Skilled nursing is better than unskilled, provided the patient is continuously under the charge of the nurse, but the benefit derived from the brief visit of a district nurse to an infectious case is more than discounted by the impression produced, that infectious cases can be nursed in their own homes (many of which must be without adequate means of isolation) as safely as in hospital. The primary duty of a Public Health Authority is the protection of the healthy: the nursing of the infectious sick is a secondary duty following upon the provision of adequate isolation hospital accommodation.



Mr. Garry Simpson says:—“I am pleased that you purpose that the question of providing means for isolating infectious cases will not be long in abeyance.”

The Medical Officer of Health of Edmonton (Dr. C. D. Green) reports as to the difficulties of isolation:—“The greatest difficulty in dealing with a case of scarlet fever that arose during the year was in reference to its occurrence in a family of gipsies, and the facts so well illustrate the danger to a District arising from van dwellers, as well as the embarrassment resulting from lack of adequate hospital accommodation, that although they were brought in detail to the notice of the Council at the time of their occurrence, I will here recapitulate them. A gipsy family moved into the District from Hackney Wick, and encamped in a van and some rough tents on waste land in the Brettenham Road; within twenty-four hours of their arrival one of the children was taken with scarlet fever and was removed to the hospital, and the encampment was broken up; four days afterwards my attention was directed to a child in a cart outside a public house in a main thoroughfare, and, on inquiring into the matter, I found it was another child of the same family, with the scarlet fever rash well out. No accommodation could be obtained in the hospital, nor in any house, for the child, and no alternative remained but the encampment of the family in a field, where they remained three days, until there was a vacancy in the hospital. A third case occurred in the family, which was also taken to the hospital. A case occurred in a house in the Brettenham Road, quite close to the place where the original encampment took place, for which there was no other apparent source of infection.” The hospital mentioned appears to be the Enfield Hospital.

Mr. F. A. Spreat (Friern Barnet Urban District) reports that—"Having drawn the attention of the Council to the question of isolation hospital accommodation (beyond the existing arrangement with the Enfield and Finchley Councils), the desirability of entering into arrangements with one or other of the neighbouring Authorities is under consideration."

From the Hendon Rural District, Mr. Campbell Gowan writes:—"I may here point out to you, that the want of an isolation hospital very seriously handicaps us in our efforts to prevent the spread of infectious disease. Had we been properly able to isolate the case of scarlet fever which was imported into Stanmore in November, the three other cases which sprang from it, with one subsequent death (from diphtheria), would in all probability have been avoided. When, after years of insistence before the old Board, the land for the isolation hospital was actually acquired, I felt that a long step in the right direction had been taken. Unfortunately, the new Local Government Act, splitting the old District into three separate parts, Authorities introduced conflicting interests, and led us into an *impasse*. I suggested a Conjoint Scheme—that failed. It was next proposed that your Board should combine with Wealdstone, but that also was a failure. I would now suggest that the land should be divided equally or proportionally, and then each Board would be at liberty to erect its own hospital. The arrangements by which the Watford Isolation Hospital Authorities agreed conditionally to take cases of scarlet fever, and under which you empowered me to act, is a costly one, and, at best, but a makeshift. The Districts are but a short distance apart, and should an outbreak occur simul-

taneously in both Districts (as has before now been the case) it would break down hopelessly when most urgently needed. A further and very cogent argument has been added by the passing of the new Vaccination Act. We have before now found ourselves confronted by an outbreak of small-pox. In the near future we may with confidence anticipate a similar experience, with the added danger of a larger number of susceptible individuals, to help in spreading the infection. The most fervent apostles of the anti-vaccination creed are the firmest believers in the value of isolation, combined with good sanitation, as a sufficient prophylactic against the spread of this loathsome disease. I, therefore, entreat you once more to take this important matter into your consideration, and not let it rest until a satisfactory conclusion has been reached."

From Wealdstone, Mr. G. H. Butler similarly reports:—  
 "The emergency caused by the typhoid outbreak (8 cases in one overcrowded house) brought the need of an isolation hospital very prominently forward. This is indeed a very urgent matter, and, in face of the steady increase of population, ought to be dealt with at once. In my Annual Reports for 1895, 1896, and 1897, I referred to this matter and urged its importance. I am distinctly in favour of the Council providing a hospital for the District, independently of any other Authority. A so-called temporary building, though this would probably fulfil its purpose for 25 or 30 years to come, is all that is required, and need not be a large one to start with, as it could always be added to if occasion required. An apparatus for disinfecting by steam, and a mortuary, should also be provided at the same time."

Dr. Green (Edmonton) also touches briefly on the economic aspect of hospital provision :—“ I am quite aware of, indeed I have previously dwelt upon, the fact that several difficulties present themselves to a Council who have the administration of a District whose rateable value is small in proportion to its population and whose population increases much faster than the rateable value, in making provision for the separate isolation and treatment, according to modern requirements, of more than one class of infectious disease ; and I have expressed the opinion, to which I still adhere, that this duty would be more economically and efficiently discharged by an administrative body dealing with a much larger area, but it seems to be the general feeling, as it certainly is the tendency of the powers conferred by the legislature in relation to this matter, that each District should provide for, or in any case pay for, its own needs.”

At Wood Green (Mr. C. H. Conolly) :—“ The question of an isolation hospital has advanced since the date of the last Annual Report, so far as the acquisition of an advantageous site in White Hart Lane, at the boundary of the District, and the reception of tenders for the erection of a temporary hospital of 12 beds.

“ Delay in the completion of the buildings has arisen from the necessity of providing new sewer and water supply, and from the somewhat tedious negotiations connected therewith.

“ It has been decided to erect temporary buildings, on account of the saving in initial expense, and to pay the cost out of the rates. The original plan prepared by the

Surveyor provides for the erection of three pavilions for the reception of patients suffering from scarlet fever, typhoid fever, and diphtheria. It has been decided to proceed at present with only part of the scheme, which, although inadequate, is still an important step in advance. Through the kindness of the Medical Officer to the Finchley District Council, cases of scarlet fever have been admitted from time to time into the Finchley Hospital when there was room to spare, the cost of the maintenance of the patients being paid by Wood Green.

“Patients able to pay a minimum fee of £3 3s. are received into the London Fever Hospital, but the Authorities strongly object to receive persons whose expenses are paid out of the rates, and discourage the admission of those outside the London District.

“A few cases of typhoid fever and diphtheria are annually sent to various general hospitals in London, but in all these institutions the chance of admission depends on the accident of there being room for them at the time, and cannot be relied on with any certainty.”

Advance has also been made at Hanwell, where the Medical Officer of Health (Mr. G. Hope) says:—“I hope that before long we will have an isolation hospital for our infectious cases and a steam disinfecter. A Local Government enquiry was held on the 21st June, 1898, concerning an application from the Council for sanction to borrow £4,610 for this purpose.

“The Inspector, Arnold Royle, Esq., C.B., visited the site of the proposed hospital, and expressed his satisfaction

with it; he also examined the plans, which met with his approval.

“The sanction of the Local Government Board has been given, and all that is now necessary is for the loan to be raised. I trust this will soon be accomplished, and that the building will soon be commenced.”

From Enfield (Dr. J. J. Ridge) comes the Report that “The new hospital has been in course of erection very slowly during the year, and will apparently not be ready for some months. The inconveniences of the present temporary hospital are such that nothing but the most strenuous efforts on the part of the staff, and especially the matron, has averted a scandalous disaster. It is therefore to be hoped that the strongest possible measures will be adopted to secure the earliest opening of the new premises.”

And, from Heston and Isleworth, Mr. H. Hanslow Brind writes:—“Another cause for congratulation, and one which marks an epoch in the advance of sanitation in the District, is the completion of the joint Richmond and Heston and Isleworth Hospital at Mogden, which is now ready for the reception of patients suffering from infectious disease, the first patient having been admitted for scarlet fever on July 28th. The last patient at the Dockwell Lane Hospital was discharged on September 28th, on which date this hospital was taken over by the Joint Hospital Committee, with the intention of reserving it for a smallpox hospital should any cases of that disease arise in either this District or the Borough of Richmond.”

Dr. Watson (Tottenham) reports with regard to the charge for the removal of patients to hospitals:—"I have to congratulate your Council upon the steps you have taken in abolishing the recovery of expenses for maintenance and treatment in hospital from relatives of patients (minors) that have been removed there. Infectious diseases can only be successfully combated with by means of proper isolation, removal to hospital, and efficient disinfection, and any difficulty that exists to prevent the removal of patients to hospital as speedily as possible should be overcome at the first opportunity."

Mr. Bott (Brentford Urban District) also reports, in reference to the isolation hospital, that "this institution continues its career of usefulness, and practically all cases of scarlet fever which occur in the town are removed there. I am glad, therefore, that it has been made free to all, and that the only cause of discontent has been removed."

AMBULANCES.

DISTRICTS.	Ambulance?	Since When?	Where kept?	Accommodation?	Type and Remarks.
URBAN.					
Acton .. ..	Yes	..	Shed, Acton Lane, Uxbridge Road.	2 patients .. ..	4-wheeled cab, without upholstery.
Brentford .. ..	Yes	Aug. 1893	Town Meadow, High Street	2 patients, 1 attendant	Usual type, horse driven.
Chiswick .. ..	Yes	1894	Fire Station, High Road	Stretcher and seat	4-wheeled covered van, driven by horses.
Ealing .. ..	Yes	1884	Isolation Hospital	2 patients, 1 nurse	New horsed van, M.A.B. type.
Edmonton .. ..	Yes	1895	Sewage Farm .. ..	2 recumbent, 1 sitting	Horsed vehicle, opening behind.
Enfield .. ..	Yes	1885	Court House .. ..	2 cases .. ..	Horse brougham.
Finchley .. ..	Yes	1889	Hospital Grounds .. ..	1 patient .. ..	Barnet Workhouse Ambulance, 6 miles away.
Friern Barnet .. ..	No	..	.. ..	.. ..	.. ..
Greenford .. ..	No.	..	Isolation Hospital, Tolworth, Surbiton	1 patient, 1 nurse	1-horse brougham.
Hampton .. ..	Yes	..	.. ..	.. ..	.. ..
Hampton Wick .. ..	No.	..	.. ..	.. ..	.. ..
Hanwell .. ..	No.	..	.. ..	.. ..	.. ..
Harrow .. ..	Yes	..	Council's Depot .. ..	2 recumbent .. ..	1-horse brougham.
Hendon .. ..	Yes	1879	Hospital .. ..	.. ..	1-horse cab.
Heston and Isleworth .. ..	(?)	..	.. ..	.. ..	Infectious Hospital is at Dockwell Lane, near Cranford.
.. ..	Yes 2	..	{ Hospital, Coppett's Lane	(?)	For hospital.
.. ..	..	..	{ Depot, Hornsey .. ..	(?)	For smallpox only.



Ambulances—continued.

DISTRICTS.	Ambulance?	Since When?	Where kept?	Accommodation?	Type and Remarks.
Southall-Norwood	..	..	Joint Hospital, Hillingdon (?)	..	M.A.B. type.
Southgate	Yes.	1896		(?)	
South Hornsey	No.				
Staines..	No.				
Sunbury	No.				
Teddington	No.				
Tottenham	Yes	1889	Coombs House, High Road	1 patient, 1 attendant	1-horse, M.A.B. type, reserved for smallpox. Two new ones constructing.
Twickenham	(?)	..	..	..	Cottage Isolation Hospital is at Sewage Works.
Uxbridge	..	..	Iver, Bucks (?)	..	Joint Hospital is at Hillingdon, Uxbridge Rural District.
Waldstone	No.				
Wembley	No.				
Willesden	Yes 2	1895	Hospital Grounds	1 patient, 1 nurse	New horsed brougham. Old reserved for smallpox.
Wood Green	Yes.	1896	(?)	(?)	
RURAL.					
Hendon	No.				
Staines	No.				
South Mimms	No.				
Uxbridge	Yes	1895	Inspector's Residence	1 patient, 1 nurse	M.A.B. type.

## SECTION 3.—DISINFECTION AND METHODS.

As in the case of isolation hospitals and ambulances, so also, in the Report for 1895, a full account of disinfecting chambers and disinfection, and of the provision made in each District, was given. Accompanying it, was also a table, which has been brought up to date, reproduced, and here inserted.

It will be seen that a little progress is also being made in this direction.

DISINFECTING CHAMBERS.

Districts.	Since when ?	Where situated ?	Type.	Transport Charges. Remarks.
URBAN.				
Acton .. ..	Oct., 1894	Sewage Works ..	High pressure steam	Two hand-trucks. No charge.
Brentford .. ..	Feb., 1892	Hospital Grounds ..	High pressure steam	One hand-cart. Charge, 7s. 6d.
Chiswick .. ..	None.			
Ealing .. ..	1882	Northern Works, Perivale	Hot air oven .. ..	Iron horse-cart at Northern Works. Charge a guinea.
	1884	Hospital. Southern Boundary	Gas oven.	
Edmonton .. ..	1882	Sewage Farm ..	Hot air oven (obsolete)	Two horse-conveyances. Charge rarely made.
Enfield .. ..	1887	Sewage Farm, Ponder's End	High pressure steam	Two horse-vans. No charge made.
Finchley .. ..	None.			
Friern Barnet .. ..	None.			
Greenford .. ..	None	.. ..	.. ..	.. ..
Hampton .. ..	—	Isolation Hospital, Tolworth	Hot air .. ..	Oven at Ealing Northern Works used. No charge made to occupiers.
Hampton Wick .. ..	None.			
Hanwell .. ..	None	Proposed at Hospital	.. ..	Bed-ambulance used for removal. Charge for horse hire only.
Harrow .. ..	1898	Isolation Hospital ..	Steam .. ..	Ealing apparatus used at a fixed charge. Harrow School has apparatus at School Laundry, Roxeth.

Hendon .. ..	None.			Steam.			
Heston and Isleworth .. ..	1896		Hospital, Coppett's Lane	High pressure steam		Laundry attached.	
Hornsey .. ..	Two		Depôt, Hornsey ..	High pressure steam		Laundry attached, and vans.	
Southall-Norwood .. ..	None.						
Southgate .. ..	None.						
South Hornsey .. ..	None.						
Staines .. ..	None.						
Sunbury .. ..	None.						
Teddington .. ..	None.						
Tottenham .. ..	1896		Outfall Works ..	High pressure steam.		{ Two vans. No charge. Laundry proposed.	
Twickenham .. ..	None.						
Uxbridge .. ..	None.						
Wealdstone .. ..	None.						
Wembley .. ..	None.						
Willesden .. ..	1895		Hospital Grounds ..	High pressure steam		Two horse-vans. No charge.	
Wood Green .. ..	1893		Moat House .. ..	Low pressure steam..		Two hand-carts. No charge.	
RURAL.							
Hendon .. ..	None.						
Staines .. ..	None.						
South Mimms .. ..	None.						
Uxbridge .. ..	1886		Hospital Grounds ..	Hot air. Brick oven.		For use of hospital only.	

Mr. Hanslow Brind (Heston and Isleworth) calls attention to the temporary shelter of the inmates of small dwellings during disinfection:—“Before leaving the subject of infectious diseases I would draw your attention to Section 15 of the Infectious Diseases Prevention Act, 1890, which is as follows:—‘The Local Authority shall from time to time provide, free of charge, temporary shelter or house accommodation, with any necessary attendants for the members of any family in which any infectious disease has appeared, who have been compelled to leave their dwellings for the purpose of enabling such dwellings to be disinfected by the Local Authority.’ At present no such temporary house accommodation is provided. I hope that you will shortly consider this question and remedy the defect, as now I am often unable to have a house disinfected as thoroughly as I should like, and the occupants of the smaller houses are at times subjected to very great discomfort.”

#### SECTION 4.—VACCINATION.

*The Vaccination Act, 1898.*—The principal sections of this Act are set out in Part III, under the head of Legislation. The points are, briefly, that the period for infant vaccination is extended from three to six months, that Public Stations are abolished, and Public Vaccinators are to visit and vaccinate children in their own homes, that the infants of certificated conscientious objectors are exempted, that the penalties and punishments are mitigated, and that the Local Government Board may make Rules and Regulations as to Public Vaccinators.

They have accordingly ordered that Public Vaccinators shall use only glycerinated calf lymph, or such other lymph as the Local Government Board may issue.

The most pressing question, however, and one not touched either by the new Act, or by the new General Order, is that of the standard of vaccination.

*Standard of Vaccination.*—In the Amended Regulations of the Local Government Board General Order, dated 18th October, 1898, Third Schedule, Instructions to Vaccinators under Contract (that is, Public Vaccinators), the standard of vaccination is set out in Instructions 7 and 8.

“(7). In all ordinary cases of primary vaccination the Public Vaccinator must aim at producing four separate good-sized vesicles, not less than half-an-inch from one another. The total area of vesiculation resulting from the vaccination should not be less than half a square inch.”

“(8). \* \* \* \* In cases of successful primary vaccination the Public Vaccinator must record the number of separate scarified areas, punctures, or groups of punctures made, and the number of separate normal vaccine vesicles or groups of vesicles which have been produced. In case of re-vaccination he must register as “successful” only those cases in which either vesicles, normal or modified, or papules surrounded by areolæ have resulted.”

Unfortunately these Instructions do not apply to other than Public Vaccinators, and Private Vaccinators have only to certify that a child has been “successfully vaccinated.” The Local Government Board has explained the

meaning of the words "successfully vaccinated," in a letter dated from Whitehall, 12th November, 1898, and published in the "British Medical Journal," 19th November, 1898, to the following effect:—"The Board are of opinion that the performance of vaccination in such a way as to only produce one or two vaccine vesicles is much to be deprecated, and that such vaccination affords less protection against smallpox than when done in accordance with the instructions issued to Public Vaccinators. It appears to the Board, however, that for the purposes of their regulations a person who has on him the distinct mark of one vaccine vesicle must be deemed to have been successfully vaccinated." It is, therefore, clear that the minimum results of distinct vaccination, affording little or no protection, rank as successful vaccination as the maximum results, affording the maximum protection of immunity.

A certificate of successful vaccination is justified by the appearance of the smallest vesicle, and tender-hearted mothers who can afford it secure this result, and yet satisfy their consciences by avoiding the Public Vaccinator and making the practice of the private practitioner depend upon the present production of the least discomfort to the child.

The remedy for this is that the description of successful vaccination as set out in Clause 7 of the Instructions to Vaccinators under the Third Schedule of the General Order of 18th October, 1898, made under the Vaccination Acts, be inserted in, and form part of, the Medical Certificate of successful vaccination, Form E, Fifth Schedule of the General Order; and also that the Medical Certificate of successful vaccination be amended by the addition,

after the words "has been successfully vaccinated by me," of the words, "that is to say, the results have been . . . (here insert number of) separate good-sized vesicles or groups of vesicles, and a total area of vesiculation of not less than . . . (here insert area)," or words to the like effect.

The parent or guardian should be required to *notify* the fact of vaccination, and the medical expert should be required to *certify* the kind and result of such vaccination, that is, the precedent of the Infectious Diseases (Notification) Act, 1889, should be followed, and one standard of "efficient vaccination" should apply to rich and poor alike.

Strangely enough the strongly anti-vaccination Board of Guardians of King Norton Union take the same view, but with a different object. They say that vaccination is embittered by class distinctions, and that "the first step to the removal of this bitterness of feeling must be the placing of all classes on a footing of strictly equal treatment in regard to vaccination." This of course referring to the fact that the minimum amount of vaccination is not rejected as insufficient by the Local Government Board, that persons who can afford to pay can bring such pressure to bear as to whittle the amount down to the very minimum, whereas those who cannot afford to pay must be subjected to the regulation amount, both being regarded by the Local Government Board as successful vaccination. In other words, there are two standards, a private and a public standard, and both are justified by the Board.

Morally, socially, medically, the position is at present a false one, and, for the public benefit, the sooner it is altered the better.



The Medical Officer of Health, Finchley (Dr. Kenwood) reports, with regard to smallpox and vaccination :—“The year has been a momentous one with reference to vaccination. The Vaccination Act of 1898 was passed in a form which differed in many important respects from the Bill as originally introduced. The change in the age limit for primary vaccination from three months to six months, is on the whole advantageous, as it removes the sentimental objection to submitting an infant to the operation at a very tender age, and vaccination will not now be so generally ascribed as the cause of those congenital diseases which first show symptoms at about the third and fourth months of life. The provision for vaccination being performed in the homes of the children is good ; for, doubtless, the mingling of children in public vaccination stations involves a risk of infection being communicated. The Act requires that the Public Vaccinator shall give to the parents or guardians at least 24 hours’ notice of his domiciliary visit, and ‘glycerinated calf-lymph, or such other lymph as may be approved by the Local Government Board’ shall alone be used. Although the risk of humanized lymph was so trifling, that medical men have habitually used it in their own families, this provision will do much to allay the ill-founded fears which have arisen largely as a result of the exaggeration and misrepresentation of anti-vaccinators. Lymph which has been thus treated with glycerine destroys extraneous organisms. Every precaution, moreover, will be taken to ensure that the original lymph is taken from calves which are quite free from disease in any form.

“Section 2 of the Act is popularly known as ‘the conscience clause,’ and provides for the acceptance of

the plea of conscientious objection as a means of relief from the infliction of a fine upon those who refuse to allow their children to be vaccinated. With the exception of this conscience clause, the rest of the Act only came into operation on 1st January, 1899, and the Act remains in force for five years, when the whole subject must again come up for consideration by Parliament."

And the Medical Officer of Health, Chiswick (Mr. F. C. Dodsworth), also reviews the recent Vaccination Act:—"The relaxation of the laws in relation to this, I fear, in the future, are likely to be followed by serious results, bearing in mind the two latest epidemics, that of Gloucester in 1896, followed by Middlesborough in 1898. It has been estimated that in London one now dies from smallpox, where, before vaccination, 17 died. In England generally 1 for 20, and in Scotland 1 for 25. On the other hand, in those countries where vaccination has not been adopted, smallpox has continued its ravages. The decline of this disease has, in every country, followed the introduction of vaccination, those countries in which vaccination has been most thoroughly carried out showing the greatest decline of smallpox, and because there is not any other influence to which this decline can be attributed, Medical Officers of Health, whose duty and interest it is to promote sanitation in every way, are, in fact, equally unanimous as other medical men are in recommending and using vaccination as the only reliable protection against the ravages of smallpox. It has been alleged that the diminution of smallpox is due to improved sanitation generally. If this were so, all other infectious diseases ought to have decreased in the same way. However, they have not. Some, such as typhoid or enteric, and typhus,

which are spread by contaminated water or milk, or in the latter by overcrowding, have decidedly decreased in proportion as these sanitary defects have been removed, whilst others which resemble smallpox in being spread by personal infection, such as measles and whooping cough, in which isolation is equally difficult, as in the case of smallpox, have not decreased in the same degree as the latter has, whilst diphtheria has really increased. More than 1,100 Medical Officers of Health have recently signed a declaration, in which they express their belief that 'sanitation' apart from vaccination, cannot be relied on to prevent or stamp out epidemics of smallpox, and that the only trustworthy protection at present known against smallpox is efficient vaccination in infancy, and subsequent re-vaccination, and that the only effective way of stamping out epidemics lies in the free use of these agencies. They support this belief by actively promoting vaccination and re-vaccination, whenever an outbreak of smallpox occurs in any of their Districts. With the view of removing all reasonable fear of the communication of any serious disease by vaccination, the Royal Commissioners recommended, and the Government have now adopted, the use of calf-lymph, so carefully prepared that no ground exists for suspecting the possibility of conveying any disease.

"I regret to say that vaccination in this District is being much neglected since the Act came in force, especially by the poorer class of inhabitants."

## CHAPTER III.—SANITATION.

## SANITARY WORK GENERALLY.

Tables C (I, II, III, and IV) have been compiled as in previous years, and appended to Part III in this Report.

Tabular returns of sanitary work carried out should accompany every Annual Report in the same manner as tabular returns of births, deaths, and sickness. Most of the reports contain such returns in classified forms, but some do not. The omissions are shown in the tables themselves, and notes on the subject will be found in the summaries in Part II.

Where no record appears in the Annual Report as to the number of any particular premises in a District, the number stated in a previous Report has been entered in the Tables lettered C.

Table D has been added for the purpose of showing the Adoptive Acts, Bye-laws, and Regulations in force in each of the Districts of the County. At present the information is small, but it will accumulate, and in time complete a valuable table of reference.

If the Adoptive Acts, Bye-laws, and Regulations in force in a District were stated at the end of the Annual Reports, Table D could soon be completed.

## INSPECTIONS.

*Complaints.*—In 24 of the 33 Districts, the total number of complaints received is recorded as shown in Table C (I).

*Infectious Diseases notified.*—A complete list of the number of cases notified in each District will be found in the table headed “ Notification of Infectious Diseases, 1898,” in Section I, Chapter II of this Report, although the number of cases is not stated in some of the Reports, amongst the sanitary work in Table C (I).

*Premises periodically inspected.*—In 20 of the 33 Districts the number of premises periodically inspected is stated, but some of the numbers appear also to embrace house-to-house inspections.

*House-to-house Inspections.*—In 17 Districts house-to-house inspections were carried on during the year.

*Total Inspections.*—In about two-thirds of the Districts the number of inspections and re-inspections are recorded. These give an approximate record of work done, but as they necessarily vary in the amount of time they occupy, according to circumstance, they must be regarded as only approximately comparative.

*Letters and Notices.*—In 26 Districts records are made of the clerical work done in this direction.

## DWELLINGS

*Dwelling-houses.*—In 24 Districts the number of houses and premises cleansed and repaired are recorded, in 16 the number closed as unfit for habitation, in 10 the number re-opened after repair, and in 12 the number demolished. In Willesden 11 illegal underground rooms were vacated.

Mr. C. H. Conolly (Wood Green), reports that "11 cases of overcrowding of a nature so gross as to violate the ordinary rules of decency were discovered and abated. There are, however, a large and increasing number of cases where the minimum amount of air space desirable for the maintenance of a high standard of health is not obtained, and some in which even the minimum allowed by law is not reached. The cause of this state of things is primarily most complex, being dependent on a variety of social and economic conditions, of which the crowding of two families into houses meant for one, and the general difficulty in obtaining houses of any kind at a reasonable rent, are but the results. The tendency to overcrowding has a most disastrous influence on the public health; it increases the mortality of young children, favours the diffusion of infectious diseases, including consumption, and affects the general health and usefulness of the most robust."

In Wembley also (Mr. C. E. Goddard) overcrowding is reported:—"There can be no question that the smaller houses in the Wembley Ward have had for some time past as many occupants as they can safely hold. I have drawn your attention to the matter in two previous Annual Reports. At different times we have had, of course, cases of overcrowding and have successfully dealt with them, but during the past year only a few genuine cases have come to our knowledge, the recent one in Arthur Cottages, of which we have heard so much, was indeed a serious one, but I managed on several occasions, by threats and otherwise, to reduce the occupants to the proper number. Again the overcrowding occurred in December last, and because I was misinformed as to the ejection order, I

did not apply to you in the usual way. In future, however, your sanitary officers will place no reliance upon promises, but will, in all cases, recommend you to take prompt and immediate action. I must, gentlemen, accept slight responsibility in this case, and I regret if any sort of reflection has been cast on the Council by my apparent leniency in dealing with it. I am glad to hear that you are considering the advisability of adopting the clauses of the Housing of the Working Classes Act."

Even in Ealing, Mr. C. A. Patten remarks that—"Many of the buildings occupied by the working classes in this locality are old, and I for one should hail with satisfaction improved and extended building for their accommodation. In every instance of overcrowding brought to my notice, I take steps for its abatement, but, in my experience, anything like a wholesale displacement only leads to aggregation in other parts, and it is a duty which has to be exercised with a good deal of care and discretion. Landlords can do a great deal towards making this class of dwellings more conformable to modern ideas of sanitation by periodical whitewashing and repairs, and without waiting for the sanitary authorities to enforce these necessary measures."

Also, in Hampton Wick (Dr. Th. Günther), the same thing is noticed as taking place :—"There is a great scarcity of cottages in the District, and the working classes cannot afford to pay the high rent which is now demanded for small cottages. As they have great difficulty in finding accommodation, they are driven to take lodgings in houses, the tenants of which let rooms to enable them to pay the landlord's rent; the consequence is that many people are

crammed into one cottage. No complaint of overcrowding has been made, and it is difficult to prove such cases without having a fixed standard."

In Enfield, Dr. J. J. Ridge observes:—"There is one factor greatly affecting the health of the District, which is even now becoming noticeable. The demand for small houses is becoming so great that the small house proprietor is raising rents out of all proportion to the cost of erection, or the amount of rates. Many of the working classes being unable to pay the exorbitant rents, take in lodgers to reduce the amount, and so the evils of overcrowding are creeping in, and these are most detrimental both to the health and morals of the people."

Mr. G. Hope (Greenford Urban District) reports, that "some of the cottages are far from what they should be, but on the whole are not so bad as in many Districts, in most cases where there is squalor, it is due to the thriftlessness of the occupants. I consider that the worst specimens are those at Horsington Hill, known as Hope Cottages, those in the row occupied by the Tulls are not fit for human habitation, but the great difficulty here, as is often the case elsewhere, is that if these cottages are closed the people have nowhere else to go in the District. There is a great scarcity of properly constructed cottage property, and the only remedy is for the Council to adopt, and put in force, the Housing of the Working Classes Act, when the Council could provide these dwellings, which in time would become a valuable possession."

In the Staines Rural District, Mr. Dwight Morris expresses the opinion that—"One of the greatest advantages



of the year, carried so far by your Council, is the adoption of Part III of the Public Health Amendment Act, and making of bye-laws with regard to streets and buildings. Although not yet completed, it has already struck a severe blow at the jerry builder. The rapid erection of new cottages all over the District, during the last few months, has been simply marvellous. This frightful haste must soon have an important check, which will be of the utmost benefit to those who have to live in our District. Damp houses, defective drains, bad private roads, and badly constructed and laid out estates, will shortly, I hope, be things of the past, for all these matters have a very pernicious bearing on the health of the people. A vigorous step now will save many a life, and although more expensive will soon amply repay the additional cost of carrying it out as it should be done, and will, I feel sure, be the most important work the Council has undertaken for years."

*Underground rooms.*—These only appear to exist in Willesden, as, annually, Dr. Skinner's Report is the only one in which the record of any action appears.

*Houses let in Lodgings.*—The number of houses registered under bye-laws for houses let in lodgings to members of more than one family, sometimes known as registered tenement houses, is stated in five Districts as follows:—In Hendon, 90; in Heston and Isleworth, 3; in Southall-Norwood, 11; in Uxbridge Urban, 8; and in Willesden, 320. In 10 Districts none are registered, and presumably this applies to the remaining Districts, no bye-laws possibly being in force.

Mr. Henry Bott (Brentford Urban District) remarks, with regard to houses let in lodgings:—"My efforts, this

year, as in all previous ones, have been principally directed to improving the dwellings of the poor, seeing that they are water-tight, properly ventilated, that their sanitary arrangements are not defective, and that their water supply is efficient. Many houses have been repaired and cleansed, and five have been closed as unfit for habitation and pulled down. I am not an advocate for the wholesale demolition of small property, as long as it can be put into a proper condition by reconstruction and repair, for the small houses supply a great want as they are cheap, and, under supervision, make good homes for families earning small wages. To me it appears that the great difficulty is to house the poorest class, as they are not always desirable tenants. They are not suitable as tenants for workmen's dwellings, and if small houses are done away with they must crowd into lodgings. I would again suggest that a register be kept of all houses let in lodgings as it would materially assist the Sanitary Authority, and tend to check overcrowding with its attendant evils."

*Common Lodging-houses.*--The common lodging-houses registered, are, 1 in Acton, 7 in Brentford, 1 in Edmonton, 1 in Harrow, 2 in Heston and Isleworth, 6 in Tottenham, 4 in Uxbridge, and 4 in Willesden; in 10 Districts it is reported that none are registered, and in 15 there is no information.

*Canal Boats used as Dwellings.*--Brentford and Uxbridge, being Registration Authorities, in the former 6, and in the latter 13 canal boats are registered; inspections are recorded in some other Districts through which canals flow.

*Movable Dwellings.*--In 13 Districts caravans, tents, and sheds, occupied as dwellings were dealt with.

## SCHOOLS.

Referring to Table C (II), in 26 of the 33 Districts, the number of schools is stated, and in the majority of these Districts they are inspected.

Dr. Skinner (Willesden) remarks, in reference to the inspection of schools, that—"Owing to outbreaks of diphtheria in private schools, I drew attention to the importance of having the right to inspect them.

"A communication was made by the Council to the Local Government Board on the subject, and a reply received to the effect that the point might be introduced into a future Bill amending or consolidating the Public Health Acts; I think it very desirable this should be done."

## FACTORIES AND WORKSHOPS.

*Factories.*—The power of Sanitary Authorities extended to factories as regards nuisances from premises, accumulation and smoke, under Section 91 of the Public Health Act, 1875, the discharge of solid and liquid refuse into streams under the Rivers Pollution Prevention Act, 1878, and especially as to sanitary conveniences under Section 38 of the Public Health Act, 1875, and Section 22 of the Public Health Acts Amendment Act, 1890. The last is an important duty providing for sufficient and suitable accommodation for both sexes.

*Workshops.*—In 15 Districts the numbers of workshops are stated and the numbers of inspections. In 2 Districts it is definitely stated that there are none.

*Bakehouses.*—In all but 6 Districts the number of bake-houses are stated and they are periodically inspected in most.

*Laundries.*—In 19 Districts the numbers of laundries are stated and in the majority they are periodically inspected.

#### BATHS AND WASHHOUSES.

It would be interesting to know whether personal cleanliness is encouraged, either by the provision of baths and washhouses in private houses, or of public baths and washhouses, in the poorer neighbourhoods—an elementary means of averting disease and promoting health, recognised from time immemorial, but one so simple that it is apt to be overlooked.

#### SLAUGHTER-HOUSES.

All but five Districts record the number of slaughter-houses, and most of the inspections of these premises during the year. Even a negative record is better than none at all.

#### COWSHEDS, DAIRIES AND MILKSHOPS.

Only three Urban Districts do not report the number of premises producing or purveying milk, and the supervision exercised appears to be considerable, but there is every reason why it should be full and complete under the stimulus of public opinion and the dread of tuberculosis.

## FOOD.

*Unsound Food.*—In eight Districts unsound animals or food were seized and destroyed.

*Adulterated Food.*—In Chiswick and Friern Barnet, records of action under the Sale of Food and Drugs Act occur.

## OFFENSIVE TRADES.

In Uxbridge Urban District there are two offensive trade premises, in Greenford one, and in Hampton one. In eight Districts there are definite statements of none.

## MORTUARIES.

In 18 Districts mortuary accommodation is stated to be provided, in three, none to be provided, and in the rest no information.

Mr. C. D. Green (Edmonton) reports as follows:—“I would remind the Council that the mortuary and inquest room are not only inadequate for the purpose, but are situated more than a mile from any public conveyance, and that much inconvenience and unnecessary loss of time is thereby caused to those who are called upon to attend them, and it should be remembered that in the majority of instances the witnesses are quite poor people, unable to provide a conveyance for themselves. The inquest room itself is occupied to its full capacity in an ordinary case and in one exciting any public interest is much overcrowded. For the public and for the press there is practically no accommodation, and there is neither

a waiting room for witnesses nor a private room for the Coroner. This matter has been previously before the Council, and they have agreed that the present accommodation is inadequate and inconvenient, and two years ago gave instructions for the preparation of plans, with a view to the erection of more suitable premises in a central situation, but, so far as I am aware, nothing has yet been done."

#### BURIAL GROUNDS.

In the summaries there are mention, in one or two instances, of the extension of burial grounds where the accommodation has become insufficient.

#### WATER SUPPLY AND WATER SERVICE.

*Wells.*—Table C (III) shows that only 10 new wells have been sunk, 1 in Enfield, 1 in Heston and Isleworth, 5 in Sunbury, and 3 in Staines Rural District; some 46 were cleansed and repaired, and 54 wells were closed as polluted. In the previous year 41 were closed, and in 1897 some 45, so that the number of houses supplied from shallow wells is steadily decreasing, and the number supplied from the mains is steadily increasing. The percentage of houses supplied from the mains varies from 40 to 100 in 18 of the 33 Districts.

Dr. Sydney Ransome reports of Southgate, that—"Owing to the long drought of last summer, many of the wells, constituting the only source of water supply to the premises in which they are situated, became very short of water, and in some cases quite dry, most of these wells being surface

wells only. After the drought ended, and the wells had refilled, samples of the water from wells supplying 27 different premises situated on the Chase, Southgate, were submitted to me by the Sanitary Inspector, and, being regarded with suspicion, were sent to the County Analyst for examination. All, with one exception, were found to be unfit for dietetic purposes, and were consequently condemned, and the wells from which they were taken were ordered to be closed, and the New River Company's water laid on."

*Waterworks.* — The only quotation to be made in reference to these is that at Harrow-on-the-Hill, Colne Valley Water is supplied, and Dr. Fletcher Little reports that—"During the year the quality of the public water supply has not always been satisfactory, and in one case a fine was inflicted by the magistrates. This has not prevented the Company from sending water containing matter in suspension into the District. When I was investigating the probable causes of the outbreak of typhoid, the Company declared that samples should not be taken from their mains but only from our taps. It was not for your officers to stand upon ceremony when disease was spreading in the town, and the samples were taken, with the result already known to you. The hostile attitude then assumed by the Company induces the reflection that were the water supply controlled by a public body, the first consideration would be whether public health could be secured by a pure supply.

*Constant Supply.*—In 16 cases the percentage of houses supplied on the constant system is stated, and it varies from 15 to 100 per cent.

## DRAINAGE AND SEWERAGE.

*Privies.*—Above-ground receptacles are being substituted for pits, and moveable receptacles for fixed where dry methods are in use, and, where water carriage is possible, dry receptacles are being displaced by water-closets.

*Water-closets.*—The percentage of houses provided with water-closets shows, in Table C III, the extent to which water-carriage is displacing dry methods. In 18 of the 33 Districts the percentage of houses provided with water-closets varies from 50 to 100.

*Drains and Sewers.*—There has been considerable activity in the provision of proper sewerage, drainage, and accessories, but the number of cesspools maintained is still considerable as shown by the returns from 19 Districts, although many have been abolished. In 15 Districts the percentage of houses draining into sewers varies from 15 to 100.

From Hampton Wick, Dr. Günther reports in reference to the flushing of drains that—"Several blockages in the drains of houses have occurred during the year, and it is generally found that the point of stoppage is at the intercepting trap connecting the drains with the sewers. In all new houses erected during the year, manholes with inspecting chambers have been inserted on the house side of those traps, and if tenants would only systematically inspect these, and simultaneously flush out bath, w.c.'s, lavatories, and sinks, much better sanitary conditions would exist. I would again call the Council's attention to the desirability of obtaining from the Water Company an increased flush to each w.c. over the present 2-gallon flush."



From Uxbridge Rural District, Mr. Charles Roberts reports that—"The sewerage of Hillingdon East, Yiewsley, West Drayton, and Cowley has been in progress for some months past, and is now approaching completion. I am of opinion that it will be a great boon to all those parishes in the improvement of their sanitary condition. I hope ample means will be provided for systematic flushing, as sewers without this provision are often a source of disease. I have already stated with regard to Harefield that I believe its comparative immunity from zymotic diseases is due to this provision, and I am of opinion that if it were more stringently adopted generally there would be far less of these diseases. I trust that during the present year your Council will earnestly take into consideration the drainage both of Hayes and Ruislip, as I consider both parishes are urgently in need of it."

#### SEWAGE DISPOSAL.

A full account of the methods adopted in 1894 in the several Districts was furnished in the Report of that year; since then, from year to year, improvements and additions have been annually recorded.

From Willesden, Dr. Skinner reports that—"The drainage of the southern part of the District which passes into the Metropolitan system has not undergone any change. The works connected with the Brent area on the northern side of the ridge dividing the two areas have been completed. The works consist of 121 acres, and are now under the inspection of the County Council as well as the Thames Conservancy. All analyses of the effluents have been

satisfactory. The treatment is triple throughout. Chemical before passing into the depositing tanks; artificial filtration through beds of polarite; intermittent downward filtration and irrigation. The bed of the River Brent is being levelled which will be a great advantage."

From Wealdstone (Mr. G. H. Butler):—"The effluent from the Sewage Farm, under the improved method of treating the sewage, has been much better, and when the bacteriological filter beds, now in course of construction, are finished, it should be still further improved. Under a system of subjecting crude sewage to the action of liquefying and reducing bacteria in the interior of a specially constructed, but exceedingly simple and inexpensive anaerobic bed, and finally subjecting it to a second treatment in an aerobic or oxidation bed, they have, at Southampton, obtained an effluent of a high degree of purity.

" Under this system :—

" 1. The use of chemicals is altogether dispensed with.

" 2. The continuous and effectual liquefaction of the sludge contained in the sewage is insured.

" 3. Complete freedom from any nuisance exists.

" 4. The process is continuous and requires no mechanism for working alternating apparatus or valves.

" 5. Large and costly tanks are not necessary.

" The material used mainly consists of granulated clinkers from the refuse destructor.

“ I would urge the Council, in considering any scheme for improving the Farm, to bear in mind the great advantages of one that effectually does away with any trouble from sludge. This is always a great nuisance and source of unpleasant smell.

“ By a system of bacteriological beds the sewage is treated as a whole, and the solids reduced to a liquid form.

“ So far as I can see, there should be no difficulty in forming a sufficient number of beds at the Farm to treat a much larger volume of sewage than we are likely to have to deal with for some long time to come. Precipitation tanks and the use of chemicals could then be dispensed with, and the former made into filter beds.”

Mr. F. W. Andrew (Hendon Urban District) describes the improvements made in his District in the matter of sewage treatment:—“ The treatment of the sewage has again occupied the serious attention of the Council. In my last Report I mentioned that the Council had just completed the purchase of 19 acres more land for the treatment of the effluent. This land was dug up to the depth of 22 inches, on 12 acres of which the effluent has been treated after passing through tanks, carriers being constructed to convey it. The sludge has been pumped on to the other seven acres, the old ground having been thoroughly overdone and incapable of taking more in at present. In addition to this treatment, two large biological filters have been completed, invented by Mr. Grimley, your Surveyor. These filters, which cover a surface of 800 yards square each, consist from below upwards of clean broken bricks, burnt ballast, coke breeze, pea gravel, and it

was proposed to place sand on the top, but the expense was too great, and so finally sifted ballast was substituted. These filters are now in good working order, and I am able to state from numerous analyses periodically made that the effluent from them is very good and shows signs of continuous improvement.

“ The effect of these two filters and the treatment over the newly-purchased land of the sewage has had considerable effect upon improving the effluent, and I am glad to say your Council is now turning out one that well complies with all the conditions laid down by the Rivers Pollution Act and Thames Conservancy. I have made numerous analyses during the year, and have never known the albumenoid ammonia to exceed  $\cdot 14$  parts per 100,000, the oxygen consumed in two hours amounting to about  $\cdot 56$  grains per gallon. Owing to the large amount of washing done in the District, the effluent often appears turbid, owing to the soap used, and which often gives a detrimental effect to outsiders. Owing to the large increase in population in the West Hendon District, the low level pumping station has had a large increase of work to perform, and this will be additionally increased, when the new Cleveland Street Asylum and Hyde sewerage is completed.”

Dr. Kenwood describes fully the sewage treatment in Finchley, at the sewage disposal works, and makes certain recommendations:—“ The present method of the disposal of the Finchley Sewage is as follows:—The sewage is first subjected to coarse screening and then mixed with lime and ferrous sulphate ( $5$  and  $2\frac{1}{2}$  grains to the gallon respectively), after which it is run into large tanks, and

allowed to rest there for several hours. Mainly owing to the action of the chemicals the solid matters suspended in the liquid sewage settle as a sludge in the bottom of the tank, and when the separation is fairly complete, the supernatant liquid is drawn off, and purified by passing through two filter beds, one after the other. Finally, the liquid is sometimes allowed to irrigate a grass field, and then it enters the Strawberry Vale Brook as an inoffensive product.

\*            \*            \*            \*

“As to the first stage of sewage treatment, *i.e.*, the disposal of the solid particles in suspension, there can be no doubt whatever that natural processes may safely be substituted for the present chemical process at Finchley, and there can be equally no doubt that the second stage of purification of the sewage comparatively free from solid particles can be effected in our existing filter beds. We have seen that the experimental installation gave most satisfactory results so far as the first stage of treatment is concerned. The comparatively clear liquid which it yielded was dealt with quite efficiently by the filter provided to effect the second stage of purification; so that the final effluent of the sewage treated by natural agencies alone was about on a par with that which left the filter beds of the Farm under the treatment at present in use.

\*            \*            \*            \*

“It appears to us then that upward filtration offers a better means of effecting the separation and solution of the suspended matters of sewage, and at the same time of reducing the pollution of the effluent, than does any

system which aims at their removal by digestion in a hollow chamber such as the septic tank. The particles of filtering material seem to form a large area from which organisms can more effectively work.

“A filter more completely reproduces the conditions under which the purification of polluted water is effected in Nature, where anything analogous to a septic tank is unknown.

“The conclusions at which we arrive are:—

“1. That the sewage of the Finchley District is well adapted to a process of natural purification.

“2. That considerable expense and trouble would thereby be saved.

“3. That for stage one of natural purification the principle of upward filtration, on lines similar to those adopted in our experimental instalment, should be preferred to either the septic tank process or the method in use at Sutton (Dibden's). That probably the existing tanks could be utilised to this end; but in any case a small grit-chamber should be made to intercept the larger metallic substances and stones which would accumulate and clog the filter in the course of time.

“4. That for the second stage of natural purification the existing filter bed would serve the purpose; but valves should be provided to each outlet, so that they may each be kept sewage-logged for at least four hours, and finally rested for the remainder of the twenty-four hours.

- “ 5. That, in any case, the use of the fields for surface irrigation by the effluent should be retained.
- “ 6. That we are convinced of the value and practicability of adopting a natural process such as the one we have experimented with; but in view of the fact that a Royal Commission is now investigating the whole subject, and the relative values of different processes, it is for the Council to decide whether such a process should be adopted now or after the Commission has reported.”

The alterations made in the Staines Rural District are described by Mr. Dwight Morris:—“The Staines Reservoir works absorbing the outfall works of the Urban District of Staines, a new site was chosen at West Bedfont, which has recently been acquired for this particular purpose. Having regard to the old works being at times a most abominable nuisance in consequence of vile odours emanating therefrom, your Authority very naturally wanted some definite information about the proposed new works. A Deputation of Members of the Board, with the Surveyor and myself, visited the neighbouring works at Twickenham, Richmond, and Teddington, in order to ascertain how far these were well-conducted, and as it was suggested by the Engineer to the Staines Urban District Council that the new works would be conducted on lines similar to Richmond and Teddington, with an outlet into the Thames, we very naturally saw no reason for opposition, as these places are models of what they should be, and do not cause any nuisance to the surrounding neighbourhoods. Personally, I cannot see any difficulty if the Thames Conservators will allow the effluent to be

put into the Thames, as suggested. Whether this will be allowed above the intakes of the water companies remains to be seen.

“The effluents of both Teddington and Richmond are both below lock, and pass into the tidal way. The new works are being rapidly constructed, and one of the first things that should be done, when completed, is to make application for the workhouse and buildings to be connected with this scheme and do away with its present method of drainage.”

#### POLLUTION OF STREAMS.

The principal tributaries of the Thames, liable to pollution in Middlesex, are the Brent, the Crane, the Lee, and the Colne, and their tributaries.

Mr. W. Marston Clark (Twickenham Urban District) writes :—“The Middlesex County Council have, by the aid of an Act entitled ‘An Act to make more effectual provision for preventing the pollution and obstruction of the streams in the County of Middlesex,’ acquired fuller powers than they or the District Council have held with regard to these matters. The County Council of Middlesex were fortunate enough (and I believe it is an isolated case) to obtain this Act of Parliament for dealing with these matters. The Statute referred to empowers measures being taken to abate or remove, or cause to be abated or removed, all impediments, obstructions, and annoyances, and all nuisances and abuses whatsoever in any stream or on the banks thereof. There is also provision in the Act against drain pipes or other channels discharging sewage



or any other offensive matter into any stream. I have made inspections of the streams in the District, and tested the water, with a view to reporting (if necessary) to the County Council, but I have discovered no cause to lead me to give notice to the County Council as regards any pollution."

From Wembley, Mr. Goddard reports that—"The pollution of Kenton Brook has been terrible this last year—numbers of cows and horses are said to have been killed, poisoned by this water. Your Sanitary Officers made several visits during July and August, and found that one of the Sewage Farms near Harrow Station was responsible for nearly all the pollution of the stream. Above their Sewage Farms the brook is just a little country stream and quite clear.

"You may remember that I reported that there were twenty-one dams from the Wealdstone Farm to Wembley Park, that the riparian owner had made no attempt to clear away the rank vegetation, and in several places fallen trees were lying right across; I recommended then, and do now, that the filth should be dug out, the banks cleared of vegetation, the dams removed, and the whole stream that is in our District be disinfected. If this is not done shortly I fear we may expect a recurrence of the very serious nuisance of last year."

From the Report of Dr. Sydney Ransome it appears that in Southgate "during the summer the condition of some of the watercourses, especially Pymmes Brook, was most offensive, owing partly to the prolonged drought. Numerous inspections were made, at different times, by myself and

the Sanitary Inspector, and large quantities of crude sewage were found in Pymmes Brook, which no doubt came from the East Barnet Sewage Farm. On my reporting this matter to you, the Middlesex County Council was communicated with, and caused a thorough examination of the brook to be made, and were the means of urging the East Barnet District Council to take steps to prevent the contamination of the brook by their sewage. As a result of this some improvement has taken place, but the brook is still much polluted, and it is to be hoped that the Middlesex County Council will take further steps to prevent a repetition of the most serious condition the brook was in last summer, and the continual nuisance it has been to the District for so many years. Several other brooks were cleaned out when their condition was pointed out to those responsible for them."

With regard to the Tottenham Urban District, Dr. W. T. Watson reports that—"Since my last Report the cleansing and repairing of the various watercourses in the District has been transferred to the Middlesex County Council. How this change is going to work it is, as yet, impossible to say, but as I pointed out in my previous Reports that the watercourse in the District should be kept as free as possible from pollution of any description whatsoever, I think no time should be lost in bringing pressure to bear upon the responsible authorities for seeing that all the necessary steps are taken to ensure the purity of the streams.

"I am aware, for instance, that the Moselle Brook cannot without great expense of money and labour be made anything like an ideal watercourse; but there is

great room for improvement, which might be carried out on a smaller scale, and, for the time at least, render it comparatively pure. There are other streams in the District also which require prompt attention, and which should be dealt with in a thorough manner before the coming summer."

#### SCAVENGING.

*Refuse storage.*—Every year an increasing number of movable receptacles are substituted for fixed, where required. (See Table C. IV.)

*Refuse removal.*—In 19 Districts a weekly collection of dust takes place, but if this is not made from house to house, it becomes weekly only in name. In Willesden the system has been stated to be from house to house.

In Teddington, Dr. Günther says:—"There has been a more or less continuous application made for a more frequent call from the scavengers, although the regulation period of cleansing once in fourteen days has been fairly well maintained. Some of the applicants suggest once a week, whilst others ask that attention should be given to the bins even oftener. The suggestions were considered by your Committee, and your Surveyor prepared a Report upon the daily collection of refuse. The matter is still under consideration of the Committee."

*Refuse disposal.*—The difficulties of the disposal of refuse in populous districts increases from year to year with the growth in the number of houses, and the diminution of the area of cultivable land.

Mr. Charles Roberts (Uxbridge Rural District) reports in reference to soft core:—"You are aware, for years past large quantities of this most offensive manure have from time to time been imported into our District, more especially in the Parishes of Yiewsly and Cowley; it is a nuisance injurious to health, and I would advise your Council to take strong measures to exclude it, except in isolated positions. In addition to being a nuisance, it is detrimental to the value of property when deposited near habitations."

The Medical Officer of Health of Wembley (Mr. C. E. Goddard) complains of the importation of manure and the nuisance it causes:—"The importation of hundred of tons of strong-smelling horse manure into the District from the London bus yards by some farmers of Wembley and Kingsbury is becoming a serious nuisance. Apparently regardless of the comfort of their neighbours, tenants, and of wayfarers, they deposit for several consecutive months this pungent material close to the cottages of their employés, and near the high roads; millions and millions of flies are thereby introduced to our residences, and in summer time much of one's comfort in this neighbourhood is destroyed by this pest. We ought to insist upon these deposits being covered up with earth or other material, and we may have to ask your sanction to a prosecution where we have difficulty in inducing the landlords to take this precaution. Flies are an abomination, and no amount of carbolic soap and cleansing will rid us of this plague while this importation and deposit in this form lasts. Unfortunately, flies can bring poisonous microbes to milk and meat, and the germs of infectious disease to our families. Our local piggeries and cow

yards, of course, breed flies, but though we continue to exert ourselves in compelling the owners to keep these places clean, our efforts will be more or less neutralised if the above nuisance is not abated."

#### LEGISLATION.

During the year an Act of great public health interest was added to the Statutes, entitled "An Act to amend the law with respect to Vaccination" (61 & 62 Vic., cap. 49).

*Vaccination Act, 1898.*—This Act is of such great importance that it is desirable to quote it fully. The first eight sections practically contain the measure, and run as follows :—

- 1.—(1.) The period within which the parent or other person having the custody of a child shall cause the child to be vaccinated shall be six months from the birth of the child, instead of the period of three months mentioned in Section 16 of the Vaccination Act of 1867, and so much of that section as requires the child to be taken to a public vaccinator to be vaccinated shall be repealed.
- (2.) The public vaccinator of the district shall, if the parent or other person having the custody of a child so requires, visit the home of the child for the purpose of vaccinating the child.
- (3.) If a child is not vaccinated within four months after its birth, the public vaccinator of the District, after at least twenty-four hours' notice to the parent, shall visit the home of the child, and shall

offer to vaccinate the child with glycerinated calf lymph, or such other lymph as may be issued by the Local Government Board.

(4.) The public vaccinator shall not vaccinate a child, if, in his opinion, the condition of the house in which it resides is such, or there is or has been such a recent prevalence of infectious disease in the District that it cannot safely be vaccinated, and in that case shall give a certificate under Section 18 of the Vaccination Act of 1867, of postponement of vaccination, and shall forthwith give notice of any such certificate to the Medical Officer of Health for the District.

(5.) Notwithstanding any regulation of any lying-in hospital or infirmary, or other similar institution, the parent of any child born in any institution shall not be compelled under such regulation or otherwise to cause or permit the child to be vaccinated at any time earlier than the expiration of six months from its birth.

2.—(1.) No parent or other person shall be liable to any penalty under Section 29 or Section 31 of the Vaccination Act of 1867, if within four months from the birth of the child he satisfies two justices or a stipendiary or metropolitan police magistrate, in petty sessions, that he conscientiously believes that vaccination would be prejudicial to the health of the child, and within seven days thereafter delivers to the Vaccination Officer for the District a certificate by such justices or magistrate of such conscientious objection.

- (2.) This section shall come into operation on the passing of this Act, but in its application to a child born before the passing of this Act there shall be substituted for the period of four months from the birth of the child the period of four months from the passing of this Act.
- 3.—An order under Section 31 of the Vaccination Act of 1867, directing that a child be vaccinated, shall not be made on any person who has previously been convicted of non-compliance with a similar order relating to the same child.
- 4.—No proceedings under Section 31 of the Vaccination Act of 1867 shall be taken against any parent or person who has been convicted under Section 29 of the said Act on account of the same child, until it has reached the age of four years.
- 5.—Persons committed to prison on account of non-compliance with any order or non-payment of fines or costs under the Vaccination Acts shall be treated in the same way as first-class misdemeanants.
- 6.—The Local Government Board may make rules and regulations with respect to the duties and remuneration of public vaccinators, whether under contracts made before or after the passing of this Act.
- 7.—The Local Government Board may by order, if in their opinion it is expedient by reason of serious risk of outbreak of small-pox, or of other exceptional circumstances, require the Guardians

of any Poor Law Union to provide vaccination stations for the vaccination of children with glycerinated calf lymph or such other lymph as may be issued by the Local Government Board, and modify, as respects the area to which the order applies, and during the period for which it is in force, the provisions of this Act requiring the public vaccinator to visit the home of the child, otherwise than on request of the parent.

- 8.—The Clerk of any Sanitary Authority which shall maintain a hospital for the treatment of small-pox patients, shall keep a list of the names, addresses, ages, and condition as to vaccination of all small-pox patients treated in the hospital, such entries to be made on admission, and shall at all reasonable times allow searches to be made therein, and upon demand give a copy under his hand or under that of his deputy, of every entry of the same on payment of a fee of sixpence for each search, and threepence for each copy.

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With regard to local Acts, Dr. Green reports from the Edmonton Urban District Council that “the Council succeeded during the year in passing through a special Act of Parliament giving, among many other things, special powers of entry and inspection of drains, and removing some difficulties respecting combined drainage, and also conferring important powers in dealing with gipsy encampments, which will be found of great use in preventing certain nuisances arising therefrom, and in prohibiting encampments on certain lands where they have previously given rise to many complaints which could not hitherto be



effectively dealt with. A conviction was obtained against a person for encamping contrary to the provisions of this new Act after due notice had been given, and a penalty imposed. The views of the sanitary department were not asked for until the Bill had been drafted."

#### ADOPTIVE ACTS, BYE-LAWS, AND REGULATIONS.

It would be an advantage if the Adoptive Acts, Bye-laws, and Regulations in force in a District were stated in the Annual Reports.

To facilitate a knowledge of these powers possessed by Local Authorities, some trouble has been taken to extract, classify, and set them out in the following list, and, in Table D, Part III, to show where they are in force as far as the information is at present available.

#### ADOPTIVE ACTS.

The three following Acts may be adopted or not by an Authority :—

Infectious Diseases (Notification) Act, 1889.

Infectious Diseases (Prevention) Act, 1890.

Public Health Acts Amendment Act, 1890. (Especially Part III, sanitary and other provisions.)

Housing of the Working Classes Act, 1890, Part III.

#### BYE-LAWS.

Bye-laws *shall* be made by both Urban and Rural Authorities in reference to :—

Common Lodging Houses (P.H.A., 1875, sec. 80).

Bye-laws *shall* be made by Urban Authorities in reference to :—

Slaughter-houses (P.H.A., 1875, sec. 169).

Bye-laws *may* be made by both Urban and Rural Authorities in reference to :—

Cleansing footways, privies, cesspools, &c., and removal of house refuse (P.H.A., 1875, sec. 44).

Houses let in lodgings (P.H.A., 1875, sec. 90).

Tents, vans, and sheds, used as dwellings (H.W.C.A., 1885, sec. 9 (2)).

Hop-pickers' lodgings (P.H.A., 1875, sec. 314).

Fruit and vegetable pickers' lodgings (F.P.L.A., 1882).

Public mortuaries (P.H.A., 1875, sec. 141).

Public cemeteries (P.H.A., 1879, sec. 2).

Public Lodging Houses (H.W.C.A., 1890, sec. 62).

Bye-laws *may* be made by Urban Authorities in reference to :—

Prevention of nuisances (P.H.A., 1875, sec. 44).

Keeping of animals (P.H.A., 1875, sec. 44).

Offensive trades (P.H.A., 1875, sec. 113).

Streets and buildings (P.H.A., 1875, sec. 157, and P.H.A.A.A., 1890, sec. 23).

Removal of offensive matters through streets, and removal of house refuse from houses (P.H.A.A.A., 1890, sec. 26).

Public conveniences (P.H.A.A.A., 1890, sec. 20).

Public baths and wash-houses (B. & W.A., 1864, sec. 34.)

Swimming baths (B. & W.A., 1878).

Open spaces (O.S.A., 1887, sec. 5).

Markets (P.H.A., 1875, sec. 167).

Bye-laws *may* be made by Rural Authorities in reference to :—

Buildings, with limited powers (P.H.A.A.A., 1890, sec, 23) (3).

#### REGULATIONS.

Regulations *may* be made by both Urban and Rural Authorities in reference to :—

Mode of making communications between drains and sewers (P.H.A., 1875, sec. 21).

Removal of patients to public hospitals (P.H.A., 1875, sec. 125).

Management of public *post-mortem* rooms (P.H.A., 1875, sec. 143).

Dairies, cowsheds, and milkshops (D.C. & M. Order, 1885, Art. 13).

## PART II.

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### SUMMARIES OF THE REPORTS OF THE MEDICAL OFFICERS OF HEALTH OF THE DISTRICTS OF THE COUNTY, URBAN AND RURAL, IN ALPHABETICAL ORDER.

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The Rural Districts follow after the Urban.

The birth-rates and death-rates are per thousand of population living, the infantile mortality-rates are per thousand births.

Details of the vital statistics and sanitary work, extracted from the Reports, will be found collated in Tables A, B, and C (I), (II), (III) and (IV), in Part III. These Tables may be regarded as supplementing the Summaries.

In the Summaries of the Reports of the Medical Officers of Health of the Urban and Rural Districts of the County, a more or less methodical arrangement is adopted so far as the forms in which the various Reports are cast will allow. The facts are grouped as follows:—Name of District, Medical Officer of Health, Estimated Population, Births and Birth-rate, Deaths and Death-rate, Deaths under one year and Infantile Mortality-rate, Statistical Notes, including Zymotic Death-rate Infectious Diseases Notification, Epidemics, Hospital, Ambulance, Disinfection, Vaccination, Water Supply, Drainage and Sewerage, Sewage Disposal, Pollution of Streams, Refuse Removal, Refuse Disposal, other notes of sanitary work, and Adoptive Acts, Bye-laws, and Regulations in force.

## ACTON URBAN DISTRICT.

Medical Officer of Health, G. A. Garry Simpson, M.R.C.S.

Estimated population, 32,562.

Births, 995; Birth-rate, 30·5.

Deaths, 517; Death-rate, 15·8 (including 10 dying without the District).

Deaths under 1 year, 181; Infantile mortality-rate, 181·9.

*Mortality Statistics.*—The deaths of 10 residents of Acton who died in public institutions outside the District are included in the total number of deaths. The number of deaths from seven zymotic diseases was 78, equal to a zymotic death-rate of 2·3 per 1,000 of population; of these deaths, 10 were caused by whooping cough, and 50 by diarrhœa. In the previous year the zymotic death-rate was 4·1 per 1,000.

*Infectious Diseases Notification.*—The Act has been in force in the District since January, 1894. During the year, 234 cases were notified, as compared with 221 in 1897.

*Epidemics.*—At the seasonal period of maximum prevalence, namely, in October, scarlet fever assumed epidemic proportions, and during the year a total of 167 cases were notified, as compared with 93 cases in the previous year. Of the cases of diphtheria notified, five turned out to be cases of ulcerated sore-throat, and the total number of cases during the year was two-thirds less than the number notified in 1897. A supply of diphtheria antitoxin is kept ready for use. For doubtful cases of typhoid fever arrangements have been made to apply Widal's Serum Reaction Test to assist in diagnosis.

*Infectious Hospital.*—Ten cases of scarlet fever and two of diphtheria were admitted into the Willesden Isolation Hospital during the year.

*Sanitation.*—This is recorded in the Tables C1, 2, 3, 4, in Part III. It is proposed to erect a “destructor furnace” with as little delay as possible.

#### BRENTFORD URBAN DISTRICT.

Medical Officer of Health, Henry Bott, L.R.C.P., M.R.C.S.

Estimated population, 14,974.

Births, 523; Birth-rate, 34·9.

Deaths, 312; Death-rate, 20·8.

Deaths under 1 year, 104; Infantile mortality-rate, 223·7.

*Statistics.*—The deaths from the principal zymotic diseases numbered 68, equal to a zymotic death-rate of 4·5 per 1,000, compared with 2·5 in 1897.

*Infectious Diseases Notification.*—The Act has been in force since December, 1889. During the year, 81 certificates of infectious diseases were received, as compared with 181 in the previous year.

*Epidemics.*—During the first quarter a serious epidemic of whooping cough was experienced. During the summer diarrhoea was prevalent, and during the winter respiratory diseases. These three classes of disease caused a high zymotic and infantile mortality.

*Isolation Hospital.*—Practically all cases of scarlet fever are removed to the isolation hospital. During the year 40 patients suffering from scarlet fever were admitted. The hospital has been made free to all.

*Sanitary Work.*—Many houses have been repaired and cleansed, and five have been closed as unfit for human habitation and pulled down. It is again suggested that a register be kept of all houses let in lodgings to assist the Sanitary Authority and check overcrowding and its attendant evils.

#### CHISWICK URBAN DISTRICT.

Medical Officer of Health, F. C. Dodsworth, L.R.C.P.,  
M.R.C.S.

Estimated population, 26,772.

Births, 856; Birth-rate, 31·97.

Deaths, 450; Death-rate, 16·8 (2 non-residents excluded).

Deaths under 1 year, 132; Infantile mortality-rate, 154.

*Statistics.*—The deaths from the principal zymotic diseases numbered 93, equal to a zymotic death-rate of 3·47 per 1,000, compared with a rate of 2·23 in the previous year.

*Infectious Diseases Notification.*—The Act has been in force since January 1st, 1890. During the past year 167 notifications of infectious diseases were received, in the previous year the number was 176.

*Epidemics.*—Measles was very prevalent during the first five months of the year, and caused 31 deaths. Diarrhœa was prevalent in August and September, and caused 45 deaths.

*Isolation Hospital.*—The site for either a temporary or permanent hospital has at last been secured.

*Water Supply.*—The daily bacteriological examinations of the water of the two Companies supplying the District, namely the West Middlesex and Grand Junction Companies, have been satisfactory. Every house in the District is on the constant system of supply, and 336 houses have draw-taps on the house-mains.

*House refuse removal.*—The weekly collection of house refuse has been efficiently carried out. Motor wagons have been employed, and have so far proved a success. The erection of a refuse destructor is contemplated.

*General Sanitation.*—Eighteen houses were dealt with under the Housing of the Working Classes Act, 1890, and put in order. There is a great demand for artisans' dwellings, built on improved sanitary principles. Public baths are much in request, and, when built, will supply a great want. The "Homefields" will shortly be enclosed and laid out as a pleasure ground. 228 new dwelling houses and 9 new shops have been built.

#### EALING URBAN DISTRICT.

Medical Officer of Health, C. A. Patten, L.R.C.P.,  
M.R.C.S.

Estimated population, 34,500.

Births, 539; Birth-rate, 15.62.

Deaths, 309; Death-rate, 8.95.

Deaths under 1 year, 61; Infantile mortality-rate, 113.

*Statistics.*—The seven principal zymotic diseases caused 23 deaths, equal to a death-rate of 0.66 per 1,000 of population, as compared with 1.0 per 1,000 in the previous year. Nine uncertified deaths were registered and no inquiry held.



*Infectious Diseases Notification.*—The number of notifications received was 137, compared with 156 in the previous year.

*Isolation Hospital.*—Seventy-seven persons suffering from infectious diseases were admitted into the Ealing and other isolation hospitals. The hospital has been unable to meet the demands made upon it, and endeavours are being made to secure ground for its extension. Arrangement has been made with the Smallpox Hospital, at Barnet, to admit smallpox patients in case of necessity.

*Sanitation.*—The water supply has been satisfactory. Walpole Park, situated near the centre of the town, has been purchased as a public open space. The condition of the River Brent has greatly improved. The Sewage Farm at Perivale, and the Southern Sewage Works, have on the whole been found satisfactory.

#### EDMONTON URBAN DISTRICT.

Medical Officer of Health (late), C. D. Green, M.D., F.R.C.S.

Estimated population, 35,994 (including 158 in Edmonton Workhouse).

Births, 1,112 ; Birth-rate, 31·03 (including 9 in Edmonton Workhouse).

Deaths, 606 ; Death-rate, 16·81 (including 511 in District, 51 in Edmonton Workhouse, and 44 without the District).

Deaths under 1 year, 234 ; Infantile mortality-rate, 210 (including 222 in District, 4 in Edmonton Workhouse, and 8 without the District).

*Statistics.*—The Strand Workhouse and Schools (population, 1,291 ; births, 13 ; total deaths, 82 ; deaths under

1 year, 8) have been totally excluded from the above statistics. Part of the Edmonton Union Workhouse has been included, the numbers being set out in full in the Report, as follows:—

Parish.	Population.	Deaths.	Births.
Edmonton .. ..	158	51	9
Tottenham .. ..	205	66	10
Hornsey .. ..	42	20	3
South Hornsey .. ..	26	15	0
Enfield .. ..	64	16	3
Wood Green .. ..	25	8	1
Southgate .. ..	12	2	4
Cheshunt .. ..	22	4	1
Waltham .. ..	25	8	1
Total .. ..	579	190	32

The deaths of 44 Edmonton residents occurring without the District are included in the above statistics.

The number of deaths from the principal zymotic diseases, including those of residents occurring outside the District, was 181, equal to a zymotic death-rate of 5·05 per 1,000 of population.

*Infectious Diseases Notification.*—The Act has been in force since 1890. During the past year 231 cases were notified, as compared with 323 in 1897, and 396 in 1896.

*Epidemics.*—There was a marked diminution in the prevalence of scarlet fever during the year. A serious epidemic of diarrhoea occurred in the later part of the summer causing no less than 125 deaths, of whom 104 were children under one year, the infantile mortality-rate rising to 210 per 1,000 births.

*Isolation Hospital.*—There is no isolation hospital for the District. Partial and unsatisfactory relief is rendered from time to time by the Enfield Scarlet Fever Hospital, the Tottenham and the London Hospitals. Fortunately during the year the demand was not acute. The disinfecting apparatus is of an obsolete type and requires superseding; a new bedding van has been provided.

*Sanitation.*—A special Act of Parliament for the District was passed during the year, giving special powers of entry and inspection of drains and removing some difficulties as to combined drainage, and also conferring additional powers for dealing with gipsy encampments. A group of seven houses were closed as unfit, repaired, and re-opened. Gipsy encampments were more numerous than usual, and in addition to bringing scarlet fever and measles into the District cause many nuisances and obstructions. Several complaints were received of large deposits of house refuse for brick burning purposes.

#### ENFIELD URBAN DISTRICT.

Medical Officer of Health, J. J. Ridge, M.D., B.S., B.A., B.Sc., &c.

Estimated population, 39,360 (including 182 in Union Workhouse).

Births, 1,137; Birth-rate, 28·1

Deaths, 530 ; Death-rate, 13·46 (including 26 in Union Workhouse).

Deaths under 1 year, 179 ; Infantile mortality-rate, 157.

*Statistics.*—The deaths from the principal zymotic diseases numbered 122, equal to a zymotic death-rate of 3·1 per 1,000 of population.

*Infectious Diseases Notification.*—The number of cases of infectious diseases reported under the Act during the year was 218, exclusive of 69 cases of measles, which was a notifiable disease during a period of one month.

*Isolation Hospital.*—The number of patients admitted to the temporary isolation hospital, for scarlet fever, was 154. Of these cases, 63 were from the Enfield District, and 91 from other Districts, namely, 14 from Edmonton, 21 from South Hornsey, 16 from Friern Barnet, 5 from Cheshunt, and 5 from Southgate. The new hospital has been in course of erection, very slowly during the year, and will not be ready for some months.

*Water Supply.*—The extension of the waterworks at Ponder's End is completed. The water comes from the chalk basin and is of great purity.

*Sewerage and Drainage.*—It is trusted that immediate steps will be taken to abolish the cesspools and complete the drainage of Goat Lane and Bridgen Hall Estate, a measure that has been urgently required for some years. The Sewage Farm is over-worked and its condition very unsatisfactory, and it has been resolved to obtain the sanction of the Local Government Board to introduce the septic tank system for the purification of part of the sewage.

*Sanitary Work.*—This is set out in the Tables C 1, 2, 3, 4.

## FINCHLEY URBAN DISTRICT.

Medical Officer of Health, H. Kenwood, M.B., D.P.H.,  
F.C.S.

Estimated population, 21,307.

Births, 498 ; Birth-rate, 23·7.

Deaths, 218 ; Death-rate, 10·3 (including 12 parishioners dying without the District, and excluding 11 non-parishioners).

Deaths under 1 year, 68 ; Infantile mortality-rate, 136·5.

*Statistics.*—The deaths are inclusive of 12 parishioners who died in public institutions without the District, and of 11 non-parishioners who died within the District, the same numbers as in the previous year. Of the latter, 5 occurred in the Woodside Home, 3 in the Convent of the Good Shepherd, and 2 in the Convalescent Home, East Finchley. The number of deaths from the seven principal zymotic diseases was 39, equal to a rate of 1·85, as against 1·69 in the preceding year.

*Epidemics.*—With the exception of an increase in the mortality of children from summer diarrhoea in the third quarter, the year was an exceptionally healthy one.

*Infectious Diseases Notification.*—The Act has been in force since 1st January, 1890. During the year, 118 notification certificates of infectious sickness were received from medical practitioners, as against 104 in the preceding year.

*Isolation Hospital.*—The number of cases of scarlet fever admitted into the hospital during the year was 49. Two non-parishioners were admitted on payment, namely, 1

from Friern Barnet, and 1 from Wood Green District. Formaldehyde is employed for the surface disinfection of rooms.

*Water Supply.*—Seven samples of water were analysed, of which 2 were condemned.

*Sewage Disposal.*—During the year a large number of experiments were made with the object of purifying the sewage, by natural means and liquefaction through filters intermittently used, with the view of dispensing with chemicals and avoiding the production of sludge.

*Sanitation Generally.*—The various premises in the District were duly inspected and found satisfactory. Nuisances from pig-keeping can only be prevented from recurring by frequent periodical inspections.

*Laws and Bye-Laws.*—The Adoptive Acts and Bye-laws in force in the District remain the same, and were set out in last year's Annual Report for the County.

#### FRIERN BARNET URBAN DISTRICT.

Medical Officer of Health, F. A. Spreat, M.R.C.S., D Ph.

Estimated population, 8,668.

Births, 217; Birth-rate, 25·0.

Deaths, 85; Death-rate, 9·8 (including 5 deaths in Barnet Union Workhouse, and excluding 5 deaths of non-parishioners.)

Deaths under 1 year, 31; Infantile mortality-rate, 143.

*Statistics.*—The London County Council Lunatic Asylum at Colney Hatch (population, 2,830; births, 0; deaths, 213) is excluded from the statistics. The 5 deaths of Friern

Barnet parishioners in the Barnet Union Workhouse in Hertfordshire are included, and 5 deaths of persons not belonging to the District are excluded. There were 17 deaths due to the zymotic diseases, a zymotic death-rate of 1·9.

*Infectious Diseases Notification.*—The Act has been in force since January, 1891. During the year 69 cases of infectious diseases were notified, exclusive of measles, of which disease 142 cases were notified.

*Epidemics.*—Measles was twice prevalent during the year, whooping cough was also prevalent, and there were 18 cases of diphtheria. There was great freedom from diarrhœa.

*Isolation Hospital.*—The desirability of entering into arrangements with one or other of the neighbouring Authorities is under consideration. At present there is an arrangement with Enfield and with Finchley as to temporary accommodation, and with South Mimms Hospital, as to smallpox. Fifteen scarlet fever cases were removed to Enfield, and 1 to Finchley. The present ambulance is procured from Barnet, and the question of purchasing one is still under consideration.

*Water Supply.*—An intermittent water supply is received from the Barnet Water Company.

*Sewage Disposal.*—The effluent from the Sewage Works has been found satisfactory from time to time. Arrangements have been made to receive the sewage from the asylum into the District system of sewerage.

*Sanitation Generally.*—There is no mortuary provision. The sanitary work carried out is contained in Tables C, 1, 2, 3, 4.

*Laws and Bye-laws.*—The Acts, Bye-laws, and Regulations adopted remain as recorded in the Annual Report for 1896.

GREENFORD URBAN DISTRICT.

Medical Officer of Health, G. Hope, D.P.H., L.R.C.P., M.R.C.S.

Estimated population, 777.

Births, 13; Birth-rate, 16·7.

Deaths, 9; Death-rate, 11·5 (excluding 2 deaths of non-residents).

Deaths under 1 year, 0: Infantile mortality-rate, 0.

*Statistics.*—There were no deaths from zymotic diseases.

*Infectious Diseases Notification.*—The Act has been in force since 1892. During the year one case of scarlet fever was notified and removed to the London Fever Hospital, as there is no isolation hospital and no disinfecting apparatus available.

*Vaccination.*—Five children were vaccinated by the public vaccinator, and others privately.

*Sanitation.*—The sanitary work accomplished is set out in Tables C, 1, 2, 3, 4. The condition of the River Brent has been much improved. As a rule the cottages and houses have sufficient ground attached to deal with their own excreta, slops, and refuse. At the row known as Brent Cottages the old cesspools have been done away with and earth closets provided.



## HAMPTON URBAN DISTRICT.

Medical Officer of Health, Wentworth Tyndale, M.B.

Estimated population, 6,500.

Births, 141; Birth-rate, 21·6.

Deaths, 80; Death-rate, 12·3 (excluding 3 non-residents).

Deaths under 1 year, 20; Infantile mortality-rate, 141·8.

*Statistics.*—The principal zymotic diseases caused 15 deaths, equal to a rate of 2·3 per 1,000 of population.

*Infectious Diseases Notification.*—The Act has been in force since November, 1891. During the past year 21 cases of the originally scheduled infectious diseases were notified, and in addition 339 cases of measles.

*Epidemics.*—There was a general epidemic of measles in the District at its height during the warm months and accounting for the low mortality. The elementary schools were closed, and also the Sunday schools, for three weeks. All the eight cases of diarrhœa occurred in infants under one year, during August and September.

*Isolation Hospital.*—The isolation hospital is at Tolworth, Surbiton, Surrey. Four patients, 3 suffering from scarlatina and 1 from diphtheria, were removed to the isolation hospital, and discharged cured.

*Water Supply.*—Twenty-two samples of well-water were examined and seventeen found unfit for use. Five wells were closed, and seventeen houses were provided with water supply from the Company's main. The water supplied to the District by the Grand Junction Water Company was in every case examined found satisfactory

*Drainage and Sewerage.*—The completed scheme of sewerage is now in working order, and all owners and occupiers are recommended to connect their drains, and end the recurring nuisances from cesspools.

*Sanitation Generally.*—Attention was called to the excessive discharge of smoke from the shafts of the Water Companies in the summer during the coal strike in Wales. The soap works and other trade premises have been visited and found satisfactory. Various blocks of dwelling-house property were inspected and the defects remedied.

*Laws and Bye-laws.*—The Adoptive Acts in force are the Infectious Diseases (Notification) Act, 1899; the Infectious Diseases (Prevention) Act, 1890; and the Public Health Acts Amendment Act, 1890: the Bye-laws in force are Bye-laws for New Streets and Buildings, and Bye-laws for the Prevention of Nuisances. Regulations under the Dairies, Cowsheds, and Milkshops Order are now being drafted.

#### HAMPTON WICK URBAN DISTRICT.

Medical Officer of Health, Th. Günther, M.D.

Estimated population, 2,378.

Births, 60; Birth-rate, 25·23.

Deaths, 33; Death-rate, 13·87 (excluding four non-residents).

Deaths under 1 year, 10; infantile mortality-rate, 166.

*Statistics.*—The number of deaths from the principal zymotic diseases was three, equal to a rate of 1·2 per 1,000 of population

*Infectious Diseases Notification.*—The Act has been in force since January, 1890. During the past year 18 notifications were received.

*Epidemics.*—Some influenza cases occurred at the very beginning of the year. Measles and whooping cough were less prevalent than usual. There were many cases of summer diarrhoea.

*Isolation Hospital.*—Attention is again drawn to the fact that there is no provision for the isolation of infectious cases.

*Sanitation.*—There is great scarcity of house accommodation for the working classes. Complaints are made of the condition of some of the roads, and of the surface drainage. The Grand Junction water supply was satisfactory. Two samples of well-water were analysed and found good. The Sanitary Inspector has resigned.

#### HANWELL URBAN DISTRICT.

Medical Officer of Health, G. Hope, D.P.H., L.R.C.P., M.R.C.S.

Estimated population, 6,872 (including Central London District Schools).

Births, 200 ; Birth-rate, 29·1.

Deaths, 101 ; Death-rate, 14·6 (including 2 at Central London District Schools, and excluding 2 non-residents.

Deaths under 1 year, 32 ; Infantile mortality-rate, 160.

*Statistics.*—The Central London District Schools (population 1,065 ; births, 0 ; deaths, 2) are included in the

statistics. There were 18 deaths from the principal zymotic diseases, equal to a rate of 2·62 per 1,000. Four deaths were returned "uncertified" and no inquests held.

*Infectious Diseases Notification.*—The Act has been in force since March, 1890. During 1898, there were notified 103 cases, as compared with 115 in 1897, and 89 in 1896. Of the 55 scarlet fever cases, 38 occurred in the Central London District Schools, and 1 of the 29 diphtheria cases.

*Epidemics.*—In the month of April there was an epidemic of scarlet fever at the Central London District Schools. Diphtheria is still prevalent.

*Isolation Hospital.*—No hospital at present, but one is about to be erected near the Sewage Farm.

*Sanitation.*—Many complaints are made of the situation, structure, and fittings of the mortuary. A recreation ground has been provided. The improved condition of the River Brent has given satisfaction.

#### HARROW URBAN DISTRICT.

Medical Officer of Health, J. Fletcher Little, M.B., M.R.C.P.

Estimated population, 9,293 (exclusive of 22 in the Hendon Union Workhouse).

Births, 195 ; Birth-rate, 22·0.

Deaths, 109 ; Death-rate, 11·7 (exclusive of 8 in the Hendon Union Workhouse).

Deaths under 1 year, 20 ; Infantile mortality-rate, 102·5.

*Statistics.*—The 8 deaths in the Hendon Union Workhouse are not included on account of the inability to classify them according to ages in the table. The number of deaths caused by the principal zymotic diseases was 21, equal to a rate of 2·2 per 1,000 of population.

*Infectious Diseases Notification.*—The Act has been in force since 1890. During the past year 40 cases of infectious diseases were certified, including 14 cases of scarlet fever and 14 cases of typhoid fever.

*Epidemics.*—Diarrhœa was prevalent in the summer. Measles and whooping cough were also prevalent. An outbreak of typhoid fever occurred, and was traced to imported milk.

*Isolation Hospital.*—It is suggested that a typhoid and diphtheria block is urgently needed at the isolation hospital. A steam disinfecter has been added to the sanitary appliances of the District.

*Sanitation.*—The public water supply is now systematically examined. The bacteria beds at the Greenhill Sewage Farm have been a great success, and the effluent highly satisfactory. No trace of sludge or offensive smell was found when one of the beds was opened up after seven months' use. There are still water-closets in the District without water supply. During the year, 71 new houses, 12 shops, 30 other buildings, and 18 additions have been erected, but there appears to be a dearth of workmen's dwellings, and many of the existing ones are damp and defective. It is recommended to put in force the Housing of the Working Classes Act. A private cemetery has been made at St. Dominic's Convent, the second private cemetery in convent grounds in the District.

## HENDON URBAN DISTRICT.

Medical Officer of Health, F.W. Andrew, M.R.C.S., L.R.C.P.

Estimated population, 20,413 (excluding 270 in Hendon Union Workhouse).

Births, 541; Birth-rate, 26.5 (excluding 21 in Hendon Union Workhouse).

Deaths, 295; Death-rate, 14.4 (excluding 87 in Union Workhouse).

Deaths under 1 year, 106; Infantile mortality-rate, 196.

*Statistics.*—The workhouse accommodates Hendon, Harrow, Great and Little Stanmore, Edgware and Kingsbury, Willesden being now a separate Parish. The following are the returns for the year:—

(a) Average number of inmates in Union for the year .. .. .	336
(b) Average number of inmates chargeable to Hendon .. .. .	66
(c) Number of deaths in Union for the year .. .. .	116
(d) Number of deaths chargeable to Hendon .. .. .	29
(e) Number of births in Union for the year .. .. .	29
(f) Number of births chargeable to Hendon .. .. .	8

(In Table A, Part III, it has been necessary to include the whole of the workhouse, as the ages and causes of death of those to be excluded are not deducted, and are not available for deduction.)

The number of deaths from the principal zymotic diseases was 73, equal to a rate of 3·5 per 1,000 of a population of 20,683. One of these deaths occurred in the workhouse.

*Epidemics.*—Scarlet fever was very prevalent during the year, necessitating the closure of the schools. In August and September an epidemic of summer diarrhoea occurred.

*Infectious Diseases Notification.*—During the year 138 cases of dangerous infectious diseases were notified, of which 111 were scarlet fever cases.

*Infectious Diseases Hospital.*—The epidemic of scarlet fever severely taxed the hospital, but additional accommodation was provided by means of a hospital tent during the warm weather. The new ward proved of great service. The temporary provision for diphtheria is not satisfactory, and the erection of a separate block for this disease is recommended.

*Water Supply.*—Analyses of the water have shown it to be free from organic pollution, and of good quality. The West Middlesex Water Company have now given a constant supply, as well as the Colne Valley Company.

*Drainage and Sewerage.*—Burnt Oak District is now drained entirely by the public sewer. The Hyde low level sewerage is completed, and, although Kingsbury Parish still fouls the ditch and the Brent, before long it will all be drained. The Bittacy Hill and Mill Hill Road line of sewer is finished, and the house drains are being connected.

*Sewage Disposal.*—The Sewage Farm has been increased in capacity, and the two large biological filters completed, and in good working order.

*Refuse Removal.*—The Council has under consideration the question of doing the work without the intervention of a contractor. It is suggested that the refuse might be worked into the land with advantage.

*Sanitation Generally.*—The rigid periodical inspection of cow-sheds is recommended. In many cases the cubic space was found insufficient, and, in some, the ventilation was at fault, and, in others, cleanliness was wanting. It is recommended that “local authorities should have the power to inspect, at any time, cow-sheds and dairies situated outside their own District, when the milk from such cow-sheds or dairies is imported into their District.”

#### HESTON AND ISLEWORTH URBAN DISTRICT.

Medical Officer of Health, H. Hanslow Brind, M.R.C.S.,  
L.R.C.P., D.P.H.

Estimated population, 29,185 (including all Union Workhouse).

Births, 817; Birth-rate, 27·99 (including all Union Workhouse).

Deaths, 468; Death-rate, 16·03 (excluding 127 in Union Workhouse, and 3 in Mogden Isolation Hospital.)

Deaths under 1 year, 141; Infantile mortality-rate, 172·58 (excluding 5 in Union Workhouse).

*Statistics.*—In the above statistics the deaths (3) of non-residents in the Mogden Isolation Hospital, belonging to



the Borough of Richmond, have been omitted. Also the deaths (127) of non-residents in the Brentford Union Workhouse have been omitted, the numbers dying in that Institution having been 163, distributed as follows :—

Heston and Isleworth	..	..	..	..	36
Brentford	..	..	..	..	36
Whitton	..	..	..	..	1
Brompton	..	..	..	..	1
Acton	..	..	..	..	25
Twickenham	..	..	..	..	20
Ealing	..	..	..	..	13
Richmond	..	..	..	..	2
Hanwell	..	..	..	..	6
Notting Hill	..	..	..	..	1
Chiswick	..	..	..	..	22

[The whole population of the Union Workhouse is included in the estimated population of the District, but only a part of the deaths is included, consequently the death-rate is really somewhat higher than it appears.]

The deaths from the principal zymotic diseases numbered 109, equivalent to a rate of 3.73 per 1,000 living per annum.

*Epidemics.* — There were epidemics of measles and diarrhœa. Of the 27 deaths from measles, 26 took place in March, April, and May, when the Spring Grove School was closed for five weeks; and of the 61 deaths from diarrhœa, 46 occurred in August and September.

*Notification of Infectious Diseases.*—The Act has been in force since January, 1890. During the year 158 cases of the scheduled infectious diseases were notified, and also 857 cases of measles, 470 under 5, and 387 over 5 years of age.

Means have been provided for obtaining the bacteriological examination of material in doubtful cases of diphtheria and enteric fever.

*Isolation Hospital.*—The Joint Richmond and Heston and Isleworth Isolation Hospital, at Mogden, admitted the first patient for scarlet fever on July 28th, and the last patient was discharged from the Dockwell Lane Hospital on September 28th. The latter has been taken over by the Joint Committee as a smallpox hospital.

*Water Supply.*—The waters of 11 wells were examined, 1 was found not good, and 5 were unfit for drinking; 1 was cleansed, and 5 were closed, and water laid on. There still remain a considerable number of wells in the District.

*General Sanitation.*—The dairies and cowsheds have been carefully inspected, and put into conformity with the regulations in force. The mortuary has been completed and is in use. 24 houses were dealt with under the Housing of the Working Classes Act during the year, 11 having been put into proper repair. The Medical Officer resigned in June, and his post was filled by his successor, the present officer; the late Assistant Sanitary Inspector resigned in May, and his post has not been filled.

## HORNSEY URBAN DISTRICT

Medical Officer of Health, Henry Clothier, M.D.

Estimated population, 70,096 (including 42 inmates of workhouse without the District).

Births, 1,342; Birth-rate, 19·1.

Deaths, 594; Death-rate, 8·47 (including 20 deaths in Edmonton Workhouse and 2 at other places, and excluding 7 non-residents).

Deaths under 1 year, 158; Infantile mortality-rate 117·7.

*Statistics.*—The principal zymotic diseases caused 52 deaths, equal to a rate of 0·74 per 1,000, on a population of 70,054.

*Epidemics.*—Measles was prevalent in the first quarter of the year, when the schools were closed, and diarrhoea slightly in the third quarter, but scarlet fever caused no deaths during the year.

*Notification of Infectious Diseases.*—The Act has been in force since 1st January, 1890. During the year 350 cases were reported, as compared with 426 in 1897.

*Isolation Hospital.*—Of the 142 cases admitted to the isolation hospital, 89 were of scarlet fever, 45 of diphtheria, and 8 of typhoid fever. The discharge rooms and baths have been improved.

*Water Supply.*—There has been extension of the constant supply in connection with newly laid-out estates.

*Drainage and Sewerage.*—Careful attention has been paid to flushing the sewers and culverts, 19 additional vertical cast-iron ventilating shafts to the sewers have been erected.

*Disposal of Refuse.*—The 12-cell destructor has consumed 16,105 tons in 12,733 loads during the year. Vegetable trade refuse and shop sweepings are now burnt free of cost.

*Other Sanitary Work.*—The provision of proper manure baskets or trolleys is advised instead of manure pits in new stables. Of 69 houses visited from house to house, 7 in Southwood Lane have been pulled down, in 54 defects have been remedied, and 8 are in hand.

#### SOUTHALL-NORWOOD URBAN DISTRICT.

Medical Officer of Health, J. D. Windle, M.B., CH.B., M.R.C.S.

Estimated population, 8,531 (excluding population of London County Asylum, 2,500).

Births, 258; Birth-rate, 30·2.

Deaths, 121; Death-rate, 14·1 (including 9 dying in the Uxbridge Workhouse, and 14 in the Joint Isolation Hospital at Hillingdon).

Deaths under 1 year, 32; Infantile mortality-rate, 112·3.

*Statistics.*—The London County Asylum (population 2,500; births, 0, deaths 239) is entirely excluded from the statistics. The St. Marylebone Schools (inmates about 361, deaths, 2), are entirely included. In the Uxbridge Union Workhouse at Hillingdon, outside the District, 9 parishioners died, and in the Joint Hospital at Hillingdon, 14 parishioners died, making 23 residents dying outside the District. The number of deaths from the principal zymotic diseases was 27, equal to a rate of 3·16 per 1,000 of a population of 8,531.

*Infectious Diseases Notification.*—The total number of cases reported was 133, of these 13 (3 enteric fever, and 10 erysipelas) occurred in the London County Asylum, and 120 in the District proper.

*Epidemics.*—In continuation of 1897, diphtheria was excessively prevalent in epidemic form. The schools were closed and special inquiry was made into the probable causes of the epidemic, the results being embodied in a very full and complete Special Report, and the outcome being a periodical examination of the throats of all the school children.

*Isolation.*—A contract has been entered into to purchase a site at North Hyde, subject to the approval of the Local Government Board, to provide a separate isolation hospital, and an inquiry will be held at an early date. It is again recommended that a steam disinfecting apparatus be purchased.

*Water Supply.*—Some well waters were examined, and found “suspicious.”

*Sewerage and Sewage Disposal.*—Some 4,680 feet of new sewers were laid. Up-cast shafts are erected, where possible, for ventilation. The method in use is the water carriage system, with separate storm-water sewers. The total length of sewers, varying from 6 to 21 inches in diameter, is 12 miles 2 furlongs 75 yards, being all pipe sewers. Flushing is regularly attended, 453 loads of water having been discharged into the sewers. The quantity of sewage treated was 199,290,000 gallons.

*Refuse Removal.*—All inhabited houses (about 1,425) are supplied with galvanized-iron dust bins, with covers,

emptied weekly. During 1898, some 1,435 loads were removed.

*Sanitation Generally.*—Several nuisances, caused by the deposit of soft core, were abated. The inspection of various premises was carried out. The Adoptive Acts and Bye-laws in force remain the same as quoted last year. To the cemetery in Havelock Road another  $3\frac{1}{3}$  acres have been added, making it now about 5 acres in area. To this cemetery is attached the mortuary, with ample accommodation and provision for post-mortem examinations.

#### SOUTHGATE URBAN DISTRICT.

Medical Officer of Health, A. Sydney Ransome, B.A., M.B., D.P.H.

Estimated population, 14,000 (excluding Metropolitan Asylums Board Northern Hospital).

Births, 310 ; Birth-rate, 22·1.

Deaths, 150 ; Death-rate, 10·7 (excluding 11 in the Metropolitan Asylums Board Northern Hospital, Winchmore Hill).

Deaths under 1 year, 37 ; Infantile mortality-rate, 122.

*Statistics.*—The Northern Hospital of the Metropolitan Asylums Board at Winchmore Hill is excluded from the statistics. The number of deaths from the principal zymotic diseases was 27, equal to a rate of 1·9 per 1,000.

*Infectious Diseases Notification.*—The Act has been in force since 1889. During the year, 79 cases of infectious disease were notified, as compared with 97 in the previous year.

*Epidemics.*—Diarrhœa was very prevalent during the prolonged heat of the summer. An extensive epidemic of whooping-cough, in June, necessitated the closing of the schools for six weeks.

*Isolation Hospital.*—Plans for the proposed hospital have been prepared, quantities are being got out, and tenders will shortly be invited. During the year, 3,973 cases were admitted to the Northern Hospital of the Metropolitan Asylums Board, of which 3,119 were suffering from scarlet fever, and 854 from diphtheria, and of the 11 deaths, 2 were due to scarlet fever, 1 to diphtheria, 5 to measles following scarlet fever, 1 to rheumatic fever, and 1 (a nurse) to gastric ulcer.

*Water Supply.*—Wells supplying 27 premises were examined after the summer drought, and all but one found unfit for dietetic purposes. The condemned wells were ordered to be closed and New River Company's water to be laid on.

*Drainage and Sewerage.*—Various branch sewers, principally at New Southgate, have been reconstructed, the house drains reconstructed on the dual system, and numerous ventilating shafts erected. Flushing of the sewers is systematically carried out.

*Pollution of Streams.*—During the summer some of the watercourses became most offensive, especially Pymmes Brook, which appeared to be polluted by the East Barnet Sewage Farm.

*Other Sanitary Matters.*—A very adequate public mortuary and a post-mortem room have now been provided. Nine

cottages were closed as unfit for human habitation, 13 have been demolished, and 11 new ones erected on the same sites. Plans have been prepared for erecting 12 cottages, under the Housing of the Working Classes Act, at Highfield Row, Winchmore Hill.

#### SOUTH HORNSEY URBAN DISTRICT.

Medical Officer of Health, T. S. H. Jackman, L.R.C.P.

Estimated population, 17,225.

Births, 433 ; Birth-rate, 25·1.

Deaths, 256 ; Death-rate, 14·86.

Deaths under 1 year, 81 ; Infantile mortality-rate, 187.

*Statistics.*—The deaths caused by the principal zymotic diseases numbered 45, equal to a rate of 2·6 per 1,000.

*Infectious Diseases Notification.*—The Act has been in force since 1893. The number of infectious cases notified during the year was 101, of which 52 were scarlet-fever cases, 27 diphtheria, 1 membranous croup, 12 typhoid fever, and 9 erysipelas.

*Isolation Hospital.*—The isolation hospital provided for the District, at Warwick Gardens, St. Anne's Road, Finsbury Park, was opened for the admission of cases in the middle of January, 1899.

*Sanitation.*—The establishment of crèches in different parts of the District is recommended as one of the best means of reducing the infantile mortality.



## STAINES URBAN DISTRICT.

Medical Officer of Health, Albert Curtis, M.R.C.S.

Estimated population, 5,849.

Births, 171 ; Birth-rate, 29·9.

Deaths, 62 ; Death-rate, 10·6, including 6 parishoners dying in the workhouse at Stanwell.

Deaths under 1 year, 18 ; Infantile mortality-rate, 105.

*Statistics.*—The number of deaths from the principal zymotic diseases was 17, equal to a rate of 2·9 per 1,000.

*Infectious Diseases Notification.*—The Act has been in force since 1890. Seven cases of infectious disease were notified, namely, 6 of enteric fever and 1 of scarlet fever, and there were no deaths from these diseases.

*Isolation Hospital.*—There is no hospital for the isolation of infectious diseases.

*Sanitation.*—The nuisances inspected and abated were 72, against 87 last year, and 125 the year before.

## SUNBURY URBAN DISTRICT.

Medical Officer of Health, C. Dwight Morris, L.R.C.P.,  
M.R.C.S.

Estimated population, 4,555.

Births, 134 ; Birth-rate, 29·4.

Deaths, 79 ; Death-rate, 17·3.

Deaths under 1 year, 21 ; Infantile mortality-rate, 155.

*Statistics.*—The number of deaths caused by the principal zymotic diseases was 18, equal to a rate of 3.95 per 1,000.

*Infectious Diseases Notification.*—The Act has been in force since 1895. The number of notifiable infectious diseases registered during the year was 12, as compared with 24 in 1897, and 33 in 1896.

*Epidemics.*—Measles and whooping cough were epidemic during the year, and the schools were closed for a short period. Epidemic influenza was present in January.

*Isolation.*—There is no isolation hospital accommodation.

*Sanitation.*—A new cemetery is being provided, and it is recommended to provide proper mortuary accommodation at the same time. The Public Health (Water) Act of 1878 is being put into force with advantage. The manure traffic at the London and South Western Railway Station continues to give trouble. The house connections to the main sewers are proceeding satisfactorily, considering the height of the sub-soil water. The manholes and flushing chambers let a large amount of land water into the sewers, and so interfere with the proper working of the system, it is recommended that this be remedied before the winter. The roads are being improved, and the old gravel pits enclosed. The well waters are expected to improve in quality, since the sewage is carried right away to the out-fall works at Charlton, although a good many have been closed during the year, and Grand Junction water substituted. New buildings show a great improvement in construction, the bye-laws being strictly enforced.

## TEDDINGTON URBAN DISTRICT.

Medical Officer of Health, Th. Günther, M.D.

Estimated population, 14,000.

Births, 284 ; Birth-rate, 20·38.

Deaths, 149 ; Death-rate, 10·6.

Deaths under 1 year, 41 ; Infantile mortality-rate, 144.

*Statistics.*—The principal zymotic diseases caused 19 deaths, equal to a rate of 1·36 per 1,000.

*Infectious Diseases Notification.*—The Act has been in force since February, 1890. During the year 41 notifications were received, the same number as last year.

*Epidemics.*—Diarrhœa was prevalent during the hot season.

*Isolation Hospital.*—There is no provision for the isolation of infectious diseases.

*Water Supply.*—Of five samples of well water, one was found contaminated and unfit for domestic purposes, the well was closed and water laid on. The supply of water of the Grand Junction Company was very satisfactory.

*Drainage and Sewerage.*—The sewers were extended during the year, and the connection of house drains is steadily continuing. Six new shaft ventilators to the sewers have been erected at various points, and greater attention is paid to flushing during the hot weather.

It is suggested that an official might be appointed to cleanse all gullies and traps connected with every house in the District, say once a quarter, to obviate blockages of drains.

*Sewage Disposal.*—Additions will soon require to be made to the sewage works, and it is suggested that as the disposal of pressed sludge continues to be a difficulty, possibly the bacteriological treatment may solve the problem.

*Refuse Removal.*—The demand for more frequent removal than once a fortnight continues, and the question of a weekly or daily collection is under consideration.

*Sanitary Work Generally.*—A systematic inspection of the District was made towards the end of the year. It is suggested that 100 yards is insufficient as a minimum distance of gipsy encampments from an inhabited house, and that 200 yards would be better. The deposit of house refuse at the gravel pit adjoining Munster Road has been discontinued. The Almshouses have been rendered more habitable, and various other houses have been dealt with. A number of roads are being improved, and the periodical inspections have been made.

#### TOTTENHAM URBAN DISTRICT.

Medical Officer of Health, W. T. Watson, B.A., M.D.,  
D.P.H.

Estimated population, 91,692.

Births, 2,707; Birth-rate, 29·5.

Deaths, 1,209; Death-rate, 14·2.

Deaths under 1 year, 465; Infantile mortality-rate,  
171·7.

*Statistics.*—The total number of deaths from the principal zymotic diseases was 187, equivalent to a death-rate

of 2·0 per 1,000, as compared with 2·1 in the previous year, and 2·5 in 1896. [The North-Eastern Hospital of the Metropolitan Asylums Board, in St. Anne's Road, is presumably excluded from the statistics.]

*Infectious Diseases Notification.*—During the year 740 cases of infectious diseases were notified as compared with 887 in the previous year, and 1,087 in 1896.

*Isolation.*—[Infectious patients presumably continue to be provided for in the North-Eastern Hospital of the Metropolitan Asylums Board.] The recovery of expenses for maintenance and treatment of minors in hospital has been abolished. During the year 270 patients were removed to hospital.

*Disinfection.*—The steam disinfector has been at work the whole year through, 1,758 articles having been disinfected in the apparatus. The laundry to work in connection with it is not yet established, although the plans were being prepared before the issue of the last Annual Report.

*Sanitation.*—The Moselle Brook, and other water courses, require prompt attention. The various Board Schools are now periodically inspected, and a great number of improvements have been carried out. The consideration of erecting a dust destructor has reached an advanced stage. Every effort is made to put the dairies, cow-sheds, and milk shops in good sanitary condition; under the order of 1885 a total of 158 are now on the register. During the year plans were passed for 768 new houses, and shops and houses, 68 other buildings, and 71 alterations and additions.

## TWICKENHAM URBAN DISTRICT.

Medical Officer of Health, W. Marston Clark, M.R.C.S.,  
D.P.H.

Estimated population, 19,000.

Births, 466; Birth-rate, 24·5.

Deaths, 266; Death-rate, 14·0.

Deaths under 1 year, 69; Infantile mortality-rate, 148.

*Statistics.*—The number of deaths from the principal zymotic diseases was 42, equal to a rate of 2·2 per 1,000.

*Epidemics.*—Measles was very prevalent during the first quarter, necessitating the closure of the schools for about three weeks.

*Infectious Diseases Notification.*—The Act has been in force since 1890. During the year, 65 cases of infectious diseases were notified, as compared with 77 in the previous year, and 109 in 1896.

*Isolation Hospital.*—Into the Cottage (Isolation) Hospital 35 cases of scarlet fever were admitted, as compared with 20 in 1897. One case of enteric fever was admitted into St. John's Hospital. The question of making some provision for diphtheria cases will be considered.

*Water Supply.*—Of 14 specimens of well waters, 4 were found bad and unfit, and water was laid on to the houses supplied by them. The Grand Junction Company's water was found to be of good quality.

*Pollution of Streams.*—Inspections of the streams in the District were made, no pollution has been discovered.

*Sanitation generally.*—The question—the best means of providing housing accommodation, is under consideration. A series of tests are being made upon the gas supplied, both as to its purity and illuminating power. 516 plans of houses were approved, and 27 of alterations or additions. The urinals and water-closets in connection with public-houses have been improved.

#### UXBRIDGE URBAN DISTRICT.

Medical Officer of Health, A Charpentier, M.D.

Estimated population, 8,802.

Births, 224; Birth-rate, 25·4.

Deaths, 185; Death-rate, 21·0 (including 14 in the Joint Hospital, and 18 in the workhouse.

Deaths under 1 year, 35; Infantile mortality-rate, 156·2.

*Statistics.*—The number of deaths includes 14 parishioners dying in the Joint Hospital, and 18 in the workhouse; both these institutions being outside the Urban, and in the Rural District. The deaths from the principal zymotic diseases numbered 44, equivalent to a rate of just under 5 per 1,000.

*Infectious Diseases Notification.*—143 notifications of infectious diseases were received, as against 76 in 1897, and 63 in 1896.

*Epidemics.*—Diphtheria was very prevalent during the year, appearing to run in certain schools. The hot weather caused a severe outbreak of epidemic diarrhœa.

*Isolation.*—92 cases of scarlet fever and diphtheria were treated at the Joint Hospital at Hillingdon, Uxbridge Rural District.

*Water Supply.*—The provision of a good and sufficient water supply has been successful.

*Sewage.*—The new sewage works are now in working order. The samples of effluent examined have been of excellent quality, except on one occasion, probably due to the washing of the filter-beds.

*Sanitation generally.*—17 new houses have been certified, bringing the total up to 1,963, and very few of these are empty. The housing of the working classes remains a great difficulty, the existing houses being “very old and crowded together in yards, and almost hopeless to improve.” It is again recommended to adopt the Housing of the Working Classes Act, to provide decent and healthy dwellings without cost to the ratepayers. It is also recommended to erect a small bath and wash-house.

#### WEALDSTONE URBAN DISTRICT.

Medical Officer of Health, G. H. Butler, L.R.C.P.,  
M.R.C.S.

Estimated population, 5,000.

Births, 127; Birth-rate, 25·2.

Deaths, 47; Death-rate, 9·4.

Deaths under 1 year, 14; Infantile mortality-rate, 110.

*Statistics.*—The number of deaths caused by the principal zymotic diseases was 19, equivalent to a rate of 3·8 per 1,000.

*Infectious Diseases Notification.*—24 cases of infectious sickness were notified during the year, as compared with 18 in 1897 and 26 in 1896.



*Epidemics.*—During August and September, measles and diarrhoea were very prevalent in a severe form, and were the cause of the increase in the zymotic death-rate.

*Isolation Hospital.*—The occurrence of 8 cases of typhoid fever in one overcrowded house “brought the need of an isolation hospital very prominently forward” as a question that “ought to be dealt with at once.” It is suggested that a temporary building, with a steam disinfecting apparatus and a mortuary, would meet present needs.

*Sanitation.*—The inconvenience of being without a cemetery is much felt. Some sewers and drains and also some roads require attention. The effluent from the sewage farm has improved, and the bacteriological filter-beds, now in course of construction, will further improve it. Slaughter-houses, dairies, cowsheds and milkshops are now all registered and inspected periodically. The quarterly analysis of the water supplied has been very satisfactory. 114 new houses have been erected.

#### WEMBLEY URBAN DISTRICT.

Medical Officer of Health, C. E. Goddard, L.R.C.P  
M.R.C.S.

Estimated population, 4,740.

Births, 100; Birth-rate, 21·1.

Deaths, 48; Death-rate, 10·0.

Deaths under 1 year, 9; Infantile mortality-rate, 90.

*Statistics.*—The principal zymotic diseases were the cause of 7 deaths, equivalent to a rate of 1·47 per 1,000.

*Infectious Diseases Notification.*—The Act has been in force since 1895. During the past year 33 cases of infectious diseases were notified.

*Epidemics.*—During the year, measles, German measles and whooping cough were very prevalent.

*Isolation Hospital.*—The Willesden Isolation Hospital is used for the accommodation of infectious cases.

*Sanitation.*—Overcrowding occurs in some of the smaller houses. The importation of London manure is becoming a serious nuisance. The provision of a mortuary is under consideration. There is a serious pollution of Kenton Brook and a recurrence of the serious nuisance of last year is expected. A *Volenite* factory is being completed at Alperton, and will be visited to prevent nuisance. The Colne Valley water supply “does not appear to have been altogether satisfactory.” The sewage farm at Alperton has given much anxiety, owing to the difficulty of working the new machinery and from the accumulation of sludge, but it is hoped that the working will shortly be made good.

#### WILLESDEN URBAN DISTRICT.

Medical Officer of Health, D. S. Skinner, M.D.

Estimated population, 99,582 (including 176 in the workhouse, and 70 in the schools of Hendon Union, and 156 in the County Asylum, Wandsworth).

Births, 3,142; Birth-rate, 31·5 (including 17 in the workhouse at Hendon).

Deaths, 1,388 ; Death-rate, 13·93 (including 60 in Hendon Workhouse, 21 at asylums, and 119 in London hospitals, and excluding 9 non-residents).

Deaths under 1 year, 427 ; Infantile mortality-rate, 136.

*Statistics.*—The parish of Willesden is now a separate District, for Poor Law purposes, from the Hendon Union, and a site for a new workhouse and infirmary has been purchased just south of the Grand Junction Canal, near Lower Place, in the southern portion of the Harlesden Ward, but “although the Parish has been a separate Poor Law District for some time, the workhouse and infirmary have not yet been built.” The 3,142 births “does not apparently represent the actual total,” as 28 married and 63 single women, from Willesden, were confined in Queen Charlotte’s Lying-in Hospital. [In Table A cannot be included the proportion of Hendon Workhouse (population, 176 ; births, 17 ; deaths, 60) ; of Hendon Schools (population, 70) ; of Wandsworth Lunatic Asylum (population, 156 ; deaths, 21) ; of Metropolitan institutions (deaths, 119) ; nor excluded the 9 persons dying within the District, but not belonging thereto, on account of the ages, &c., not being known.] The number of deaths from the principal zymotic diseases was 256 in the District, equal to a rate of 2·58 per 1,000 on a population in the District of 99,180 ; or if 5 occurring outside the District be added, making 261 deaths, equal to a rate of 2·62 per 1,000, on a population of 99,582. The 5 zymotic deaths outside the District were, scarlet fever, 1 ; enteric fever, 1 ; and diphtheria, 3.

*Infectious Diseases Notification.*—During the year, 835 notifications of infectious diseases were received, equal to a rate of 8·42 per 1,000, on a population of 99,180. The

number in 1897 was 956, and in 1896 was 815; there was a diminution in the number of scarlet fever cases, but a considerable increase in the number of diphtheria cases.

*Epidemics.*—Diphtheria exhibited a very marked increase, connected with school attendance, one school was closed owing to an outbreak.

*Isolation Hospital.*—Stonebridge Farm is no longer used for diphtheria patients; it was vacated in February, thoroughly cleansed and disinfected, and re-let to a family. The diphtheria patients are now accommodated in one of the blocks, at the hospital. In July it was resolved to add an annexe to the administrative block, and a two-story hospital block to the isolation hospital buildings.

*Disinfection.*—Two men are specially engaged in fumigating rooms, and in assisting in the testing and examining of drains; infected bedding and other articles are removed in a closed van to the isolation hospital, and disinfected in the steam chamber, or, if useless, destroyed

*Vaccination.*—

Year.	No. of Births.	Successfully vaccinated.	Insusceptible.	Dead, unvaccinated.	Conscientious objectors.	Postponed.	Removed to other Districts.	Gone away.	Not yet vaccinated.
1897	2,750	1,778	12	268	0	27	12	247	409
1898	3,125	1,474	13	257	37	117	32	227	968

Attention is drawn to the fact that there is no provision for isolating smallpox should an outbreak occur.

*Water Supply.*—Since the passing of the Metropolis Water Act, 1897, enabling the necessary alterations of fittings to be enforced outside London, and within the whole area of supply, the West Middlesex Water Company have gradually been extending the constant system, the most populated being now so supplied, and other parts will receive attention in due time. The two-gallon flushing cisterns for w.c.'s are regarded as insufficient.

*Sewerage.*—The Brent area works are now completed, and comprise 121 acres for triple treatment, chemical deposition, filtration, and irrigation. The bed of the Brent is being levelled.

*Sanitation Generally.*—Queen's Park is 30 acres in extent, and Roundwood Park  $26\frac{1}{2}$  acres. During the year 1,498 plans for new houses were approved. An additional inspector has recently been appointed, so that more frequent inspection of tenement houses can be made. The cowsheds and grazing grounds are gradually disappearing to make way for new houses, only one remaining in the Kilburn District, and seven in other parts. A public slaughter house is again advocated. A considerable amount of work was done in inspecting workshops, including laundries and bakehouses. Nuisances from the removal of fish offal are on the increase. Cellars attempted to be illegally occupied as dwellings are kept under observation. Ballast burning gives rise to a great number of complaints.

#### WOOD GREEN URBAN DISTRICT.

Medical Officer of Health, C. H. Conolly, M.R.C.S

Estimated population, 31,000.

Births, 890; Birth-rate, 28·7.

Deaths, 420 ; Death-rate, 13·54 (including 7 residents dying outside the District, and excluding 1 non-resident dying within).

Deaths under 1 year, 147 ; Infantile mortality-rate, 165.

*Statistics.*—Of the 7 deaths of residents outside the District, 3 took place in the Edmonton Union, 1 in the Tottenham hospital, and 3 in London hospitals. The non-resident died in the Cottage Hospital. The deaths from the principal zymotic diseases numbered 105, equal to a rate of 3·38 per 1,000.

*Infectious Diseases Notification.*—The Act came into force in March, 1890. During the year 257 cases of infectious diseases were notified, as compared with 274 in the previous year.

*Epidemics.*—138 cases of diphtheria, with 23 deaths, occurred, as against 46 cases with 11 deaths in 1897, the large proportion of cases being at school ages. The secretions of some half-dozen doubtful cases of diphtheria were examined by the Clinical Research Association. There were 21 deaths from measles, as compared with 1 in the previous year, the outbreak occurring just before the Easter holidays.

*Isolation Hospital.*—An advantageous site in White Hart Lane has been acquired, and tenders for the erection of a temporary hospital of 12 beds have been received. Scarlet fever cases have, from time to time, been admitted to the Finchley Hospital, and a few cases of typhoid fever and diphtheria sent to the London hospitals.

*Sanitation.*—The plans of 302 new dwelling houses, and 10 alterations and additions were approved. 302 houses

in various roads were inspected from house to house during the year, and 11 nuisances of gross overcrowding were abated. Clerical assistance has been obtained to deal with the increasing correspondence and clerical work in the Sanitary Inspector's office.

#### HENDON RURAL DISTRICT.

Medical Officer of Health, B. Campbell Gowan, L.R.C.P.,  
M.R.C.S.

Estimated population, 7,859.

Births, 194; Birth-rate, 24·68.

Deaths, 90; Death-rate, 11·45.

Deaths under 1 year, 26; Infantile mortality-rate, 134.

*Statistics.*—The opinion is expressed that the population is probably larger than estimated, due to immigration which cannot be calculated at this long interval since the census of 1891, and, if so, the death-rate would be lower than stated. The principal zymotic diseases caused 11 deaths, equivalent to a rate of 1·4 per 1,000.

*Infectious Diseases Notification.*—During the year 36 cases of infectious diseases were notified, as compared with 49 in 1897, and 57 in 1896.

*Epidemics.*—Diarrhœa was prevalent. An outbreak of measles led to the closing of one set of schools.

*Isolation Hospital.*—There is no accommodation for the isolation of infectious disease.

*Sanitation.*—It is suggested that all vendors of milk should be licensed and registered by the Board. The new

sewerage system at Stanmore is completed and many connections made. A new sewer brings the drainage from Elstree to Little Stanmore Farm. The cottage properties have been improved, but the want of cottage accommodation is still sorely felt. The water supply, beyond the reach of the Colne Valley service, is still derived from questionable sources.

#### STAINES RURAL DISTRICT.

Medical Officer of Health, C. Dwight Morris, L.R.C.P.,  
M.R.C.S.

Estimated population, 19,541.

Births, 570; Birth-rate, 29·1.

Deaths, 299; Death-rate, 15·3.

Deaths under 1 year, 77; Infantile mortality-rate, 135.

*Statistics.*—The Billet Estate, in the Parish of Stanwell, now forms part of the Staines *Urban* District. It consisted of 63 acres 3 roods of land, with a population of 490 persons. The number of deaths from the principal zymotic diseases was 44, equal to a rate of 2·25.

*Infectious Diseases Notification.*—The Act has been in force since 1890. During the year, 118 cases of infectious diseases were notified, as compared with 128 in 1897, and 108 in 1896.

*Isolation Hospital.*—None has been provided.

*Sanitation.*—The Staines Reservoir Works introduced during the later half of the year outside labour causing an uncertain amount of overcrowding, although a number of buildings were erected to house some of the workpeople.



Many large populated areas are without a reliable supply of wholesome water, but the estate at Ashford will probably receive early attention. The Public Health (Water) Act is being put into force. With the exception of the tanks at Harmondsworth Moor, there is little to complain of the contamination of ditches. Under the Regulations of the County Council, the fair people encamped at Cowey Hatch, near Walton Bridge, just above the intake of one of the Water Companies, were removed by the Sanitary Inspector. In the Parish of Ashford, an outbreak of diphtheria occurred, 13 cases in the village, and 10 in the West London District Schools. The schools at Cranford were closed in September, on account of an outbreak of scarlet fever. At Shepperton, in May, the school was closed on account of measles, and at Bedfont, in October, the schools were closed for the same reason. The Outfall Works of the Staines Urban District have been displaced by the Staines Reservoir Works, and have been removed to West Bedfont, but it is suggested to carry the effluent into the Thames, *above* the intakes of the Water Companies. During the year, Part III. of the Public Health Amendment Act has been adopted, and bye-laws for new streets and buildings have been made.

#### SOUTH MIMMS RURAL DISTRICT.

Medical Officer of Health, W. Gruggen, L.R.C.P.,  
D.P.H.

Estimated population, 2,571.

Births, 67 ; Birth-rate, 26·0.

Deaths, 29 ; Death-rate, 11·2 (including 1 (?) death in  
workhouse.

Deaths under 1 year, 5 ; Infantile mortality-rate, 74.

*Statistics.*—One death in the workhouse appears to be added to the 28 deaths in the District. The principal zymotic diseases caused 3 deaths, equal to a rate of 1.1 per 1,000 living.

*Infectious Diseases Notification.*—The Act has been in force since 1st February, 1890. During the year, 23 cases of infectious diseases were notified, as compared with 6 cases in 1897, and 34 in 1896.

*Epidemics.*—The cases of scarlet fever were confined to Potter's Bar, where the schools were closed in November.

*Isolation Hospital.*—Attention is again called to the want of this provision.

*Sanitation.*—South Mimms and Potter's Bar villages are supplied by the Barnet Water Company. South Mimms village is well sewered, the sewage being treated on about eight acres of land. Plans for the sewerage of Potter's Bar are under the consideration of the Local Government Board. Of 4 samples of water, 1 was found "doubtful" and 3 "good."

#### UXBRIDGE RURAL DISTRICT.

Medical Officer of Health, Chas. Roberts, M.R.C.S.

Estimated population, 15,323 (exclusive of 32 non-parishioners in workhouse).

Births, 456; Birth-rate, 29.7.

Deaths, 255; Death-rate, 16.6 (excluding 58 non-parishioners in the workhouse and the Joint Hospital).

Deaths under 1 year, 54; Infantile mortality-rate, 118.

*Statistics.*—The deaths deducted as not belonging to the District were:—diphtheria, 29 (in the Joint Hospital); diarrhoea, 1; phthisis, 4; bronchitis, 6; heart disease, 3; other diseases, 15; making a total of 58. The principal zymotic diseases caused 37 deaths, equal to a rate of 2·4 per 1,000.

*Infectious Diseases Notification.*—During the year, 117 notifications of infectious diseases were received, as compared with 145 in 1897, and 143 in 1896.

*Isolation Hospital.*—During the year 227 patients were admitted to the Joint Isolation Hospital, as under:—

Districts.	Scarlatina.	Diphtheria.	Total.
Uxbridge Urban .. .. .	7	85	92
Uxbridge Rural .. . . .	31	18	49
Southall-Norwood Urban .. .. .	7	79	86
Totals ..	45	182	227

There were 34 deaths in the Hospital, 1 from scarlatina, and 33 from diphtheria, of which 14 belonged to the Uxbridge Urban, 5 to the Uxbridge Rural, and 15 to the Southall-Norwood Urban District. The hospital is at times overcrowded, and it is again urged that Southall-Norwood should have a hospital of its own.

*Water.*—Qualitative analyses of 13 samples of water were made, 4 of which were unfit for domestic purposes.

*Drainage and Sewerage.*—The sewerage of Hillingdon East, Yiewsley, West Drayton, and Cowley is approaching completion. It is suggested that ample means should be provided for systematic flushing. The Parishes of Hayes and Ruislip are urgently in need of drainage. The Uxbridge Urban Sewage Works are completed and the effluent is purer, though still somewhat offensive and with a yellow deposit.

*Scavenging.*—This has been carried out periodically during the year in the Parishes of Harefield, Hayes, Ruislip, West Drayton, and Yiewsley. It is recommended to exclude soft core deposits from the District, except in isolated positions.

*Hayes.*—There still exists the unsatisfactory condition of foul ditches and stagnant pools, and it is very desirable that a thorough system of drainage should be carried out. An enquiry has been held by the Local Government Board, but difficulty has arisen as to the outfall site and as to the drainage of Yeading. Many foul ditches, piggeries, and dirty cottages were inspected.

*Northolt.*—The only deaths due to infectious diseases were two from measles.

*Hillingdon East.*—The general condition of this Parish has been healthy.

*Yiewsley.*—In January, action was taken in consequence of a large heap of London sweepings being deposited on land adjoining the canal and close to the Para Rubber Works,

and a prohibition order obtained, which has had a salutary effect upon such nuisances. In May, a large heap (about 360 tons) of London sweepings was deposited close to Ernest Road, Horton Road, within six feet of a row of cottages. In October, another enormous heap of this same refuse was deposited near the Varnish Works, in an isolated position, and covered with earth. In March, the schools were closed on account of an outbreak of measles.

*Cowley.*—This Parish will be much improved by the new system of drainage.

*West Drayton.*—Nothing to call for notice occurred during the year.

*Ruislip.*—In February the schools were closed at Northwood on account of measles. Northwood is a growing District and sadly wants drainage; all present drains and cesspits should be abolished, together with dirty ditches and stagnant pools.

*Harefield.*—The Parish has been in a healthy condition with the exception of three cases of scarlatina and a few cases of measles.

*Ickenham.*—Four cases of diphtheria were notified from this Parish, and the school was temporarily closed.

*Tables.*—Nineteen detailed tables of sanitary work are appended to the Report.

## PART III.

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STATISTICAL TABLES.

*Note.*—The Statistical Notes at the commencement of the Summaries of many of the Districts must be read in conjunction with the Statistical Tables A and B, especially for explanations of the numbers referring to Public Institutions.



A

TABLE OF DEATHS during the Year 1898, in the Districts of the COUNTY OF MIDDLESEX, classified according to DISEASES, AGES, and LOCALITIES.

Table with columns: Districts, Estimated Population 1898, Registered Births 1898, Mortality from all causes at various ages (Under 1 year, 1 and under 5, etc.), Mortality from unjoined causes (Scarlatina, Diphtheria, etc.), Mortality from unjoined causes (Typhus, Enteric Typhoid, etc.), Mortality from unjoined causes (Measles, Whooping Cough, etc.), and Total.













COUNTY OF MIDDLESEX.—SANITARY WORK, 1898.

Sanitary Districts.	Schools.			Workshops and Work-places.			Laundries.			Bakelhouses.			Slaughter-houses.			Cow-sheds.			Dairies and Milk-shops.			Unsound Food.		Adulterated Food.		Offensive trades.		Mortuaries.				
	Number in District.	Periodical Frequency or Number of Inspections.	Number found defective.	Number in District.	Periodical Frequency or Number of Inspections.	Contraventions of Factory Acts.	Number in District.	Periodical Frequency or Number of Inspections.	Contraventions of Factory Acts.	Number in District.	Periodical Frequency or Number of Inspections.	Contraventions of Factory Acts.	Number on Register.	Periodical Frequency or Number of Inspections.	Contraventions of Eye-laws.	Number on Register.	Periodical Frequency or Number of Inspections.	Contraventions of Eye-laws.	Number on Register.	Periodical Frequency or Number of Inspections.	Contraventions of Eye-laws.	Animals seized.	Articles or parcels seized.	Samples taken.	Found adulterated.	Number of premises in District.	Periodical Frequency or Number of Inspections.	Contraventions of Eye-laws.	Accommodation for.	Number of bodies received.		
URBAN.																																
Acton .. .. .	16	6	0	..	..	..	750	..	..	20	42	0	5	97	0	7	89	0	26	89	0	..	11	..	..	..	..	..	1	20		
Brentford .. .. .	6	1	13	..	..	..	5	..	..	22	..	1	8	..	..	4	..	1	26	..	1	..	7	..	..	..	..	..	..	..		
Chiswick .. .. .	0	qtrly.	0	..	..	..	41	..	..	16	qtrly.	0	7	qtrly.	0	4	qtrly.	0	37	qtrly.	0	0	0	55	4	..	..	..	rooms	20		
Ealing .. .. .	..	..	..	..	..	..	17	hf.-yrly.	..	20	qtrly.	..	5	qtrly.	..	7	qtrly.	..	25	qtrly.	..	..	..	..	..	..	..	..	..	..		
Edmonton .. .. .	17	37	2	18	42	2	10	15	1	23	56	0	7	58	3	12	40	1	68	151	0	0	20	0	0	0	..	..	1	..		
Enfield .. .. .	25	twice	19	67	twice	8	12	twice	2	32	twice	2	15	thrice	2	47	twice	15	52	twice	1	24	..	..	..	0	..	..	2	..		
Finchley .. .. .	25	3	..	0	..	..	13	3	..	15	4	..	12	4	..	7	4	..	11	4	..	..	..	..	0	..	..	1	..			
Frern Barnet .. .. .	6	24	..	1	4	..	4	16	..	5	20	..	2	8	..	7	28	..	6	24	..	..	8	1	..	..	..	0	..			
Greenford .. .. .	1	..	..	0	..	..	1	..	..	0	..	..	0	..	..	..	..	..	..	..	..	..	..	..	1	..	..	0	..			
Hampden .. .. .	7	mtly.	3	1	..	..	..	..	..	5	hf.-yrly.	2	5	hf.-yrly.	3	5	hf.-yrly.	4	3	hf.-yrly.	0	0	0	0	0	1	1	0	2	7		
Hampden Wick .. .. .	3	..	..	7	..	..	7	..	..	3	..	..	2	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Hanwell .. .. .	3	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Harrow .. .. .	..	..	..	3	..	..	3	..	..	12	..	..	7	..	..	8	..	..	3	..	..	..	..	..	..	..	..	..	1	3		
Hendon .. .. .	11	freqtly.	..	..	..	..	65	freqtly.	..	13	freqtly.	..	10	freqtly.	..	22	freqtly.	2	20	hf.-yrly.	..	..	..	..	..	..	..	..	..	1	20	
Hendon and Idsworth .. .. .	40	173	8	37	231	1	14	100	0	36	269	13	19	158	9	27	273	12	38	307	12	..	5	0	0	0	0	0	2	8		
Hornsey .. .. .	12	mtly.	3	..	..	..	..	..	..	33	qtrly.	..	10	freqtly.	..	8	..	..	37	qtrly.	..	..	3	..	..	..	..	..	..	6	34	
Southall-Norwood .. .. .	6	freqt.	0	10	..	..	..	0	..	8	..	..	7	..	..	8	..	..	7	..	..	..	..	..	0	..	..	..	..	..		
Southgate .. .. .	6	freqt.	1	..	..	..	..	..	..	11	freqt.	..	7	..	..	8	..	..	7	..	..	..	..	..	..	0	..	..	..	..		
South Hornsey .. .. .	8	5	..	11	8	..	9	9	..	10	9	..	4	4	..	2	3	..	17	freqt.	..	..	..	..	..	..	..	..	1	1		
Staines .. .. .	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Staines .. .. .	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Sunbury .. .. .	3	hf.-yrly.	1	1	hf.-yrly.	0	5	4	0	3	3	0	unregist.	h.-yrly	0	7	hf.-yrly.	0	7	hf.-yrly.	0	0	0	0	0	0	0	0	0	0	1	1
Teddington .. .. .	3	18	..	..	..	..	..	..	..	13	..	..	6	73	1	9	45	5	17	33	..	..	..	..	..	..	..	..	..	..	..	
Tottenham .. .. .	76	..	..	65	249	3	50	180	..	64	490	..	17	418	..	23	280	..	158	785	..	..	..	..	..	..	..	..	..	5	143	
Tottenham .. .. .	15	occasl.	1	25	occasl.	0	14	freqtly.	1	17	hf.-yrly.	1	12	freqtly.	1	11	freqtly.	0	22	freqtly.	1	0	0	0	0	0	0	0	0	4	5	
Uxbridge .. .. .	7	..	..	..	..	..	..	..	..	7	..	..	8	..	..	8	..	..	5	..	..	..	..	..	..	2	..	..	..	..		
Wembley .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	2	freqtly.	0	5	freqtly.	..	8	freqtly.	..	..	..	..	..	2	..	..	..	..		
Wembley .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Willesden .. .. .	26	..	2	56	yrly.	26	160	yrly.	36	51	yrly.	18	9	qtrly.	2	8	yearly	4	70	yrly.	18	0	12	..	..	0	..	..	..	..		
Willesden .. .. .	..	..	..	23	60	..	21	81	..	15	32	..	5	97	..	7	50	1	28	71	5	..	0	..	..	..	..	..	..	..		
Wood Green .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
RURAL.																																
Hendon .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Staines .. .. .	15	occasl.	4	..	..	..	..	..	..	16	occasl.	..	0	No	bye-laws	..	hf.-yrly.	..	..	hf.-yrly.	..	..	..	..	..	..	..	..	..	..	..	
South Mimms .. .. .	2	5	..	..	..	..	..	..	..	4	3	..	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Uxbridge .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	

5 infectious  
53 non-infect.  
30



COUNTY OF MIDDLESEX.—SANITARY WORK, 1898.

Sanitary Districts.	Water Supply and Water Service.												Drainage and Sewerage.																					
	Wells.			Cisterns.			Privy and Ash Pits, Ash and Earth Closets.			Water Closets.			Drains.			Cesspools.			Sewers.															
	New Sunk.	Cleaned, Repaired, Etc.	Closed as Polluted.	Houses, Water Laid on to.	Percentage of Houses Supplied from Mains.	New, Provided.	Cleaned, Repaired, Covered, Etc.	Over-flow Pipes Disconnected from Drains.	Flush Cisterns Provided to W.C.'s.	Draw-Traps Removed from Cisterns to Mains.	Percentage of Houses Supplied on Constant System.	Alone Ground Receptacles Substituted for Pits.	Movable Receptacles Substituted for Kios.	Water Closets Substituted for Dry Receptacles.	New Constructed.	New Apparatus Provided.	Repaired, Cleaned, Etc.	Supplied with Water, or Supply Rendered Efficient.	Ventilated.	Percentage of Houses Provided with Water Closets.	Examined, Tested, Exposed, Etc.	Unstopped, Repaired, Trapped, Etc.	Waste Pipes, Rain Water Pipes, Etc., Disconnected.	Soil Pipes and Drains Ventilated.	Disconnecting-Traps or Chambers Inserted.	Reconstructed.	New Laid.	Rendered Impervious, Repaired, Cleaned, Etc.	Abolished, and Drain Connected to Sewer.	Percentage of Houses Draining into Sewers.	Yards of New Sewers Laid.	Yards of Sewers Reconstructed.		
URBAN.																																		
Acton .. .. .	..	..	..	..	..	..	..	32	..	100	..	..	..	..	56	..	..	..	100	93	45	18	34	72	77	..	..	..	3	99	..	..		
Brentford .. .. .	..	..	..	1	99	..	63	..	..	99	..	..	..	..	8	4	99	211	..	99	30	121	..	..	..	..	..	..	..	..	..	..		
Chiswick .. .. .	0	..	..	294	80	294	32	25	..	336	100	0	0	0	20	30	51	56	51	100	218	142	25	51	193	51	..	0	1	100	..	..		
Kaling .. .. .	..	..	1	..	..	5	101	..	..	52	13	..	2	1	..	..	..	..	..	..	196	66	137	138	121	206	..	..	..	..	..	..		
Edmonton .. .. .	0	0	4	10	99	3	45	..	25	62	99	..	..	..	13	88	82	43	9	99	313	145	29	118	149	110	700	..	..	..	..			
Enfield .. .. .	1	30	1	37	..	37	25	..	76	..	..	0	5	..	8	82	167	399	16	..	171	363	156	161	63	163	..	..	..	..	..	..		
Finchley .. .. .	..	1	3	9	95	8	50	..	123	..	0	..	..	..	5	25	12	123	3	99	180	30	18	11	35	32	38	8	6	90	..	..		
Friern Barnet .. .. .	..	..	..	..	98	..	23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Greenford .. .. .	..	..	..	2	90	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Hampton .. .. .	0	0	5	17	85	17	57	3	2	0	85	1	0	1	2	16	33	..	..	90	68	190	23	10	6	2	..	80	0	0	6,709	1,100		
Hampton Wick .. .. .	..	..	..	..	100	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Hanwell .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Harrow .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Hendon .. .. .	..	..	..	4	98	4	12	..	31	..	98	..	56	..	7	15	..	122	..	99	53	36	23	47	18	14	18	60	52	95	*	4,276*		
Hendon and Isleworth .. .. .	1	2	5	22	98	4	74	1	41	0	98	8	7	8	29	41	91	59	10	97	432	235	31	67	60	23	250	32	49	85	5,756	1,206		
Hornsey .. .. .	..	..	..	..	100	1	56	..	34	..	60	..	..	..	36	89	137	30	14	100	164	179	105	83	35	127	..	6	1	100	9,437	620		
Southall-Norwood .. .. .	1	14	..	..	..	..	..	..	29	..	98	2	2	2	2	28	..	28	5	98	10	12	4	8	1	2	..	7	2	98	..	..		
Southgate .. .. .	..	..	..	27	..	..	..	..	41	..	93	116	37	..	3	143	89	44	..	99	97	30	172	123	155	142	..	2	..	..	..	..		
South Hornsey .. .. .	..	..	..	..	3	16	7	16	..	..	..	..	..	..	7	..	75	27	..	..	197	125	21	33	4	..	..	..	..	..	..	..		
Staines .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Sunbury .. .. .	5	3	10	160	40	100	..	..	..	..	40	0	0	100	20	..	20	20	100	50	..	..	20	100	100	0	100	60	50	15	..	..		
Teddington .. .. .	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Tottenham .. .. .	..	..	..	387	100	399	385	4	108	..	50	..	..	..	1,495	801	101	351	11	100	2,590	302	692	843	922	2,494	1,602	..	..	..	..	..		
Twickenham .. .. .	0	6	4	20	55	15	20	0	35	0	95	0	0	0	6	20	61	55	12	75	13	89	13	14	8	12	6	0	4	99	..	..		
Uxbridge .. .. .	..	..	..	..	55	..	..	..	..	..	100	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Wealdstone .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wembley .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Willesden .. .. .	..	..	..	..	100	56	125	8	56	0	15	..	..	..	32	127	341	289	39	100	409	121	38	21	75	47	65	..	..	..	..	..		
Wood Green .. .. .	..	..	..	..	160	13	25	..	122	..	..	..	..	..	4	175	3	47	13	100	259	82	283	179	122	201	1	..	1	100	..	..		
RURAL.																																		
Hendon .. .. .	..	..	..	..	..	14	..	..	..	..	..	..	..	..	14	19	39	30	..	..	38	46	..	55	64	..	..	..	2	38	..	..		
Staines .. .. .	3	13	17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
South Mimms .. .. .	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Uxbridge .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3	1	3	..	..	..	12	2	4	..	..	3	5	..	..	..	..	..	..

NOTE.—Asterisks or other signs appearing opposite a District, signify that those columns of the District are taken together.  
0 = none.  
.. = no return.

6,123  
5,513  
1,280  
2,692  
1,613 soil  
1,420 S.W.  
soil  
surface



CHAPTER 1

Introduction to the study of...

The purpose of this study is to...

Methodology and research design...

Results and discussion of findings...

Conclusion and implications for practice...

References and further reading...

Appendix A: Data collection instruments...

Appendix B: Statistical analysis results...

Appendix C: Interview transcripts...

Appendix D: Survey questionnaires...

Appendix E: Ethical approval documents...

Appendix F: Glossary of terms...

Appendix G: Acknowledgements...

Appendix H: Bibliography...

Appendix I: Index...

Sanitary Districts.	Disinfection.			Dust.				Dampness.						Sundry Nuisances Abated.						Contagious Diseases of Animals.			Infant Life Protection Act.																						
	Rooms fumigated.	Rooms stripped and cleaned.	Articles disinfectcd or destroyed.	Drain-lins repaired.	New lins provided.	Movable receptacles substituted for fixed.	Periodical frequency of dust removal.	Number of complaints of non-removal received.	Roofs repaired, &c.	Guttering and rain-pipes repaired, &c.	Gardens, Arves, &c., fertilised and drained.	Yards paved and drained.	Surfaces adjoining houses paved.	Pry areas provided.	Ventilation below floor provided.	Basements rendered impervious.	Overcrowding.	Stacks.	Accumulations of refuse.	Foul ditches, ponds, &c., and stagnant water.	Foul pigs and other animals.	Other nuisances.	Outbreaks.	Animals infected.	Animals destroyed.	Number of licensed premises.	Number of children.	Number of deaths.																	
<b>URBAN.</b>																																													
Acton .. .. .	123	6	82	6	9	..	..	236	9	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	0	0												
Brentford .. .. .	51	15	..	17	73	..	Weekly	41	78	63	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	0	0												
Chiswick .. .. .	99	81	2	15	88	88	Weekly	250	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	0	0												
Ealing .. .. .	82	119	1,530	18	130	130	Weekly	113	20	48	..	47	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..												
Edmonton .. .. .	161	67	1,568	..	104	14	Weekly	80	61	24	16	29	9	0	5	0	11	3	35	24	15	294	..	..	..	..	..	..	..	..	5	..	..												
Enfield .. .. .	193	70	2,751	2	131	11	Weekly	172	99	85	..	166	9	..	31	16	17	1	47	9	33	38	..	..	..	..	..	..	..	..	..	0	..	..											
Finchley .. .. .	68	15	44	32	130	8	Weekly	39	25	10	12	18	9	..	5	..	19	2	7	18	..	38	..	..	..	..	..	..	..	..	..	0	..	..											
Friars Barnet .. .. .	135	5	103	21	13	13	26	33	12	5	..	..	5	..	7	2	2	..	3	1	3	10	..	..	..	..	..	..	..	..	..	0	..	..											
Greenford .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..										
Hampton .. .. .	162	65	8	0	17*	*	Weekly fortnightly	3	19	15	0	7	0	0	2	0	2	7	30	4	4	50	1	7	22	..	..	..	..	..	..	..	0	..	..										
Hampton Wick .. .. .	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..									
Harewell .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..								
Harrow .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..								
Hendon .. .. .	124	23	Lots	32	54	23	Weekly	34	36	9	2	..	..	..	3	3	8	2	17	12	2	72	1	15	15	..	..	..	..	..	..	..	..	..	0	..	..								
Hendon and Isleworth .. .. .	583	23	6,005	7	108	2	..	68	27	61	10	37	1	0	8	0	9	1	1,025	7	21	20	0	..	..	..	..	..	..	..	..	..	..	..	0	0	0								
Hornsey .. .. .	294	142	5,005	3	37	2	Weekly	170	26	70	2	55	9	..	27	2	5	8	61	..	10	91	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..								
Southall-Norwood .. .. .	73	4	..	..	..	..	Weekly	0	1	2	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..								
Southgate .. .. .	64	61	26	..	105	..	Weekly	27	61	47	5	129	..	..	63	1	3	1	9	3	2	6	..	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..							
South Hornsey .. .. .	131	..	65	..	38	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..						
Staines .. .. .	..	..	..	..	..	..	Weekly	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..						
Susbury .. .. .	8	8	..	0	0	0	Weekly	10	..	..	20	20	..	..	1	1	..	..	2	3	..	..	..	0	0	0	0	0	0	0	0	0	0	0	0	0	0								
Teddington .. .. .	24	30	..	86	22	..	fortnightly	..	12	87	8	8	..	..	..	..	..	..	..	1	..	19	1	3	14	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..					
Tottenham .. .. .	495	435	1,798	40	275	40	Weekly	2,000	304	292	..	431	801	..	51	2	17	10	32	6	7	30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..						
Twickenham .. .. .	30	26	4	10	30	0	Weekly	75	20	20	12	12	0	7	0	0	12	7	10	6	8	50	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	0	0						
Uxbridge .. .. .	..	..	..	..	..	..	Weekly	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	0	0					
Wembleton .. .. .	..	..	..	..	..	..	10 days	..	5	2	..	..	..	..	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..						
Wembley .. .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	..	..				
Willesden .. .. .	804	..	..	54	32	58	{ H. to H. Weekly	101	56	72	147*	*	..	4	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..					
Wood Green .. .. .	181	179	3,528	1	48	48	Weekly	124	68	29	..	170*	*	..	8	8	12	24	25	1	7	28	0	0	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	0	0			
<b>RURAL.</b>																																													
Hendon .. .. .	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	..	13	6		
Staines .. .. .	72	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	80	18	41	78
South Mimms .. .. .	6	..	40 white-washed	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	5
Uxbridge .. .. .	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Notes.—Asterisks or other signs appearing opposite District signify that those columns of the District are taken together.  
0 = none.  
.. = no return.

2 glanders  
2 fever  
.. horses  
.. swine

Board of Guardians





