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**Publication/Creation**

1908

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County

Borough



of Bolton.

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ANNUAL REPORT

OF THE

Medical Officer of Health

AND

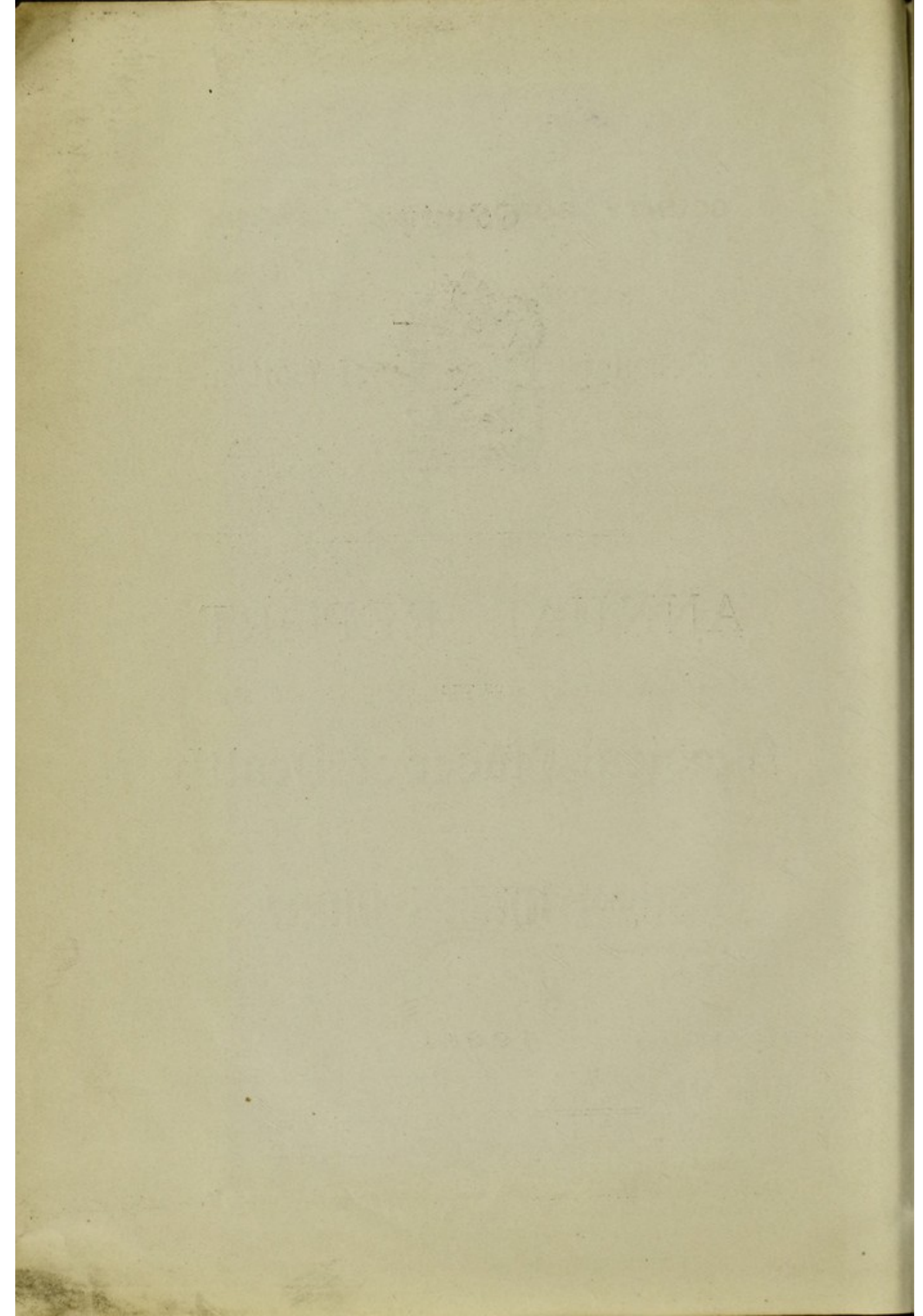
School Medical Officer

FOR

**1908.**

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BOLTON:  
ROBERT WHEWELL & SON, PRINTERS, &C., FOLDS ROAD  
1909.





## COUNTY BOROUGH OF BOLTON.

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### SANITARY COMMITTEE.

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*The Mayor*—Ald. W. H. BROWN, J.P.

*The Deputy Mayor*—Ald. THOS. B. TONG, J.P.

*Chairman*—Counc. E. ASPINALL.

*Vice-Chairman*—Counc. W. HARGRAVES, J.P.

Ald. J. HEYWOOD, J.P.

„ KNOWLES EDGE, J.P.

„ J. GREENWOOD.

„ J. YOUNG, L.R.C.P.

Counc. C. AINSWORTH, J.P.

„ G. BLACKBURN.

„ J. BOARDMAN.

Counc. W. CARR.

„ E. CHALLINOR.

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„ G. HAMPSON.

„ H. M. HARWOOD, J.P.

„ F. STEEL.

„ R. TOOTILL, J.P.

### STAFF OF THE SANITARY DEPARTMENT.

---

*Food Inspector*—RICHARD SPENCER.

*District Inspector*—1. JOHN McMILLAN, Cert. R. San. I.

2. GEORGE SOUTHERN.

3. EDWARD OAKES, Cert. R. San. I.

4. EDWARD HERBERT FARAGHER, Cert. R. San. I.  
and Cert. for Food.

5. EVAN SUMNER, M. R. San. I.

6. HERBERT DANIELS, Cert. R. San. I.

*Chief Clerk*—J. HOLKER, Cert. R. San. I.

*Chief Disinfecter*—JOHN WILSON.

*Health Visitors*—1. Miss D. C. EBBETS, San. Cert. of London Jt.  
Bd., and Health Visitors Cert. of R. San. I.

2. Miss S. A. RAMSDEN, C.M.B., Cert. R. San. I.

*School Nurse*—1. Miss M. HAYWARD, 3 years' Training P.L. Infirmary.

2. Miss C. KIPPAX, 3 years' Training P.L. Infirmary.

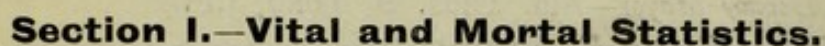
*Matron Borough Fever Hospital*—Miss IRENE WEBB.

*Assistant Medical Officer of Health and Assistant School Medical Officer*—

C. W. PAGET MOFFATT, M.A. Lond., M.B., B.C., D.P.H.  
Cantab.

*Medical Officer of Health and School Medical Officer*—J. E. GOULD, M.D.  
Lond., D.P.H. Cantab.





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**Extract from Memorandum of Local Government Board,  
November, 1906, as to the Annual Reports of  
Medical Officer of Health.**

"The Report should be chiefly concerned with the conditions affecting health in the district, and with the means for improving those conditions. It should contain an account, brought up to the end of the year under review, of the Sanitary circumstances of the district, and of any improvement or deterioration which may have occurred during the year in these circumstances. Care should be taken to report fully and explicitly on the influences affecting or threatening to affect injuriously the public health in the district, and on the action which has been taken, or which may still be needed, with a view to combat those influences. It is of especial importance that the Medical Officer of Health should record what action has been taken to remedy unhealthy conditions which have been reported by him in previous annual reports, or in special reports presented during the year under review, and that attention should be called afresh year by year to such as remain unremedied."

The subjects to be especially borne in mind are:—

- (1) Physical features of the District.
- (2) House accommodation.
- (3) Occupation and influence on health.
- (4) Sewerage and drainage.
- (5) Excrement and refuse disposal, system in vogue, defects if any.
- (6) Water supply, sufficiency, wholesomeness and freedom from risk of pollution.
- (7) Places over which the Council have supervision.
- (8) Nuisances—byelaws.
- (9) Method of dealing with infectious disease.
- (10) Schools and their sanitary condition and action taken in regard to the health of the scholars.
- (11) Medical Inspection of school children as part of the duties of School Medical Officer.



GENTLEMEN,

The Health Report for 1908 must prove, especially to sanitary reformers, an interesting one, not only on account of the new work undertaken by the Sanitary Committee for the instruction of mothers, but also on account of the duty imposed upon the Education Authority for the medical inspection of school children. These have been brought about by the Notification of Births Act, 1907, and the Education (Administrative Provisions) Act, 1907. I have also been able to give for the first time some details of the water supply of the Borough. These will be found in the three new Sections IV., V., and VI. added to the report.

On account of this extra work the staff has been increased by an Assistant Medical Officer, two Health Visitors, and two School Nurses.

The death-rate for the Borough is again a very low one, 15.5, as will be seen by comparison with previous years, and the epidemic death-rate, 1.69, is the lowest recorded for many years.

With regard to the sanitary work great progress has been made in the removal of unhealthy areas, obstructive buildings, and the closing of unfit houses. If the present rate of progress is maintained Bolton will soon cease to have any reproach on account of its slum dwellings. The chief work then remaining will be the substitution even in the poorest districts of fresh-water closets for the present insanitary privy-middens and pails, together with properly paved backyards.

Reports from the Public Analyst and the Scavenging Superintendent are included in this report.

I have great pleasure in again testifying to the loyalty and industry of the Staff, and to the Chairman and Members of the Sanitary Committee I am more than usually indebted for their warm support and active interest in all branches of the work undertaken by the Department.

I am,

Yours obediently,

JOHN E. GOULD.

Public Health Department, Bolton,  
February, 1909.





SUMMARY OF  
VITAL AND MORTAL STATISTICS

1907

SECTION I.

*Vital and Mortal Statistics.*



SECTION I.

---

Oil and Mineral Statistics.

---

# SUMMARY OF VITAL AND MORTAL STATISTICS 1908.

Position ... ..	Lat. 53° 35' N., Lon. 2° 37' W.
Elevation above sea level ... ..	230ft. to 1450ft.
Geological Formation:—Boulder Clay and Sand over Coal Measures.	
Area in Acres ... ..	15283
Population ... ..	185358
Density ... ..	12·1
Inhabited Houses—Census 1901 ... ..	35995
Uninhabited Houses—Census 1901 ... ..	3093
New Houses Certified 1901—1908 inclusive ... ..	3821
New Houses Certified 1908 ... ..	521
Rateable Value ... ..	£825312
Births ... ..	4573
Birth-rate ... ..	24·6
Deaths ... ..	2874
Death-rate (Corrected for Institutions) ... ..	15·5
Corrected Death-rate (ascertained by appli- cation of Registrar-General's Factor 1·1308) ... ..	17·5
Average Death-rate (1898-1907) ... ..	17·6
Infantile Mortality ... ..	148
Epidemic Death-rate (Seven Chief Diseases) ... ..	1·69
Diarrhœa Death-rate ... ..	·84
Diarrhœa Mortality per 1000 Births ... ..	34·3
Enteritis Mortality per 1000 Births ... ..	14·6
Phthisis Death-rate ... ..	1·16
Death-rate from other forms of Tuberculosis ... ..	·51
Respiratory Death-rate ... ..	2·84
Rainfall (21 years' average, 41) ... ..	44·45
76 Great Towns Death-rate ... ..	14·9
76 Great Towns Epidemic Death-rate ... ..	1·58
76 Great Towns Infantile Mortality ... ..	128



### **Population and Area.**

For the middle of 1908, the estimated population was 185,358 and this on an area of 15,283 acres, or 23·8 sq. miles, gives a density of 12·1 persons per acre.

### **Births.**

4,573 births were registered, rather more than last year, equal to a birth-rate of 24·6, one of the lowest yet recorded. The illegitimate births numbered 179, and were 3·9 per cent. of the total births.

### **Deaths.**

2,874 deaths were registered of Bolton residents, including those who died in institutions outside the Borough. The death-rate was 15·5 the average for ten years being 17·6. There were 255 deaths in the Workhouse, 121 in the Bolton Infirmary, 53 in Lunatic Asylums, 32 in the Borough Fever Hospitals, and five in other institutions outside the Borough. 38 of those who died in the Infirmary and two of those in the Fever Hospitals were non-residents.

The deaths in the wards varied from 10·8 in Rumworth to 23·8 in Exchange Ward.

Eighteen per cent. of the total deaths were due to respiratory diseases, chiefly bronchitis and pneumonia; thirteen per cent. to epidemic diseases; eleven per cent. to tubercular diseases; nine per cent. to old age; and the rest to various other causes in smaller percentages, as will be seen from the summary of causes of death.



TABLE I

POPULATIONS, BIRTH-RATES, &amp;C., IN WARDS, 1908.

WARD.	Population.	Area.	Density.	Birth-rate	Death-rate	Infantile Mortality.	Zymotic Death-rate.
West ... ..	28059	450	62·3	25·8	16·3	141	1·78
Halliwell ... ..	24465	358	68·3	23·7	14·0	127	1·10
Bradford ... ..	20588	285	72·2	27·7	16·6	175	2·13
Derby ... ..	20552	300	68·5	24·8	16·8	184	2·67
East ... ..	9631	160	60·1	33·3	21·9	193	1·86
Rumworth ... ..	9465	163	58·0	25·1	10·8	134	2·11
Church ... ..	8472	390	21·7	18·7	16·8	201	1·53
North ... ..	7985	150	53·2	22·2	14·6	168	75
Exchange ... ..	4234	105	40·3	29·5	23·8	144	2·83
Old Borough ...	133451	2361	56·5	25·5	16·2	159	1·83
Great Lever ... ..	11897	867	13·7	19·7	12·1	106	1·34
Tonge ... ..	11060	830	13·3	20·3	13·2	111	1·80
Astley Bridge ... ..	8850	1780	4·9	20·5	11·2	120	1·01
Smithhills ... ..	5768	2108	2·7	22·5	14·0	146	1·38
Hulton ... ..	5557	1620	3·4	24·1	13·8	97	·89
Darcy Lever-cum-Brightmet	3410	1372	2·4	34·6	18·4	110	1·17
Deane-cum-Lostock ...	3230	2601	1·2	30·0	21·3	144	2·16
Heaton ... ..	2135	1744	1·2	19·6	12·1	23	—
Added Area ... ..	51907	12922	4·0	22·4	13·6	113	1·32
Extended Borough ...	185358	15283	12·1	24·6	15·5	148	1·69

TABLE II.

POPULATIONS, DENSITIES, BIRTH-RATES, DEATH-RATES AND  
INFANTILE MORTALITY IN PREVIOUS YEARS.

Year.	Population	Density	Births	Birth- rate.	Deaths.	Death-rate	Infantile Mortality.
1773	5600	3'0					
1791—1800	14437	7'8					
1801—1810	20444	11'1					
1811—1820	27364	14'8					
1821—1830	37240	20'2					
*1831—1840	46579	25'3					
<b>1841-1850</b>	<b>55167</b>	<b>29'9</b>					
<b>1851-1860</b>	<b>61645</b>	<b>33'5</b>				<b>30'7</b>	
<b>1861-1870</b>	<b>75999</b>	<b>41'2</b>				<b>29'4</b>	
1871	83095	45'1				26'1	
1872	84072	45'6				28'0	
1873	85061	46'2				23'3	
1874	86061	46'7	3526	40'9	2219	25'7	178
1875	87073	47'3	3552	40'7	2403	27'5	193
1876	88097	47'8	3722	42'2	2199	24'9	169
1877	89133	48'4	3596	40'3	2226	24'9	169
†1878	102919	43'5	3952	38'3	2313	22'4	181
1879	103819	43'9	3897	37'5	2233	21'5	158
1880	104727	44'3	4644	44'3	2835	27'0	179
<b>1871-1880</b>	<b>91405</b>	<b>45'8</b>	<b>3841</b>	<b>40'6</b>	<b>2346</b>	<b>24'8</b>	<b>175</b>
1881	105643	44'7	3811	36'0	2022	19'1	151
1882	106567	45'1	3834	35'9	2277	21'3	170
1883	107499	45'5	3697	34'3	2157	20'0	171
1884	108439	45'9	3701	34'1	2615	24'1	194
1885	109387	46'3	3788	34'6	2282	20'8	161
<b>1881-1885</b>	<b>107507</b>	<b>45'5</b>	<b>3766</b>	<b>34'9</b>	<b>2270</b>	<b>21'0</b>	<b>169</b>
1886	110343	46'7	3786	34'3	2572	23'3	184
1887	111308	47'1	3627	32'5	2393	21'4	172
1888	112281	47'5	3729	33'2	2453	21'8	170
1889	113263	47'9	3759	33'1	2528	22'3	166
1890	114253	48'3	3726	32'5	2986	26'1	176
<b>1886-1890</b>	<b>112289</b>	<b>47'5</b>	<b>3725</b>	<b>33'1</b>	<b>2586</b>	<b>22'9</b>	<b>173</b>
1891	115253	48'8	3914	33'9	2516	21'6	165
1892	116261	49'2	3769	32'4	2648	22'6	185
1893	117278	49'6	3874	33'0	2813	23'8	200
1894	118309	50'1	3719	31'4	2215	18'5	162
1895	119337	50'5	3960	33'1	2862	23'7	213
<b>1891-1895</b>	<b>117286</b>	<b>49'6</b>	<b>3847</b>	<b>32'7</b>	<b>2610</b>	<b>22'2</b>	<b>185</b>
1896	120380	50'9	3792	31'7	2496	20'7	165
1897	121433	51'5	3985	32'8	2671	21'9	184
1898	122495	51'8	3800	31'0	2350	19'1	167
†1899	162222	10'6	4878	30'0	3238	19'9	180
1900	164240	10'7	4775	29'0	3222	19'6	170
<b>1896-1900</b>	<b>138154</b>	<b>35'1</b>	<b>4246</b>	<b>30'9</b>	<b>2795</b>	<b>20'2</b>	<b>173</b>
1901	168748	11'0	4648	27'5	3085	18'2	172
1902	171082	11'1	4779	27'9	2959	17'2	132
1903	173401	11'3	4700	27'1	3062	17'6	151
1904	175744	11'4	4736	26'9	2994	17'0	167
1905	178111	11'6	4481	25'1	2754	15'4	166
<b>1901-1905</b>	<b>173417</b>	<b>11'2</b>	<b>4668</b>	<b>26'8</b>	<b>2968</b>	<b>17'0</b>	<b>157</b>
1906	180502	11'8	4599	25'4	2794	15'4	138
1907	182917	11'9	4476	24'4	3073	16'7	145
1908	185358	12'1	4573	24'6	2874	15'5	148

\* Incorporation in 1838 with 48000 population and 1840 acres:

† Added in 1878 part of Rumworth with 163 acres and 3000 population,  
and part of Halliwell with 358 acres and 10,000 population.

‡ Borough extended and 38000 added to the population.



BIRTH-RATES, DEATH-RATES, AND INFANTILE MORTALITY IN 33 GREAT  
TOWNS, 1908 (REGISTRAR GENERAL'S RETURNS).

TOWNS	Birth-rate	Death-rate	Epidemic Death-rate	Infantile Mortality
76 Great Towns	27·0	14·9	1·58	128
1 Croydon	25·4	12·7	1·38	100
2 Southampton	26·4	12·9	1·17	113
3 Leicester	23·4	12·9	1·50	131
4 Cardiff	26·6	12·9	1·10	125
5 Derby	25·9	13·0	·93	112
6 Bristol	23·1	13·5	1·15	126
7 Portsmouth	28·4	13·7	·96	98
8 London	25·4	13·8	1·35	113
9 West Ham	28·8	13·8	2·38	128
10 Norwich	25·2	14·0	1·12	115
11 Halifax	19·0	14·1	1·00	101
12 Brighton	21·3	14·7	·63	104
13 Gateshead	30·9	14·9	1·90	149
14 Plymouth	22·1	15·0	·91	129
15 Nottingham	26·6	15·1	1·24	145
16 Leeds	24·8	15·3	1·50	138
17 South Shields	30·1	15·4	1·66	134
(L) 18 <b>BOLTON</b>	24·6	15·5	1·69	148
19 Bradford	20·2	15·5	1·36	143
(L) 20 Blackburn	25·0	15·6	1·54	150
21 Birkenhead	31·4	15·7	1·90	135
22 Sheffield	30·7	15·8	1·83	140
23 Birmingham	28·4	15·9	1·86	145
24 Newcastle-on-Tyne	29·7	15·9	1·25	136
25 Hull	30·2	16·1	2·19	145
26 Sunderland	33·0	17·7	1·84	146
(L) 27 Salford	29·6	17·8	3·04	153
(L) 28 Preston	27·7	17·9	2·22	154
(L) 29 Burnley	28·2	17·9	2·83	200
(L) 30 Manchester	29·1	18·2	2·25	151
31 Rhondda	40·3	18·4	3·53	183
(L) 32 Liverpool	31·7	19·2	2·20	141
(L) 33 Oldham	28·0	19·8	2·50	160

(L) Lancashire Towns.



## SUMMARY OF CAUSES OF DEATH, 1908.

## General Diseases.

	No. of Deaths.	Per cent. of Total Deaths.	Death-rate per 1000 of pop'n.
1. Specific Febrile or Epidemic Diseases ... ..	368	12.8	1.98
2. Constitutional Diseases :—			
(a) Phthisis ... ..	216	7.5	1.16
(b) Other Tubercular ...	95	3.3	.51
(c) Cancer ... ..	122	4.2	.65
3. Developmental Diseases :—			
(a) Premature Birth ...	94	3.2	.50
(b) Old Age ... ..	245	8.5	1.32

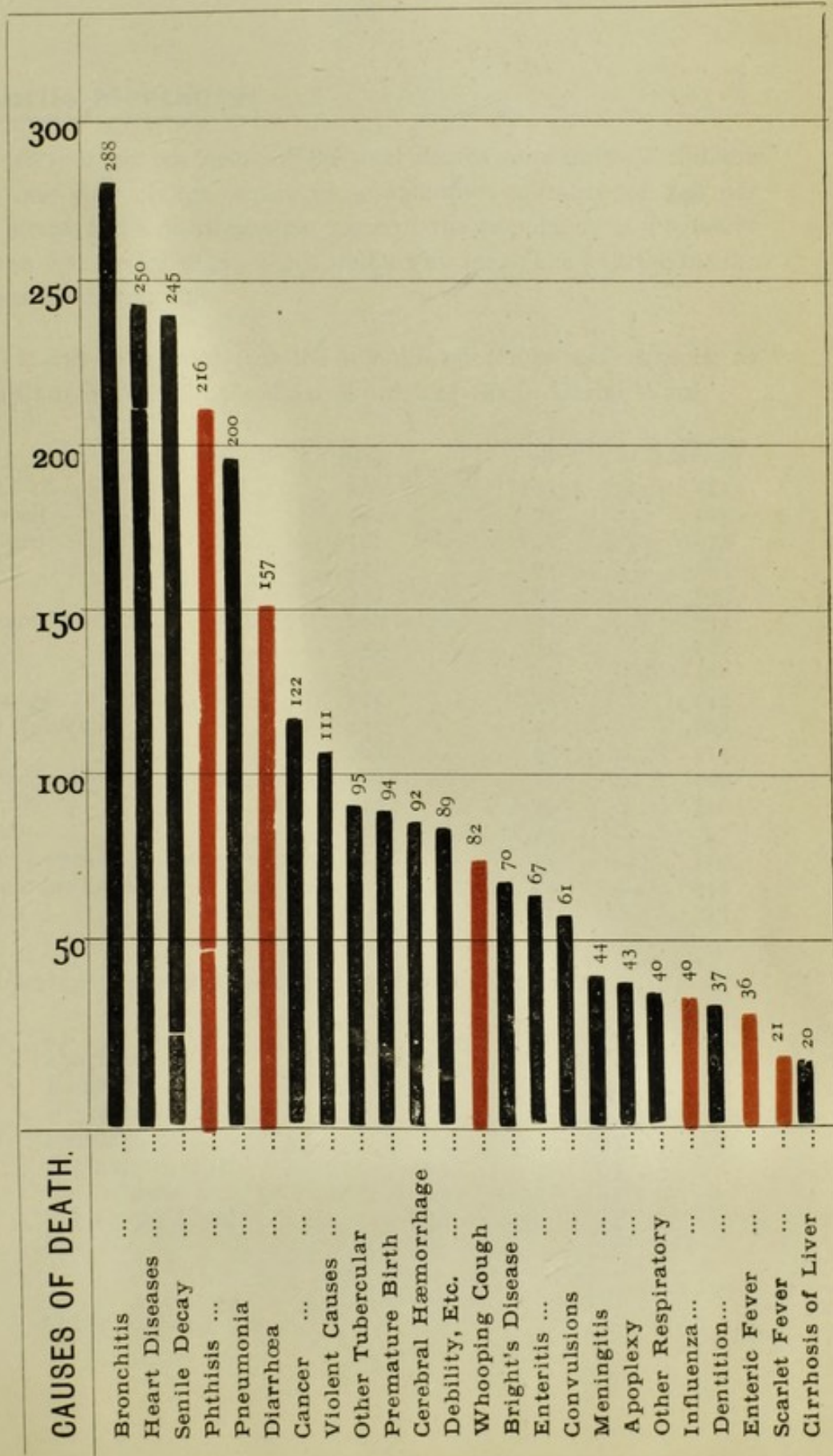
## Local Diseases.

1. Nervous System ... ..	175	6.0	.94
2. Heart ... ..	250	8.6	1.34
3. Blood Vessels ... ..	152	5.2	.82
4. Respiratory System :—			
(a) Bronchitis ... ..	288	10.0	1.55
(b) Pneumonia ... ..	200	6.9	1.07
(c) Other Respiratory ...	40	1.3	.21
5. Digestive System ... ..	172	5.9	.92
6. Urinary System ... ..	93	3.2	.50
7. Pregnancy and Child Birth	12	.4	.06
8. Ill-Defined and not Specified Diseases ... ..	95	3.3	.51

## Violent Causes.

1. Accidents ... ..	84	2.9	.45
2. Suicide ... ..	25	.8	.13

# Comparative View of the Principal Causes of Death, 1908.



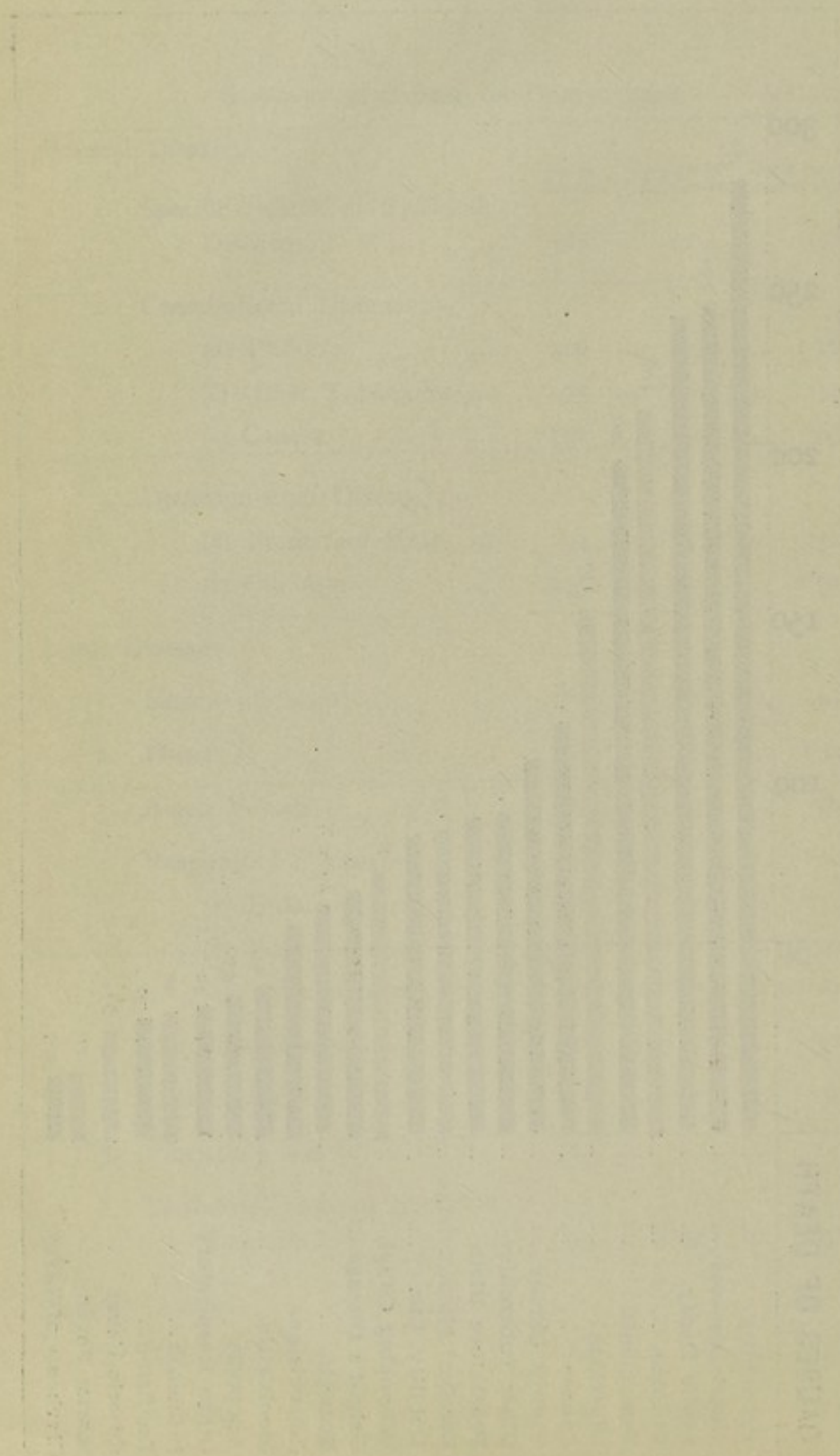
Deaths from Infectious Diseases.

Deaths from Diseases other than Infectious.



# General View of the Principal Causes of Death

1860



### Infantile Mortality.

677 or 23 per cent. of the total deaths were those of children under one year of age, equal to an infantile mortality of 148 per 1,000 births, and a death rate per 1,000 of the population of 3.6, lower than the average for 1898—1907, which was 158. The average for the 76 great towns was 128.

It will be noticed that the infantile mortality was as much as 201 in Church Ward, 193 in East Ward, and 184 in Derby Ward.

WARD	Births	Deaths under 1 year	Infantile Mortality
West	726	103	141
Halliwell	582	74	127
Bradford	571	100	175
Derby	510	94	184
East	321	62	193
Rumworth	238	32	134
Church	159	32	201
North	178	30	168
Exchange	125	18	144
Great Lever	235	25	106
Tonge	225	25	111
Astley Bridge	182	22	120
Smithills	130	19	146
Hulton	134	13	97
Darcy Lever-cum-Breightmet	118	13	110
Deane-cum-Lostock	97	14	144
Heaton	42	1	23

The causes of death under one year were as follows :—

	1907.	1908.
Diarrhœa	47	121
Enteritis	19	40
Respiratory Diseases	100	102
Debility, &c.	78	87
Premature Birth	105	93
Convulsions	63	51
Whooping Cough	30	44
Measles	64	1
	<hr/>	<hr/>
Other Various Causes	506	539
	146	138
	<hr/>	<hr/>
	652	677



### Mortality from Epidemic Diseases.

314 deaths were registered from the seven chief epidemic diseases, equal to a death-rate of 1·69 lower than the average for the last ten years, which was 2·38. It is higher than that for the 76 great towns, which was 1·58.

The causes of death are set out here, and the death-rates in previous years in Table III.

#### CAUSES OF DEATH FROM ALL EPIDEMIC DISEASES :—

		1907.	1908.
Seven Chief Epidemic Diseases.	Small-pox	—	—
	Scarlet Fever	30	21
	Diphtheria and Membranous Croup	20	15
	Enteric, Continued Fever	26	37
	Diarrhœa	66	157
	Measles	234	2
	Whooping Cough	64	82
	Influenza	42	40
	Other Epidemic Diseases	22	14
Total		504	368

TABLE III.

DEATH-RATES FROM THE SEVEN EPIDEMIC DISEASES, 1886-1908

Year.	Small-pox.	Scarlet Fever.	Diphtheria and Membr Croup	Fever.	Measles.	Whooping Cough.	Diarrhoea.	Seven Chief Epidemic.	
1886	...	—	·14	·06	·16	1·23	·67	1·39	4·4
1887	...	—	·32	·06	·31	·80	·24	1·29	3·06
1888	...	—	·45	·06	·33	·29	·50	·99	2·6
1889	...	—	·56	·25	·27	1·39	·55	·91	4·1
1890	...	—	·48	·12	·22	·83	·92	·94	3·53
1891	...	—	·18	·08	·27	·47	·38	·81	2·22
1892	...	—	·25	·11	·17	·36	·92	1·10	2·95
1893	...	·05	·28	·06	·28	1·38	·66	1·67	4·42
1894	...	—	·08	·04	·21	·16	·51	·57	1·59
1895	...	—	·17	·12	·41	1·00	·56	1·74	4·03
1896	...	—	·32	·07	·41	·04	·83	·85	2·50
1897	...	—	·18	·03	·29	1·77	·32	1·63	4·16
1898	...	—	·16	·06	·28	·25	·36	1·80	2·93
1899	...	—	·22	·08	·33	·57	·27	1·59	3·08
1900	...	—	·12	·12	·29	·22	·50	1·13	2·40
1901	...	—	·30	·15	·23	·64	·59	1·42	3·05
1902	...	·04	·68	·27	·23	·18	·30	·40	2·12
1903	...	·01	·34	·21	·20	·28	·05	·87	1·98
1904	...	·005	·12	·16	·21	·09	·76	·88	2·25
1905	...	—	·02	·09	·19	·51	·04	1·01	1·88
1906	...	—	·09	·13	·22	·01	·11	1·15	1·72
1907	...	—	·16	·10	·14	1·27	·34	·36	2·40
Average 1898-1907	·005	·22	·13	·23	·40	·30	1·06	2·38	
1908	...	—	·11	·08	·19	·01	·44	·84	1·69



TABLE IV.  
33 GREAT TOWNS.—DEATH-RATES PER 1000 LIVING FROM ALL CAUSES, AND FROM THE PRINCIPAL EPIDEMIC DISEASES, AND INFANT MORTALITY IN THE TEN YEARS 1897-1906, AND IN 1907.

TOWNS.	ALL CAUSES		SMALL-POX.		MEASLES.		SCARLET FEVER.		DIPHTHERIA.		WHOOPING-COUGH.		FEVER.		DIARRHŒA.		DEATHS UNDER ONE YEAR TO 1000 BIRTHS.	
	Ten years 1897-1906.	1907.	Ten years 1897-1906.	1907.	Ten years 1897-1906.	1907.	Ten years 1897-1906.	1907.	Ten years 1897-1906.	1907.	Ten years 1897-1906.	1907.	Ten years 1897-1906.	1907.	Ten years 1897-1906.	1907.	Ten years 1897-1906.	1907.
<b>76 TOWNS.</b>	<b>16.5</b>	<b>15.4</b>	<b>0.03</b>	<b>0.00</b>	<b>0.42</b>	<b>0.43</b>	<b>0.14</b>	<b>0.12</b>	<b>0.20</b>	<b>0.17</b>	<b>0.33</b>	<b>0.35</b>	<b>0.11</b>	<b>0.07</b>	<b>0.89</b>	<b>0.40</b>	<b>147</b>	<b>127</b>
LONDON...	17.4	14.6	0.03	—	0.47	0.38	0.11	0.14	0.28	0.16	0.37	0.38	0.11	0.04	0.85	0.32	148	116
CROYDON ...	13.5	12.4	0.01	—	0.21	0.05	0.05	0.08	0.16	0.27	0.27	0.23	0.06	0.01	0.70	0.25	130	94
WEST HAM ...	17.2	14.6	0.06	—	0.54	0.51	0.11	0.18	0.45	0.24	0.46	0.54	0.21	0.05	1.55	0.66	165	131
BRIGHTON ...	16.1	14.7	—	—	0.26	0.10	0.04	—	0.27	0.12	0.19	0.27	0.09	0.02	0.75	0.33	141	113
PORTSMOUTH ...	17.0	16.0	—	—	0.29	0.05	0.09	0.02	0.38	0.29	0.31	0.27	0.24	0.14	1.17	0.29	151	123
SOUTHAMPTON ...	15.9	13.0	0.01	0.02	0.31	0.05	0.04	0.02	0.25	0.18	0.30	0.16	0.12	0.04	0.89	0.36	139	108
NORWICH ...	17.8	14.6	—	—	0.41	0.03	0.10	0.02	0.17	0.38	0.31	0.34	0.16	0.10	1.20	0.46	177	125
PLYMOUTH ...	18.2	14.7	0.00	—	0.40	0.21	0.10	0.03	0.13	0.13	0.30	0.09	0.10	0.06	0.90	0.34	163	110
BRISTOL ...	16.2	13.2	0.00	0.00	0.44	0.09	0.10	0.07	0.27	0.17	0.35	0.10	0.11	0.04	0.60	0.32	137	100
BIRMINGHAM ...	19.4	16.2	0.00	—	0.43	0.57	0.20	0.17	0.22	0.18	0.45	0.34	0.17	0.09	1.38	0.43	182	147
LEICESTER ...	16.0	12.7	0.01	—	0.30	0.27	0.15	0.17	0.46	0.07	0.31	0.06	0.10	0.02	1.22	0.31	174	131
NOTTINGHAM ...	17.9	17.5	0.01	—	0.34	0.78	0.13	0.02	0.16	0.16	0.31	0.51	0.25	0.15	1.25	0.63	181	165
DERBY ...	15.6	14.3	0.01	—	0.27	0.63	0.12	0.03	0.16	0.42	0.25	0.18	0.13	0.14	0.71	0.20	149	121
BIRKENHEAD ...	18.1	15.4	0.01	—	0.34	1.10	0.17	0.10	0.24	0.20	0.41	0.15	0.23	0.09	1.14	0.31	164	110
LIVERPOOL ...	22.3	19.0	0.03	—	0.50	0.39	0.28	0.18	0.25	0.15	0.48	0.43	0.21	0.13	1.61	0.73	180	144
<b>Bolton</b>	<b>18.0</b>	<b>16.8</b>	<b>0.01</b>	—	<b>0.46</b>	<b>1.29</b>	<b>0.23</b>	<b>0.18</b>	<b>0.13</b>	<b>0.12</b>	<b>0.31</b>	<b>0.35</b>	<b>0.24</b>	<b>0.14</b>	<b>1.20</b>	<b>0.41</b>	<b>156</b>	<b>146</b>
MANCHESTER ...	21.5	18.1	0.01	—	0.70	0.36	0.18	0.16	0.18	0.16	0.44	0.49	0.15	0.05	1.42	0.50	182	146
SALFORD ...	21.3	17.7	0.00	—	0.83	0.44	0.30	0.26	0.36	0.31	0.49	0.61	0.28	0.08	1.57	0.44	188	140
OLDHAM ...	19.7	19.4	0.04	—	0.58	0.24	0.26	0.12	0.18	0.13	0.43	0.47	0.11	0.03	0.82	0.53	166	144
BURNLEY ...	19.8	17.6	0.02	—	0.67	0.07	0.30	0.13	0.30	0.14	0.40	0.28	0.18	0.11	1.65	0.69	212	158
BLACKBURN ...	18.4	16.9	0.01	—	0.57	0.36	0.28	0.14	0.30	0.13	0.30	0.33	0.20	0.10	1.02	0.28	182	153
PRESTON ...	21.0	19.1	0.01	—	0.86	0.21	0.19	0.06	0.19	0.10	0.42	0.60	0.28	0.15	1.79	0.54	208	158
HALIFAX ...	16.5	14.3	0.01	—	0.36	0.05	0.16	0.02	0.16	0.26	0.18	0.10	0.14	0.07	0.36	0.18	136	103
BRADFORD ...	17.1	14.8	0.01	—	0.32	0.17	0.17	0.04	0.21	0.15	0.24	0.28	0.17	0.08	0.79	0.17	160	124
LEEDS ...	18.2	15.3	0.01	—	0.47	0.22	0.16	0.12	0.33	0.14	0.35	0.34	0.16	0.06	1.04	0.38	170	130
SHEFFIELD ...	19.1	17.1	0.00	—	0.52	0.86	0.22	0.23	0.43	0.12	0.37	0.35	0.23	0.09	1.53	0.99	180	145
HULL ...	18.1	16.1	0.08	0.00	0.44	0.66	0.11	0.06	0.23	0.25	0.35	0.37	0.18	0.06	1.57	0.37	169	127
SUNDERLAND ...	20.4	19.2	0.01	—	0.48	0.64	0.16	0.14	0.14	0.27	0.42	0.27	0.28	0.07	1.12	0.45	165	130
SOUTH SHIELDS ...	19.0	16.7	0.02	—	0.48	0.44	0.21	0.10	0.12	0.15	0.45	0.47	0.20	0.05	0.81	0.15	155	133
GATESHEAD ...	18.4	15.4	0.05	—	0.40	0.46	0.16	0.05	0.12	0.25	0.46	0.36	0.10	0.08	1.21	0.37	169	136
NEWCASTLE-ON-TYNE ...	20.2	15.9	0.01	—	0.39	0.44	0.12	0.08	0.16	0.19	0.41	0.48	0.10	0.04	0.78	0.14	166	123
CARDIFF ...	15.8	15.0	0.01	0.01	0.40	0.95	0.10	0.11	0.39	0.12	0.37	0.30	0.09	0.07	0.66	0.34	145	131
RHONDDA ...	19.2	16.3	0.00	—	0.53	0.54	0.19	0.07	0.74	0.15	0.42	0.20	0.30	0.17	1.27	0.78	195	162

In this table 0.00 indicates that the deaths were too few to give a death-rate of 0.005; where *no deaths* occurred, ... is inserted.  
England and Wales, 1907: Death rate, 15.0; Birth rate, 26.3; Infant Mortality, 118, and lowest recorded.



TABLE V.

METEOROLOGICAL OBSERVATIONS, 1908.

(From the Borough Meteorologist's Report).

Month.	Baro- meter.	Readings of Thermometers.					Elastic Force of the Aqueous Vapour	Mean Amount of Humidity Saturation per 100°	Rain.	Registered Sunshine in Hours	Mean amount of Ozone o — None 10 — Maximum
	Corrected and Reduced to 32° Far. Mean sea level.	Highest	Lowest	Mean	Range	Dew-point			Amount Collected		
January ...	30·125	40·8	31·1	36·33	9·7	31·9	·188	87·0	3·865	h. m. 8-45	·39
February	30·042	44·7	36·7	40·46	8·4	37·2	·226	89·0	4·345	39-10	·82
March ...	29·817	44·3	33·8	38·18	10·1	32·9	·189	83·3	3·658	51-0	·50
April ...	29·979	49·8	35·9	41·39	13·3	34·6	·204	76·3	2·907	70-50	·23
May ...	29·964	61·4	46·5	52·10	14·9	46·1	·315	76·5	2·910	146-45	·32
June ...	30·088	64·7	48·9	55·32	15·8	48·7	·344	74·0	2·829	158-15	·50
July ...	29·995	66·5	51·9	57·64	14·3	52·1	·394	77·4	5·851	121-25	·42
August ...	29·978	63·3	50·7	55·75	12·9	49·4	·359	75·8	3·676	124-20	·40
September	29·904	61·4	47·8	53·49	13·2	49·6	·361	84·6	4·959	61-35	·40
October ...	30·135	60·2	47·9	56·08	12·2	49·3	·352	88·0	2·399	62-50	·10
November.	29·994	49·8	39·2	43·97	10·3	40·3	·256	92·6	3·647	19-35	·40
December.	29·874	42·5	34·3	38·77	8·1	35·4	·216	89·6	3·410	9-0	·32
Mean or Total	29·991	54·1	42·1	47·46	11·9	42·3	·270	82·8	44·456	873-30	·41
Yearly Averages, 1888-1908	29·942	53·4	41·6	46·90	11·1	41·7	·264	81·5	41·060	783-44	1·07





SECTION II.

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*Infectious Diseases*  
AND  
*Hospital Isolation.*

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SECTION II.

Infectious Diseases

Hospital Isolation.

### **Notification.**

999 cases of ordinary infectious disease were notified in accordance with the Infectious Diseases (Notification) Act, 1889, and 202 cases of phthisis under the Bolton Corporation Act, 1905.

This is lower than the number for 1907 and below the average for the last ten years. There was a decrease in the number of scarlet fever cases but an increase in the number of enteric fever cases.

The cases consisted of:—scarlet fever, 637; enteric fever (including continued fever), 192; diphtheria, 76; puerperal fever, 10; and erysipelas, 84. There were no cases of smallpox notified.

The case-rate varied from 2·5 in North Ward, to 8·7 in Exchange Ward.

The epidemic death-rate was 1·69, being lower than the average for the last ten years and the second lowest recorded in the Borough since 1886.

There were 21 deaths from scarlet fever, 37 from enteric fever, 15 from diphtheria, 157 from diarrhoea, two from measles, and 82 from whooping cough.



TABLE VI.

WEEKLY NOTIFICATION OF SCARLET, ENTERIC, AND  
DIPHThERIA, 1908.

Week	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter		
	Scarlet Fever	Enteric and Continued Fever	Diphtheria and Memb. Croup	Scarlet Fever	Enteric and Continued Fever	Diphtheria and Memb. Croup	Scarlet Fever	Enteric and Continued Fever	Diphtheria and Memb. Croup	Scarlet Fever	Enteric and Continued Fever	Diphtheria and Memb. Croup
1	17	2	5	19	1	3	10	2	1	11	4	...
2	20	4	6	18	1	1	9	...	1	3	3	1
3	16	7	1	21	2	...	19	3	...	5	7	...
4	17	1	1	12	1	...	7	8	1	4	3	...
5	14	1	...	10	...	...	11	3	3	10	8	1
6	24	2	4	16	1	1	8	2	...	10	7	2
7	25	1	1	20	4	2	8	6	1	5	4	3
8	21	2	1	16	3	1	8	5	2	7	3	...
9	16	1	1	10	4	3	4	8	2	6	6	1
10	13	...	2	20	1	...	4	8	...	1	7	3
11	18	3	2	15	1	...	7	9	1	6	6	3
12	16	4	2	16	4	1	7	1	2	8	8	5
13	18	4	1	14	5	1	8	6	1	9	5	2
Total ...	235	32	27	207	28	13	110	61	15	85	71	21

TABLE VII.

DISTRIBUTION OF NOTIFIED DISEASES IN WARDS, 1908.

WARDS.	Small-pox.	Scarlet Fever.	Enteric Fever and Continued Fever.	Diphtheria and Memb. Croup.	Puerperal Fever.	Erysipelas.	Total.	Rate per 1000.
West ... ..	...	108	24	18	2	4	156	5.5
Halliwell ... ..	...	120	11	6	...	4	141	5.7
Bradford ... ..	...	67	15	6	...	9	97	4.7
Derby ... ..	...	83	39	7	3	12	144	7.0
East ... ..	...	12	21	5	...	4	42	4.3
Rumworth ... ..	...	26	13	1	...	8	48	5.0
Church ... ..	...	36	11	3	...	8	58	6.8
North ... ..	...	14	4	1	...	1	20	2.5
Exchange ... ..	...	32	1	1	1	2	37	8.7
Old Borough ... ..	...	498	139	48	6	52	743	5.5
Great Lever ... ..	...	22	12	6	2	10	52	4.3
Tonge ... ..	...	19	17	10	1	4	51	4.6
Astley Bridge ... ..	...	20	7	3	...	5	35	3.9
Smithills ... ..	...	16	3	1	...	3	23	3.9
Hulton ... ..	...	30	2	4	...	3	39	7.0
Darcy Lever-c-Brightmet	...	14	0	2	1	1	18	5.2
Deane-cum-Lostock ... ..	...	10	12	1	...	4	27	8.3
Heaton ... ..	...	8	0	1	...	2	11	5.1
Added Area ... ..	...	139	53	28	4	32	256	4.9
Extended Borough ... ..	...	637	192	76	10	84	999	5.3



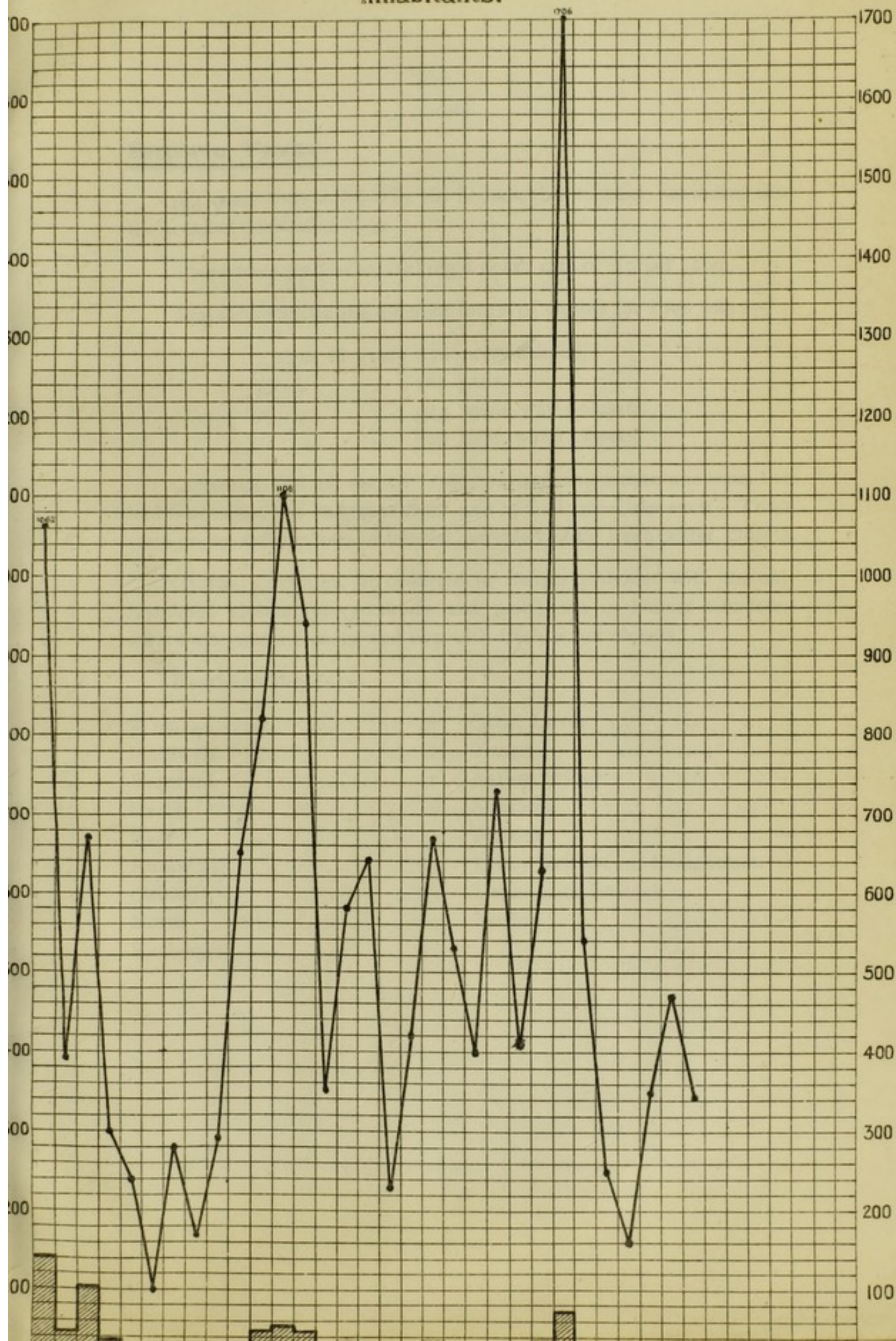
TABLE VIII.  
INFECTIOUS DISEASES NOTIFIED FROM 1880 TO 1908.

Year	Small-pox	Scarlet	Diphtheria, Membr Croup	Enteric	Continued	Typhus	Puerperal	Cholera	Erysipelas	Relapsing	Total	Rate per 1000 of pop'n	Total admitted to Hospital
1880...	18	702	5	102	13	17	3	...	...	...	860	8.0	...
1881...	9	320	5	98	1	24	10	2	...	..	469	4.4	...
1882...	267	259	19	77	...	30	3	...	...	...	655	6.1	...
1883...	3	193	9	75	4	9	3	1	...	...	207	1.9	...
†1884...	13	303	11	152	1	6	3	4	...	...	493	4.5	62
1885...	6	186	8	57	...	...	4	...	...	...	261	2.3	120
1886.	...	322	18	60	...	3	3	...	...	...	406	3.6	208
1887..	...	721	22	107	...	2	1	...	...	...	853	7.5	296
1888...	11	924	51	180	...	2	4	...	...	...	1172	10.3	289
1889.	4	1256	92	125	2	16	...	...	...	...	1495	13.0	309
1890...	...	1071	74	101	1	15	4	..	...	...	1266	10.9	273
1891...	...	411	93	145	...	16	5	...	...	...	670	5.8	113
1892..	1	683	112	97	1	2	8	1	...	...	905	7.7	158
1893...	44	747	123	170	...	2	4	...	...	...	1090	9.2	202
1894...	2	267	25	117	1	...	16	...	...	...	428	3.6	136
1895...	10	495	34	237	1	...	7	...	...	...	784	6.5	168
1896...	1	816	29	186	...	...	10	...	...	...	1042	8.6	293
1897...	...	645	17	125	...	...	8	...	...	...	795	6.5	261
1898...	...	487	27	208	...	...	2	...	...	...	724	5.9	316
*1899.	...	1226	52	321	...	...	12	...	...	...	1611	9.9	567
1900...	1	644	56	208	...	...	9	...	13	1	932	5.6	482
1901...	...	1066	91	219	...	...	8	...	28	...	1412	8.3	639
1902..	63	2910	202	192	4	...	14	...	71	...	3456	20.2	1266
1903...	55	971	142	178	2	...	15	...	85	...	1448	8.3	619
1904...	19	477	150	158	2	...	9	...	69	...	884	5.0	347
1905...	2	292	103	164	1	...	5	...	78	...	645	3.6	261
1906..	...	630	84	197	...	...	9	...	123	...	1043	5.7	472
1907...	...	866	79	135	...	...	18	...	89	...	1187	6.4	627
1898 to 1907	14.0	956.9	98.6	198.0	.9	...	10.1	...	55.6	.1	1334.2	7.8	559.6
1908...	...	637	76	190	2	...	10	...	84	...	999	5.3	481

First Year Notification, 1878. † Isolation Hospital Established. \* Borough Extended.

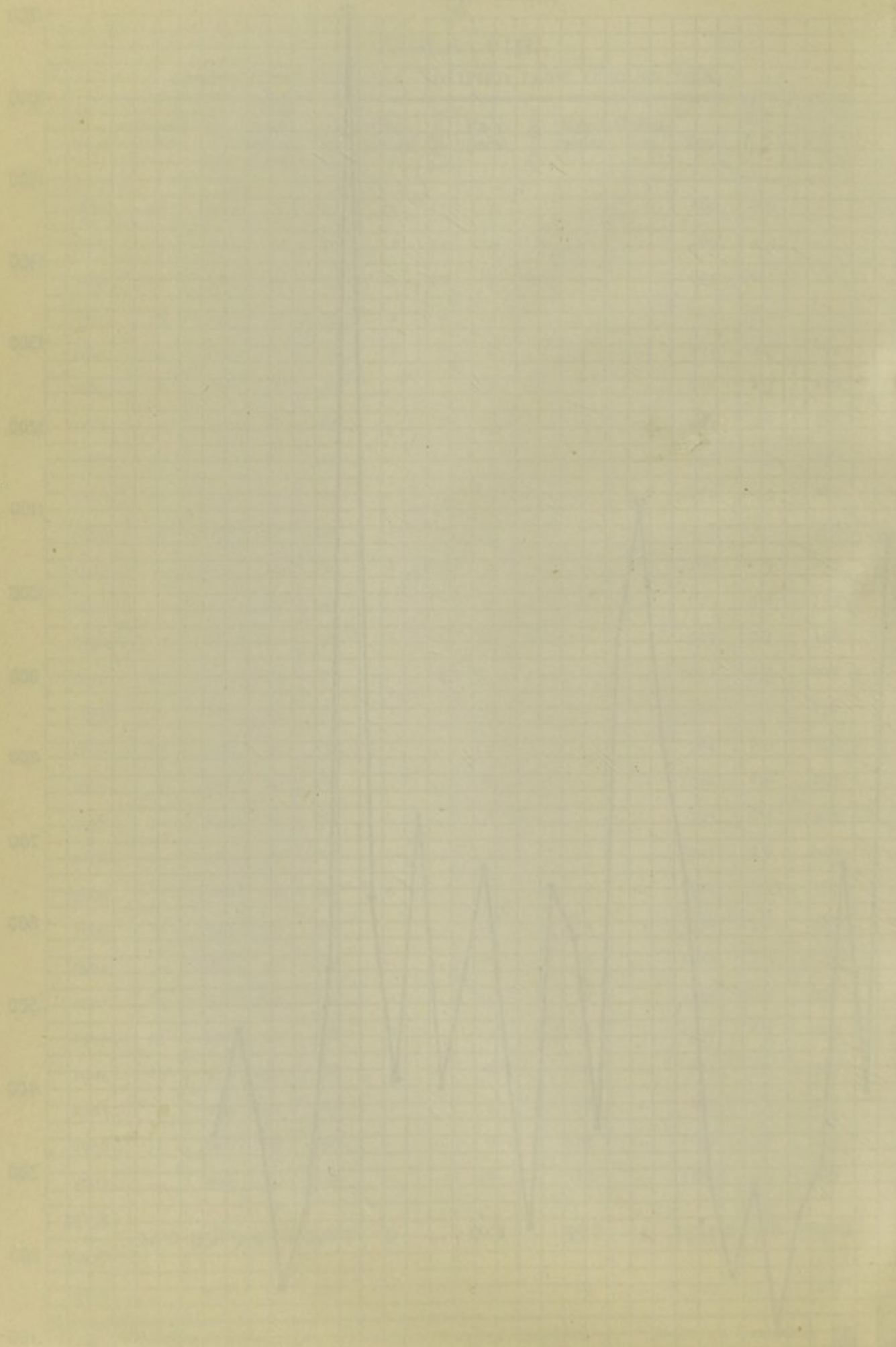


Cases and Deaths from Scarlet Fever per 100,000 inhabitants.





Grass and Beets from Several Years per 100000  
Inhabitants



### Enteric Fever.

192 cases were notified in 167 houses, this number including also those called continued fever.

There were 37 deaths, making a death rate of  $\cdot 19$  per 1000.

The incidence on the different forms of closets for 1908 was:—

1	case in every	176	privy-ashpits.
1	„	„	182 pails.
1	„	„	223 waste-water closets.
1	„	„	710 fresh-water closets.

20 houses out of the 167 infected had more than one case, two had four cases, one had three cases, and 17 had two cases each. There were no secondary cases in houses provided with fresh-water closets.

Of the 37 deaths, 29 occurred in houses provided with the old-fashioned closets (privy-ashpits and pails), six in houses connected with waste-water closets, and two with fresh-water closets.

#### Deaths in Wards:—

West ...	...	...	...	6	Great Lever ...	..	...	3
Halliwell ...	...	...	...	2	Tonge ...	...	...	4
Bradford ...	...	...	...	1	Astley Bridge ...	...	...	—
Derby ...	...	...	...	6	Smithills ...	...	...	3
East ...	...	...	...	4	Hulton ...	...	...	—
Rumworth ...	...	...	...	—	Darcy Lever-cum-Breightmet.			1
Church ...	...	...	...	3	Deane-cum-Lostock ...	...	...	4
North ...	...	...	...	—	Heaton ...	...	...	—
Exchange ...	...	...	...	—				

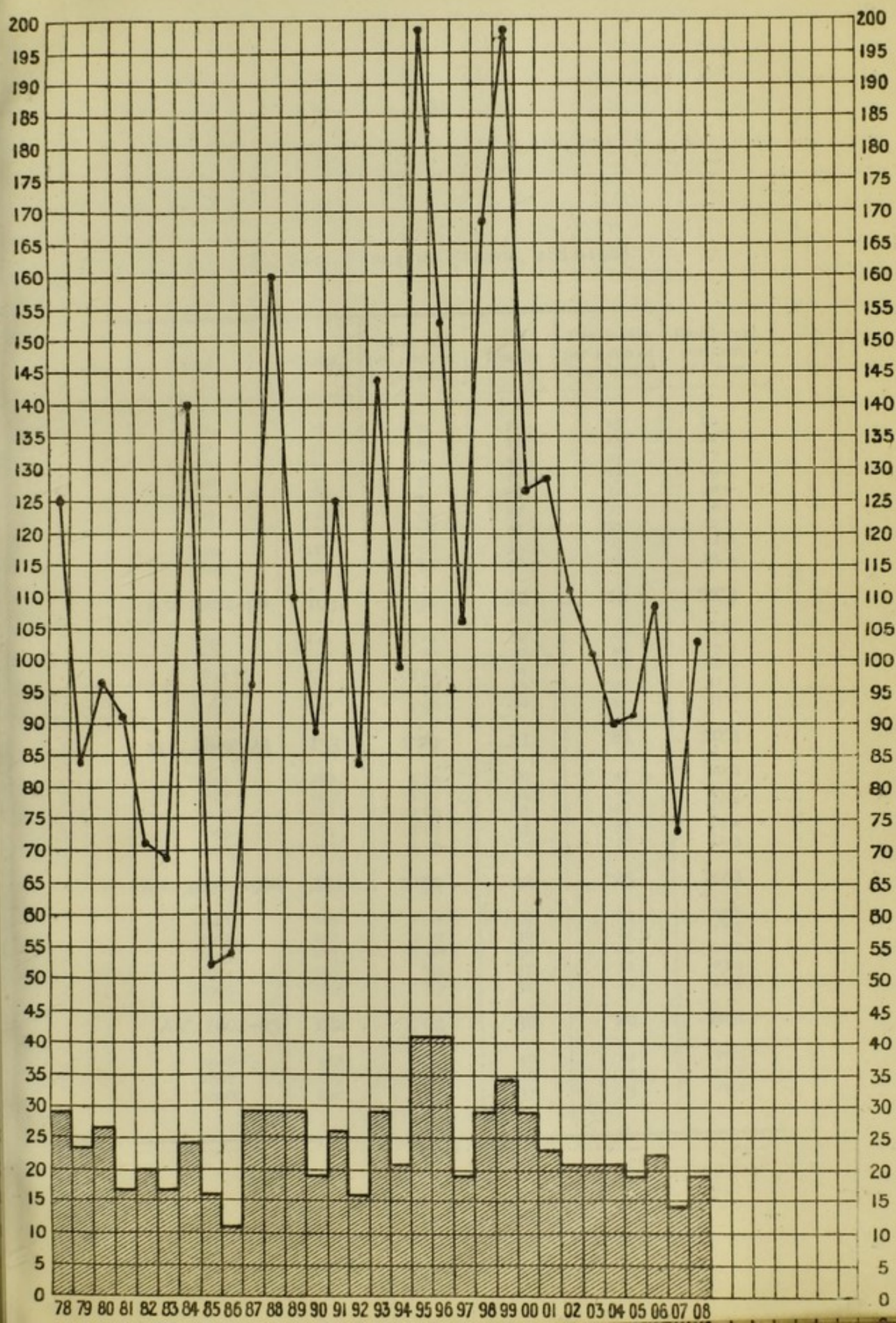


TABLE IX.  
CASES OF ENTERIC FEVER REPORTED IN EACH MONTH DURING THE  
LAST FIVE YEARS COMPARED WITH 1908.

Month	1903	1904	1905	1906	1907	Average	1908
January	13	9	22	19	15	15.6	15
February	12	10	12	13	4	10.2	6
March	7	5	15	13	11	10.2	11
April	8	11	6	15	8	9.6	5
May	4	6	8	15	4	7.4	12
June	10	6	3	9	10	7.6	12
July	7	7	11	5	8	7.6	15
August	27	18	11	10	18	16.8	22
Séptember	30	14	19	16	13	18.4	26
October	23	29	19	24	21	23.2	22
November	21	21	17	33	15	21.4	22
December	16	22	21	25	8	18.4	24
Total	178	158	164	197	135	166.4	192

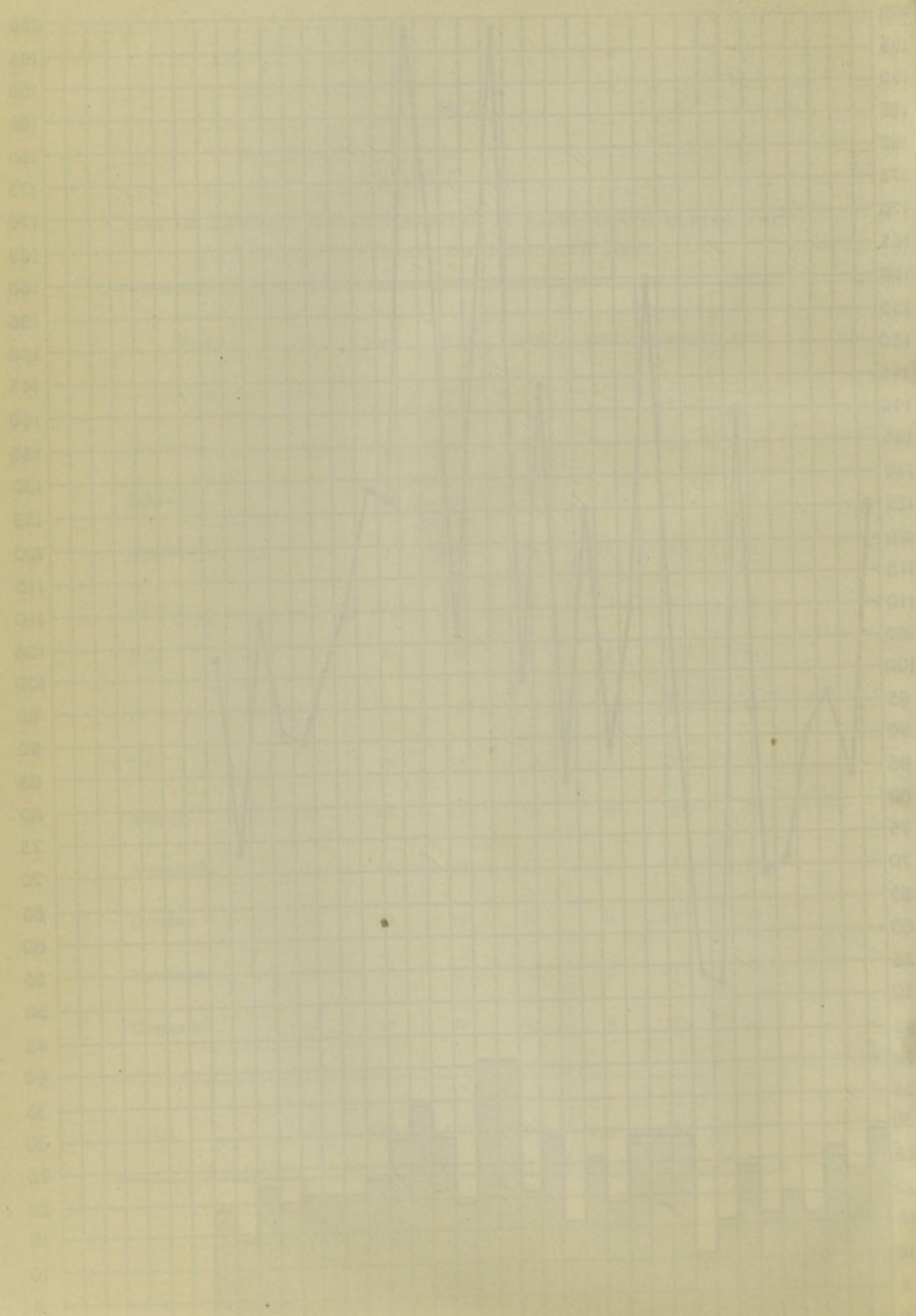


Enteric Fever.—Cases and Deaths per 100,000 inhabitants.





Enteric fever—Cases and Deaths per 100 000 Inhabitants



## ENTERIC FEVER IN BOLTON, 1882-1908.

Year	Cases	Case-rate per 1,000 of Population.	Deaths	Death-rate per 1,000 of Population	Death-rate per cent. of Cases.
1882	77	·72	17	·15	22·0
1883	75	·69	17	·15	22·6
1884	152	1·39	26	·23	17·1
1885	57	·51	17	·15	29·8
1886	60	·53	12	·10	20·0
1887	107	·95	31	·27	28·9
1888	180	1·58	31	·27	17·2
1889	125	1·09	31	·27	24·8
1890	102	·88	22	·18	21·5
<b>Av. 1881-90</b>	<b>103</b>	<b>·92</b>	<b>22</b>	<b>·19</b>	<b>22·3</b>
1891	145	1·24	30	·26	20·6
1892	97	·83	19	·16	17·5
1893	170	1·44	34	·28	20·0
1894	117	·98	25	·20	21·3
1895	237	1·98	50	·41	21·0
<b>Av. 1891-95</b>	<b>153</b>	<b>1·29</b>	<b>31</b>	<b>·26</b>	<b>20·4</b>
1896	186	1·54	50	·41	26·8
1897	125	1·02	24	·20	19·2
1898	208	1·69	35	·28	16·8
1899	321	1·97	55	·33	17·1
1900	208	1·26	47	·28	22·5
<b>Av. 1896-1900</b>	<b>209</b>	<b>1·51</b>	<b>42</b>	<b>·25</b>	<b>20·1</b>
1901	219	1·29	39	·23	17·8
1902	192	1·12	36	·21	18·8
1903	178	1·02	36	·20	20·2
1904	158	·89	37	·21	23·4
1905	164	·92	34	·19	20·7
<b>Av. 1901-05</b>	<b>182</b>	<b>1·04</b>	<b>36</b>	<b>·20</b>	<b>20·1</b>
1906	197	1·09	40	·22	20·3
1907	135	·73	26	·14	19·2
1908	192	1·03	37	·19	19·2



### **Diphtheria and Membranous Croup.**

76 cases were notified in 67 houses, with 15 deaths, equal to a death-rate of 19·7 per cent. of cases, or ·08 per 1000 of the population. The number of cases is smaller than in 1907, and the death-rate is slightly lower.

Of those notified only 34 were children attending school, and 24 contacts of school children. 32 schools were affected; 16 had cases only, nine had cases and contacts, and seven contacts only. The highest number of cases in any one school was four, and the highest number of contacts three.

The age distribution was:—

Age.	Number.		Deaths.	
0—1	...	2	...	—
1—2	...	4	...	2
2—3	...	6	...	1
3—4	...	5	...	1
4—5	...	11	...	6
5—10	...	25	...	3
10—15	...	4	...	1
15 and upwards	...	19	...	1

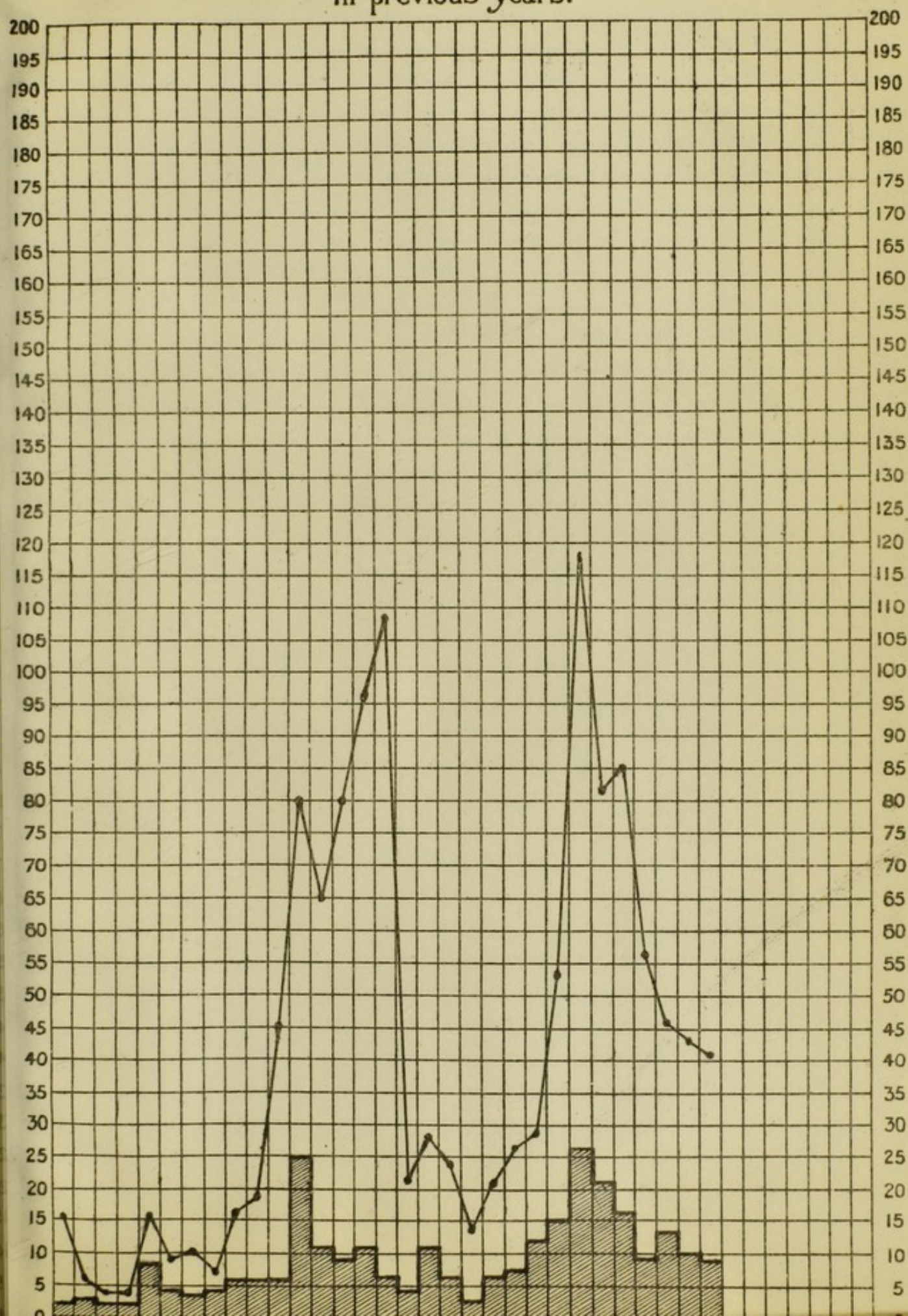
### **Measles.**

The town was remarkably free from measles during the greater part of the year, and there were only two deaths.

In the last three months three infant schools and one infant and mixed school were closed on account of measles.

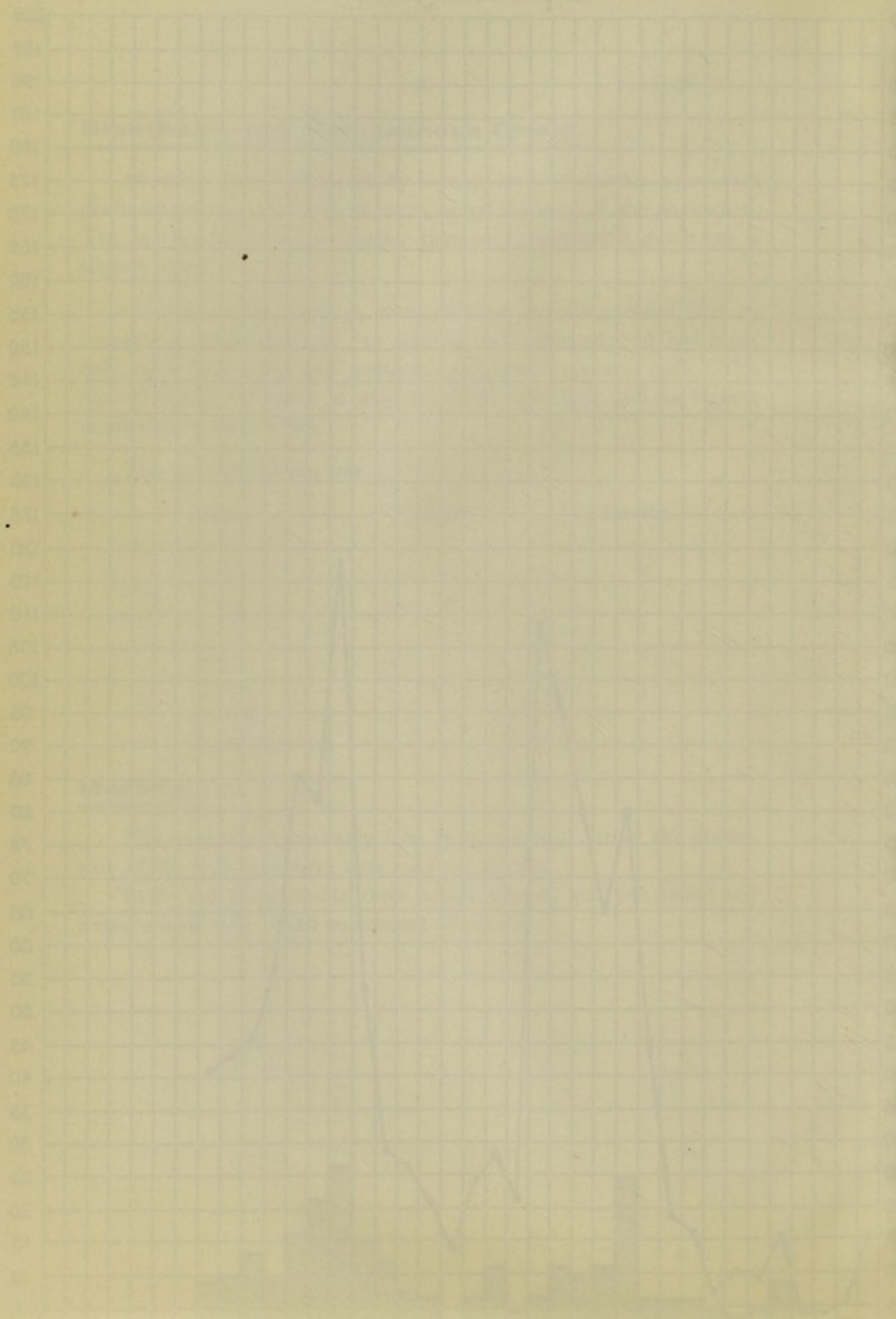


Case-rates and Death-rates per 100,000, for Diphtheria,  
in previous years.

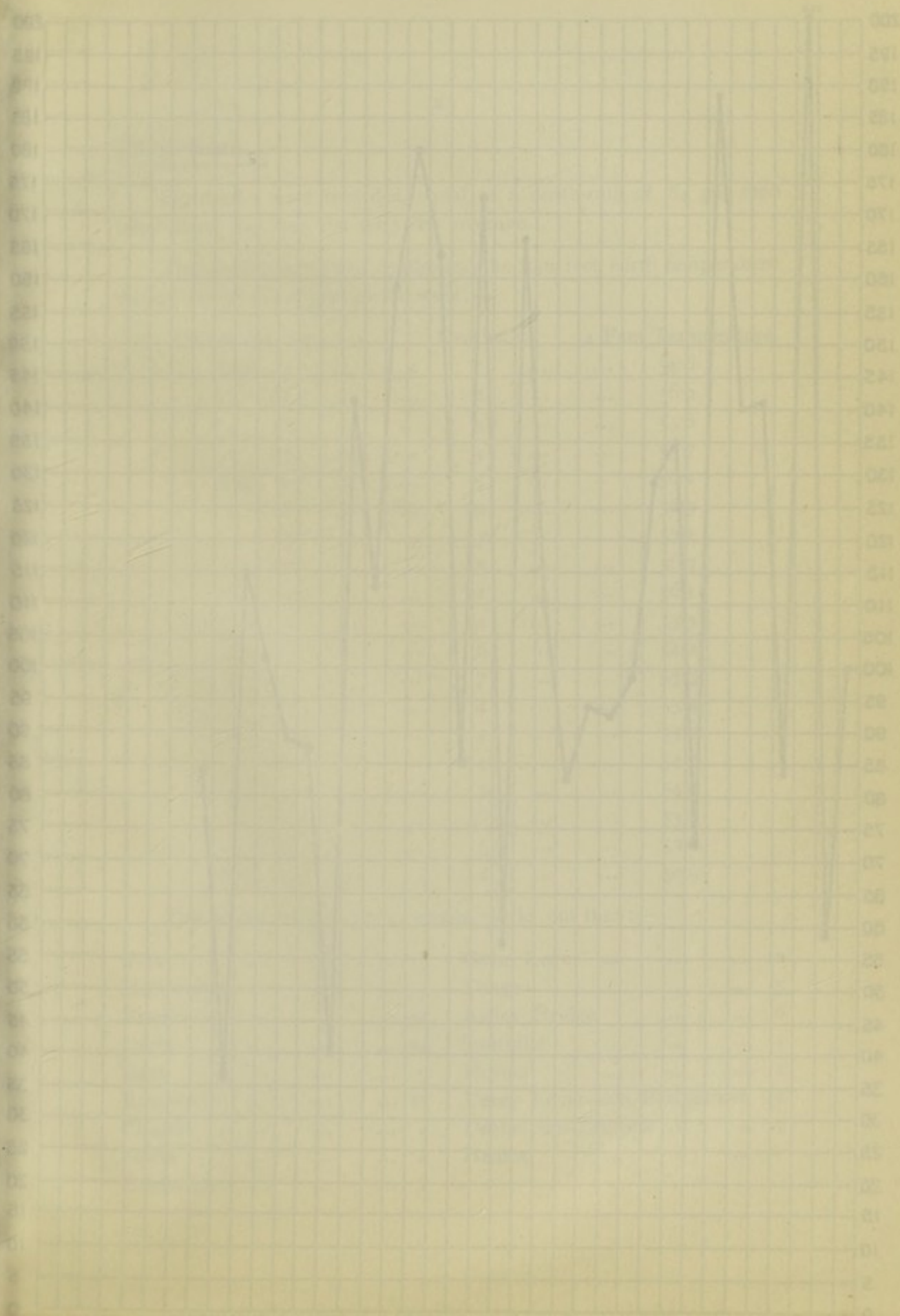




Cases and Death-rates per 100,000, for Typhoid fever, in previous years.

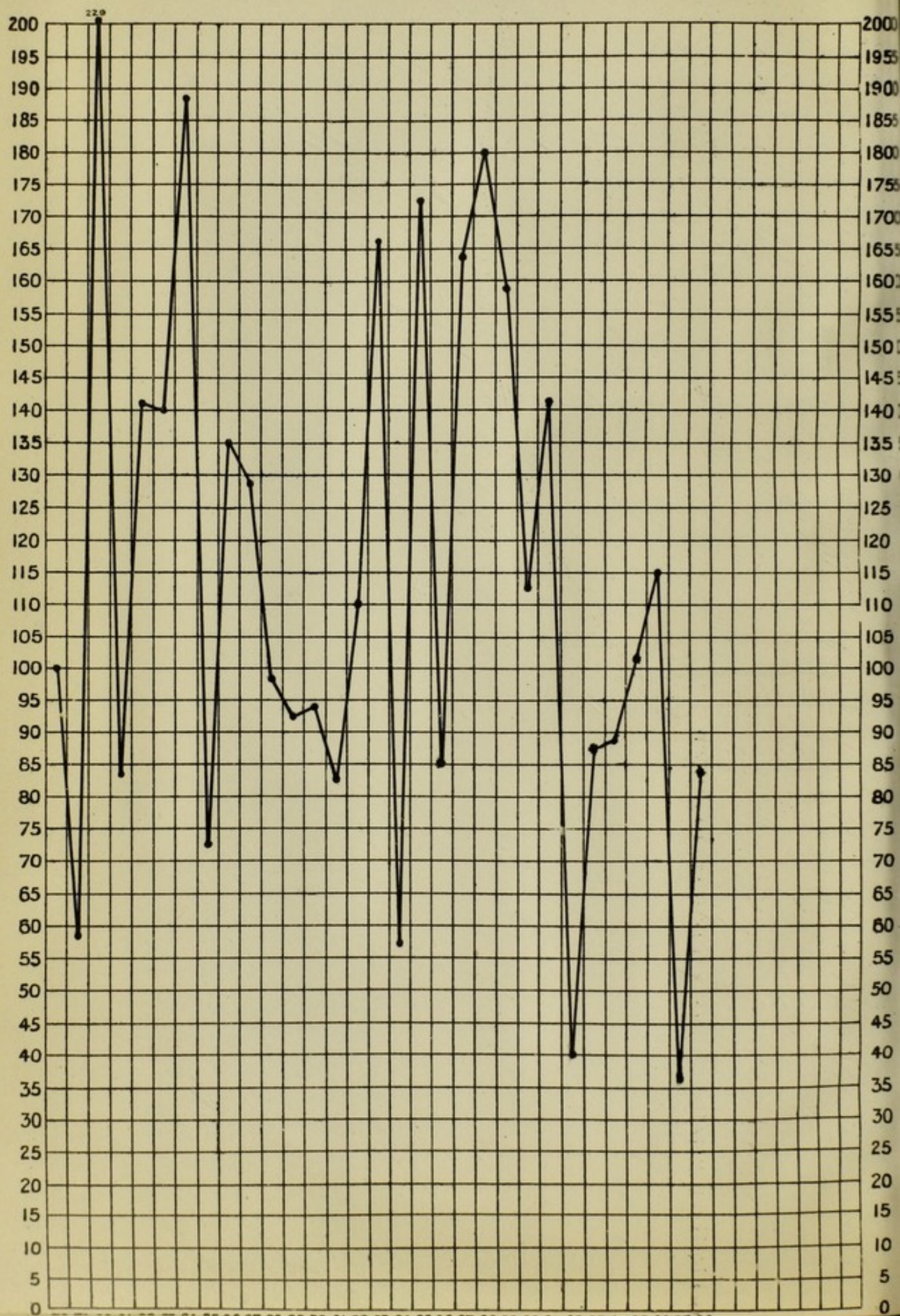


# Dysentery—Deaths in previous years per 100,000 inhabitants





Diarrhœa.—Deaths in previous years per 100,000 inhabitants.





**Diarrhœa.**

157 deaths were recorded, equal to a death-rate of ·84 per 1000 inhabitants, less than the ten years' average.

The weekly number of deaths and the four feet earth temperature during the period of prevalence were :—

Week Ending.				Deaths.		4 Feet Temperature.	
July	4	...	...	1	...	...	54·6
"	11	...	...	2	...	...	56·0
"	18	...	...	3	...	...	55·6
"	25	...	...	4	...	...	55·7
Aug.	1	...	...	9	...	...	56·2
"	8	...	...	10	...	...	56·9
"	15	...	...	17	...	...	57·1
"	22	...	...	15	...	...	56·7
"	29	...	...	21	...	...	56·1
Sept.	5	...	...	24	...	...	55·5
"	12	...	...	6	...	...	54·2
"	19	...	...	7	...	...	53·3
"	26	...	...	4	...	...	53·4
Oct.	3	...	...	4	...	...	53·7
"	10	...	...	4	...	...	54·6
"	17	...	...	3	...	...	54·0
"	24	...	...	6	...	...	53·7
"	31	...	...	5	...	...	52·0
Nov.	7	...	...	2	...	...	50·9

The deaths distribution in wards, works out thus :—

West	...	...	...	25	Great Lever	...	...	...	12
Halliwell	...	...	...	17	Tonge	...	...	...	5
Bradford	...	...	...	34	Astley Bridge	...	...	...	6
Derby	...	...	...	24	Smithills	...	...	...	1
East	...	...	...	9	Hulton	...	...	...	1
Rumworth	...	...	...	11	Darcy Lever-cum-Brightmet.	...	...	...	2
Church	...	...	...	4	Deane-cum-Lostock	...	...	...	1
North	...	...	...	4	Heaton	...	...	...	—
Exchange	...	...	...	1					



TABLE XII.

MONTHLY DEATHS FROM MEASLES, 1895—1908.

Month	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average 1895—1908
January ...	8	1	3	...	12	4	9	1	6	...	7	...	6	...	4
February ...	12	...	23	...	17	2	11	2	2	1	8	...	7	...	6
March...	22	...	55	...	12	...	13	2	10	1	27	1	35	...	12
April ...	27	...	66	1	22	2	17	1	4	2	24	1	44	...	15
May ...	30	1	31	1	11	6	14	1	10	...	12	...	91	...	14
June ...	14	2	30	2	11	8	33	2	7	...	10	...	33	1	10
July ...	2	...	8	...	2	2	6	...	3	2	2	...	12	...	2
August ...	3	1	...	1	...	5	5	1	2	...	1	...	5	...	1
September...	2	...	...	...	1	2	...	2	1	...	...	...	1	...	1
October ...	...	...	...	2	...	...	1	3	1	3	...	...	...	...	1
November ...	...	1	...	1	3	1	...	5	2	1	...	...	...	1	1
December ...	...	...	...	23	3	5	...	9	1	6	...	...	...	...	3
Totals...	120	6	216	31	94	37	108	29	49	16	91	2	234	2	73

### **Phthisis (Pulmonary Tuberculosis.)**

Voluntary notification of this disease was adopted by the Bolton Corporation on 7th July, 1902, and compulsory notification came into force under Section 52 of the Bolton Corporation Act, 1905. on 9th October, 1905.

The notifications up to date have been as follows:—

Year.	No. Notified.
1902 (part) ... ..	80
1903 ... ..	92
1904 ... ..	93
1905 (part compulsory from 9th October) ...	150
1906 (first complete year compulsory) ...	262
1907 ... ..	195
1908 ... ..	202

Inspection is made of the houses, information is obtained of the history of the disease, pamphlets are distributed, and cleansing and disinfection are done by the Corporation.

Sanatorium treatment is offered free to suitable cases who cannot afford to pay.

The occupations of those notified as suffering were as follows:—

Cotton Spinning ... ..	23
Cotton Weaving ... ..	11
Bleaching and Printing ... ..	5
Metals, Machines, and Implements ...	16
Coal Mining ... ..	2
Building Construction ... ..	13
Conveyance of Men and Goods ... ..	8
General Labourers ... ..	17
Food, Drink and Tobacco ... ..	6
Dress, etc. ... ..	2
Commercial or Business Clerks ... ..	5
Miscellaneous Trades ... ..	21
Domestic Service ... ..	4
Household Work ... ..	43
School Children ... ..	8
Teachers ... ..	1
No Occupation or Occupation Unknown ...	17



Only 21 cases out of 223 were notified before, i.e., 9.4 per cent.

During the period of notification, 1902—1908, in 24 houses two cases have occurred, in one house three cases, and in one house four cases.

Eight beds at Meathop Sanatorium are now maintained by the Sanitary Committee, and these have been fully occupied during the year.

The following are the summarised results of the treatment of those admitted and discharged from July, 1906, up to the end of 1908. Of these three were in the "A" stage of the disease, eight in the "B" stage, 26 in the "C" stage, and one in the "E" stage:—

			1906.	1907.	1908.	Total.
Total Admitted and Discharged	...	...	6	11	21	38
Number Cured	...	...	4	5	9	18
„ Improved	...	...	1	—	8	9
„ Slightly Improved	...	...	—	3	1	4
„ Not Improved	...	...	1	3	3	7

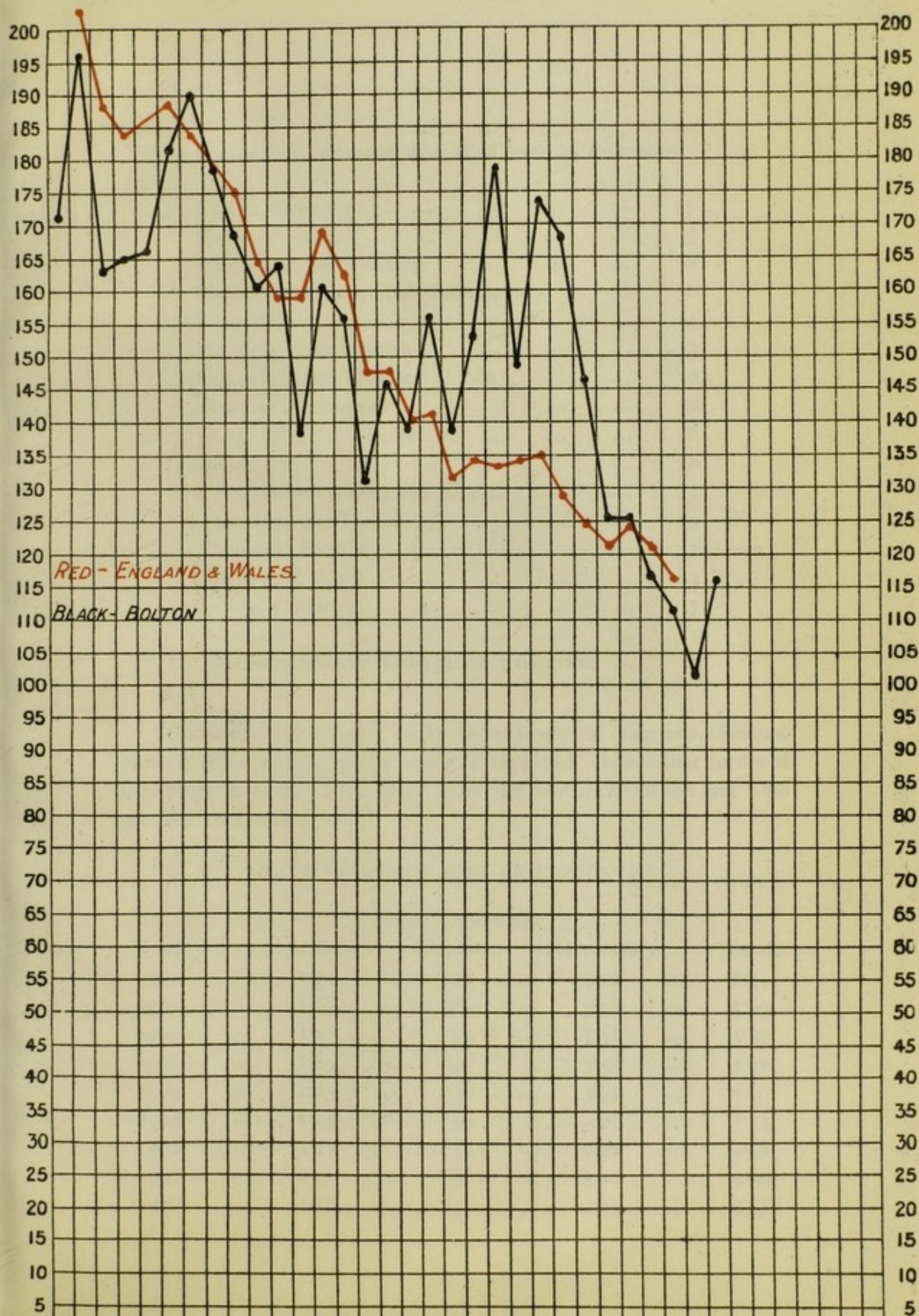
During 1908 the deaths registered from the disease numbered 216, the death-rate being 1.16 per 1000 inhabitants. In the year 1879 a death-rate of 1.96 was recorded. The death-rate during the year 1907 for England and Wales was 1.14.

The age and sex distribution are shewn here:—

SEX.	Total	AGES.							
		Under 5	5-15	15-25	25-35	35-45	45-55	55-65	65 and upwards
Male .....	135	1	4	14	27	34	37	16	2
Female ....	81	..	5	18	18	17	15	5	3
Totals ....	216	1	9	32	45	51	52	21	5

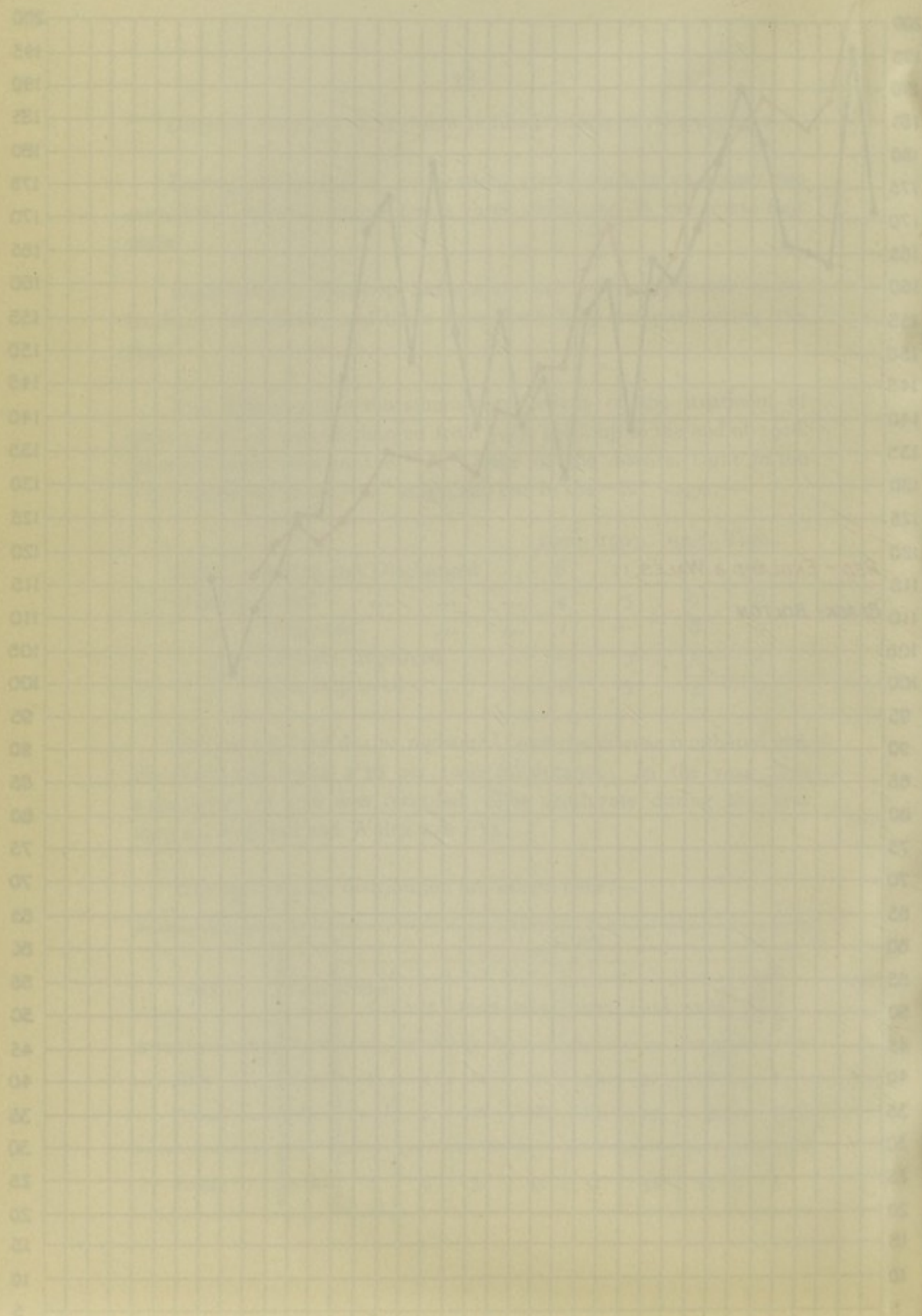


Phthisis.—Deaths per 100,000 inhabitants in previous years.





Philippine Islands—Deaths per 100,000 inhabitants in previous years.



The occupations of those who died were as follows:—

Cotton Spinning	...	...	...	...	25
Cotton Weaving	...	...	...	...	5
Bleaching and Printing	...	...	...	...	2
Metals, Machines, and Implements	...	...	...	...	30
Coal Mining	...	...	...	...	4
Building Construction	...	...	...	...	13
Conveyance of Men and Goods	...	...	...	...	12
General Labourers	...	...	...	...	22
Food, Drink and Tobacco	...	...	...	...	6
Dress, etc.	...	...	...	...	8
Commercial or Business Clerks	...	...	...	...	4
Miscellaneous Trades	...	...	...	...	15
Domestic Service	...	...	...	...	7
Household Work	...	...	...	...	43
School Children	...	...	...	...	7
Teachers	...	...	...	...	1
No Occupation or Occupation Unknown	...	...	...	...	12

It is possible that owing to the better means of diagnosis, diseases formerly diagnosed as phthisis are now classified under other forms of respiratory disease. I therefore give the statistics for the last nine years for comparison:—

#### DEATH-RATES PER 1000 OF POPULATION.

Year.	Other Tubercular				Total.
	Phthisis.	Diseases.	Respiratory.		
1900	1·74	·48	4·12	...	6·34
1901	1·68	·24	3·78	...	5·69
1902	1·47	·32	3·51	...	5·30
1903	1·25	·53	3·54	...	5·32
1904	1·25	·50	3·34	...	5·09
1905	1·17	·39	2·79	...	4·35
1906	1·11	·55	2·72	...	4·38
1907	1·01	·38	3·26	...	4·65
1908	1·16	·51	2·84	...	4·51



### **Bacteriological Examination.**

The following specimens were sent to the Public Health Laboratory, Owens College, Manchester, during the year for examination, and with the results as tabulated:—

Specimen.	Positive Result.	Negative Result.	Total.
Blood from Enteric Fever ...	21	35	56
Sputum of Phthisis ...	14	33	47
Swab from Diphtheria...	1	15	16
	<hr/> 36	<hr/> 83	<hr/> 119

### **Isolation of Infectious Diseases.**

481 cases were admitted to the Hospitals at Deane, but no cases were admitted to the Smallpox Hospital at Ainsworth.

They consisted of scarlet fever, 378; enteric fever, 93; diphtheria, 1; phthisis, 2; other diseases, 7. The number is below the average of the last ten years, which was 559.

The scarlet fever totalled 59 per cent. of those notified and the enteric 49 per cent. The death-rate amongst the scarlet fever cases 4.2 per cent., and amongst the enteric 16.1 per cent. There was also one death of another disease.

The report on the isolation of consumptive patients is given under a separate heading.

There was no change in the staff during the year which was as follows:—

1 Matron.	5 Wardmaids.
3 Sisters.	4 Laundresses.
3 Staff Nurses.	5 Servants.
1 Ambulance Nurse.	2 Gardeners.
8 Probationers.	2 Porters.

The number of scarlet fever cases admitted was the lowest for several years, and the work would have been easier but for the early autumnal increase—in August—of the number of enteric fever cases which necessitated the opening of an extra pavilion.

Miss Webb, the Matron, was restored to health after illness, and has been in active work during the year. There was only one severe case of illness amongst the staff, a probationary nurse who developed enteric fever after three weeks' work in the enteric pavilion. She made a complete recovery, and is now at work again.

The Hospital is a difficult one to manage owing to the fact that it is divided by a main road into two separate parts. Miss Webb has, however, kept up her reputation as a highly trained nurse and an excellent administrator, and deserves every credit for her economical management, the condition of the Hospitals, and the proficiency and devotion of her nursing and domestic staff.

The Hospitals are in a good state of repair, the bedding and linen in good condition, the sanitary fitments and drainage are up-to-date. The Sanitary Committee have on several occasions visited the Hospital and expressed their satisfaction at all they have seen.



TABLE XIV.

ADMISSIONS AND DEATHS OF SCARLET AND ENTERIC FEVER PATIENTS IN 1908.  
DIVIDED ACCORDING TO AGE AND SEX.

AGES.	SCARLET FEVER.						ENTERIC FEVER.						TOTAL.	
	Males.		Females.		Total.		Males.		Females.		Total.			
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.		
Under 5 ...	57	5	49	3	106	8	3	...	3	1	6	1	112	9
5 to 10 ...	93	1	97	5	190	6	2	...	3	...	5	...	195	6
10 to 20 ...	35	1	29	...	64	1	15	...	14	3	29	3	93	4
20 to 30 ...	5	...	9	...	14	...	17	3	9	2	26	5	40	5
30 to 40 ...	...	...	3	1	3	1	16	2	4	1	20	3	23	4
Above 40 ...	...	...	1	...	1	...	3	1	4	2	7	3	8	3
Totals...	190	7	188	9	378	16	56	6	37	9	93	15	471	31

**SECTION III.**

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*Sanitary Work.*

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SECTION III

Sanitary Work

**Abstract of Sanitary Work.**

## PLACES UNDER INSPECTION :—

Common Lodging-houses	...	...	...	...	...	63
Houses Let-in-Lodgings	...	...	...	...	...	53
Factories	...	...	...	...	...	315
Factory Chimneys	...	...	...	...	...	255
Workshops and Workplaces	...	...	...	...	...	618
Bakehouses	...	...	...	...	...	245
Public-houses	..	...	...	...	..	388
Offensive Trades	...	...	...	...	...	37
Slaughter-houses	...	...	...	...	...	53
Cowsheds	...	...	...	...	...	356
Milkshops	...	...	...	...	...	518
Public Sanitary Conveniences	...	...	...	...	...	18
Travelling Vans	...	...	...	...	...	111

## ABSTRACT OF WORK DONE DURING 1908 :—

Complaints from Public	...	...	...	...	...	235
Nuisances Reported	...	...	...	...	...	3778
Letters Written or Verbal Notices	...	...	...	...	...	2122
Informal Notices Issued	...	...	...	...	...	1426
Legal Notices Issued	...	...	...	...	...	552
Smoke Observations	...	...	...	...	...	607
Smoke Nuisances Reported	...	...	...	...	...	25
Smoke Notices Served	...	...	...	..	...	12
Smoke Prosecutions	...	...	...	...	...	4
Houses Fumigated	...	...	...	...	...	2259
Articles Disinfected	...	...	...	...	...	5687
Articles Destroyed	..	...	...	...	...	194
Houses, etc., Limewashed	...	...	...	...	...	414
Houses Demolished	...	...	...	...	...	124
Houses Closed	...	...	..	...	...	43
Houses Made Fit	...	...	...	...	...	43
Privy Ashpits Converted into Water Closets	...	...	...	...	...	743
Privy Ashpits Demolished	...	...	...	...	...	5
Drains Reconstructed	...	...	...	...	...	182
Houses in which Rubble Drains have been Abolished	...	...	...	...	...	85
Yards Completely Flagged	...	...	...	...	...	66
Samples of Food, etc., Purchased	...	...	...	...	...	401
Samples Adulterated	...	...	...	...	...	30
Adulteration Prosecutions	...	...	...	...	...	27



### **General Sanitary Work.**

There has been no special epidemic, but during the last three months of the year there was an increase in the number of cases of enteric fever.

The work in connection with the conversion of privy-middens and pails has been pushed forward and taken up considerable time, and more houses have been dealt with either in unhealthy areas or as unfit for habitation than in any previous year.

The staff of Inspectors has been fully occupied in these and other duties.

### **Sanitary Staff.**

The staff has been increased by one Assistant Medical Officer, two Health Visitors, and two School Nurses during the year, and now stands as under :—

- 1 Medical Officer of Health and School Medical Officer.
- 1 Assistant Medical Officer of Health and Assistant School Medical Officer.
- 1 Food and Meat Inspector.
- 6 Sanitary Inspectors.
- 4 Clerks.
- 2 Health Visitors.
- 2 School Nurses.
- 3 Ambulance Drivers and Disinfectors.
- 2 River and Urinal Cleaners.
- 11 Bath Officials.
- 5 Lavatory Attendants.
- 33 Hospital Staff (excluding Ainsworth Smallpox Hospital).

### **Housing of the Working Classes.**

During 1908, of the unfit class of house there were demolished 124, closed 43, and made fit 43, i.e., a total of 210: of these 83 were back-to-back and 55 single.

Back-to-back and single, or 1, 2 and 3-roomed tenements:—

Year.				No. of houses.	
1891	Census Returns	...	...	...	3051
1896	Sanitary Office Enumeration			...	2064
1901	Census Returns	...	...	...	2558
1903	Sanitary Office Enumeration			...	2185
1904	"	"	"	...	2067
1905	"	"	"	...	2004
1906	"	"	"	...	1969
1907	"	"	"	...	1896
1908	"	"	"	...	1756

The number of back-to-back and single houses in wards is given in Table II.

Table I. shows the work done in improving the working class houses during the last 35 years.

The amount expended, chiefly in demolitions, up to the end of 1908 was as follows:—

				£
1874-1885	...	...	...	6,775
1886-1895	...	...	...	1,696
1896-1908	...	...	...	22,533



TABLE I.

ABSTRACT OF HOUSES DEMOLISHED, CLOSED, MADE FIT OR  
IMPROVED, (1874 to 1908).

Date	Demolished	Closed	Made Fit	Improved	Total
1874—1885	...	...	...	...	293
1886—1895	...	...	...	...	245
1896	23	9	10	29	71
1897	85	14	24	21	144
1898	17	11	8	...	36
1899	22	7	3	...	32
1900	59	44	8	...	111
1901	42	22	79	...	143
1902	18	18	19	...	55
1903	85	20	19	42	166
1904	52	3	46	...	101
1905	39	9	10	10	68
1906	69	17	17	...	103
1907	43	65	24	...	132
1908	124	43	43	...	210
	678	282	310	102	1372

TABLE II.

ENUMERATION OF BACK-TO-BACK AND SINGLE HOUSE IN WARDS,  
1908.

Ward	Without Available Yard Space.		With Available Yard Space.		Total.
	Back-to-Back	Single	Back-to-Back	Single	
East ... ..	143	38	74	15	270
Derby ... ..	58	25	247	2	332
Bradford ... ..	83	43	181	26	333
Exchange ... ..	64	91	96	30	281
West ... ..	31	42	67	39	179
Church ... ..	2	8	97	4	111
Halliwell ... ..	...	6	20	46	72
North ... ..	6	1	...	3	10
Rumworth ... ..	6	...	...	4	10
Astley Bridge ... ..	...	3	14	29	46
Smithills ... ..	...	3	17	27	47
Darcy Lever-cum- Brightmet ... ..	...	...	14	4	18
Tonge ... ..	...	...	43	4	47
Total ... ..	393	260	870	233	1756



### **Closet Accommodation.**

During the year 1908, there were 743 conversions of old privy-middens or pails into water-closets, and five demolitions of the same type of closet in connection with insanitary property.

From 1899-1908 inclusive, 5484 closets have been converted at a cost to the Corporation of £10881, and replaced by water-closets, and 160 have been demolished.

In public-houses during the same period 104 water-closets were added for customers; in the Public Elementary Schools 94 have been provided, and 812 fresh-water closets and 110 pails in factories and workshops, where also 33 cesspools were abolished.

That is in ten years, a total of 6494 closets have been provided on the water-carriage system, in addition to those provided in new houses, viz., 5582.

The present number of privy-middens and pails as compared with those of 1898 are:—

District:	Privy-middens.			Pails.		
	1898.		1908.	1898.		1908.
Old Borough	... 12740	...	8396	... 6782	...	6536
Added Area	... 7581	...	6603	... 22	...	26
Whole Borough	... 20321	...	14999	... 6804	...	6562

In the Old Borough in 1898 the numbers were:—

Privy-middens and Pails	...	...	...	19522
Water-closets	...	...	...	7587

At present the numbers are:—

Privy-middens and Pails	...	...	...	14932
Water-closets	...	...	...	13894

Formerly in the Old Borough 75 per cent. were on the dry system and 25 per cent. on the water-carriage system, now 52 per cent. are on the dry system and 48 per cent. on the water-carriage system.

## CLOSETS IN PUBLIC-HOUSES.

Of the 388 public-houses in the Borough, 380 have two or more closets and eight have only one closet. The figures for 1907 were:— 282 with two or more closets, and 11 with one closet. Of these latter two have provided sufficient accommodation, and one public-house has been closed.

During the year 13 privy-middens were converted into fresh-water closets, and four fresh-water closets were added to make up an insufficiency, i.e., total 17 fresh-water closets.

Of the eight public-houses having only one closet:—

Seven are on the privy-midden system (one in the Old Borough and six in the Added Area).

One is on the fresh-water system.

The 380 public-houses having two or more closets are divided up as follows:—

262 have two or more water-closet.

77 have at least one water-closet and one privy-midden or pail.

41 have two closets on the dry system (privy-midden or pail.)

In other words, 68 per cent. are wholly on the water-carriage system, 89 per cent. have at least one water-closet, 11 per cent. are on the dry system.

During the last ten years (1899-1908), 293 fresh-water closets and 10 waste-water closets have been provided generally in place of insanitary privy-middens and pails in public-houses.



TABLE III.  
CLOSET ACCOMMODATION, 1908.

	No. of Closets Converted or Demolished, 1908.		Conversions in Old Houses and Additions in New Houses, 1908.				Present Closet Accommodation, 1908.				Per Cent. on	
	P.M.	Pail.	P.M.	Pail.	W.W.C.	F.W.C.	P.M.	Pail.	W.W.C.	F.W.C.	Dry System.	Water System.
Old Borough	534	36	1	...	657	133	8396	6536	10696	3198	52	48
Great Lever	45	...	...	...	125	9	1474	...	946	140	57	43
Tonge	38	...	...	...	77	8	1520	...	745	42	66	34
Astley Bridge	72	...	...	...	30	80	1131	7	479	314	59	41
Smithills	3	...	...	...	39	2	545	3	621	144	42	58
Hulton	19	...	...	...	74	2	625	...	524	38	52	48
Darcy Lever-cum- Broughton	1	...	1	...	6	1	657	...	161	55	75	25
Deane-cum-Lostock	...	...	...	...	15	1	420	4	188	73	62	38
Heaton	...	...	...	...	...	17	231	12	145	258	37	63
Extended Borough.	712	36	2	...	1023	253	14999	6562	14505	4262	53	47

### **Common Lodging Houses.**

There are now 63 registered houses in Bolton, a decrease of one. Two houses were closed and one other placed on the register during 1908. They are distributed thus:—

Ward.	Houses.	Rooms.	Beds.
Exchange ...	30	153	574
East ...	30	154	830
Church ...	2	14	58
Derby ...	1	10	43

All notices from the Sanitary Inspectors have been complied with, and there has been no contravention of the bye-laws.

Accommodation for the sexes:—

Description.	Houses.	Males.	Females.	Couples.
Males only ...	38	1079	—	—
Couples only ...	2	—	—	9
Females and Couples ...	3	—	23	8
Males and Couples ...	8	113	—	21
Males and Females ...	1	3	5	—
Males, Females and Couples	11	144	52	48
	63	1339	80	86

### **Houses Let-in-Lodgings.**

During the year 1908, twelve houses have been placed on the register, and 20 houses closed, thus making a total of 53 registered houses in the Borough. They are distributed in the wards thus:—

Exchange ...	45
East ...	8

The rooms let by these houses are as follows:—

1 house lets	8 rooms.
7 houses let	6 „
3 „	5 „
4 „	4 „
16 „	3 „
15 „	2 „
7 „	1 „



### **Canal Boats.**

No boats that were used as dwellings, came within the district of this Authority during the year 1908.

### **Vans, Tents, &c.**

10 vans situated in Morgan Street, Astley Bridge, were inspected in February, 26 vans on the Wholesale Market, Bridge Street and Smith's Yard, and 16 at Bridgeman Street were inspected at Whitsuntide; 45 vans on the Wholesale Market and Victoria Square, and 14 at Morgan Street during Christmas and New Year.

### **Factories.**

14 complaints were received from Factory Inspectors during 1908 of which 7 referred to insufficient and unsuitable closet accommodation, and 7 to insufficient means of escape in case of fire.

During the year 67 fresh-water closets were provided in 16 factories in place of old and insanitary closets or as additions. In the ten years 1899-1908, there have been provided 812 fresh-water closets and 110 pails.

In the 315 factories the closet accommodation for females consists of 881 fresh-water closets, 64 pails, 27 privy-middens, and 18 privies. That for males consists of 1277 fresh-water closets, 132 pails, 53 privy-middens, and 29 privies.

Comparison of closet accommodation in factories in 1900 with that of 1908 :—

Year.	No. of Factories.	F.W.C.	Pails.	P.M. Type.	Cesspools.
1900 ...	260 ...	1525 ...	194 ...	298 ...	33
1908 ...	315 ...	2158 ...	198 ...	127 ...	0

TABLE IV.

## CLOSET ACCOMMODATION IN FACTORIES, 1908.

	DISTRICTS						Total
	1	2	3	4	5	6	
Factories ... ..	33	50	61	39	81	51	315
No. of Factories in accordance with the Sanitary Accommodation Order ... ..	30	28	39	31	37	32	197
No. of Factories not in accordance with the Sanitary Accommodation Order but satisfactory ... ..	...	17	10	5	29	13	74
No. of Factories with unsatisfactory closets ...	3	5	12	3	15	6	44
No. of Factories with unsatisfactory closets but where no sewer is available ... ..	...	4	4	1	1	...	10
No. of Factories with F.W.C. ... ..	32	38	32	36	62	42	242
„ „ „ W.W.C. ... ..	...	...	2	...	6	1	9
„ „ „ Pails ... ..	3	5	18	9	9	9	53
„ „ „ P.M. ... ..	1	5	7	2	5	1	21
„ „ „ Privies ... ..	...	...	6	1	...	...	7
„ „ „ Cesspools ... ..	...	...	...	...	...	...	...
No. of Fresh-water closets ... ..	142	422	364	371	538	312	2149
„ waste-water closets ... ..	...	...	2	...	6	1	9
„ pails ... ..	8	24	98	41	15	10	198
„ privy-middens ... ..	1	55	9	3	10	2	80
„ privies ... ..	...	...	31	16	...	...	47
„ cesspools ... ..	...	...	...	...	...	...	...



### **Workshops and Workplaces.**

4 complaints were received from Factory Inspectors during 1908, referring to cleansing and limewashing. The workshops, including bakehouses and laundries, number 863, the employees, 1897 males, and 1389 females.

The number and character of trades in workshops are :—

Trade.	No. in Trade.	Trade.	No. in Trade.
Bakers ... ..	245	Cycle Makers ... ..	5
Boot and Clog Makers ... ..	112	Brush Makers ... ..	5
Dressmakers ... ..	98	Shirt Makers, etc. ... ..	5
Millinery, etc. ... ..	61	Chemists ... ..	4
Tailors, etc. ... ..	47	Athletic Goods ... ..	4
Joiners, etc. ... ..	25	Rag Sorters ... ..	4
Cabinet Makers ... ..	20	Leather Dealers ... ..	3
Tinplate Workers ... ..	19	Bedding ... ..	3
Ice Cream Manufacturers ... ..	16	Umbrella Makers ... ..	3
Confectioners ... ..	14	Tarpaulin Makers ... ..	3
Plumbers ... ..	14	Tripe Works ... ..	3
Saddlers ... ..	11	Skip Makers... ..	3
Drapers ... ..	10	Window Blind Makers ... ..	2
General Smiths ... ..	9	Clog Iron Makers ... ..	2
Stocking Knitters ... ..	9	Coach Builders ... ..	2
Watch and Clock Makers ... ..	8	Picture Framers ... ..	2
Laundries ... ..	7	Masons ... ..	2
Wheelwrights ... ..	7	Painters ... ..	2
Coopers, etc. ... ..	7	Sign Writers... ..	2
Ironmongers ... ..	7	Photographers ... ..	2
Horse-shoeing ... ..	6	Paper Dealers ... ..	2
Chemical Works ... ..	6	Pickle Makers ... ..	2
Cotton-waste Warehouses ... ..	6	Bookbinders ... ..	2
Printers ... ..	5	Brass Founders & Finishers ... ..	1
		Miscellaneous ... ..	26

### **Bakehouses.**

There are at present on the register 245 bakehouses, 12 new ones, generally in connection with small shops, having been added during the year, and 3 closed.

Of these 25 are underground, and certified in accordance with Section 99 of the Factories and Workshops Act, 1901.

TABLE V.  
1.—INSPECTION.

Premises	Number of		
	Inspections	Written Notices	Prosecutions
Factories (including Factory Laundries) ...	406	54	.....
Workshops (including Workshop Laundries) ...	948	32	.....
Workplaces (other than Outworkers' premises included in Part 3 of this Report) ...	117	5	.....
Total ... ..	1471	91	.....

## 2.—DEFECTS FOUND.

Particulars	Number of Defects			Number of Prosecutions
	Found	Remedied	Referred to H. M. Inspector	
<i>Nuisances under the Public Health Acts :—</i>				
Want of cleanliness ... ..	70	68	...	...
Want of ventilation ... ..	7	7	...	...
Overcrowding ... ..	1	1	...	...
Want of drainage of floors ... ..	2	2	...	...
Other nuisances ... ..	46	43	..	...
Sanitary accommodation {	insufficient ...	28	21	...
	unsuitable or defective ...	29	23	...
	not separate ...	11	10	...
	for sexes ...			
<i>Offences under the Factory and Workshop Act :—</i>				
Illegal occupation of underground bake-house (s. 101) ... ..	...	...	...	...
Breach of special sanitary requirements for bakehouses (ss. 97 to 100) ... ..	...	...	...	...
Other offences (excluding offences relating to outwork which are included in part 3 of this report) ... ..	...	...	...	...
Total ... ..	194	175	...	...



TABLE V.—(Continued.)

## 3.—HOME WORK.

<i>List of Outworkers (s. 107):—</i>	Number of	
	Lists	Outworkers
List received twice in the year ... ..	26	272
Addresses of outworkers {	forwarded to other Authorities	11
	received from other Authorities	2
Inspections of Outworkers' Premises ... ..	164	
<i>Homework in unwholesome or infected premises:—</i>	<i>Wearing Apparel</i>	<i>Other</i>
Notices prohibiting homework in unwholesome premises (s. 108.) ... ..	...	...
Cases of infectious disease notified in homeworkers' premises ... ..	...	...
Orders prohibiting homework in infected premises (s. 110)	...	...

## 4.—REGISTERED WORKSHOPS.

<i>Workshops on the Register (s. 131) at the end of the year:—</i>	Number
<div>Important clause of workshops, such as workshop bakehouses may be enumerated here {</div> <div>Bakehouses, including underground ... ..</div> <div>Other Workshops ... ..</div>	<div>245</div> <div>618</div>
Total number of Workshops on Register ... ..	863

## 5.—OTHER MATTERS.

Class	Number
<i>Matters notified to H.M. Inspector of Factories:—</i>	
Failure to affix Abstract of the Factory and Workshop Act, (s. 133)... ..	2
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (s. 5) ... {	Notified by H.M. Inspector ...
	Reports (of action taken) sent to H.M. Inspector ...
Other (Fire Escapes) ... ..	7
<i>Underground Bakehouses (s. 101):—</i>	
Certificates granted under the year ... ..	1
In use at the end of the year ... ..	25

TABLE VI.

BAKEHOUSES IN WARDS, 1908.

Ward					Total	Ground Level	Underground
West	...	...	...	...	34	34	...
Halliwell	...	...	...	...	31	29	2
Bradford	...	...	...	...	29	24	5
Derby	...	...	...	...	31	27	4
East	...	...	...	...	17	14	3
Church	...	...	...	...	16	12	4
Rumworth	...	...	...	...	9	9	...
North	...	...	...	...	10	9	1
Exchange	...	...	...	...	17	12	5
Old Borough					194	170	24
Great Lever	...	...	...	...	18	18	...
Tonge	...	...	...	...	10	10	...
Astley Bridge	...	...	...	...	7	7	...
Smithills	...	...	...	...	3	2	1
Hulton	...	...	...	...	10	10	...
Darcy Lever-cum-Breightmet	...	...	...	...	...	...	...
Deane-cum-Lostock	...	...	...	...	3	3	...
Heaton	...	...	...	...	...	...	...
Added Area					51	50	1
Extended Borough					245	220	25



### **Smoke Abatement.**

The summary for the year 1908 is as follows:—Observations 607, nuisances reported 25, notices served to abate 12, prosecutions 4, convictions 4, fines totalling £5, making an average of 25/- per case.

23 out of 255 firms are on the "black list." One firm was prosecuted and also served with notice to abate, three firms were prosecuted only, one firm was cautioned and also served with notice to abate, ten firms were served with notice to abate only, and eight firms were cautioned.

An inspection of the table in which the chimneys are arranged in classes shews that 128, *i.e.*, half the factory chimneys in the Borough, emit black smoke in less quantities than 1 minute in the half-hour, and there ought to be no difficulty in getting all the others to behave in the same way, especially as 54 of these have no difficulty in keeping their chimneys practically smokeless.

TABLE VII.

SUMMARY OF SMOKE OBSERVATIONS, 1908.

Month			Observations	Nuisances Reported	Warnings given	Notices Served	Prosecutions	Convictions	Amount of Fines
January	...	...	48	2	1	1	...	...	...
February	...	...	52	2	...	1	1	1	40/- and costs
March...	...	...	54	3	2	1	...	...	...
April	...	...	57	2	1	...	1	1	40/- and costs
May	...	...	56	5	2	2	1	1	Costs
June	...	...	52	7	1	5	1	1	20/- and costs
July	...	...	49	1	...	1	...	...	...
August	...	...	46	1	1	...	...	...	...
September	...	...	48	1	1	...	...	...	...
October	...	...	33	1	...	1	...	...	...
November	...	...	55	...	...	...	...	...	...
December	...	...	57	...	...	...	...	...	...
Total			607	25	9	12	4	4	£5 and costs



TABLE VIII.  
CHIMNEYS UNDER OBSERVATION, ARRANGED IN CLASSES, 1908.

Class		Districts						Total
		1	2	3	4	5	6	
1	No. of Chimneys that have emitted practically no black smoke in $\frac{1}{2}$ hour's observation ... ..	12	8	10	6	15	3	54
2	No. of Chimneys that have emitted under 1 minute of black smoke in $\frac{1}{2}$ hour's observation ... ..	7	12	13	18	15	9	74
3	No. of Chimneys that have emitted 1 minute but less than 2 minutes of black smoke in $\frac{1}{2}$ hour's observation ... ..	11	17	22	8	28	18	104
4	No. of Chimneys that have emitted 2 or more minutes of black smoke in $\frac{1}{2}$ hour's observation ... ..	1	4	5	1	6	6	23
	TOTAL ... ..	31	41	50	33	64	36	255

TABLE IX.

PRACTICALLY SMOKELESS CHIMNEYS.

No.	Firm.	Situation.	Boilers.	Apparatus.
1	R. H. ... ..	Nelson Square ...	1	Booty's Patent
2	M. S.... ... ..	Deansgate ...	1	No Apparatus
3	E. A.... ... ..	Deansgate ...	1	No Apparatus
4	W. G. & Sons ... ..	Central Street ...	1	No Apparatus
5	E. W. ... ..	Oxford Street ...	1	No Apparatus
6	R. P.... ... ..	Newport Street ...	1	No Apparatus
7	M. A. C. ... ..	Newport Street ...	1	No Apparatus
8	C. & W., Ltd., No. 4 ... ..	Gilnow ... ..	4	Cass's Cokers
9	B. C.... ... ..	Knowsley Street	1	No Apparatus
10	M. S. Co., Ltd. ... ..	Gilnow ... ..	2	Bennis's Stoker on One
11	J. W. M., No. 1 ... ..	Gilnow ... ..	1	No Apparatus
12	J. W. M., No. 2 ... ..	Gilnow ... ..	1	No Apparatus
13	M. S. Co., Ltd. ... ..	Halliwell Road ...	2	Automatic Synd. Co's Stokers
14	B. & J. Ltd., & K., Ltd. ... ..	Egyptian Street ...	5	Triumph and Cass's Stokers
15	B. & J., Ltd. ... ..	Higher Bridge St.	3	Cass's Cokers
16	H. S. Co., Ltd., Nos. 1 & 2 ... ..	Chorley Old Road	6	Bennis's Stokers
17	K., Ltd. ... ..	Vernon Street ...	2	Hodgkinson's & Triumph St.
18	J. C. ... ..	Gray Street ...	1	No Apparatus
19	W. E. & S., Ltd., ... ..	Brownlow Fold ...	2	No Apparatus
20	W. H. & Sons ... ..	Doffcocker ...	1	Triumph St. & Sirocco Fan
21	B. & J., Ltd., No. 1 ... ..	Prospect Street ...	1	Cass's Cokers
22	B. & J., Ltd., No. 2 ... ..	Prospect Street ...	3	Cass's Cokers
23	B. & J., Ltd., No. 3 ... ..	Prospect Street ...	3	Cass's Cokers
24	W. M. & Co., Ltd. (Spinning) ... ..	Regan Street ...	2	Proctor's Stokers
25	W. M. & Co., Ltd., (W'ving) No. 1 ... ..	Regan Street ...	2	Proctor's Stokers
26	W. M. & Co., Ltd., (W'ving) No. 2 ... ..	Regan Street ...	2	Proctor's Stokers
27	E. & T., Ltd. ... ..	Waters Meeting ...	10	Hodgkinson's Stokers
28	G. & S. Ltd. ... ..	Astley Bridge ...	2	Bennis's Stokers



TABLE IX.—Continued.

## PRACTICALLY SMOKELESS CHIMNEYS.

No.	Firm.	Situation.	Boilers.	Apparatus.
29	J. C. & Bro., Ltd. ... ..	Eagley Mills ... ..	3	British Syndicate's Patent
30	A. H. & S. ... ..	Simpson Street ... ..	1	No Apparatus
31	M. H. S. Co., No. ... ..	Mill Hill ... ..	3	Hodgkinson's Stokers
32	M. H. S. Co., No. 2 ... ..	Mill Hill ... ..	3	Hodgkinson's Stokers
33	J. H. & Co.... ..	Brightmet Street ... ..	1	Own make of Stoker
34	W. G. & S., Ltd. ... ..	Lever Bridge ... ..	2	Triumph Stoker
35	G. T. ... ..	All Saints Street ... ..	1	No Apparatus
36	W. H. & S. ... ..	Burnden ... ..	1	No Apparatus
37	C. & W., Ltd., No. 1 ... ..	Lever Street ... ..	3	Vickers' Cokers
38	C. & W., Ltd., No. 2 ... ..	Lever Street ... ..	3	Vickers' Cokers
39	C. & W., Ltd., No. 3 ... ..	Lever Street ... ..	4	Cass's Cokers
40	C. & W., Ltd., No. 5 ... ..	Roxalina Street ... ..	4	Cass's Cokers
41	J. H. & S., No. 2 ... ..	Rishton Lane ... ..	2	Cass's Cokers
42	E. & C. ... ..	Slaterfield ... ..	1	No Apparatus
43	P. C., Ltd., ... ..	Lever Street ... ..	4	Bennis's Stokers
44	J. J. & Sons, Ltd. ... ..	Weston Street ... ..	2	Cass's Cokers
45	H. H. & Son ... ..	Back Derby Street ... ..	1	Specially Constructed Boiler
46	W. & McK. ... ..	Weston Street ... ..	2	Triumph Stokers
47	J. F. ... ..	Parkfield Road ... ..	1 Kiln.	None
48	J. B. & Sons ... ..	Pilkington Street ... ..	1	No Apparatus
49	B. C. B. ... ..	High Street ... ..	2	British Smoke Prev. Appart's
50	B. C. S. Wks. ... ..	Hacken ... ..	1	No Apparatus
51	J. M. & Sons, Ltd., No. 4 ... ..	St. Mark Street ... ..	4	Triumph Stoker
52	D. S. S. Co. ... ..	Thomas Street ... ..	2	Cass's Cokers
53	H. P. & Co.... ..	Wigan Road ... ..	2	Bennis's Stokers
54	J. M. & Co. ... ..	Deane Road ... ..	1	Bennis's Stokers

**Cowsheds, Dairies and Milkshops.**

There are now 163 occupiers of 356 cowsheds. During the year six cowsheds were added and six closed. Of the 7 cowsheds reported as unsatisfactory last year one has been made satisfactory, and one closed, and there still remain five to be dealt with.

The registered milk sellers number 518, and are distributed in the wards as shewn in the table.

**Offensive Trades and Slaughterhouses.**

One chemical works, one hide and skin depot, and one slaughterhouse were given up during 1908, and these are the only changes since the last report.



TABLE X.

REGISTERED COWKEEPERS AND DAIRYMEN, AND MILKSELLERS,  
1908.

Wards					Cowkeepers and Dairymen	Milksellers
West	...	...	...	...	1	92
Bradford	...	...	...	...	...	101
Derby	...	...	...	...	1	78
Halliwell	...	...	...	...	1	61
East	...	...	...	...	...	51
Church	...	...	...	...	...	22
Rumworth	...	...	...	...	4	22
North	...	...	...	...	...	23
Exchange	...	...	...	...	...	37
Great Lever	...	...	...	...	7	9
Tonge	...	...	...	...	7	6
Astley Bridge	...	...	...	...	21	3
Smithills	...	...	...	...	20	6
Hulton	...	...	...	...	27	2
Darcy Lever-cum-Breightmet	...	...	...	...	16	2
Deane-cum-Lostock	...	...	...	...	36	2
Heaton	...	...	...	...	22	1
Total	...	...	...	...	163	518

TABLE XI.

PRESENT CONDITION OF COWSHEDS, 1908.

	Districts						Total
	1	2	3	4	5	6	
No. of Cowkeepers ...	43	21	36	10	33	20	163
No. of Farms with good Sanitary Cowsheds...	40	15	30	7	26	11	129
No. of Farms with fair Sanitary Cowsheds ...	3	5	5	2	6	8	29
No. of Farms with Insanitary Cowsheds ...	...	1	1	1	1	1	5



TABLE XII.

## OFFENSIVE TRADES AND SLAUGHTERHOUSES.

Trade	Added Area	West	Halliwell	Bradford	Derby	East	Church	North	Rumworth	Exchange	Total
Fellmonger, Tanner and Leather Dresser ...	...	1	...	1	...	...	...	...	...	...	2
Fellmonger and Tanner ...	...	...	...	...	...	1	...	...	...	...	1
Leather Dresser and Roller ...	...	...	...	...	...	...	1	...	...	1	2
Hide and Skin Depot ...	...	...	...	...	...	...	...	...	...	1	1
Knackers' Yard ...	...	...	...	...	...	...	1	...	...	...	1
Blood Boiler ...	...	...	...	1	...	...	1	...	...	...	2
Tallow Melter ...	...	...	...	...	...	...	...	...	...	1	1
Chemical Works ...	...	1	...	...	...	1	3	...	...	...	5
Tar and Oil Distillers ...	...	...	...	...	...	...	2	...	...	...	2
Muriatic Acid Works ...	...	1	...	...	...	...	...	...	...	...	1
Tar and Sulphate of Ammonia Works... ..	...	1	...	...	...	...	...	...	...	...	1
Tripe Boiler ...	...	1	...	3	1	2	2	...	...	1	10
Brick Works ...	...	5	...	1	...	...	...	...	1	...	7
Soap Works ...	...	1	...	...	...	...	...	...	...	...	1
Slaughterhouses ...	...	9	4	3	22	2	3	3	1	1	53
Total ...	19	5	4	27	3	7	13	1	2	9	90

## Meat and Food Inspection.

The Acts dealing with this branch of sanitary work are :—

The Public Health Act, 1875, Sec. 116 to 119.

The Public Health Act Amendment Act, 1890, Sec. 28.

The Public Health (Regulations as to Food) Act, 1907.

The Bolton Corporation Act, 1872, Sec. 102.

The Food and Drugs Act, 1875 to 1907.

Contagious Diseases (Animals) Act, 1894 to 1903.

During the past year the various animals, carcasses, &c., passing through the public abattoirs, private slaughter-houses, markets and railway sidings have been carefully examined both before and after slaughter, and generally speaking the meat retailed in the Borough has been of a high standard.

A circular issued during the year to farmers, cattle dealers and butchers containing regulations with regard to the slaughter and disposal of animals meeting with accidents or diseased, has had a very good effect in increasing the number of animals slaughtered under direct inspection at the Public Abattoirs.

### GENERAL INSPECTION.

Slaughter-houses and Shops	...	...	2127
Beasts...	...	...	6946
Sheep and Lambs	...	...	25396
Swine	...	...	11783
Calves	...	...	1358
Store Cattle	...	...	3018
Farms...	...	...	182

### CARCASSES FOUND TO BE AFFECTED WITH DISEASE.

No.	Disease.	Cows.	Bulls	Heifers.	Bullocks	Calves.	Sheep.	Pigs.	Carcases destroyed.	Parts of organs.
91	Tuberculosis	78	3	7	2	—	—	1	51	40
9	Pneumonia ...	9	—	—	—	—	—	—	9	—
4	Dropsy ...	3	—	1	—	—	—	—	4	—
3	Traumatic	2	—	—	1	—	—	—	—	3
17	Inflammat'n	2	—	—	—	3	5	7	17	—
	Moribund ..	2	—	—	—	3	5	7	17	—
124		94	3	8	3	3	5	8	81	43



## OTHER FOOD DESTROYED.—

Fish	...	...	...	...	20 tons, and 20 bags of shell fish.
Poultry	...	...	...	...	121
Sheep Feet	...	...	...	...	2000
Rabbits	...	...	...	...	850
Fruit	...	...	...	...	12 cwt.
Vegetables	...	...	...	...	4 tons 10 cwts.

Regular and systematic inspections have been made during the year of the cattle sidings, meat and fish markets, fairs and all premises from which food is retailed.

There has been no seizure of food during the year.

The farmers, butchers and dealers show a commendable willingness not only to surrender for destruction unsound food, but also to make known at this office that they have such on the premises.

The want has been felt for some considerable time for a place under our control where suspected animals from farms and elsewhere, could be taken and slaughtered, and where unsound food of all kinds could be stored, and arrangements have been made with the Market Committee of the Corporation for that purpose.

## CONTAGIOUS DISEASES ANIMALS ACTS, 1894-1908.

Orders and Regulations of the Board of Agriculture under the above Acts during 1908.

SWINE.—The Swine Fever (Movement of Ireland) Order of 1904 continues in force in the Borough, and the movement of swine for slaughter has been, during the year, carried out under licences issued from this office.

Three new orders dealing with the movement of swine have come into operation, viz.:—

1. Swine Fever (Regulation of Movement) Order of 1908.
2. Swine Fever Order of 1908.
3. An Order Amending the Swine Fever (Regulation of Movement) Order of 1908.

The first order deals with the licensing of fat and store wines from infected areas into the Borough.

The second deals with the notification of swine affected or suspected of being affected with swine fever, and the methods to be adopted for dealing with the swine and the premises.

The third order, which applies only to this Borough, has been issued by the Board of Agriculture, on the application of the Medical Officer of Health, and modifies the Movement Order of 1908 with regard to the movement of swine through the public streets. The Borough has been free during the year from swine fever.

SHEEP.—An order dealing with the dipping of sheep (Sheep Dipping (England) Order of 1908), came into force in April of this year. The number of sheep in this Borough is not large, but on three occasions during the year the inspector has been in attendance at the dipping of sheep and the requirements of the order have been carried out.

CATTLE.—There has been no outbreak of contagious disease affecting cattle.



HORSES, &c.—The Glanders or Farcy Order of 1907 came into operation on January 1st of this year, it requiring notice to be given by the owner of any horse, ass, or mule affected or suspected of being affected with glanders and farcy.

No case has occurred during the year.

The Lancashire (Parasitic Mange) Order of 1908, which is still in force, requires the notification to the Medical Officer of Health of any horse, ass or mule affected with or suspected of being affected with parasitic mange, and provides for the isolation of the animals and disinfecting of the premises. Six cases of psoroptic mange have occurred during the year, and the animals and premises have been dealt with in accordance with the requirements of the Board of Agriculture, and the disease has been confined to the animals affected.

One farmer was summoned for failing to report a case of mange and fined £1 os. 6d.

GENERAL.—THE FERTILISERS AND FEEDING STUFFS ACT, 1908.—Under this Act, the Council of a County Borough may appoint an agricultural analyst and official samplers.

The County Council and Council of a County Borough may join in the appointment of such officials.

Any person who desires to have a sample analysed, the local authority must have the sample analysed in accordance with the regulations issued by the Board of Agriculture.

The Sanitary Committee considered the provisions of this Act and have appointed an analyst and official sampler.

No application has been made by any person to have a sample analysed since the Act came into operation.

Two other orders came into force, viz. :—

1. Hay and Straw (Movement from Great Britain to Ireland) Order of 1908.
2. Foreign Hay and Straw Order of 1908.

## PUBLIC ANALYST'S REPORT AND SUMMARY, 1908.

I have to report that during the year 1908 I have had submitted to me for analysis, under the Sale of Food and Drugs Acts and Margarine Acts, 401 samples. These samples were made up as follows :—

Milk	...	...	199	samples.
Butter		...	74	"
Margarine		...	30	"
Coffee		...	26	"
Confectionery		...	22	"
Spirits		...	14	"
Barley		...	13	"
Pepper		...	6	"
Cheese		...	4	"
Lard		...	8	"
Cocoa		...	5	"

As in all previous years, milk, by virtue of its supreme importance, heads the list, the number of samples of this article being nearly half the total.

Of the 30 adulterated samples 23 were milk.

Some interesting prosecutions were instituted early in the year in regard to various vegetable butters. These prosecutions were almost, if not quite, the first in the country. They were successful and all such material is now labelled margarine.

Barley or pearl barley gained some notoriety in various parts of the country as being adulterated with talc or French chalk. Thirteen samples were submitted to me by your inspector but no such adulteration occurred in any sample.

None of the remaining classes call for any special remark except that, judging by the year 1908, adulteration of butter by common fats is becoming rare.

No case occurred in the year under review.



The fines inflicted amounted to £34 10s. od. and costs. One was of £5, four were of £3, five were of £2, and six were of £1 and costs.

The system of unofficial or informal samples has proved useful, giving information which has led to detection and conviction afterwards. It could be beneficially extended.

On the following page I give a list of the articles adulterated, with the fine imposed in each case.

WALTER RATCLIFFE, F.C.S.,

Public Analyst.

## SUMMARY OF ADULTERATED SAMPLES.

No. of Sample.	Description.	Fine.
51 ...	Butnut ...	Dismissed.
52 ...	Table Nutter ...	£5 and costs.
53 ...	Nut Cream Butter ...	Withdrawn on payment of costs.
54 ...	Butnut ...	do.
55 ...	Butnut ...	do.
59 ...	Table Nutter ...	do.
124 ...	Margarine ...	£1 and costs.
155 ...	Milk ...	Dismissed.
156 ...	Milk ...	£1 and £6 5s. 6d. costs.
181 ...	Milk ...	Withdrawn on payment of costs.
182 ...	Milk ...	do.
194 ...	Milk ...	£2 and costs.
195 ...	Skimmed Milk ...	£2 and costs.
196 ...	Milk ...	£3 and costs.
197 ...	Milk ...	£3 and costs.
198 ...	Milk ...	£2 and costs.
199 ...	Milk ...	£3 and costs.
200 ...	Milk ...	£3 and costs.
203 ...	Skimmed Milk ...	£2 and costs.
204 ...	Milk ...	£2 and costs.
209 ...	Milk ...	10/- and costs.
216 ...	Milk ...	10/- and costs.
220 ...	Milk ...	10/- and costs.
302 ...	Milk ...	£1 and costs.
303 ...	Milk ...	£1 and costs.
312 ...	Milk ...	£1 and costs.
313 ...	Milk ...	£1 and costs.
361 ...	Milk ...	Unofficial.
379 ...	Milk ...	Unofficial.
380 ...	Milk ...	Unofficial.



TABLE XIII.  
HIGH STREET BATHS—NUMBER AND CLASS OF BATHERS, 1908.

Month.	No. of Weeks	Swimming Baths.		Slipper Baths.		Needle Baths.	Vapour Baths.	Season Ticket Holders.	School Child- ren's Holiday Tickets.	School Children (Free).	Police. (Free).	Total	Corresponding period last year.
		at 4d.	at 2d.	at 6d.	at 4d.								
January ...	5	346	732	66	97	15	34	119	19	...	...	1428	1294
February ...	4	388	992	64	86	15	44	155	...	...	...	1744	1301
March ...	4	474	1437	69	108	20	35	141	3	...	...	2287	2008
April ...	5	765	2712	140	184	28	51	160	53	...	...	4093	3699
May ...	4	1074	3817	136	161	31	39	163	9	2835	16	8281	6093
June ...	4	1423	4184	147	221	34	42	172	193	3096	44	9556	7965
July ...	5	2145	5545	240	346	129	80	204	1441	849	28	11007	12300
August ...	4	1578	4561	163	199	58	38	175	172	2848	26	9818	7842
September ...	5	973	4008	132	160	22	57	225	148	1085	31	6841	5725
October ...	3	597	2357	81	96	21	35	88	...	231	13	3519	2334
November ...	5	460	1838	80	89	22	30	101	9	...	41	2670	2754
December ...	5	312	1195	82	68	13	27	165	...	...	35	1897	1916
Total ...	53	10535	33378	1400	1815	408	512	1868	2047	10944	234	63141	55231

TABLE XIV.

TURKISH BATHS.—NUMBER AND CLASS OF BATHERS, 1908.

Month	No. of Weeks	Massage	Books of Tickets		Cash Tickets		Slipper Baths		Medicated Baths	Total	Corresponding period last year
			1st Class	2nd Class	1st Class	2nd Class	1st Class	2nd Class			
January ...	5	45	28	38	122	112	12	20	5	382	372
February .	4	31	32	24	142	101	13	17	3	363	349
March ...	4	30	32	26	115	120	12	10	4	349	247
April ...	5	15	58	18	150	155	8	14	2	420	426
May ...	4	10	49	21	105	108	7	9	3	312	368
June ...	4	15	39	19	97	117	11	14	5	317	287
July ...	5	50	42	30	144	149	18	13	13	459	398
August ...	4	12	34	23	90	94	10	10	4	277	317
September	5	14	42	26	119	131	5	12	3	352	375
October ...	3	27	30	13	94	83	7	9	4	267	243
November.	5	54	64	35	139	130	18	12	5	457	383
December.	5	55	54	33	99	110	8	11	9	379	386
Total ...	53	358	504	306	1416	1410	129	151	60	4334	4151



## Scavenging Operations, 1908.

### OLD BOROUGH.

#### Collection of Refuse ;—

52,914 $\frac{3}{4}$	tons from the ashpits and closets.
10,869 $\frac{1}{2}$	„ „ streets and markets.
1,131	„ „ abattoirs.
1,250 $\frac{1}{4}$	„ „ lock-up shops.
599 $\frac{1}{4}$	„ „ Falcon and Wellington Yard stables.
3,418 $\frac{3}{4}$	„ of private refuse disposed of at the depots.

70,183 $\frac{1}{2}$  tons.

#### Disposal of Refuse :—

18,350 $\frac{3}{4}$	tons sold as manure to farmers.
5,733 $\frac{1}{2}$	„ tipped away
1,036 $\frac{1}{2}$	„ incinerated at Hacken Sewage Works.
42,841	„ incinerated at Wellington Yard and Back-o'-th'-Bank.
2,221 $\frac{3}{4}$	„ surplus moisture drained into sewers.

70,183 $\frac{1}{2}$  tons.

#### Expenditure :—

	£	s.	d.	£	s.	d.
Cost of collection and cartage ...	12062	10	2			
„ incineration ...	1864	19	7			
„ mortar making ...	2744	12	7			
„ manure grinding ...	561	18	6			
„ wagon loading ...	750	5	2			
				17984	6	0

#### Income :—

Manure sales, after paying £1751 1s. 1d. for railway carriage ...	1062	14	10			
Net value of mortar sales ...	3909	17	1			
				4972	11	11
Net cost ...				13011	14	1

#### Snow Removal :—

Amount paid for extra men and carts ...	192	2	8
Total cost... ..	£13203	16	9

4428 loads of snow were removed from the streets during the year.

## Mortar Making and Incineration :—

	Wellington Yard.		Back-o'-th'- Bank.
Bricklayer's mortar ...	9253 $\frac{1}{4}$ tons.	...	5539 $\frac{1}{2}$ tons.
Special mortar ...	442 $\frac{1}{2}$ tons.	...	192 $\frac{1}{2}$ tons.
	<u>9695<math>\frac{3}{4}</math> tons.</u>	...	<u>5732 tons.</u>
Refuse burned ...	24375 $\frac{1}{2}$ tons	...	18465 $\frac{1}{2}$ tons.
	£ s. d.		£ s. d.
Bricklayer's mortar sold			
@ 5/- per ton ...	2313 6 3	...	1384 17 6
Special mortar sold @			
6/8 per ton ...	147 10 0	...	64 3 4
	<u>£2460 16 3</u>	...	<u>£1449 0 10</u>
Cost of incineration ...	1176 15 7	...	688 4 0
Cost of mortar making	1705 19 2	...	1038 13 5
	<u>£2882 14 9</u>	...	<u>£1726 17 5</u>

The costs given in the foregoing summary include all wages paid, provender used, 12% per annum depreciation on horses and plant, and current repairs and tools; in fact, all charges except those paid on the sites of the depôts and the initial outlay upon the buildings and machinery.

## Carts and Horses :—

During the year the Scavenging Department employed 50 horses upon the foregoing operations, and had in use, more or less, the undertabulated vehicles :—

42 Carts.	74 Railway wagons.
8 Street water vans.	8 Depôts manure wagons.
4 Pail closet vans.	24 Destructor clinker wagons.
6 Pail closet tanks.	8 Mortar carts.
1 Iron tank for cesspools.	3 Jobbing carts.
8 Street sweeping machines.	1 Lurry.
15 Handcarts.	1 Carriage.
29 Barrows.	8 Iron clinker barrows.
1 Covered ashvan.	



## ADDED AREA :—

	Scavenging The roads were scavenged for			Ashpit emptying The ashpits were emptied for		
All the main roads ...	...	1271	15 4	...	...	...
Great Lever Highways	...	255	0 11	...	572	4 0
Tonge do.	...	126	19 2	...	497	3 5
Brightmet do.	...	25	12 6	...	Contract	
Darcy Lever do.	...	38	5 4	...	Contract	
Middle Hulton do.	...	84	15 6	...	163	7 1
Over Hulton do.	...	36	12 2	...	92	5 1
Deane do.	...	...	...	...	109	18 10
Heaton do.	...	111	10 8	...	Contract	
Smithills do.	...	216	4 9	...	308	19 1
Lostock (snow removers only)	...	4	1 5	...	Contract	
		<u>£2170</u>	<u>17 8</u>	...	<u>£1743</u>	<u>17 6</u>

The following Table shows the number of cartloads of road and ashpit refuse disposed of by the Scavenging Department during the year :—

	Mainroads.		Highways.		Ashpits.	
Great Lever ...	...	465	...	546	...	2579
Tonge ...	...	383	...	399	...	2958
Brightmet	...	165	...	121	...	—
Darcy Lever	...	—	...	178	...	—
Middle Hulton	...	622	...	340	...	1192
Over Hulton	...	317	...	251	...	636
Deane ...	...	464	...	—	...	790
Heaton ...	...	560	...	308	...	—
Lostock ...	...	70	...	—	...	—
Smithills ...	...	410	...	566	...	1668
		<u>3456</u>		<u>2709</u>		<u>9823</u>

During the year 1140 loads of snow were removed from the Main Roads and Highways, the costs for which are included in the above charges.

The costs given in the " Added Area " summary include all wages paid, carts hired, current repairs, and tools used. An average load of road scrapings and sweepings will weigh about one ton, and an ashpit, etc., load about  $1\frac{1}{4}$  tons.

**SECTION IV.**

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**Notification of Births Act, 1907.**

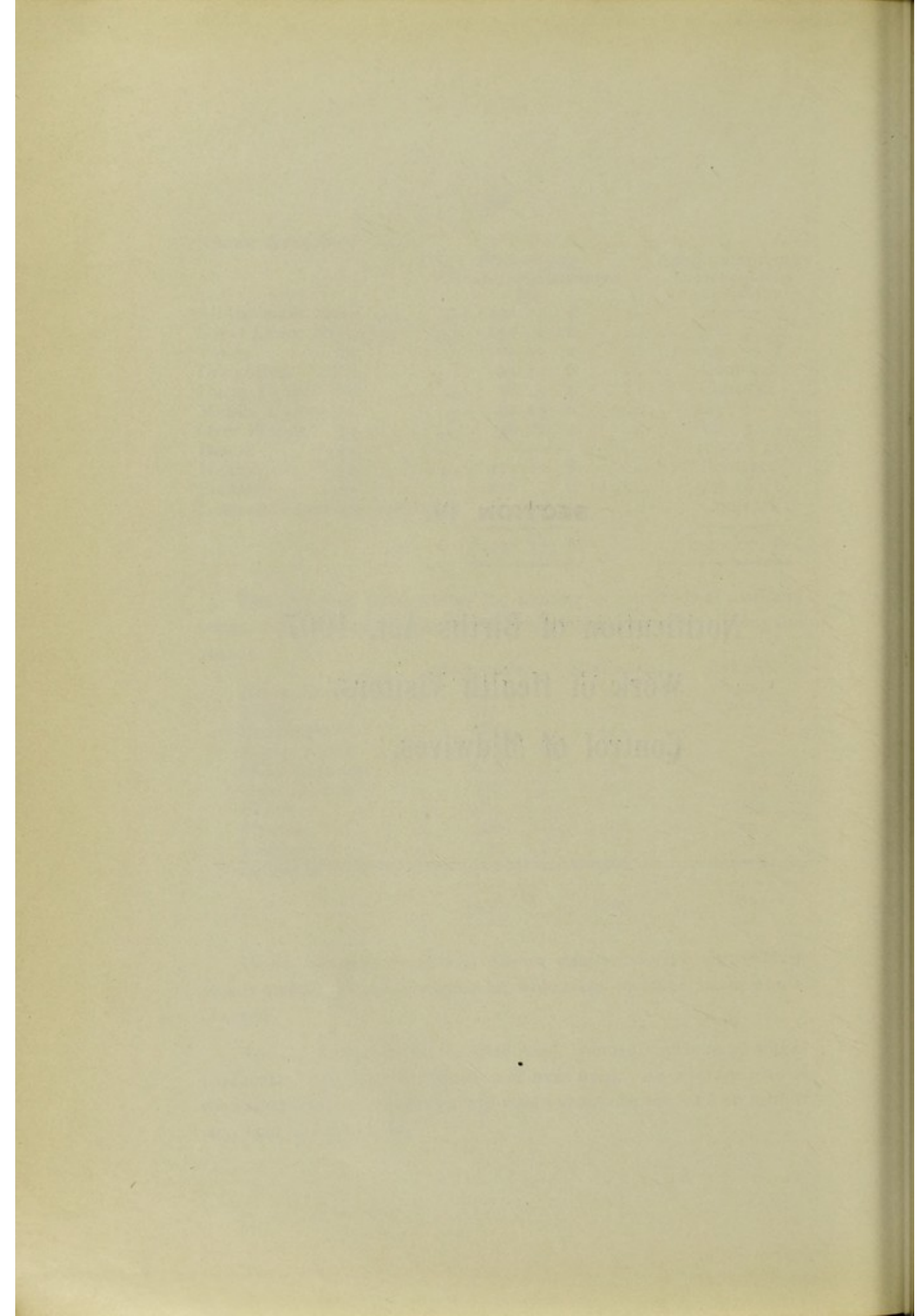
**Work of Health Visitors.**

**Control of Midwives.**

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### **Notification of Births Act, 1907.**

This Act having been adopted by the Town Council, and the consent of the Local Government Board having been obtained, came into operation on the 7th March, 1908, in Bolton.

It provides that :—

“ In the case of every child born in an area in which this Act is adopted, it shall be the duty of the father of the child, if he is actually residing in the house where the birth takes place at the time of its occurrence, and of any person in attendance upon the mother at the time of, or within six hours after the birth, to give notice in writing of the birth to the Medical Officer of Health of the district in which the child is born, in manner provided by this section.”

Following on this two Health Visitors were appointed who commenced their duties on March 20th and April 7th, respectively. It was originally intended to appoint three, but it was decided to wait till the arrangements had been completed for the medical inspection of school children. No further appointment has yet been made.

Their duties are in the first place, (1) to visit houses in which births have been notified, and where no medical man is in attendance, to give advice in a homely and practical manner on the rearing and feeding of children; (2) to investigate all deaths of children under one year of age; (3) to give lectures on the management of infants and in personal hygiene; (4) to visit, if required, factories and workshops where females are employed, houses and schools where infectious diseases are reported, and to perform such other duties appertaining to their office as may be required by the Sanitary Committee.

### **Work of Health Visitors.**

Most of their time during 1908 has been occupied in making enquiries for the Home Office in response to a request from Mr. Gladstone, the Home Secretary, for fuller information with regard to



the effect on the health of the child of the industrial employment of women before and after childbirth. It was pointed out that a simultaneous and systematic enquiry into these matters on uniform lines by the Medical Officers of Health of a number of representative industrial centres would yield the best results. This suggestion was favourably received by the Medical Officers and the Local Sanitary Authorities, and an elaborate schedule was drawn up which is to be filled up for each case enquired into. The history of the child will be recorded up to the end of the first year of life, and it has been decided that the enquiry shall be limited to children born during 1908. At the end of 1909 the information will be collected, a report made by the Medical Officer and the schedule filled in, returned to the Home Secretary.

The Secretary of State in a circular dated 17th December, 1907, states that the two main objects of the enquiry are :—

(1) To determine the effect of employment of women before and after childbirth on the health of mother and child, and particularly, by means of a comparison between women who have been at work in a factory or workshop and women who have been otherwise employed or engaged only in domestic duties whether employment in a factory or workshop has any specially prejudicial effect, and,

(2) so far as the Medical Officer of Health may be able to collect material bearing on the question, to gauge the social and economic effects which further restrictions on the employment of women in factories and workshops before and after childbirth would entail, and in particular whether such restrictions would or would not have indirect effects prejudicial to infant life, either (a) by adding to the economic burden of child-bearing and so leading to a further fall in the birth rate, or (b) by increasing the poverty of the household, and so—through worse feeding, &c.—leading to an increase in the infant death rate.

The Wards of the Borough of Bolton divided into Birth enquiry  
Districts :—

DISTRICT 1.	Population.			Births.
Halliwell (H.O.E.)	...	24465	...	582
West (H.O.E.)	...	28059	...	726
Smithills	...	5768	...	130
Astley Bridge	...	8850	...	182
North	...	7985	...	178
	—————75127			—————1798

DISTRICT 2.				
Exchange (H.O.E.)	...	4234	...	125
East (H.O.E.)	...	9631	...	321
Church	...	8472	...	159
Bradford (H.O.E.)	...	20588	...	571
Darcy Lever-cum-Breigh't	...	3410	...	118
Tonge	...	11060	...	225
	—————57395			—————1519

DISTRICT 3.				
Derby (Part H.O.E.)	...	20552	...	510
Rumworth	...	9465	...	238
Deane-cum-Lostock	...	3230	...	97
Hulton	...	5557	...	134
Great Lever	...	11897	...	235
Heaton	...	2135	...	42
	—————52836			—————1256
	—————			—————
	185358			4573

Those marked (H.O.E.) form the special district selected for the Home Office Enquiry above referred to. In these the Home Office Schedule has been filled up as well as the ordinary Birth Enquiry Card.



Health Visitors were appointed for Nos. 1 and 2 districts, but these limits have not been strictly adhered to. Smithills, Astley Bridge, and Tonge have been omitted, and for them has been substituted the greater part of Derby Ward, a densely populated and rather poor district which I thought it important to include. The better class houses, and those not requiring the attentions of a Health Visitor have naturally been left unvisited.

The enquiries are made within a few days of the notification of the birth. The information obtained is entered on a small card—one for each birth—which are kept in cabinets on the card index system.

A summary of the work done is given in the following tables:—

### **Summary of Work Done.**

A. Total births registered in No. 1 and 2 Districts ... 2164

B. Notification of births:—

1. Living	...	...	...	2032
2. Still-born	...	...	...	93
3. Number notified by Medical Men			...	419
4. " " Midwives			...	1527
5. " " Parents		...	...	179

C. Visits:—

1. Total Visits to houses	...	...	3344
2. Number of birth enquiries made		...	1650
3. Number of cases where particulars were obtained for the Home Office	...	...	1516
4. Death enquiries made	...	...	146
5. Re-visits	...	...	1548

D. Information obtained:—

1. Sanitary defects referred to M.O.H.	...	35
2. Cases referred to Philanthropic Societies	...	50
3. " " to and received from N.S.P.C.C.		16
4. Number of cases of neglect and improper feeding		181
5. Number of long tube bottles found	...	291

6. Summary of Home Office enquiries with regard to the employment of women before and after childbirth, and the methods of feeding in the newly-born :—

Employment.	Breast Fed.	Breast and Hand Fed.	Hand Fed.	Still-Born.
Factories ...	282	39	72	15
Industrially (at home) ...	49	4	16	3
Charwomen, &c. ...	34	9	13	4
Domestic ...	760	50	133	33
Totals ...	1125	102	234	55

Much work has been done by Health Visitors which cannot be set down in summary form in regard to feeding, cleanliness, clothing, and seeking medical advice, and in cases of poverty appeals to charitable societies. On the whole they have been warmly welcomed by the mothers, their visits have been in many cases asked for, and no objections have been offered to their enquiries.

In their reports the Health Visitors point to the frequent use of the long tube bottles with their accompanying dangers, and the continued affection of the mothers for bread and milk for the very young infant. Home-made medicines and teething powders are in common use, and occasionally it has been found that opium has been used to sooth the infant's cries. Deaths from convulsions are frequent, but although the mothers are quite ignorant of the proper treatment and can afford to send for medical aid they refuse to do so.

Many children have been found suffering from dirty heads, and it is common to find them with bare heads and feet exposed to the most inclement weather.

There seems to be plenty of useful work for the Health Visitors to do, if only the mothers can be persuaded to follow their advice and realise their duties to their children.

### **Control of Midwives.**

The Act for the Control of Midwives was passed in July, 1902, and came into force on 1st April, 1903.



During the year 1908 one midwife gave up practice, one left the town, and one died, leaving a total of 56 midwives on the register at the end of the year. Of this number seven have the certificate of the Central Midwives' Board, 14 have certificates from recognised institutions, and 35 were registered as having been in bona-fide practice for one year prior to 31st July, 1902.

In accordance with the regulations of the Central Midwives' Board, I have received notifications of:—

- 81 Still-births.
- 133 Sending for medical help.
- 2 Deaths of new-born children.
- 2 Puerperal fever cases.

I have examined the case-books, instruments, and appliances of each midwife twice during the year, and find they have attended 2771 cases out of a total of 4573 births in the Borough.

**SECTION V.**

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**Medical Inspection of Schools**

**AND**

**School Children.**

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# Medical Inspection of Schools

and

School Children

### **Acts and Regulations.**

1. Education (Ad. Prov.) Act, 1907, Sec. 13.
2. Memorandum on Medical Inspection of Children in Public Elementary Schools. Circular 576, 22nd November, 1907.
3. Schedule of Medical Inspection. Circular 582, 23rd January, 1908.
4. Functions of School Medical Officer. Circular 596, 17th August, 1908.
5. Board of Education Code, 1908. Articles, 25, 43, 44, 45, 53, 57, 58.

### **Scope and Purposes of the Act.**

This is best explained by a quotation from the Memorandum dated 22nd November, 1907 :—

“ For some years past evidence has been accumulating that there exists in certain classes of the English people a somewhat high degree of physical unfitness which calls for amelioration, and, as far as possible, for prevention. The Legislature resolved that to grapple effectively with this problem or at least part of it, it was necessary first to improve the health conditions, both personal and in regard to environment, of the children of the nation. A consideration of the question led to the conclusion that medical inspection of school children is not only reasonable but necessary as a first practical step towards remedy. The reasonableness of such inspection, if it is conducted on sensible lines leading to an improvement of the surroundings and physical life of the children, must become evident both to their parents and to the nation as a whole.”

The operative section of the Act so far as medical inspection is concerned is as follows :—

Sec. 13. (1) “ The powers and duties of a Local Education Authority under part III. of the Education Act, 1902, shall include :—(a) Power to provide for children attending public elementary schools, vacation schools, vacation classes, playcentres, etc. (b) The duty to provide for the medical inspection of children immediately before or at the time of, or as soon as possible after their admission to a public elementary school, and on such other occasions as the Board of



Education direct; and the power to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools."

The circular further points out that although most Local Education Authorities have taken steps of some kind in the promotion of school hygiene and medical inspection, that cases have as a rule been imperfectly followed up and much of the advice has been ignored or inappropriately applied. "Moreover in many districts not only have serious defects of sanitation, such as bad lighting and lack of ventilation, injuriously affecting the children been ignored, but even the means of preventing the extension of infectious diseases have been neglected in a greater or less degree. The present Act is not intended to supersede the powers which have long been exercised by the Sanitary Authorities under various Public Health Acts, but is meant to serve rather as an amplification and a natural development of previous legislation."

### **Organisation.**

The organisation suggested by the Board of Education was adopted by the Bolton Town Council and is embodied in the following resolutions on the dates mentioned :—

15th April, 1908.—1. "That the duties placed upon the Council as the Local Education Authority by Section 13 of the Education (Aministrative Provisions) Act, 1907, in regard to the Medical Inspection of School Children should be carried out under the immediate supervision of a Sub-Committee of the Education Committee, to be called the Medical Inspection Sub-Committee, such Sub-Committee to be constituted of eight members, four of whom shall be members of that Committee and four of whom shall be co-opted from the Sanitary Committee."

2. "That the Medical Officer of Health should be appointed the Medical Officer for the purposes of the Inspection of Schools in accordance with the provisions of Section 13 of the Education (Administrative Provisions) Act, 1907, and shall be required to advise the Education Committee and supervise and control all medical assistance that may be needed to carry out the work."

3. "That an Assistant to the Medical Officer of Health should be appointed at a salary of £250, rising by annual increments of £10 to a maximum of £300, whose chief duty shall be to assist the Medical Officer of Health in carrying out the work of Medical Inspection of School Children, but who shall also be available for other public health work if unoccupied in school work, and who shall be required to devote his whole time to the duties of the office and not engage in private practice."

4. "That the question of the appointment of nurses to assist in the work of the Medical Inspection of School Children be referred to the Medical Inspection Sub-Committee to be appointed."

4th Sept., 1908.—"That the Medical Officer of Health, John E. Gould, M.D. (Lond.) be and hereby is appointed School Medical Officer to advise the Education Committee and to supervise and control all medical assistance."

Subsequently the following appointments were made:—

7th Oct., 1908.—Assistant School Medical Officer and Assistant Medical Officer of Health:—C. W. Paget Moffatt, M.A. (Lond.), M.B., B.C., D.P.H. (Cantab.), M.R.C.S., L.R.C.P.

School Nurses:—Miss C. S. Kippax, three years' certificate, St. Marylebone Poor Law Infirmary, London.

Miss M. Hayward, three years' certificate, St. Marylebone, Poor Law Infirmary, London.

### **Powers and Duties of School Medical Officers.**

These are detailed in Circular 596, dated 17th August, 1908, and Articles 25, 43, 44, 45, 53, and 57 of the Board of Education Code, 1908.

The School Medical Officer is defined as—

"A Medical Officer named by the Local Education Authority and recognised as such by the Board."

In their circular the Board remark, "But it is considered very important that a single individual should be charged with the organisation and control of the whole of the machinery of the School



Medical Service, and that he should be in a position to take responsibility for the acts of all persons taking part in the work, including those of Assistant Medical Officer, School Nurses, Attendance Officers and Teachers, so far as they perform any functions in connection with the School Medical Service."

The special functions assigned to him are :—

- (1) The responsibility for supervising and controlling the general work of medical inspection of school children and advising the Local Authority on all matters of school hygiene, under Section 13, Education Act, 1907, and under the resolutions of the Town Council, 1908.
- (2) Those of reporting on the working and effect of any arrangements made for educating children at an open air school, school camp, &c.
- (3) The powers of advising or approving the closure of a school under Art. 45.
- (4) The powers of authorising the exclusion of certain children from a school on specified grounds under Art. 53.
- (5) The duty of making an annual report on the schools and school children under his superintendence.

The following are the heads suggested for the annual report of the School Medical Officer :—

- (1) General view of the hygienic conditions prevalent in the schools in respect of surroundings, ventilation, lighting, warming, equipment, sanitary conveniences, lavatories, water supply, and cloakroom.
- (2) Description of arrangements made for correlation of School Medical Service with Public Health Service.
- (3) General description of arrangements for organisation and supervision of medical inspection, including details of schedule, assistance given by nurses, managers of schools, teachers, attendance officers, and the methods adopted for securing the presence and co-operation of parents.

- (4) General statement of medical inspection carried out during the year, including number of visits paid to schools and departments; the principle of inspection, whether at entrance or before leaving; the number of children inspected classified according to age and sex; the number referred for further examination, the number in respect of whom directions were given; the average time per head occupied.
- (5) General review of facts disclosed by medical inspection, including tables shewing height and weight of children according to age and sex.
- (6) General review of the relation of home circumstances and social and industrial conditions to the health of the children.
- (7) Review of the methods employed for the treatment of defects.
- (8) Review of methods adopted for dealing with blind, deaf, mentally or physically defectives, and epileptic children.
- (9) Review of action taken to prevent spread of infectious disease.
- (10) Review of methods of instruction in personal hygiene and temperance, of physical or breathing exercises, arrangements for open air schools, camps, &c.
- (11) Amount of miscellaneous work, such as the examination of scholarship candidates, pupil teachers, or teachers of any grade.

One of the conditions required to be fulfilled by the Local Education Authorities, in order to obtain the grants for schools, is that "satisfactory provision must be made for the medical inspection of children attending public elementary schools in accordance with Section 13 (1) (b) of the Education (Admin. Prov.) Act, 1907."

### **Character and Degree of Medical Inspection.**

A schedule has been drawn up by the Board of Education consisting of some 26 headings, and this has been printed in card



form as convenient for indexing and registering in schools. Among the directions given is one which says that all entries of the results of inspection in each individual case must be regarded as confidential.

The Board have decided that not less than three inspections during the school life of the child will be necessary. The first inspection should take place at the time of, or as soon as possible after, admission to school; the second at or about the third year (say the seventh year of age); and the third at or about the sixth year of school life (say the tenth year of age). A further inspection immediately before the departing of the child into working life would be desirable where practicable.

In the first year (1908) it may prove impracticable to attempt more than the inspection of the children newly admitted, and those leaving school. The last regulation issued in Art. 58 of the Code of 1908 says that "the Board must be satisfied that provision has been made for the medical inspection of all children admitted to the school since 1st August, 1908, and of all children who are expected to leave before 31st July, 1908."

### **Medical Inspection, 1908.**

Actual medical inspection of school children was commenced on December 2nd, and 16 school days have been devoted to the work. Some delay was caused by the non-arrival of the cards and some inconvenience owing to the fact that there are only 12 weighing machines, which have to be moved about from school to school. The convenience of the medical staff will not be adequately met until there is a weighing and measuring machine in every school.

There are in Bolton 56 Public Elementary and three Special Schools, 45 Infants' Departments, and 63 Boys', Girls', or Mixed Departments. The average number of children on the roll is 30,700, the average number of children leaving each year is 3,100, and the admissions each year are about the same 3,100.

The present staff was suggested as probably adequate to inspect those newly admitted and those about to leave from the time the work was actually begun; but as the Board of Education have



decided that provision must be made as from 1st August, 1908, it is doubtful whether the work can be brought up-to-date, considering we were four months late in beginning.

Each week's work is planned out beforehand, and notices sent to the Head Teachers and Parents, informing them of the date and time of the Medical Inspector's visit. Up to the present time the Medical Inspector has been accompanied by the two School Nurses who assist him in the examination of the children, in the undressing and dressing of the children, and in the clerical work. There has been no time for other work, as the number of children presented for examination has been larger than was anticipated.

After the examination of the children notices are sent to the parents of those excluded and those suffering from serious defects, with recommendations to seek medical treatment, and in cases of minor ailments directions as to measures likely to prove beneficial. During the school holidays the Nurses have been able to follow up to their homes some of the most important cases, and have continued their advice.

The schedule of medical inspection adopted has been, with slight modification, that suggested by the Board, printed on cards 8" x 5", and kept in the schools in cabinets. A copy of the cards and of the various notices is here shewn in their actual dimensions.

So far the arrangements have worked satisfactorily, and we have received every assistance from Managers, Teachers, and Attendance Officers. There have been very few objections from the parents, and many of them have been glad to avail themselves of the opportunity of consulting the Medical Inspector with regard to the physical condition of their children.

The sanitary survey of the schools has been undertaken by the Medical Officer of Health, with the assistance of the Sanitary Inspectors, and the medical inspection of the school children by Dr. Moffatt, assisted by the School Nurses.

There are many matters not dealt with in this report, such as the blind and deaf, which I hope to be able to deal with in the next annual report.

Details of the work done are given in the summaries.



## SANITARY SURVEY OF SCHOOLS.—SUMMARY, 1908.

Number of Schools Inspected	...	...	...	...	15
Number of Departments ..	...	...	...	...	33
Schools with Insanitary Closets	...	...	...	...	3
"    "    Closets Insufficiently Lighted	...	...	...	...	2
"    "    Urinals without Flushing Apparatus	...	...	...	...	13
"    "    Defective Means of Ventilation	...	...	...	...	6
"    "    Defective Means of Perflation	...	...	...	...	2
"    "    Defective Artificial Lighting ...	...	...	...	...	6
"    "    Defective Lavatory Accommodation	...	...	...	...	3
"    "    Insufficient Cloak-Room Accommodation	...	...	...	...	1
"    "    Defective Yard Gully Traps ...	...	...	...	...	1

## MEDICAL INSPECTION OF SCHOOL CHILDREN.—SUMMARY, 1908.

Number of Schools Visited	...	...	...	...	23
"    Departments	...	...	...	...	52
"    Children Examined	...	...	...	...	672
"    Children Excluded	...	...	...	...	23
"    Parents or Guardians Notified	...	...	...	...	218
Number Referred for Further Examination	...	...	...	...	22
Special Examinations of Children	...	...	...	...	43

## AGE AND SEX DISTRIBUTION OF CHILDREN EXAMINED.

Age.		Males.		Females.		Total.
3—4	...	62	...	51	...	113
4—5	...	65	...	55	...	120
5—6	...	111	...	90	...	201
6—7	...	20	...	20	...	40
7—8	...	8	...	4	...	12
8—9	...	4	...	4	...	8
9—10	...	1	...	3	...	4
10—11	...	4	...	2	...	6
11—12	...	7	...	6	...	13
12—13	...	49	...	47	...	96
13—14	...	29	...	17	...	46
14—15	...	12	...	1	...	13
Total		372	...	300	...	672

**Defects Found.**

Defect.					Number.
Insufficient Clothing and Footgear					1
Bad Nutrition...					—
Head	{ Verminous	...	...	...	110
	{ Ringworm	...	...	...	8
Body	{ Verminous...	...	...	...	8
	{ Ringworm	...	...	...	2
Defective Teeth					52
Tonsils Enlarged					118
Adenoids ...					60
Enlarged Cervical Glands					278
Eye Disease ...					7
Defective Vision (out of 238 examined)					63
Ear Disease ...					25
Defective Hearing					10
Defective Speech					10
Heart and Circulation ...					6
Disease of Lungs (not Tubercular)					8
Tuberculosis ...					4
Disease of Nervous System					3
Rickets ...					36
Deformities (mostly Rickets)					24
Infectious Disease ...					1
Other Disease (not Ringworm) ...					7
Mentally Defective ...					—

The children examined consisted for the most part of scholars admitted since the 1st August, 1908, and of scholars who will leave school before the 1st August, 1909, but a certain number of children who belong to neither of these classes, were brought by the teachers under the notice of the Medical Inspector. In view of the short period during which inspection was in force in 1908, no attempt has been made to work out the percentage of defects, as percentages based on such a small number of children examined would be valueless.



## BOLTON EDUCATION COMMITTEE CARD.

NAME (Surname first)		ADDRESS		Born							
School					Date of Leaving						
Date of Entry or Transfer											
Year											
Actual Attendance											
Possible Attendance											
(5) Height											
(6) Weight											
PERSONAL HISTORY BEFORE OR AFTER ADMISSION.											
	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Chicken Pox	Mumps	Rheumatism	Brain Fever	Chorea	Epilepsy	Hernia
Before											
After											
FAMILY HISTORY						GENERAL OBSERVATIONS					
DIRECTIONS TO PARENTS OR TEACHERS											
I.	II.					III.					IV.

(BACK)

III

	I.	II.	III.	IV.	I.	II.	III.	IV.
1 Date of Inspection					13 Ear Disease			
2 Standard and					14 Hearing			
Reg. of Attendance					15 Speech			
3 Age of Child					16 Mental Condition			
4 Clothing and					17 Heart and			
Footgear					Circulation			
7 Nutrition					18 Lungs			
8 Cleanliness & Con- dition of Skin					19 Nervous System			
Head					20 Tuberculosis			
Body					21 Rickets			
9 Teeth					22 Deformities Spinal Disease, etc.			
10 Nose and Throat					23 Infectious or Con- tagious Disease			
Tonsils					24 Other Diseases or Defects			
Adenoids								
11 Submaxillary and Cervical Glands								
12 External Eye Disease								
Vision R.								
do. L.					Medical Officer's Initials			



**Notice to Parents re Medical Inspection.**

BOLTON EDUCATION COMMITTEE,

\_\_\_\_\_ School.

\_\_\_\_\_ 190

I beg to give you notice that the Medical Officer, appointed under the Regulations of the Board of Education in accordance with the Education (Administrative Provisions) Act, 1907, will attend the above named School on \_\_\_\_\_ for the purpose of medically inspecting your child \_\_\_\_\_. You may attend the examination if you care to do so.

FRED. WILKINSON,

*Director of Education.*

(FRONT).

**BOLTON EDUCATION AUTHORITY.****FIRST NOTICE.**

Date \_\_\_\_\_

To the Parents  
or Guardians of \_\_\_\_\_

The School Medical Officer having examined this child, reports the condition indicated on the other side of this card.

You are therefore strongly urged to attend to this matter at once, and secure proper medical treatment.

**Please Sign and Return.**

I have read the Notice from School, and will  
at once attend to this matter.

Signed, \_\_\_\_\_

Date \_\_\_\_\_

(BACK OF FIRST NOTICE).

## NOTICE OF NEED OF TREATMENT.

—

This child needs medical treatment on account of

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**BOLTON EDUCATION AUTHORITY.****SECOND NOTICE.**

Date \_\_\_\_\_

To the Parents  
or Guardians of \_\_\_\_\_

As you have already been notified, this child has been examined by the Medical Officer, and reported as needing medical treatment for

\_\_\_\_\_

In the event of any further delay the Education Committee will be informed and further action taken.

**Please Sign and Return.**

I have read the Notice from School, and will at once attend to this matter.

Signed, \_\_\_\_\_

Date \_\_\_\_\_



(FRONT)

**BOLTON EDUCATION AUTHORITY.****EXCLUSION NOTICE.**

Date \_\_\_\_\_

*To the Parents  
or Guardians of* \_\_\_\_\_

The School Medical Officer having examined this child, reports the condition indicated on the other side of this card.

You are therefore strongly urged to attend to this matter at once, and secure proper medical treatment.

**Please Sign and Return.**

I have read the Notice from School, and will at once attend to this matter.

Signed, \_\_\_\_\_

Date \_\_\_\_\_

(BACK).

**NOTICE OF UNFITNESS FOR SCHOOL.**

This child has been examined and is unfit for  
School on account of \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

You are therefore advised to keep the child at home, under medical treatment, until well.

(FRONT).

**BOLTON EDUCATION AUTHORITY.****PRIVATE NOTICE.**

Your attention is drawn to the condition of this child's head.

The School Nurse has examined it and by carrying out the directions on the other side it can be made clean within a week.

Unless the unclean condition is remedied the child will have to be kept separated from others in the School.

Date \_\_\_\_\_

JOHN E. GOULD,  
School Medical Officer.

I have read the Instructions on the back of this Card, and will endeavour during the week to get \_\_\_\_\_ into a clean and healthy condition.  
Signed, \_\_\_\_\_

(BACK).

**INSTRUCTIONS FOR CLEANING HEADS.**

1. All hair with nits and all hair within a quarter of an inch of a sore must be cut off.
2. The head must be washed thoroughly daily for a week with paraffin oil, to which an equal quantity of olive oil may be added. Remove scabs by softening with warm water.
3. Comb the hair carefully with a fine comb after this.

**CAUTION.**—Do not use paraffin near the fire or a naked light.

This portion to be signed by the child's Parent or Guardian and returned in the enclosed envelope to the Head Teacher as soon as possible.



### **Special Schools for the Epileptic and Mentally Defective.**

In Bolton there is at present accommodation for 180 children in two schools, one in Derby Street, in the same premises as an ordinary day school, for 80, and one in Kay Street, a separate and new building, for 100.

The Kay Street School is in every way satisfactory, but the Derby Street is by no means suitable for the purpose, as the class-rooms are insufficient in number, the central hall is used continuously as a class-room, and the playground is common to the ordinary day scholars.

The numbers at present in the centres are :—Derby Street, 98; Kay Street, 60.

During the year 25 children were admitted to Kay Street Centre and 19 to Derby Street, after being duly certified by me. Those who left during the year were disposed of as follows :—

	Derby St.	Kay St.	Total.
Transferred to Ordinary Schools ...	1	—	1
To Work ...	11	2	13
To Home, as Unfit for Work ...	6	2	8
Left the District... ..	2	1	3
Transferred to Kay Street Centre	2	—	2
Transferred to Derby Street Centre	—	5	5
	<hr/> 22	<hr/> 10	<hr/> 32

The following are the results of the last six monthly examination in December, 1908 :—

Degree of Improvement.	Derby St.	Kay St.
Fit for Transfer ...	3	3
Good Improvement ...	29	28
Improvement ...	50	16
Slight Improvement ...	7	5
Very Slight Improvement ...	4	5
Absent Through Ill-health ...	—	1
	<hr/> 93	<hr/> 58

**Blind School.**

This is situated in Duke Street, and can accommodate 20 children, where there are at present 9 boys and 4 girls. It is not well adapted for the purpose, and is shortly to be vacated for a new one, which will accommodate both blind and deaf children.



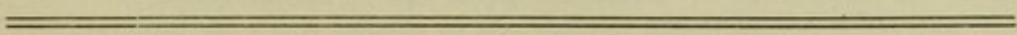


Medical Officer of Health's Report upon  
the present condition of the Boston  
Corporation Water Supply.

SEPTEMBER, 1903.

**SECTION VI.**

*Water Supply.*





SECTION VII

Water Supply

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*Medical Officer of Health's Report upon  
the present condition of the Bolton  
Corporation Water Supply.*

SEPTEMBER, 1908.

—o—

**Water Supply Area.**

Water from the Bolton Corporation Waterworks is distributed direct to the County Borough of Bolton, the whole of the Urban Districts of Farnworth, Turton, Kearsley, and Little Hulton, part of the Urban Districts of Westhoughton and Worsley, part of the Rural Districts of Bury and Barton-on-Irwell; also in bulk to the whole of the Urban District of Aspull, the remainder of the Urban District of Westhoughton, and part of the Urban District of Atherton.

The population of this area, estimated for the middle of 1908, is 288,468, and very few houses in the district are supplied otherwise than by the Bolton water.

<b><u>District.</u></b>	<b>Population,</b>		
DIRECT TO HOUSES.	1908.		Acreage.
1. Bolton Borough .....	185,358	...	15,283
2. Farnworth U.D. ....	27,704	...	1,502
3. Turton U.D. ....	12,789	...	17,522
4. Kearsley U.D. ....	10,210	...	996
5. Little Hulton U.D. ....	7,763	...	1,706
6. Part of Westhoughton U.D. (Over Hulton)	1,100	...	1,200
7. Part of Bury R.D. (Ainsworth), other part from Bury and Heywood .....	1,700	...	1,165
8. Part of Worsley U.D. (Higher Division), other part from Manchester .....	9,000	...	2,000
9. Part of Barton-on-Irwell R.D. (Clifton), other part from Manchester .....	3,106	...	1,193



## BY METER IN BULK.

10. Rest of Westhoughton U.D., from Bolton wholly .....	14,900	...	4,354
11. Part of Atherton U.D.; also from Tyldesley and Manchester ... ..	6,837	...	851
12. Aspull U.D., from Bolton wholly .....	8,001	...	1,906
	288,468		49,678

NOTE. — Edgworth, a village of 2,580 inhabitants, is supplied by spring water stored in the Crowthorne reservoir, and Belmont, a village of 937 inhabitants, is supplied by spring water from Daddy Meadows Spring, collected in a tank. These villages are within the Turton Urban District.

**Quantity of Water.**

6,075,000 gallons are daily consumed for domestic and manufacturing purposes in the water supply area proper, and 425,000 gallons daily in bulk to the outside area, making a total of 6,500,000 gallons. This includes the unfiltered water from Crowthorne and Daddy Meadows Spring.

The daily consumption per head works out at 23 gallons, of which it is estimated 15 are used for domestic purposes and 8 for manufacturing. In the out-districts, according to the populations furnished to me by the respective Medical Officers of Health, the daily consumption works out at 14 gallons per head.

**Gathering Grounds.**

The water is derived from three gathering grounds, viz. — Entwistle, situate mainly in the Turton Urban District, and for a part in Darwen Borough, about six miles to the North of Bolton; Dingle, situate for the most part in the Turton District, and for a small part in Bolton, four miles to the North-West; and Heaton, situate wholly in Bolton, three miles to the West.

Gathering Ground.	Rainfall (Average 30 years).	Acres.	Amount of Corporation Land.
1. Entwistle ... ..	53	2160	1791.5
2. Dingle ... ..	55	490	480.0
3. Heaton ... ..	43	523	Nil.

### **Impounding Reservoirs.**

There are five impounding reservoirs for the three watersheds, not reckoning a catch-water reservoir at Old Hall on the Heaton watershed.

Watershed.	Reservoir.	Height in feet above O.D.	Capacity in Mil. Gals.	Average col. per day in Mil. Gals.
Entwistle ...	Entwistle ...	690.35	762	4.5
Dingle ...	{ Springs ...	757.56	134	1.25
	{ Dingle ...	717.41	79	
Heaton ...	High Rid ...	578.50	133	1.00
	Crowthorne ...		1.5 spring water.	

Another impounding reservoir is in course of construction at Delph, near the village of Dimple, which will have a capacity of 520 million gallons.

### **Filters and Service Reservoirs.**

There are altogether three sets of sand filters and one set of mechanical filters. At Sweetloves there are four sand filters and a set of ten mechanical filters for the filtration of water from Entwistle and Dingle reservoirs. At Dingle a set of two sand filters for the Springs water, and at Markland Hill, Heaton, a set of three sand filters for the filtration of the High Rid water. The depth of the sand averages  $2\frac{1}{2}$  feet at Sweetloves and Dingle, and  $2\frac{1}{4}$  feet at Markland Hill. The following are the details summarised:—

Filters.	Water.	No.	Area, sq. yds.	Mil. Gals per Day.	Average Rate.	Height above O.D.
Sweetloves, Sand.	Ent. & Dingle.	4	10,000	3.5	4.68	572
Sweetloves, Mechan.	Entwistle	10	...	1.5	...	...
Dingle, Sand	Springs	2	1,600	0.5	4.17	720
Markland Hill, Sand	High Rid	3	3,658	1.0	3.65	520

About two-thirds of the area of the sand filters is working at one time, and the rate of filtration has been calculated on that basis. The scraping takes place not oftener than once in every 14 days, and on an average once in three weeks.

There are two service reservoirs, one at Sweetloves, with a capacity of 90 million gallons; and one at Heaton, with 91 millions. They are connected at several points in the Borough by mains, and thus act as balancing reservoirs. The Springs water, filtered at the Dingle filter beds, about 600,000 gallons per day, is distributed by a high level main to Turton and the higher parts of the Borough, and serves a population of about 24,000.



### **Entwistle Gathering Ground.**

This is the largest of the three gathering grounds, and comprises 2,160 acres, of which 1791.5 acres are now in the possession of the Corporation. The water is collected from the Cadshaw Valley, which is formed by the middle coal measures, and covered by glacial drift. The tops of the hills are for the most part peaty moorland.

The chief stream, which supplies about two-thirds of the water, is the Cadshaw Brook; other contributory streams being the Simm's Clough Stream and the Green's Arms Streams. There are also springs on the hill sides from which a material part of the water is derived.

The sides of the valley are often steep and abrupt.

The meadow land forms about 21 per cent. or 450 acres, and the pasture land about 62 per cent. of the whole.

There are at present on the watershed 32 farms, 27 of which belong to the Corporation; nine cottages, two public houses, and a population totalling 170.

An inspection was recently made by myself and the Waterworks Engineer (Mr. Mitchell), with a view of ascertaining any sources of pollution. There was no manure on the land at the time, but there is no doubt that this forms the chief source of pollution, as many of the farms are near the Cadshaw Brook. There is a considerable amount of meadow land which is at times heavily manured, and there are no restrictions as to distance from streams. The manure is collected into manure pits provided with liquid tanks, and these are periodically emptied. Only one of these was covered, and at the time of our visit, after heavy rain, they were found to be very wet. The closets at the farms are now almost wholly on the pail system. We saw no evidence of human faeces, and found that the pails were regularly emptied and the contents deposited off the watershed.

Any possible source of pollution from the Darwen Isolation Hospital, which is on the edge of the watershed, has been removed by the reconstruction of the drains and the treatment of the sewage by a settling tank and bacterial beds. Other opportunities of pollution are the surface water from the public highway (Bolton to Blackburn), the privy-middens at the Green's Arms Public House and adjoining cottages, a few places where there is still defective drainage, and contributory streams exposed to pollution by cattle.

The water in the Cadshaw Brook was found to be distinctly acid, but that of Simm's Clough, the Green's Arms Streams, and the reservoir neutral. There have been no complaints with regard to the acidity of this water, and I have never heard of any cases of lead poisoning arising in the area to which it is distributed.



There is no provision for the exclusion of storm water.

All this water is filtered at Sweetloves.

The raw water from this watershed at times, especially after heavy rain, shews a rather large amount of albuminoid ammonia and oxygen absorbed, but this disappears after filtration, and the water chemically has been uniformly good. The number of bacteria, per c.c., has occasionally been high, but the filtration has proved effective in reducing them within the danger limit.

### **Dingle (or Belmont) Gathering Ground.**

This is a much smaller gathering ground than that of Entwistle, is in extent 490 acres, of which 480 are in the possession of the Corporation. The average annual rainfall for the last 30 years was 55 inches.

Geologically it is formed of shales and grits of the millstone grit series, covered by glacial drift. The reservoirs—Springs and Dingle—are at the foot of a steep hill, which is covered with heather. There is a small portion of pasture land near the reservoirs. The water is obtained almost wholly from a stream called the Three Nooked Shay Brook, which is reinforced by means of a tunnel which runs to the Daddy Meadows Spring on the hillside. Dingle Reservoir also receives water from the Dingle Brook and one or two small streams.

There are two farms and one dwelling-house on this gathering ground, two of them belonging to the Corporation. The closets are on the pail system, and are regularly emptied off the watershed. The North Dingle Brook, which runs close behind the Dingle Farm, has been enclosed in a stone culvert, and all chance of pollution removed.

The quality of the water may be judged from the analyses given below. Although the water is usually good, both chemically and bacteriologically, it will be seen that the saline ammonia, albuminoid ammonia, and especially the oxygen absorbed occasionally are higher than is usual in first-class waters. This occurs especially after heavy rains.

The most important characteristic of this water, however, from a health point of view, is its power of dissolving lead. It was pointed out in the 1899 Local Government Board Report that acidity and plumbo-solvent action might have been expected in view of the exceptionally peaty character of the soil. Before 1899 the higher parts of the present Borough were under the administration of the Bolton Rural District Council, of which the present Turton Urban District formed a part. The high level main, with the unmixed Springs water, therefore supplied only parts outside the Borough prior to their incorporation in 1899.



I am not aware of any complaints before that period, and the first received since then, was at the end of 1907. Two cases of lead poisoning occurred in a house situate just above the Sweetloves Filter Beds, which is supplied with Springs water. About the same time the Medical Officer of Health of Turton informed me that he had had seven cases in his district within the last ten months of 1907.

Analyses of the water then made showed that it had a total acidity (reckoned as  $H_2SO_4$ ) of 1.234 grains per gallon, a plumbosolvent capacity (after 24 hours' contact with bright lead) of .98 grains per gallon, and the water left in the pipes all night contained .315 grains per gallon. The Waterworks Committee took the matter up and ordered experiments to be made with a view to neutralising the acidity and preventing it acting on lead. These experiments have just been completed. The analyses for the last six weeks show that it has become neutral and has no action on bright lead after 24 hours' contact. A permanent chalk-mixing apparatus has been recommended by the Engineers to be built near the point of the intake on the Three Nooked Shay Brook, and an extension of the sand filters, it is believed, will remove this source of danger to the health of the inhabitants.

### **Heaton (or High Rid) Gathering Ground.**

This is the oldest of the three, and comprises 523 acres, none of which is in the hands of the Corporation. It is wholly in the Borough of Bolton, but very few houses have been built on it during the last ten years.

It is formed by the middle coal measures, covered by glacial drift, chiefly clay, and there is no peat. The slopes are not steep like those at Entwistle or Dingle; 75 per cent. consists of pasture land, and 20 per cent. of meadow land.

The upper half of the watershed drains by means of small streams into High Rid reservoir, which receives also a supply of spring water from a tunnel driven into the hillside. The lower half drains to a four-foot catch-water culvert which leads from near Old Hall Lodge to the Markland Hill filter beds. Water from High Rid passes by a 2½ft. culvert to join the 4ft. culvert at Old Hall. The Old Hall catch-water has an overflow into the 4ft. culvert. The slopes are underdrained, the drains leading into streams or the 4ft. catch-water culvert.

There are seven farms, two public houses, and 39 cottages on the watershed, with a population of 216.

Most of the houses are provided with privy-middens, but these are regularly attended to and the contents deposited off the watershed. Several have been reconstructed within the last ten years.

The land is heavily manured at certain times of the year from the contents of the manure pits and tanks.



The slop water from the houses along the Chorley Old Road (Bolton to Horwich) and the surface water have been led into the sewer, and so off the watershed, but on the farms the slop and surface water is allowed to run on to the land. The culvert leading to High Rid reservoir and that joining High Rid to Heaton are rubble in construction and admit surface water.

Old Hall lodge-water was found to be turbid and unwholesome looking, and on analysis was found to be badly polluted.

There have been no complaints with regard to the lead dissolving properties of this water, which is always neutral in re-action.

There is no arrangement for the exclusion of storm water from the High Rid reservoir.

This water has a larger amount of albuminoid ammonia than any other of the supplies, and the filtration of it was for a time not efficient, in fact, on some occasions the filtered water was worse than the raw water in this respect. Recently the sand filters have been renewed and there has been a great improvement.

### **The Quality of the Water.**

The raw waters are derived from three main sources:—Entwistle, Dingle, and Heaton watersheds, in the proportion of  $4\frac{1}{4}$ ,  $1\frac{1}{4}$ , and one million gallons per day.

The chemical and bacteriological averages are given below for the dates mentioned, but it will be seen that these do not cover the whole year.

The Entwistle water has a high average of oxygen absorbed, .427, which is due to its peaty origin; the albuminoid ammonia being .012, number of microbes 205, and B. coli 4. This water after filtration is generally good from the sand and mechanical filters, the average being: albuminoid ammonia .006, oxygen absorbed .309, microbes 22, B. coli 0. A typical example of the filtered water is (19th October):—

Free or Saline Ammonia .....	.001
Albuminoid Ammonia .....	.005
Nitrates.....	.000
Oxygen absorbed in 10 mins. ...	.300
Nitrites .....	.000
Chlorine .....	2.106
Total Hardness .....	6.500
Permanent Hardness .....	3.500
Acidity .....	Nil.
Plumbo-solvency .....	Nil.
No. of microbes per c.c. ....	4
B. coli per 100 c.c. ....	0



There has been noticed at times a slight acidity, but this has been adequately guarded against by the provision of a chalk mixing apparatus at Entwistle before the water enters the two-mile tunnel which brings it to Sweetloves. After storage in the sweetloves reservoir it is not quite so good bacteriologically as immediately after filtration.

The possible source of pollution referred to in the 1899 report has been completely removed by the demolition of the house and privy-midden near the reservoir and the erection of mechanical filters on the site. Whether this good average will be maintained during the winter months remains to be seen. The chief opportunities of pollution of this supply are the large amount of manured land on the watershed area, and the fact that no provision has as yet been made for the exclusion of the first rush of storm water.

The Dingle water. This important supply is of a higher standard than that of Entwistle and in its origin is a pure and good water. Bacteriologically it is not so good as Entwistle, but after passing the filters it improves greatly and becomes as good as the Entwistle water both chemically and bacteriologically. Its acidity and plumbo-solvent property have already been referred to, and the last analyses made show that after treatment in the chalk mixing house its acidity is nil, its action on lead is nil, and water taken from a house in Egerton, where the water had remained in the house with a pipe 100 yards long, gave less than 1-100 grain of lead per gallon.

The following is the last analysis of the water, made on October 19th:—

Free or Saline Ammonia .....	·0008
Albuminoid Ammonia .....	·009
Nitrates .....	·000
Oxygen absorbed in 10 mins...	·300
Nitrites .....	·000
Chlorine .....	1·989
Total Hardness .....	4·500
Permanent Hardness .....	2·250
Acidity .....	Nil.
Plumbo-Solvent action .....	Nil.
No. of microbes per c.c. ....	30
B. coli per 100 c.c. ....	2

The water from the Heaton watershed is not so pure in its origin as the other two, owing to the position of the gathering ground and the opportunities of pollution. The albuminoid ammonia averages ·020, the oxygen absorbed ·375, and the number of microbes 300, B. coli is generally present. After filtration the



water greatly improves, especially recently, since the renewal of the filter beds at Markland Hill. The following is the most recent analysis of the filtered water:—

Free or Saline Ammonia .....	·0016
Albuminoid Ammonia .....	·013
Nitrates .....	·000
Oxygen absorbed in 10 mins...	·300
Nitrites .....	·000
Chlorine .....	2·457
Total Hardness.....	7·500
Permanent Hardness .....	4·000
Acidity.....	Nil.
Plumbo-Solvency .....	Nil.
No. of microbes per c.c. ....	102
B. coli per 100 c.c.....	2

The water has never shown any acidity or plumbo-solvent action, but in hot summers especially, the water in the Heaton storage reservoir deteriorates owing to an excessive growth of low vegetable organisms, and becomes unpalatable at times. This matter is now receiving the earnest attention of the Waterworks Engineers.

### **Complaints.**

Very few complaints have been received during 1908 with regard to the quality of the water, and only one complaint with regard to insufficiency, and the answers sent to me by the Medical Officers of Health of the districts supplied by the Bolton Corporation show that the water has been, on the whole, very satisfactory. In answer to enquiries made in September, 1908, I received the following replies:—

ATHERTON.—“Last complaint made 16th January, 1908. Since that time the water has not always been satisfactory in quality.”

WESTHOUGHTON.—“Last complaint made in January, 1908. Since then water has been of quite good quality and has remained so up to the present time.”

TURTON.—“No complaints have reached the Council in regard to the Bolton Corporation water supply except as to its acid reaction and plumbo-solvent properties.”

AINSWORTH.—“I have not received any complaint during the present year, the worst that I have heard is that the pipes are not flushed often enough.”

CLIFTON (Barton-upon-Irwell).—“We have received no complaints as to the quality of the water supplied to the district of Clifton.”



FARNWORTH.—“I have no cause to complain of the quality of the water supplied to Farnworth by the Bolton Corporation.”

ASPULL.—“Last complaint made in 1907. Quantity of the supply is variable, sometimes absent, and rarely what may be termed good. The quality of the water just now is good, but occasionally we have complaints owing no doubt to the frequent “churning” of the water in the mains.”

WORSLEY.—“I have had no complaints *re* water supply during 1908.”

KEARSLEY.—“I have had no complaints to make, or had any made to me either this year or last.”

LITTLE HULTON.—“Water supply has been satisfactory this year.”

### **Conclusions.**

The condition of the raw water is at present satisfactory, but there are opportunities of pollution both at Entwistle and Heaton, which will have to be carefully guarded against by proper supervision and measures of prevention, as the conditions in the rainy season will, in all probability, be not so favourable as at present.

The Dingle water, the purest in its origin, has in its raw state a marked action on lead, and the present experiments should be continued to determine the neutralisation necessary at different periods of the year.

The analyses of the water should be continued so as to determine the efficiency of the filters during the whole of the year, and these should be extended and improved as is found necessary.

The Waterworks Committee have during the last year made some notable improvements for the purpose of improving the quality of the water. The Markland Hill Filters have been renewed with Leighton Buzzard Sand, and an apparatus is about to be installed for the automatic regulation of the water through the filter beds. The extension of these filter beds is also under consideration. Mechanical filters have been erected at Sweetloves, and the covering of the clear water well with concrete is nearly completed. A chalk-mixing apparatus has been erected both at Dingle and Entwistle. A new reservoir at Delph is in course of construction.

I am indebted to the Waterworks Engineers, Messrs. Swindlehurst and Mitchell, for the figures and many of the facts in the body of this report, and especially to Mr. Mitchell, who has accompanied me on the inspection and given me most ungrudgingly his valuable advice and assistance.

# ANALYSES OF WATER, 26th August, 1908, to 6th October, 1908, (Seven Samples).

	STORAGE WATERS.			
	SWEETLOVES.		HEATON.	
	Albuminoid Ammonia.	Oxygen Absorbed.	Albuminoid Ammonia.	Oxygen Absorbed.
<b>Chemical Results—</b>				
Average .....	·006	·226	·017	·319
Maximum .....	·009	·275	·028	·440
Minimum .....	·004	·170	·013	·230
<b>Bacteriological Results—</b>				
Average .....	87	0·28	128	5
Maximum .....	172	2	244	10
Minimum .....	28	0	37	2



# ANALYSES OF WATER, 26th August, 1908, to 6th October, 1908 (Seven Samples).

	RAW WATERS.						FILTERED WATERS.									
	ENTWISTLE.			DINGLE.			HEATON.		S'LOVES SAND.		S'LOVES MECH.		DINGLE SAND.		HEATON SAND.	
	Album. Ammonia Absorbed	Oxygen Absorbed	Album. Ammonia	Oxygen Absorbed	Album. Ammonia	Oxygen Absorbed	Album. Ammonia	Oxygen Absorbed	Album. Ammonia	Oxygen Absorbed	Album. Ammonia	Oxygen Absorbed	Album. Ammonia	Oxygen Absorbed	Album. Ammonia	Oxygen Absorbed
<b>Chemical Results—</b>																
Average .....	·012	·427	·013	·337	·018	·367	·006	·309	·006	·257	·006	·202	·011	·280		
Maximum .....	·022	·490	·016	·480	·020	·525	·009	·400	·009	·315	·008	·315	·016	·430		
Minimum .....	·009	·350	·009	·135	·016	·320	·002	·210	·005	·155	·005	·095	·008	·200		
	No. of Microbes	B. Coli.	Micr.	B. Coli.	Micr.	B. Coli.	Micr.	B. Coli.	Micr.	B. Coli.	Micr.	B. Coli.	Micr.	B. Coli.		
<b>Bacteriological Results—</b>																
Average .....	205	4	405	5	208	9	22	0	13	0	65	0·5	56	2		
Maximum .....	490	10	960	10	596	20	42	0	31	0	144	2	132	7		
Minimum .....	57	0	56	2	42	0	10	0	5	0	3	0	9	0		
	26th Aug. 1908.	3rd Sep. 1908.	8th Sep. 1908.	17th Sep. 1908.	22nd Sep. 1908.	28th Sep. 1908.	6th Oct. 1908.									
<b>Acidity and Lead Dis. Prop. (Dingle)—</b>																
Organic Acidity.....																
Co <sub>2</sub> Acidity .....	Neut'l	Neut'l	Neut'l	Neut'l	Neut'l	Neut'l	Neut'l									
Action on Lead (24 hours) .....	Nil	Nil	Nil	Nil	Nil	Nil	Nil									

*Appendix.*

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[illegible]



[illegible]



TABLE

CAUSES

4

CAUSES OF DEATH,	Total.	SEX.		AGE.															
		M.	F.	0	1	2	3	4	5	10	15	20	25	30	35	40	45	45	50
				to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
				1	2	3	4	5	10	15	20	25	30	35	40	45	50		
<b>IV.—Constitutional.</b>																			
Tubercular Phthisis																			
(Pulmonary Tuberculosis) ...	180	108	72	1	...	...	...	...	3	2	10	16	18	20	20	21	24		
Phthisis ...	36	27	9	...	...	...	...	...	2	2	2	4	4	3	5	5	5		
Tubercular Meningitis	30	16	14	8	10	2	...	2	6	...	...	1	...	...	...	...	...		
Tubercular Peritonitis	11	5	6	4	...	1	...	1	1	1	...	1	1	...	...	...	...		
Tabes Mesenterica	17	8	9	12	4	1	...	...	...	...	...	...	...	...	...	...	...		
Lupus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Tubercle of other Organs	20	14	6	4	1	3	1	...	...	...	1	...	1	3	3	...	...		
General Tuberculosis	17	9	8	5	2	...	1	1	1	...	2	1	...	1	2	...	...		
Scrofula	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Rheumatic Fever,																			
Acute Rheumatism	12	5	7	...	...	...	...	...	1	1	5	1	...	2	1	...	...		
Rheumatism of Heart	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Chronic Rheumatism	11	4	7	...	...	...	...	...	1	...	...	1	...	...	...	...	...		
Rheumatic Arthritis,																			
Rheumatic Gout	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Gout	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Carcinoma	78	38	40	...	...	...	...	...	...	...	...	...	1	1	3	4	9		
Sarcoma	6	3	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Cancer, Malignant Disease	38	12	26	...	...	...	...	...	...	...	...	...	...	...	1	1	4		
Rickets	2	1	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...		
Purpura	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Hæmophilia, Hæmorrhagic																			
Diathesis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Anæmia, Leucocythæmia	19	4	15	...	...	1	...	...	...	...	1	1	...	...	2	4	1		
Diabetes Mellitus	17	13	4	...	...	...	...	...	...	...	1	1	...	2	1	...	1		
Total Constitutional	496	268	228	35	17	8	2	5	15	6	22	27	25	32	38	36	46		
<b>V.—Developmental.</b>																			
Premature Birth	94	45	49	93	...	1	...	...	...	...	...	...	...	...	...	...	...		
Congenital Defects	15	5	10	14	...	...	...	...	1	...	...	...	...	...	...	...	...		
Injury at Birth	4	3	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...		
Atelectasis	4	2	2	4	...	...	...	...	...	...	...	...	...	...	...	...	...		
Want of Breast Milk	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Teething	37	20	17	20	13	4	...	...	...	...	...	...	...	...	...	...	...		
Old Age, Senile Decay...	245	79	166	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Total Developmental	399	154	245	135	13	5	...	...	1	...	...	...	...	...	...	...	...		
<b>B.—Local Diseases.</b>																			
<b>I.—Nervous System.</b>																			
Meningitis, Inflammation of																			
Brain	44	28	16	17	10	...	3	2	6	3	2	...	...	...	...	...	...		
Softening of Brain	11	6	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...		
General Paralysis of Insane	9	8	1	...	...	...	...	...	...	...	...	...	...	1	...	2	1		
Insanity (not Puerperal)	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Chorea	2	...	2	...	...	...	...	...	...	1	1	...	...	...	...	...	...		
Epilepsy	6	2	4	...	...	...	...	...	...	...	...	1	...	...	...	1	...		
Convulsions	61	33	28	51	5	4	...	1	...	...	...	...	...	...	...	...	...		
Laryngismus Stridulus	5	2	3	2	...	...	1	1	1	...	...	...	...	...	...	...	...		
Locomotor Ataxy	4	4	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1		
Paraplegia and Diseases of																			
Spinal Cord	7	2	5	...	...	...	...	...	...	...	...	...	...	...	...	1	...		
Neuritis, Peripheral,																			
Poly-neuritis	5	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Brain Tumour (not Specific)	5	5	...	...	...	...	...	1	1	...	...	...	...	2	...	...	...		
Other Diseases of Nervous																			
System	14	10	4	...	...	1	...	...	...	...	...	...	...	...	1	1	2		
Total Nervous	175	102	73	70	15	5	4	5	8	4	2	1	1	5	6	4	4		



								WARD.																
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c- Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar. Lever c-Br'htmet
7	3	1	1	...	...	1	179	11	13	28	8	19	10	4	20	6	4	7	17	4	8	8	9	4
1	...	...	...	...	...	...	36	2	2	9	1	5	4	...	2	...	1	...	8	...	1	1	...	...
...	...	1	...	...	...	22	8	1	2	4	2	6	1	3	6	...	...	1	1	...	1	2	...	...
...	...	...	...	...	...	6	5	1	2	1	1	2	...	...	2	...	1	...	...	...	...	...	1	...
...	...	...	...	...	...	17	...	...	4	6	...	3	...	...	1	...	...	...	2	...	...	...	1	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	9	11	...	1	4	1	1	1	1	3	1	...	...	2	1	2	...	2	...
...	...	1	...	...	...	9	8	...	3	4	2	...	...	...	1	...	...	...	4	...	...	1	2	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	12	1	1	4	1	1	...	...	1	...	...	...	2	...	...	...	1	...
1	4	2	...	...	...	...	11	1	1	1	...	2	...	1	2	...	...	1	1	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
17	7	6	4	1	...	...	78	6	2	11	1	10	5	6	8	3	2	3	10	1	3	2	5	...
...	1	2	...	1	...	...	6	1	...	2	2	...	...	...	...	...	...	...	...	...	...	...	1	...
11	6	1	1	1	...	...	38	1	1	5	2	2	2	6	7	1	2	2	2	...	...	1	4	...
...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	1	...	1	...	...	1	18	1	2	4	...	1	...	1	3	...	1	1	1	...	...	1	...	3
3	1	3	1	...	...	...	17	3	...	2	...	1	1	2	2	1	...	...	1	1	1	1	1	...
43	23	17	8	4	...	67	429	29	35	85	21	53	24	24	59	12	11	16	52	7	16	17	27	8
...	...	...	...	...	...	94	...	7	4	16	1	11	8	2	13	3	1	2	13	...	4	5	...	4
...	...	...	...	...	...	14	1	1	1	1	...	2	...	4	2	...	1	...	...	...	1	...	1	1
...	...	...	...	...	...	4	...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	...	1	...
...	...	...	...	...	...	4	...	...	...	2	...	1	...	1	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	32	58	61	54	22	37	...	2	1	9	1	8	3	1	7	...	...	3	...	2	...	...	...	...
...	...	...	...	...	...	...	245	9	17	32	7	21	19	12	16	15	9	12	27	6	7	16	12	8
12	32	58	61	54	22	153	246	19	23	60	9	43	31	21	38	19	11	14	43	6	14	21	14	13
...	...	...	...	...	...	32	12	1	4	7	...	5	1	...	6	1	1	1	9	2	2	1	3	...
4	2	...	1	...	...	...	11	...	...	2	...	...	1	1	2	1	...	...	1	...	...	...	3	...
...	...	1	...	...	...	9	...	3	...	2	...	...	1	...	...	...	...	2	...	1	...	...	...	...
...	...	...	...	1	...	2	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...
...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	1	1	...	6	...	1	...	2	...	...	1	...	...	...	...	1	...	...	...	1	...	...
...	...	...	...	...	...	61	...	2	6	15	4	11	1	2	7	...	...	8	...	3	...	1	1	...
...	...	...	...	...	...	4	1	...	3	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
...	2	...	...	...	...	...	4	1	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	...
1	2	...	...	...	...	...	7	1	...	2	...	1	...	...	1	...	...	...	2	...	...	...	...	...
...	1	...	...	...	...	...	5	...	...	...	1	1	...	...	...	...	...	...	2	...	...	...	1	...
...	...	...	...	...	...	1	4	...	...	1	...	...	1	...	1	...	...	...	2	...	...	...	...	...
6	1	1	...	...	...	1	13	...	...	2	1	2	...	1	1	...	1	2	2	1	...	1	...	...
11	8	2	2	2	...	99	76	9	13	35	6	20	6	5	19	2	3	3	31	3	6	4	8	2



CAUSES OF DEATH,	Total.	SEX.		AGE.															
		M.	F.	0 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50		
<b>II.—Organs of Special Sense.</b>																			
Otitis, Mastoid Disease ...	2	...	2	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Epistaxis, Nose Disease ...	1	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
Ophthalmia, Eye Disease ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Total Organs of Special Sense	3	1	2	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	
<b>III.—Heart.</b>																			
Valvular Disease, Endocarditis (not Infective) ...	92	47	45	...	...	...	...	...	...	4	8	4	3	6	5	10	10	...	
Pericarditis ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Hypertrophy of Heart ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Angina Pectoris ...	8	6	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
Dilatation of Heart ...	9	6	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
Fatty Degeneration of Heart ...	14	8	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
Syncope. Heart Disease (not Specified) ...	125	59	66	2	1	...	1	...	3	1	2	3	5	6	5	5	11	...	
Total Diseases of Heart	250	128	122	2	1	...	1	...	3	5	10	7	8	12	11	16	23	...	
<b>IV.—Blood Vessels.</b>																			
Cerebral Hæmorrhage, Embolism, Thrombosis ...	92	45	47	...	...	...	...	...	...	...	1	1	2	1	2	6	1	...	
Apoplexy, Hemiplegia ...	43	20	23	...	...	...	...	...	...	...	...	...	1	...	3	...	2	...	
Aneurism... ..	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
Senile Gangrene ...	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Embolism, Thrombosis (not Cerebral) ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Phlebitis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Varicose Veins ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Blood Vessels (other Diseases of)	12	10	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Total Diseases of Blood Vessels...	152	77	75	...	...	...	...	...	...	...	1	1	3	1	5	6	5	...	
<b>V.—Respiratory System.</b>																			
Laryngitis ...	8	4	4	3	2	1	2	...	...	...	...	...	...	...	...	...	...	...	
Membranous Laryngitis (not Diphtheritic) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Croup (not Spasmodic or Membranous) ...	2	2	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	
Other Diseases of Larynx (not Specified) ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
Bronchitis ...	288	130	158	47	12	2	2	1	2	1	2	...	3	2	7	5	7	...	
Lobar and Croupous Pneumonia	31	16	15	2	2	...	...	...	...	2	...	2	5	2	...	2	2	...	
Broncho, Catarrhal and Lobular Pneumonia...	92	55	37	39	28	6	5	...	2	...	...	...	...	...	...	2	1	...	
Pneumonia ...	77	40	37	9	4	4	2	1	3	...	2	4	3	2	5	6	5	...	
Emphysema, Asthma ...	4	1	3	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	
Pleurisy ...	9	6	3	...	...	...	1	...	2	...	...	1	2	...	...	1	...	...	
Fibroid Disease of Lung ...	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	
Other Diseases of Respiratory System ...	13	5	8	2	...	1	...	...	...	1	...	...	1	...	2	...	1	...	
Total Diseases of Respiratory System ...	528	261	267	102	48	15	13	2	10	4	4	7	14	6	14	18	17	...	



								WARD.																
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar. Lever c-Br'htmet
...	...	...	...	...	...	1	1	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
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7	7	4	...	1	...	...	92	9	5	11	...	10	3	5	12	...	...	8	15	1	5	2	4	2
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1	1	2	...	...	...	...	9	...	...	...	...	1	1	...	3	...	...	...	3	...	...	1	...	...
3	4	...	...	...	...	...	14	...	2	2	...	...	...	1	2	1	1	...	3	...	...	1	1	...
16	14	11	9	1	...	4	121	3	5	24	4	16	11	4	20	3	4	...	21	1	2	2	4	1
28	27	20	9	2	...	4	246	12	12	39	4	28	17	10	38	4	5	9	44	2	7	7	9	3
20	12	15	6	4	...	...	92	2	6	19	6	10	4	6	10	2	3	2	16	...	...	2	3	1
6	10	5	3	...	...	...	43	1	5	3	...	3	5	7	2	...	2	...	7	2	...	...	4	2
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28	26	26	10	4	...	...	152	3	11	25	6	16	9	13	13	3	5	2	26	2	2	4	9	3
...	...	...	...	...	...	8	...	...	3	1	...	...	...	...	2	...	...	...	...	...	1	1	...	...
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45	44	23	17	8	7	64	224	13	36	44	16	37	12	7	33	8	4	9	31	1	2	11	13	11
2	5	1	...	...	...	4	27	2	2	4	2	1	3	1	4	...	...	2	8	...	...	1	1	...
3	1	2	...	...	...	78	14	2	9	13	4	8	2	2	18	6	2	8	9	...	1	4	3	1
7	4	4	3	1	1	20	57	1	6	12	2	10	4	7	10	1	2	3	5	...	1	1	9	3
1	1	1	...	...	...	1	3	...	...	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...
...	...	...	...	...	...	1	8	...	2	2	...	1	...	1	...	...	...	...	1	...	1	...	1	...
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1	1	2	...	...	...	3	10	...	1	2	...	1	1	2	2	1	...	...	1	...	1	...	1	...
59	56	34	20	9	8	180	348	18	60	81	24	59	22	20	69	16	8	22	50	1	7	18	28	16



CAUSES OF DEATH,	Total.	SEX.		AGE.															
		M.	F.	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	
				to 1	to 2	to 3	to 4	to 5	to 10	to 15	to 20	to 25	to 30	to 35	to 40	to 45	to 50		
<b>VI.—Digestive System.</b>																			
Tonsillitis, Quinsy ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Mouth, Pharynx Disease (not Specified) ...	4	1	3	2	...	...	1	...	...	...	...	...	...	...	1	...	...	...	
Gastric Ulcer ...	7	1	6	...	...	...	...	...	...	1	...	1	1	1	...	...	...	...	
Gastritis Gastric Catarrh, Gastro-Intestinal Catarrh ...	34	16	18	20	1	...	1	...	...	1	1	...	1	...	1	...	...	...	
Other Diseases of Stomach (not Malignant) ...	16	8	8	8	2	...	...	...	...	...	...	...	...	...	...	...	1	...	
Enteritis (not Epidemic) ...	24	11	13	16	3	...	1	...	...	...	...	...	...	...	...	...	...	...	
Gastro-Enteritis ...	9	7	2	4	1	1	...	...	1	1	...	...	...	...	...	...	...	...	
Appendicitis, Perityphlitis ...	8	5	3	...	...	...	...	1	1	2	1	...	...	1	...	...	...	...	
Hernia ...	6	2	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
Intestinal Obstruction ...	7	3	4	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	
Other Diseases of Intestines ...	19	9	10	6	...	...	...	...	...	...	...	...	...	...	2	1	...	...	
Peritonitis (not Puerperal) ...	6	3	3	2	...	1	...	...	1	1	...	1	...	...	...	...	...	...	
Cirrhosis of Liver ...	20	14	6	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	
Other Diseases of Liver and Gall Bladder ...	9	4	5	2	...	...	...	...	...	1	...	...	1	...	...	...	1	...	
Other Diseases of Digestive System ...	2	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Total Diseases of Digestive System ...	172	86	86	61	7	2	3	2	3	7	2	3	3	3	4	7	8	...	
<b>VII.—Lymphatic System and Ductless Glands.</b>																			
Spleen Disease ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Other Diseases of Lymphatic System ...	2	...	2	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	
Thyroid Body Disease ...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Suprarenal Capsules Disease ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Total Diseases of Lymphatic System & Ductless Glands...	4	1	3	...	...	...	...	...	...	...	1	...	...	1	...	1	1	...	
<b>VIII.—Urinary System.</b>																			
Acute Nephritis ...	10	8	2	3	...	...	...	...	...	...	2	...	...	...	2	...	...	...	
Chronic Bright's Disease, Albuminuria ...	70	37	33	1	...	...	...	...	...	1	...	1	1	1	5	3	8	...	
Calculus (Not Biliary) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Bladder and Prostrate Disease ...	6	2	4	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	
Other Diseases of Urinary System ...	7	2	5	...	...	...	...	...	...	...	...	...	...	1	1	1	...	...	
Total Diseases of Urinary System	93	49	44	4	...	...	...	...	...	1	2	1	2	2	8	4	9	...	
<b>IX.—Generative System.</b>																			
Ovarian Tumour (not Malignant) ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Other Diseases of Ovary ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Uterine Tumour (not Malignant) ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Other Diseases of Uterus and Vagina ...	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Disorders of Menstruation ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Other Diseases of Generative and Mammary Organs ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
Total Diseases of Generative System ...	5	1	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	
<b>X.—Pregnancy and Childbirth.</b>																			
Abortion, Miscarriage ...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	
Puerperal Mania ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Puerperal Convulsions ...	1	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Placenta Prævia, Flooding, Accidental Hæmorrhage ...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Other Accidents of Pregnancy and Childbirth ...	9	...	9	...	...	...	...	...	...	...	...	1	3	1	3	1	...	...	
Total Accidents of Pregnancy and Childbirth ...	12	...	12	...	...	...	...	...	...	...	...	2	4	2	3	1	...	...	



								WARD.																
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar. Lever c-Br hmet
...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	3	1	...	...	1	...	1	1	...	...	...	...	...	...	...	1	...	...	...
...	...	...	...	...	...	7	7	...	1	...	...	...	...	2	2	2	...	...	...	...	...	...	...	...
1	1	1	1	...	...	22	12	...	3	6	...	3	1	1	3	...	2	1	7	...	1	4	2	...
1	2	...	...	...	...	10	6	...	2	2	1	4	1	...	3	2	...	...	1	...	...	...	...	...
...	2	1	...	...	...	20	4	1	...	2	...	8	...	1	6	1	...	2	3	...	...	...	...	...
...	...	...	...	...	...	6	3	...	...	2	...	...	...	...	...	...	...	...	3	...	...	1	2	1
1	...	...	...	...	...	1	7	...	...	2	...	...	...	1	1	1	...	2	...	...	...	1	...	...
1	...	1	...	...	...	...	6	...	...	...	...	1	...	...	1	1	...	...	1	...	1	...	1	...
...	1	1	...	...	1	1	6	...	...	2	...	1	1	...	...	...	...	...	...	...	...	...	3	...
1	1	...	1	1	...	6	13	2	2	4	1	2	...	2	1	...	...	...	...	...	2	1	...	2
...	...	...	...	...	...	3	3	1	2	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...
5	3	2	...	...	...	...	20	1	1	1	1	4	2	3	2	1	...	...	2	...	...	...	2	...
1	1	1	...	...	...	2	7	...	...	...	...	3	...	1	1	...	1	...	1	...	2	...	...	...
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11	11	7	2	1	1	75	97	5	11	24	3	29	6	11	20	8	3	5	20	...	7	7	10	3
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14	10	8	1	...	...	1	69	6	2	11	2	7	2	4	5	1	3	...	9	2	5	2	7	2
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15	13	8	2	1	...	4	89	7	4	16	4	10	2	7	7	2	3	...	12	2	6	2	7	2
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1	...	1	...	...	...	...	5	1	...	2	...	...	...	...	...	...	...	...	1	...	...	1	...	...
...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	9	...	1	...	...	1	...	1	2	1	...	1	1	...	...	...	1	...
...	...	...	...	...	...	...	12	...	1	...	...	1	1	2	2	1	...	1	1	...	...	...	1	...



TABLE

CAUSES

10

CAUSES OF DEATH.	Total.	SEX.		AGE.															
		M.	F.	0	1	2	3	4	5	10	15	20	25	30	35	40	45	50	
				to 1	to 2	to 3	to 4	to 5	to 10	to 15	to 20	to 25	to 30	to 35	to 40	to 45	to 50		
<b>XI.—Locomotor System.</b>																			
Caries, Necrosis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Arthritis, Periostitis ...	2	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of Locomotor System ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Diseases of Locomotor System ...	2	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
<b>XII.—Skin.</b>																			
Ulcer, Bed sore ...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Eczema ...	2	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pemphigus ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Skin Diseases...	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Diseases of Skin ...	5	2	3	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
<b>C.—Other Specified Diseases.</b>																			
<b>D.—Ill-defined and not Specified Diseases.</b>																			
Atrophy, Debility, Marasmus ...	89	57	32	87	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Dropsy, Ascites, Anasarca ...	2	1	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tumour ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abscess ...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Hæmorrhage ...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sudden Causes (causes unascertained) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Ill-defined Diseases ...	2	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total Ill-defined and not Specified Causes ...	95	58	37	90	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>E.—Violent Causes.</b>																			
<b>1.—Accident.</b>																			
In Mines and Quarries ...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Vehicles and Horses...	6	5	1	...	...	...	...	...	...	...	...	1	1	...	1	1	...	...	...
Ships, Boats, Docks (not Drowning) ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Building Operations...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Machinery ...	8	7	1	...	...	...	...	...	...	1	1	...	1	1	...	...	...	...	2
Weapons and Implements ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burns and Scalds ...	16	7	9	...	2	1	2	4	3	...	2	...	...	...	...	1	...	...	...
Poison, Poisonous Vapours ...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Drowning ...	9	7	2	...	...	...	...	...	1	...	...	2	2	1	...	...	...	...	...
Suffocation ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Falls ...	35	22	13	...	...	1	...	...	1	...	1	1	2	3	1	1	...	...	2
Weather Agencies ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Otherwise or not Stated ...	6	4	2	1	...	...	...	...	...	1	...	...	1	2	...	...	...	...	...
<b>2.—Homicide.</b>																			
<b>3.—Suicide.</b>																			
<b>4.—Execution.</b>																			
Total Violent Deaths ...	111	73	38	1	2	2	3	4	5	2	4	6	8	12	6	6	...	...	8
Total from all Causes...	2874	1447	1427	677	156	57	36	26	60	33	60	65	79	84	105	107	129	...	...



—Continued.  
DEATH, 1908.

								WARD.																
60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 and upwards	0 to 5	5 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-c-Lostock	Rumworth	Halliwell	Heaton	Smithills	Astley Bridge	Tonge	Dar. Lever c-Br'htmet
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	2	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	3	2	...	...	1	1	...	...	1	1	...	...	...	1	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	89	...	5	11	13	2	14	3	...	9	1	4	4	12	...	2	1	6	2
...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...
...	1	...	...	...	...	93	2	5	11	13	3	17	3	...	10	1	4	4	13	...	2	1	6	2
...	...	...	...	...	...	...	2	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	6	...	...	1	...	...	2	...	...	...	...	...	...	...	...	1	...	2
...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	8	2	2	...	...	...	...	1	1	...	...	...	2	...	...	...	...	...
...	...	...	...	...	...	...	9	7	4	1	...	3	...	...	1	...	3	1	1	...	...	1	1	...
...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
...	...	1	...	...	...	...	9	...	...	...	...	...	1	1	1	...	1	...	...	...	2	2	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	5	3	4	...	2	1	34	...	2	13	2	6	2	2	2	...	...	1	1	1	...	1	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	1	5	...	...	1	1	1	1	1	...	1	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	1	1	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	2	2	...	1	...	25	1	2	4	1	3	...	5	2	...	...	1	2	1	2	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	7	6	4	1	2	12	99	3	10	22	5	13	7	10	8	2	4	3	6	2	4	5	2	5
219	207	181	119	78	34	952	1922	117	211	459	101	343	143	144	347	77	69	103	344	26	81	100	146	63



TABLE II.

## POPULATION, BIRTHS AND DEATHS IN PREVIOUS YEARS.

Year	Population estimated to Middle of each Year	Births		Total Deaths registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-residents Registered in Public Institutions in District	Deaths of Residents Registered in Public Institutions beyond District	Net Deaths at all Ages belonging to the District	
		Number	Rate	Under 1 year of age		At all ages					Number	Rate
				Number	Rate per 1000 Births Registered	Number	Rate					
1898	122495	3800	31·0	632	166	2196	17·9	81	31	185	2350	19·1
1899	162222	4878	30·0	864	177	2971	18·3	116	17	284	3238	19·9
1900	164240	4775	29·0	806	168	2952	17·9	119	16	285	3222	19·6
1901	168748	4648	27·5	794	170	2864	16·9	128	24	245	3085	18·2
1902	171082	4779	27·9	626	130	2741	16·0	160	31	240	2959	17·2
1903	173401	4700	27·1	704	149	2768	15·9	136	18	312	3062	17·6
1904	175744	4736	26·9	775	163	2743	15·6	129	28	279	2994	17·0
1905	178111	4481	25·1	724	161	2492	13·9	138	26	288	2754	15·4
1906	180502	4599	25·4	631	137	2551	14·1	138	27	270	2794	15·4
1907	182917	4476	24·4	646	144	2795	15·2	174	28	306	3073	16·7
Averages for years 1898-1907.	167946	4587	27·4	720	156	2707	16·1	131	24	269	2953	17·6
1908	185358	4573	24·6	667	145	2599	14·0	153	38	313	2874	15·5

## CENSUS, 1901.

Total Population at all ages	...	...	...	168215
Number of Inhabited Houses	...	...	...	35995
Average Number of Persons per House	...	...	...	4'6
Area of District in Acres (exclusive of area covered by water)	...	...	...	14908



TABLE III.

## WARD POPULATIONS, BIRTHS, AND DEATHS.

Names of Wards	Borough				North				East				West				Exchange				Bradford			
	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 Year
1898.....	12495	3800	2350	638	6993	220	124	33	11313	349	237	69	27438	765	448	120	7250	216	178	47	19018	643	382	109
1899.....	16222	4878	3238	880	7036	213	127	41	11313	354	267	75	27627	784	556	142	7250	188	149	45	19068	600	391	104
1900.....	16424	4775	3222	814	7200	217	137	41	11000	338	276	60	28370	714	544	127	6750	167	147	39	19440	599	383	104
1901.....	16874	4648	3085	800	7386	179	118	22	10654	320	257	74	27290	695	451	106	5874	132	156	38	19852	636	441	118
1902.....	17108	4779	2959	633	7452	209	142	24	10556	312	245	57	27343	708	430	87	5724	173	150	28	19915	627	430	110
1903.....	17340	4700	3062	713	7520	203	141	33	10400	324	249	50	27410	684	469	121	5535	115	119	20	19980	651	401	111
1904.....	17574	4736	2994	792	7560	198	122	30	10275	312	231	70	27572	670	496	131	5331	151	101	34	20110	600	379	99
1905.....	17811	4481	2754	744	7600	175	97	25	10140	339	211	65	27705	677	436	115	5130	144	101	30	20220	572	363	110
1906.....	18050	4599	2794	636	7710	194	104	27	10040	300	207	51	27840	709	477	123	4950	132	95	15	20330	603	386	101
1907.....	18291	4476	3073	652	7810	186	118	15	9940	322	233	64	27960	691	491	106	4779	125	107	30	20430	547	402	102
Averages of years 1898 to 1907	16794	4587	2953	730	7426	199	123	29	10563	327	241	63	27655	709	479	117	5856	154	130	32	19836	607	395	106
1908.....	18358	4573	2874	677	7985	178	117	30	9631	321	211	62	28059	726	459	103	4234	125	101	18	20588	571	343	100



TABLE III. (Continued).

## WARD POPULATIONS, BIRTHS, AND DEATHS.

Names of Wards	Church				Great Lever				Derby				Hulton				Deane-cum-Lostock				Rumworth				
	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	
Year																									
1898.....	9820	169	149	20	18483	640	370	118	Statistics not available	18483	640	370	118	Statistics	not available	Statistics	not available	5891	230	145	42	5891	230	145	42
1899 .....	9936	175	153	31	18629	645	405	119	7744	247	136	31	18629	645	405	119	87	2787	86	69	23	5995	217	135	36
1900.....	8760	161	143	25	19190	607	424	119	7700	244	129	32	19190	607	424	119	82	2700	98	55	16	6400	235	144	46
1901.....	8607	155	134	31	19171	591	370	114	9098	230	139	31	19171	591	370	114	77	3203	96	39	12	7263	220	164	44
1902.....	8604	172	158	24	19315	616	367	104	9433	252	129	23	19315	616	367	104	73	3209	92	36	8	7590	233	124	31
1903.....	8550	171	139	26	19470	561	349	95	9900	236	150	34	19470	561	349	95	78	3215	80	51	9	7925	249	129	29
1904.....	8545	168	138	38	19685	601	360	103	10290	234	130	36	19685	601	360	103	81	3231	81	60	5	8165	246	163	53
1905.....	8540	139	102	18	19870	545	343	93	10697	214	159	36	19870	545	343	93	79	3245	82	49	13	8415	224	122	43
1906.....	8537	164	135	17	20120	555	344	87	11050	237	121	21	20120	555	344	87	58	3250	89	32	8	8805	229	125	38
1907.....	8534	169	139	16	20320	536	342	76	11428	240	167	33	20320	536	342	76	78	3255	72	44	7	9205	241	152	37
Averages of Years 1898 to 1907	8843	164	139	24	19425	589	367	102					19425	589	367	102						7565	232	140	39
1908.....	8472	159	143	32	20552	510	347	94																	32



TABLE III. (Continued).

## WARD POPULATIONS, BIRTHS, AND DEATHS.

Names of Wards	Halliwell				Heaton				Smithills				Astley Bridge				Tonge				Darcy Lever-cum- Brightmet			
	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year	Population esti- mated to Middle of each year	Births Registered	Deaths at all Ages	Deaths under 1 year
1898.....	16289	568	317	80	Statistics	not available																		
1899.....	16487	564	355	110	1516	35	22	1	3471	112	64	17	7496	183	122	24	7904	277	149	34	3849	83	54	15
1900.....	17540	566	361	88	1530	29	25	1	3600	102	61	14	7510	188	109	21	8400	284	126	43	3850	94	76	15
1901.....	19746	591	349	87	1902	38	24	4	4412	121	54	13	7707	160	110	29	8562	260	147	37	3566	89	55	11
1902.....	20390	577	283	51	1930	38	31	5	4614	90	68	11	7849	194	137	25	8920	236	99	17	3554	87	57	7
1903.....	21070	572	339	75	1960	37	33	4	4830	138	87	25	7995	176	122	24	9301	256	141	29	3520	97	65	15
1904.....	21635	619	307	76	1994	57	41	10	5010	133	59	17	8155	180	111	22	9725	256	139	31	3508	108	67	15
1905.....	22305	529	303	96	2035	48	25	4	5187	143	74	14	8312	186	118	18	10145	239	117	27	3485	79	56	10
1906.....	22905	573	314	64	2050	46	33	4	5350	117	73	11	8440	188	111	17	10440	227	113	25	3480	90	65	13
1907.....	23580	536	371	80	2063	31	22	3	5522	119	80	11	8540	178	127	22	10755	260	132	23	3475	86	68	8
Averages of Years 1898 to 1907	20194	569	329	80																				
1908.....	24465	582	344	74	2135	42	26	1	5768	130	81	19	8850	182	100	22	11060	225	146	25	3410	118	63	13







TABLE V.  
CAUSES OF, AND AGES AT, DEATH DURING YEAR 1908.

Causes of Death	Deaths at the subjoined Ages of "Residents" whether occurring in or beyond the District							Deaths at all Ages of "Residents" belonging to Localities, whether occurring in or beyond the District													Total Deaths whether of "Residents" or "Non-Residents" in Public Institutions in the District					
	All Ages	Under 1 year	1 and under 5	5 and under 15	15 and under 25	25 and under 65	65 and upwards	North	East	West	Exchange	Bradford	Church	Great Lever	Derby	Hulton	Deane-cum-Loxstock	Rumworth	Halliwell	Heaton		Smithills	Asley Bridge	Tonge	Dar L-cum-Brightmet	
Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Measles	2	1	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Scarlet Fever	21	11	9	...	...	1	...	...	...	3	2	2	2	...	6	...	...	...	4	...	...	1	...	...	16	
Whooping Cough	82	44	36	2	...	...	...	2	3	12	7	6	3	1	17	3	1	9	4	...	...	2	3	8	...	
Diphtheria (including Membranous Croup)	15	...	10	4	1	...	...	...	2	3	1	1	1	...	2	1	1	...	...	...	1	...	2	...	1	
Croup	2	...	1	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Fever { Enteric	36	...	1	1	10	24	...	...	4	6	...	1	3	3	6	...	4	...	1	...	3	...	4	...	...	
Other continued	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	
Epidemic Influenza	40	1	1	2	7	25	4	...	1	4	2	8	2	...	4	1	4	3	4	...	1	3	3	...	...	
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Diarrhoea	157	121	25	1	1	7	2	4	9	25	1	34	4	12	24	1	1	11	17	...	...	6	5	...	...	
Enteritis	67	40	8	3	1	9	6	1	3	10	...	11	1	2	9	1	2	3	13	...	1	5	4	...	...	
Puerperal Fever	6	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	1	...	...	
Erysipelas	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Phthisis (Pul. Tuber.)	216	1	...	9	32	169	5	13	15	37	9	24	14	4	22	6	5	7	25	...	...	9	9	4	...	
Other Tuber. Diseases	95	33	30	9	6	15	2	2	12	19	6	12	2	4	13	1	1	1	9	...	...	3	3	6	...	
Cancer, Malign. Disease	122	...	...	...	...	91	31	8	3	18	5	12	7	12	15	4	4	5	12	...	...	3	10	...	15	
Bronchitis	288	47	17	3	2	120	99	13	36	44	16	37	12	7	33	8	4	9	31	...	...	2	11	13	...	1
Pneumonia	200	50	52	7	8	61	22	5	17	29	8	19	9	10	32	7	4	13	22	...	...	2	6	13	4	...
Pleurisy	9	...	1	2	1	5	...	...	2	2	...	1	...	1	...	...	...	...	1	...	...	1	...	...	...	3
Other Diseases of Respiratory Organs	29	5	7	1	...	10	6	...	4	6	...	2	1	2	4	1	...	...	4	...	2	1	1	1	...	...
Alcoholism	...	...	...	...	...	16	5	1	1	1	1	4	2	3	2	1	...	...	2	...	...	...	2	...	...	...
Cirrhosis of Liver	21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Veneral Diseases	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Premature Birth	94	93	1	...	...	...	...	7	4	16	1	11	8	2	13	3	1	2	13	...	...	4	5	...	...	...
Diseases and Accidents of Parturition	12	...	...	...	2	10	...	...	1	...	...	1	1	3	2	1	...	1	1	...	...	...	1	...	...	...
Heart Diseases	250	2	2	8	17	163	58	12	12	39	4	28	17	10	38	4	5	9	44	...	...	...	7	9	3	4
Accidents	84	1	10	7	8	43	15	2	8	17	3	10	7	5	6	2	4	2	4	...	...	2	5	2	4	47
Suicides	25	...	...	...	1	19	5	1	2	4	1	3	...	5	2	...	...	1	2	...	...	...	...	...	1	2
All other causes	998	237	61	24	27	290	359	46	71	163	32	115	47	56	95	32	28	27	129	14	34	33	51	25	36	
All causes	2874	677	275	93	125	1085	619	117	211	459	101	343	143	144	347	77	69	103	344	26	81	100	146	63	153	



TABLE VI.

## INFANTILE MORTALITY DURING THE YEAR 1908.

## DEATHS FROM STATED CAUSES IN WEEKS AND MONTHS UNDER ONE YEAR OF AGE.

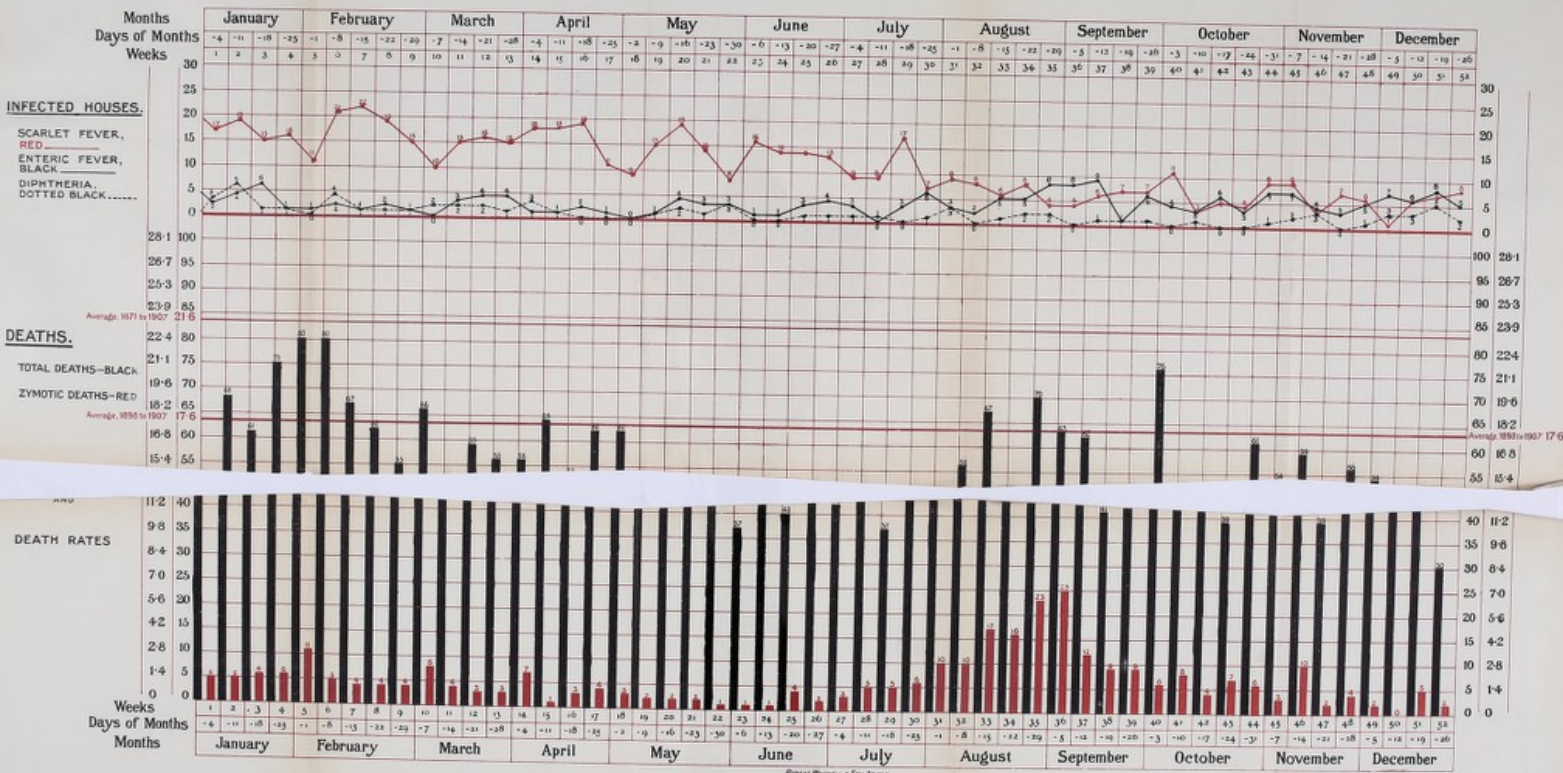
Cause of Death		Under 1 Week	1-2 Weeks	2-3 Weeks	3-4 Weeks	Total under 1 Month	1-2 Months	2-3 Months	3-4 Months	4-5 Months	5-6 Months	6-7 Months	7-8 Months	8-9 Months	9-10 Months	10-11 Months	11-12 Months	Total Deaths under 1 Year
All Causes	Certified	6	28	31	21	165	70	30	52	57	46	50	37	40	26	45	33	671
I. Common Infectious Diseases	Small Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Chicken Pox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Measles ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Scarlet Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diphtheria (including Membranous Croup)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
II. Diarrhoeal Diseases	Whooping Cough	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diarrhoea, all forms	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Enteritis, Muco-enteritis, Gastro-enteritis...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Gastritis, Gastro-intestinal Catarrh	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Premature Birth	57	7	9	7	80	9	...	...	3	...	...	...	...	...	...	...	...
III. Wasting Diseases	Congenital Defects	6	4	4	...	14	...	...	...	...	...	...	...	...	...	...	...	...
	Injury at Birth ...	2	2	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...
	Want of Breast-milk, Starvation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Atrophy, Debility, Marasmus	13	6	9	4	32	14	10	10	3	6	...	...	...	...	...	...	...
	Tuberculous Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
IV. Tuberculous Diseases	Tuberculous Peritonitis: Tabes Mesenterica	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Tuberculous Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Syphilis ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Rickets ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
V. Other Causes	Meningitis ( <i>not Tuberculous</i> )	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Convulsions	9	4	4	1	18	6	8	6	3	...	...	...	...	...	...	...	...
	Bronchitis	...	...	...	...	...	10	6	4	6	4	...	...	...	...	...	...	...
	Laryngitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Pneumonia	...	...	...	...	...	...	3	1	4	3	...	...	...	...	...	...	...
	Suffocation, overlying ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Causes ...	4	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
		91	28	31	21	171	70	50	52	57	46	50	37	40	26	45	33	677

Births in the year—Legitimate, 4,394; Illegitimate, 179.

Deaths from all Causes at all Ages, 2,874.

Population, estimated to middle of 1908, 185,358

1908.





Months

Days of Months

Weeks

INFECTED HOUSES

SCARLET FEVER

RED

ENTERIC FEVER

BLACK

DIPHTHERIA

DOTTED BLACK

DEATHS

TOTAL DEATHS - BLACK

ENTERIC DEATHS - RED