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Contributors

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CITY OF BRADFORD.



—❧— REPORT —❧—

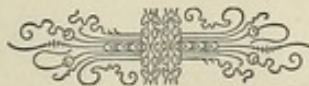
ON THE

Health of Bradford

FOR THE YEAR 1896.

BY THE

MEDICAL OFFICER OF HEALTH.



Bradford :

M. FIELD & SONS, GODWIN STREET PRINTING WORKS.



Handwritten text
TELE





HEALTH DEPARTMENT.

Town Hall,

Bradford,

W. Arnold Evans, M.D. D.P.H.
Medical Officer of Health.

TELEPHONE N^o 506.

Feb 12th

1897

Dear Sir,

I have made arrangements for the ~~the~~
Library the Brit. Med. Association to be
supplied with a copy of my Annual report
every year .

I believe a copy of the report for
the year 1895 has been sent .

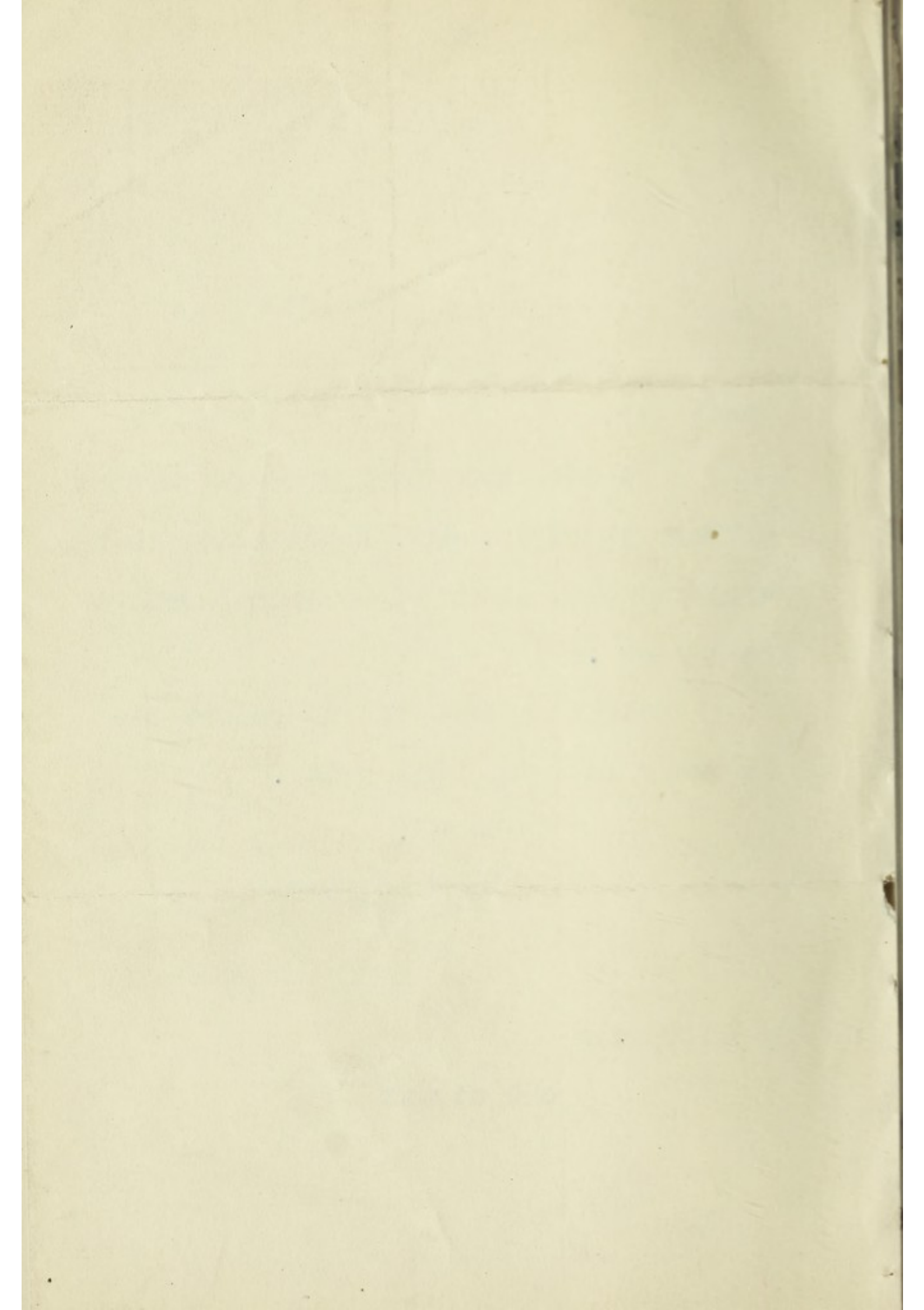
Believe me,

Yours faithfully

W. Arnold Evans

The Librarian

429 Strand



Sanitary Committee, 1896.

(Meets Every Wednesday, at 5 p.m.)

THE WORSHIPFUL THE MAYOR.

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MR. COUNCILLOR JAMES FREEMAN, Deputy Chairman.

MR. ALDERMAN JOWETT. MR. ALDERMAN POPPLEWELL.

,, LISTER. ,, ROBINSON.

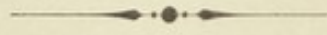
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| ,, | GRAY | ,, | ROBINSON |
| ,, | HAYHURST | ,, | SMITH |
| ,, | JARRATT | ,, | STANSFIELD |
| ,, | JOHNSON | ,, | STOTT |
| ,, | LAND | ,, | WILLIAMSON |
| ,, | MOORHOUSE | ,, | H. S. WRIGHT |

MR. COUNCILLOR JAS. WRIGHT.

City Hospital Committee, 1896.

(Meets Last Tuesday in Each Month.)



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MR. COUNCILLOR JAMES FREEMAN, Deputy Chairman.

MR. ALDERMAN JOWETT.

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„ „ POPPLEWELL.

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„ COUNCILLOR ARMITAGE.

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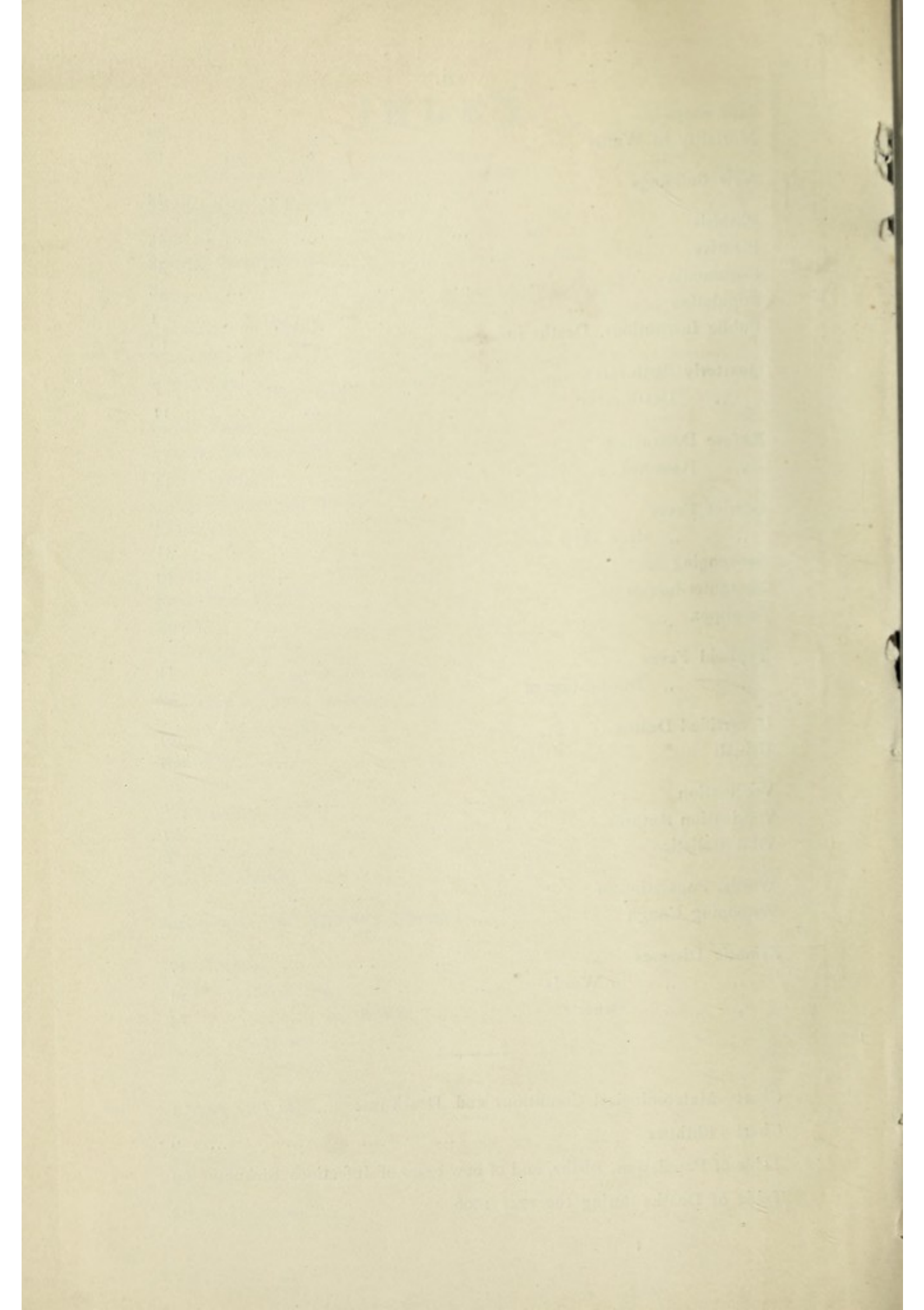
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„ „ JAS. WRIGHT.

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VITAL STATISTICS.

POPULATION.

THE population of the City of Bradford as estimated by the Registrar General to the middle of the year 1896 is 228,809, being an increase of 2,425 over the estimated mean population of the previous year. But in view of the fact that six years have now elapsed since the last official census was taken there must be some uncertainty as to the number of persons living in the City, for it does not necessarily follow that the assumption upon which this estimate is based, viz. that the City is increasing in population at the same rate during the present decade that it did during the ten yearly period 1881-91, holds good. In consequence of the estimate of the Registrar General being liable to inaccuracy in this regard, I attempted verification by taking a census of the number of inhabited houses and assuming that their mean density of population was identical with that ascertained at the 1891 census, viz 4.71 persons per house. On the night of the 12th of April, 1897, Mr. Byng, the Deputy Chief Constable kindly caused the number of empty houses in the City to be taken, the total amounting to only 757 as compared with 1988 on 4th of April, 1891. I have since extracted from the census return of 1891 the number of houses at that time inhabited, and from the books in my office the number of certificates subsequently granted for new houses, and have deducted from this total the houses demolished by street improvements or otherwise closed. It thus appears that on the 12th of April there were 52,500 inhabited houses in the City, and if this figure be multiplied by 4.71 the house density of population in 1891, the population of Bradford would appear to be 247,275 persons, a figure exceeding the estimate of the Registrar General by about 18,000. I am quite aware that on account of the low mortality rates prevailing in Bradford there

are some who consider the population over estimated, but in face of the foregoing consideration I can scarcely see my way to accept that view.

Table I. shows the principal figures as to population and mortality rates for every year since 1882.

TABLE I.—Shewing corrected Population, Birth-rate, and Mortality Rates from 1882-1896.

| YEAR. | Corrected Estimate of Population to middle of each year. | ANNUAL RATE PER 100 LIVING. | | |
|-------|--|-----------------------------|-------------|---------------|
| | | Birth-Rate. | Death-Rate. | Zymotic-Rate. |
| 1882 | 197,103 | 31·59 | 21·01 | 3·2 |
| 1883 | 199,214 | 29·88 | 18·77 | 1·5 |
| 1884 | 201,347 | 30·86 | 21·13 | 2·6 |
| 1885 | 203,504 | 30·55 | 18·62 | 1·5 |
| 1886 | 205,684 | 30·55 | 20·35 | 2·3 |
| 1887 | 207,887 | 29·83 | 21·44 | 2·9 |
| 1888 | 210,113 | 29·82 | 18·66 | 1·6 |
| 1889 | 212,364 | 29·53 | 21·15 | 2·9 |
| 1890 | 214,634 | 29·10 | 23·21 | 2·3 |
| 1891 | 216,938 | 28·64 | 22·12 | 2·35 |
| 1892 | 219,262 | 27·18 | 17·91 | 1·46 |
| 1893 | 221,610 | 27·58 | 20·90 | 3·22 |
| 1894 | 223,985 | 26·60 | 16·95 | 1·65 |
| 1895 | 226,384 | 26·03 | 19·80 | 2·47 |
| 1896 | 228,809 | 25·94 | 16·77 | 1·50 |

In Table II. the Ward population is shown. It is seen that the density in the different Wards varies between 3.4 and 90.5 persons per acre.

TABLE II.

| WARDS. | Population. | Acreage. | Persons per Acre. |
|-----------------------------|----------------|---------------|-------------------|
| North | 13,519 | 372 | 36.3 |
| South | 13,879 | 308 | 45.0 |
| East | 16,480 | 392 | 42.0 |
| West | 15,028 | 166 | 90.5 |
| Listerhills | 19,773 | 390 | 61.7 |
| Great Horton | 15,623 | 1283 | 12.1 |
| Little Horton | 16,185 | 428 | 37.8 |
| East Bowling | 16,988 | 557 | 30.4 |
| West Bowling... .. | 18,244 | 1004 | 18.1 |
| Exchange | 5,126 | 117 | 43.8 |
| Bradford Moor... .. | 18,528 | 674 | 27.4 |
| Manningham | 23,762 | 457 | 51.9 |
| Bolton | 8,910 | 994 | 8.9 |
| Heaton | 17,036 | 879 | 19.3 |
| Allerton | 9,728 | 2815 | 3.4 |
| BOROUGH TOTAL | 228,809 | 10,776 | 21.0 |

MARRIAGES.

Returns obtained from Mr. Crowther, Clerk to the Bradford Guardians and from Mr. Helmsley, Clerk to the North Bierley Guardians show that 2,224 marriages were solemnized in the City of Bradford during the year ending Dec. 31st., 1896. The marriage rate was therefore 19·4 per 1000 of the population, an increase upon 1·3 per 1000 upon the rate of the previous year. In London the rate was 18·0 per 1000.

TABLE III.

| Periods. | Number of Marriages. | Proportion of Marriages. to Population. |
|----------|----------------------|--|
| 1891 | 2,171 | 1 in 99 |
| 1892 | 2,059 | 1 in 106 |
| 1893 | 1,944 | 1 in 114 |
| 1894 | 2,035 | 1 in 110 |
| 1895 | 2,053 | 1 in 110 |
| 1896 | 2,244 | 1 in 102 |

BIRTHS.

The number of births registered during the 53 weeks ending January 2nd, 1897, was 5,945 consisting of 2,991 males and 2,954 females, and forming a birth-rate of 25·94 per 1000 of the population. A reference to Table I. shows a gradual but continued decrease in the birth-rate since 1882, and that the rate for the past year is the lowest on record.

TABLE IV.

Shewing Birth-rates in Cities and Towns of England having over 200,000 population during the year ending January 2nd, 1897.

| Towns in order of magnitude of Rates. | Birth-rate per 1000. |
|---------------------------------------|----------------------|
| Liverpool | 34·9 |
| Salford | 34·9 |
| Sheffield | 34·0 |
| Manchester | 33·0 |
| Birmingham... .. | 32·6 |
| Hull | 31·9 |
| Newcastle | 31·1 |
| Leeds | 30·7 |
| 33 Large Towns | 30·7 |
| London... .. | 30·2 |
| Nottingham... .. | 28·9 |
| Bristol | 27·6 |
| Bradford | 25·94 |

STILL-BIRTHS.—The present registration laws do not require the registration of still-born children, consequently the bodies of many infants are taken to burial grounds and interred upon the certificate or statement of a midwife or other person present at the birth, no registration of such birth having been made. The Select Committee on Death Certification appointed by Parliament reported some considerable time ago, and recommended the compulsory registration of still-born children, but so far no legislation has been attempted. Information supplied by the registrars of three large Cemeteries in Bradford discloses the fact that during the year ending Dec. 31st., 1896, no less than 297 still-born children were interred without their birth having been registered.

Table V. shews the distribution of the births in the different Wards of the City; the rate ranges from 20·0 per 1,000 in Heaton to 30·3 in South Ward.

TABLE V.
Shewing the Births and Birth-rate in the City of Bradford in each of the 15 Wards in 1896.

| WARDS. | MALES. | | FEMALES. | | MALES AND FEMALES. | | | Birth-rate per 1000. | | |
|----------------------|-------------|---------------|-------------|-------------|--------------------|-------------|-------------|----------------------|---------------|--------------|
| | Legitimate. | Illegitimate. | Total. | Legitimate. | Illegitimate. | Total. | Legitimate. | | Illegitimate. | Total. |
| North | 158 | 20 | 178 | 162 | 22 | 184 | 320 | 42 | 362 | 26.7 |
| South | 183 | 15 | 198 | 213 | 11 | 224 | 396 | 26 | 422 | 30.3 |
| East... .. | 201 | 7 | 208 | 202 | 8 | 210 | 403 | 15 | 468 | 25.3 |
| West | 153 | 15 | 168 | 178 | 13 | 191 | 331 | 28 | 359 | 23.8 |
| Listerhills ... | 201 | 14 | 215 | 191 | 12 | 203 | 392 | 26 | 418 | 21.1 |
| Great Horton... | 209 | 6 | 215 | 188 | 1 | 189 | 397 | 7 | 404 | 25.2 |
| Little Horton... | 171 | 32 | 203 | 227 | 31 | 258 | 398 | 63 | 461 | 28.4 |
| East Bowling... | 223 | 8 | 231 | 231 | 11 | 242 | 454 | 19 | 473 | 27.8 |
| West Bowling.. | 268 | 12 | 280 | 260 | 8 | 268 | 528 | 20 | 548 | 30.0 |
| Exchange .. | 58 | 5 | 63 | 40 | 10 | 50 | 93 | 15 | 113 | 22.0 |
| Bradford Moor. | 270 | 7 | 277 | 241 | 14 | 235 | 511 | 21 | 532 | 28.7 |
| Manningham ... | 308 | 12 | 320 | 267 | 10 | 277 | 575 | 22 | 597 | 25.1 |
| Bolton | 116 | 5 | 121 | 82 | 2 | 84 | 198 | 7 | 205 | 23.0 |
| Heaton | 190 | 7 | 197 | 171 | 7 | 178 | 361 | 14 | 375 | 20.0 |
| Allerton | 116 | 1 | 117 | 139 | 2 | 141 | 255 | 3 | 258 | 26.5 |
| BOROUGH TOTAL | 2825 | 166 | 2991 | 2792 | 162 | 2954 | 5617 | 328 | 5945 | 25.94 |

Table VI. sets forth the births in each quarter of the year.

TABLE VI.

Shewing number of Births and Birth-rates in each quarter of 1896.

| 1896. | Males. | Females. | Total. | Birth-rate per 1000 living. |
|----------------|--------|----------|--------|-----------------------------|
| 1st Quarter .. | 705 | 754 | 1459 | 25·6 |
| 2nd ,, ... | 752 | 712 | 1464 | 25·7 |
| 3rd ,, ... | 774 | 789 | 1563 | 25·4 |
| 4th ,, ... | 760 | 699 | 1459 | 25·5 |

From Table VII. it is seen that 328 of the total number of births were those of illegitimate children, or 5·5 per cent. of the whole.

TABLE VII.

Shewing the Illegitimate Births and Birth-rate in Bradford during each of the five years 1891-1896 inclusive.

| Year. | Illegitimate Births. | Per cent. of Total Births. |
|-------|----------------------|----------------------------|
| 1891 | 362 | 5·8 |
| 1892 | 329 | 5·5 |
| 1893 | 320 | 5·2 |
| 1894 | 331 | 5·5 |
| 1895 | 345 | 5·8 |
| 1896 | 328 | 5·5 |

DEATHS.

The number of deaths from all causes registered during the 53 weeks ending January 2nd, 1897. was 3838, of which 1939 were of males and 1899 of females. The death-rate for the year is 16·7 per 1000, the lowest rate that has yet been recorded. In England and Wales the death-rate was 17·1 per 1000, and in the thirty-three large Towns 18·9 per 1000; in London it was 18·5 per 1000.

The table following gives the number of births and deaths and rates per 1000 since the year 1881.

TABLE VIII.

| YEAR. | Estimated Population in the middle of each year. | Births. | Deaths. | Annual Rate per 1000 living. | |
|--------|--|---------|---------|------------------------------|---------|
| | | | | Births. | Deaths. |
| 1882 | 197,103 | 6225 | 4142 | 31·59 | 21·01 |
| † 1883 | 199,214 | 5953 | 3741 | 29·88 | 18·77 |
| 1884 | 201,347 | 6216 | 4255 | 30·86 | 21·13 |
| 1885 | 203,604 | 6218 | 3791 | 30·65 | 18·62 |
| 1886 | 205,684 | 6285 | 4187 | 30·55 | 20·35 |
| 1887 | 207,887 | 6202 | 4458 | 29·83 | 21·44 |
| 1888 | 210,113 | 6266 | 3922 | 29·82 | 18·66 |
| 1889 | 212,364 | 6272 | 4492 | 29·53 | 21·15 |
| † 1890 | 214,634 | 6247 | 4982 | 29·10 | 23·21 |
| 1891 | 216,938 | 6214 | 4800 | 28·64 | 22·12 |
| 1892 | 219,262 | 5959 | 3927 | 27·18 | 17·91 |
| 1893 | 221,610 | 6112 | 4632 | 27·58 | 20·90 |
| 1894 | 223,985 | 5960 | 3797 | 26·60 | 16·95 |
| 1895 | 226,384 | 5894 | 4483 | 26·03 | 19·80 |
| † 1896 | 228,809 | 5945 | 3838 | 25·94 | 16·77 |

† In these years the births and deaths are those registered in 53 weeks.

A death-rate of 16·7 per 1000 is a very low one for a manufacturing City like Bradford, and is as much as 3·1 per 1000 less than the death-rate for 1895. In looking over the Causes of Death during the year with a view of discovering the cause of the decreased mortality, I find that the chief differences from the mortality in the previous year are as follows:—

TABLE IX.

| DISEASES. | Deaths in 1895. | Deaths in 1896. | Decrease. |
|--|--------------------|--------------------|-----------|
| Diarrhoea | 361 | 70 | 291 |
| Bronchitis | 525 | 382 | 143 |
| Convulsions | 248 | 152 | 96 |
| Influenza... .. | 114 | 19 | 95 |
| Atrophy and Debility | 186 | 145 | 41 |
| Old Age | 224 | 184 | 40 |
| Tuberculous Diseases, including Phthisis } | 446 | 416 | 30 |
| Pneumonia | 327 | 304 | 23 |
| Brain Disease... .. | 308 | 286 | 22 |
| Premature Birth | 125 | 107 | 18 |
| Typhoid Fever | 39 | 29 | 10 |

Bronchitis was much less common than is usual, and there were also 23 fewer deaths from Pneumonia than in the previous year; the prevalence of these diseases is to a large extent dependent upon cold wet weather, and their decreased prevalence during the past year indicates that the climatic conditions were unfavourable to their existence. The comparatively small number of deaths from Diarrhoea, viz. 70, as compared with 361 for 1895, is due to the fact that the hot weather during the summer months was not of long duration, and consequently the heat necessary for the cultivation of the diarrhoeal poisons in polluted soil was not present. It is satisfactory to note the

greatly diminished mortality from Influenza. On the other hand the number of lives sacrificed to Tuberculous diseases has not undergone much diminution, Phthisis contributing 367 deaths as compared with 366 for the previous year. The mortality from Measles increased from 17 deaths in 1895 to 105 in 1896, and Whooping Cough from 98 to 105.

TABLE X.

Comparative Table shewing the Estimated Population, Birth-rate, Death-rate, and Infantile Death-rate in each of the Twelve largest towns of England and Wales (those having a population of over 200,000) for the year 1896.

| | Estimated Population to middle of 1896. | Birth-rate. | Death-rate. | Zymotic rate. | Deaths of Infants to 1000 Births. | Persons to an Acre. |
|-----------------|---|--------------|--------------|---------------|-----------------------------------|---------------------|
| London ... | 4,421,955 | 30·2 | 18·6 | 3·14 | 161 | 59·2 |
| Manchester . | 529,561 | 33·0 | 22·6 | 3·42 | 176 | 41·0 |
| Liverpool .. | 632,572 | 34·9 | 22·7 | 3·01 | 173 | 47·8 |
| Birmingham | 501,241 | 32·6 | 20·8 | 3·57 | 197 | 39·5 |
| Leeds | 402,449 | 30·7 | 18·8 | 2·28 | 169 | 18·7 |
| Sheffield ... | 347,278 | 34·0 | 19·3 | 2·91 | 173 | 17·7 |
| Bristol... .. | 230,623 | 27·6 | 16·9 | 1·90 | 142 | 49·3 |
| Nottingham | 229,775 | 28·9 | 17·5 | 2·47 | 168 | 21·0 |
| Bradford | 223,809 | 25·94 | 16·77 | 1·50 | 143 | 21·2 |
| Hull | 220,844 | 31·9 | 18·9 | 3·32 | 173 | 26·8 |
| Newcastle ... | 212,223 | 31·1 | 18·5 | 2·08 | 165 | 39·5 |
| Salford ... | 210,707 | 34·9 | 22·6 | 4·10 | 199 | 40·7 |

Mortality in the Wards.

In Table XI. is given the Mortality in the Wards. It is seen to vary from 11·8 per 1000 in Bolton and Heaton to 19·9 and 20·7 in East Bowling and North Wards respectively.

TABLE XI.

Shewing the mortality rates in the various Wards.

| WARDS. | Total death-rate per 1000 living. |
|-----------------------------|-----------------------------------|
| North | 20·7 |
| South | 19·6 |
| East | 16·5 |
| West | 18·1 |
| Listerhills | 14·3 |
| Great Horton | 17·2 |
| Little Horton | 18·3 |
| East Bowling | 19·9 |
| West Bowling | 18·0 |
| Exchange | 19·8 |
| Bradford Moor | 16·6 |
| Manningham | 16·3 |
| Bolton | 11·8 |
| Heaton | 11·8 |
| Allerton | 14·1 |
| BOROUGH TOTAL | 16·77 |

The Seasonal mortality is seen in Table XII.

TABLE XII.

| | Zymotic Diseases. | Consumption. | Lung Diseases excluding Consumption. | From all causes. |
|-------------------|-------------------|--------------|--------------------------------------|------------------|
| First Quarter ... | 1·4 | 1·8 | 3·4 | 16·9 |
| Second Quarter... | 1·0 | 1·6 | 3·0 | 16·1 |
| Third Quarter ... | 1·6 | 1·4 | 1·9 | 15·5 |
| Fourth Quarter... | 1·7 | 1·4 | 3·8 | 17·4 |
| Whole Year | 1·50 | 1·5 | 3·80 | 16·77 |

Ages at Death.

INFANTILE MORTALITY.—The total number of deaths of infants under twelve months of age was 849, equivalent to a yearly death-rate of 142 per 1000 births. The infantile mortality rates varied in the thirty-three great towns from 135 per 1000 births in Brighton to 203 in Preston.

The table appended shews the principal causes of the infant mortality.

TABLE XIII.

Rates of Mortality of Children under 1 year of age, from Chief Infantile Diseases per 1000 Births.

| | 1894. | | 1895. | | 1896. | |
|----------------------------|--------|-----------------------|---------|-----------------------|---------|-----------------------|
| | Deaths | Rate per 1000 Births. | Deaths. | Rate per 1000 Births. | Deaths. | Rate per 1000 Births. |
| From all Causes | 860 | 144 | 1197 | 203 | 849 | 142 |
| Lung Diseases... | 188 | 32 | 186 | 31 | 159 | 26 |
| Convulsions ... | 128 | 21 | 197 | 33 | 121 | 20 |
| Atrophy and Debility... .. | 139 | 23 | 166 | 28 | 125 | 21 |
| Premature Birth. | 122 | 20 | 125 | 21 | 106 | 17 |
| Diarrhœa | 33 | 5 | 246 | 42 | 50 | 8 |
| Whooping Cough | 23 | 4 | 42 | 7 | 49 | 8 |
| Tuberculous Disease | 23 | 4 | 31 | 5 | 39 | 6 |
| Measles | 31 | 5 | 3 | 0.5 | 23 | 3 |

The infantile mortality varied, as shewn in Table XIV., from 82 per 1000 births in Bolton Ward, to 189 and 190 per 1000 in the West and North Wards respectively.

TABLE XIV.

Shewing number of Deaths of Infants under 1 year of age and the Death-rate per 1000 Births in each Ward.

| WARDS. | Deaths of Infants under 1 year of age. | Death-rate per 1000 Births. |
|-----------------------------|---|--------------------------------|
| North | 69 | 190 |
| South | 69 | 163 |
| East | 56 | 134 |
| West | 68 | 189 |
| Listerhills | 50 | 119 |
| Great Horton | 41 | 101 |
| Little Horton | 76 | 164 |
| East Bowling | 75 | 158 |
| West Bowling | 62 | 113 |
| Exchange | 20 | 177 |
| Bradford Moor | 84 | 157 |
| Manningham | 97 | 162 |
| Bolton | 17 | 82 |
| Heaton | 41 | 109 |
| Allerton | 24 | 92 |
| BOROUGH TOTAL | 849 | 143 |

TABLE XV.

*Seasonal and Infantile Mortality.**

| WARDS. | QUARTERS. | | | | Total Deaths. | Deaths under 5 years of age. | Percentage of Deaths under 5 years to total deaths. | Percentage of Deaths under 1 year to total births. |
|----------------------|------------|------------|----------------|------------|---------------|------------------------------|---|--|
| | Mar. | June. | Sept. 14 weeks | Dec. | | | | |
| North | 62 | 62 | 62 | 59 | 245 | 103 | 42·0 | 19·0 |
| South | 78 | 50 | 65 | 45 | 238 | 89 | 37·3 | 16·3 |
| East | 70 | 46 | 54 | 69 | 239 | 86 | 35·9 | 13·3 |
| West | 55 | 51 | 57 | 56 | 239 | 72 | 30·1 | 15·3 |
| Listerhills | 59 | 56 | 55 | 78 | 248 | 69 | 27·8 | 11·9 |
| Great Horton ... | 56 | 53 | 51 | 76 | 236 | 78 | 33·0 | 10·1 |
| Little Horton ... | 57 | 74 | 63 | 66 | 260 | 102 | 39·2 | 13·6 |
| East Bowling ... | 79 | 71 | 71 | 75 | 296 | 120 | 40·5 | 15·8 |
| West Bowling ... | 70 | 74 | 67 | 77 | 288 | 105 | 36·4 | 11·3 |
| Exchange | 19 | 27 | 19 | 24 | 89 | 26 | 29·2 | 17·6 |
| Bradford Moor ... | 78 | 61 | 74 | 56 | 269 | 127 | 47·2 | 15·7 |
| Manningham ... | 89 | 78 | 101 | 71 | 339 | 128 | 37·7 | 16·2 |
| Bolton... .. | 26 | 22 | 25 | 19 | 92 | 29 | 31·5 | 8·2 |
| Heaton | 41 | 46 | 44 | 46 | 177 | 44 | 24·8 | 8·2 |
| Allerton | 24 | 25 | 28 | 44 | 121 | 42 | 34·7 | 9·3 |
| Public Institutions | 104 | 123 | 119 | 136 | 482 | 81 | 16·8 | ... |
| BOROUGH TOTAL | 967 | 919 | 955 | 997 | 3838 | 1301 | 33·8 | 14·2 |

* In this table the deaths occurring in the Public Institutions have been deducted from the Wards in which the Institutions are situate and classified together.

TABLE XVI.

Shewing the proportion of Deaths of Children under 1 year and under 5 in the City of Bradford, during the 20 years 1877-96.

| YEARS. | Deaths under 1 year per 1000 Births. | Deaths under 1 year per 100 Deaths at all ages. | Death-rate under 5 years per 1000 living at that age. | Death-rate under 5 years per 100 deaths at all ages. |
|--------|--------------------------------------|---|---|--|
| 1877 | 157 | 27.1 | 78.6 | 44.3 |
| 1878 | 178 | 25.9 | 85.7 | 47.4 |
| 1879 | 152 | 23.5 | 74.3 | 42.4 |
| 1880 | 176 | 27.2 | 82.2 | 48.0 |
| 1881 | 154 | 25.8 | 56.4 | 40.7 |
| 1882 | 174 | 27.0 | 71.4 | 45.9 |
| 1883 | 147 | 23.4 | 50.5 | 36.8 |
| 1884 | 181 | 34.2 | 62.1 | 41.2 |
| 1885 | 144 | 23.6 | 49.9 | 37.7 |
| 1886 | 168 | 25.1 | 59.4 | 41.5 |
| 1887 | 179 | 24.9 | 62.0 | 41.6 |
| 1888 | 153 | 24.6 | 50.0 | 39.0 |
| 1889 | 181 | 25.3 | 60.8 | 42.6 |
| 1890 | 169 | 21.2 | 55.8 | 35.9 |
| 1891 | 181 | 23.4 | 57.2 | 39.0 |
| 1892 | 155 | 23.5 | 44.8 | 37.4 |
| 1893 | 198 | 26.1 | 79.5 | 39.7 |
| 1894 | 144 | 22.6 | 59.2 | 36.1 |
| 1895 | 203 | 26.6 | 75.9 | 39.2 |
| 1896 | 143 | 22.1 | 56.2 | 38.8 |

Deaths in Public Institutions.

The number of deaths occurring in the Public Institutions of the City, amounted to 482, and were distributed as follows:—

| | Males. | Females. | Total. |
|---|------------|------------|------------|
| Eye and Ear Hospital | 1 | — | 1 |
| St. Catherine's Home | — | 14 | 14 |
| Children's Hospital | 12 | 10 | 22 |
| City Hospital for Infectious Diseases | 19 | 18 | 37 |
| Infirmary | 97 | 75 | 172 |
| Workhouse | 129 | 107 | 236 |
| | <u>258</u> | <u>224</u> | <u>482</u> |

Infectious Diseases.

The Deaths due to the seven principal Zymotic Diseases—Smallpox, Measles, Scarlet Fever, Diphtheria, Whooping Cough, Fever and Diarrhœa - numbered 344, equivalent to a Death-rate of 1.5 per 1000. Table XVII. gives the figures for the past 10 years.

TABLE XVII.
Shewing number of Deaths from Zymotic Diseases in Bradford during the years 1887-1896.

| DISEASES. | 1887. | 1888. | 1889. | 1890. | 1891. | 1892. | 1893. | 1894. | 1895. | 1896. | Total in 10 years for each Disease. |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------------------------|
| Small-pox | ... | 2 | 1 | ... | ... | 4 | 113 | 27 | ... | 1 | 148 |
| Measles | 124 | 120 | 113 | 208 | 81 | 62 | 68 | 111 | 17 | 105 | 1009 |
| Scarlet Fever... .. | 98 | 33 | 63 | 46 | 143 | 45 | 71 | 72 | 25 | 24 | 620 |
| Diphtheria | 13 | 7 | 12 | 8 | 13 | 10 | 19 | 13 | 18 | 12 | 125 |
| Whooping Cough... .. | 150 | 38 | 178 | 50 | 133 | 90 | 97 | 63 | 98 | 105 | 902 |
| Typhus Fever | ... | ... | 1 | ... | 2 | ... | ... | ... | ... | ... | 3 |
| Typhoid Fever | 32 | 19 | 48 | 31 | 27 | 18 | 48 | 31 | 39 | 28 | 321 |
| Other or doubtful Fevers | 1 | 7 | 4 | 3 | 5 | 1 | 5 | 1 | 3 | ... | 30 |
| Diarrhœa | 202 | 131 | 205 | 154 | 106 | 91 | 292 | 53 | 361 | 69 | 1664 |
| Total Zymotic Diseases } each year } | 620 | 357 | 625 | 500 | 510 | 321 | 713 | 371 | 561 | 344 | 4922 |

The prevalence of Infectious Disease in Bradford as compared with England and Wales and the thirty-three great towns is shewn in the following table.

TABLE XVIII.

| 1896. | No. of Deaths. | Death-rates per 1000 living. | | |
|------------------------|----------------|------------------------------|--------------------|-----------------|
| | | Bradford. | England and Wales. | 33 Large Towns. |
| Small-pox | 1 | 0.00 | 0.02 | 0.00 |
| Measles | 105 | 0.45 | 0.56 | 0.71 |
| Scarlatina | 24 | 0.10 | 0.18 | 0.22 |
| Diphtheria and Croup | 19 | 0.09 | 0.29 | 0.38 |
| Whooping Cough ... | 105 | 0.45 | 0.41 | 0.57 |
| "Fever" | 28 | 0.12 | 0.17 | 0.19 |
| Diarrhœa | 69 | 0.38 | 0.55 | 0.79 |
| 7 Zymotic Diseases ... | 350 | 1.50 | 2.18 | 2.86 |

The number of deaths from each infectious disease is given in the following tables:—

TABLE XIX.

Deaths from Measles.

| WABDS. | QUARTERS. | | | | | | | | Year 1896. | | |
|----------------------|-----------|----------|----------|----------|-----------|----------|-----------|-----------|------------|-----------|------------|
| | March. | | June. | | Sept. | | Dec. | | M. | F. | Total. |
| | M. | F. | M. | F. | M. | F. | M. | F. | | | |
| North | 1 | ... | ... | ... | ... | ... | 2 | 4 | 3 | 4 | 7 |
| South | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | 2 | 3 |
| East | ... | ... | ... | ... | ... | ... | 5 | 5 | 5 | 5 | 10 |
| West | ... | ... | 1 | ... | 1 | ... | ... | ... | 2 | ... | 2 |
| Listerhills | ... | ... | ... | ... | ... | ... | 8 | 5 | 8 | 5 | 13 |
| Great Horton | ... | ... | ... | ... | 2 | ... | 10 | 3 | 12 | 3 | 15 |
| Little Horton | ... | ... | ... | ... | 3 | ... | 5 | 5 | 8 | 5 | 13 |
| East Bowling | ... | ... | ... | ... | 1 | 1 | 3 | 2 | 4 | 3 | 7 |
| West Bowling | ... | ... | ... | ... | ... | 1 | 4 | 4 | 4 | 5 | 9 |
| Exchange | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | 2 |
| Bradford Moor | ... | 1 | 1 | ... | ... | ... | 1 | 2 | 2 | 3 | 5 |
| Manningham | ... | ... | ... | ... | 4 | 1 | 1 | 1 | 5 | 2 | 7 |
| Bolton | ... | ... | ... | 1 | ... | ... | 1 | ... | 1 | 1 | 2 |
| Heaton | ... | ... | ... | ... | ... | ... | 1 | 1 | 1 | 1 | 2 |
| Allerton | ... | ... | ... | ... | ... | ... | 3 | 5 | 3 | 5 | 8 |
| BOROUGH TOTAL | 1 | 1 | 2 | 1 | 11 | 4 | 46 | 39 | 60 | 45 | 105 |

Ages at Death.

| Under 1 Year | 1— | 2— | 3— | 4— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | All Ages. |
|-----------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|--------------|
| 23 | 43 | 22 | 7 | 4 | 5 | ... | 1 | ... | ... | ... | ... | 105 |

TABLE XXI.
Deaths from Diphtheria.*

| WARDS. | QUARTERS. | | | | | | | | Year, 1896. | | |
|----------------------|-----------|----------|----------|----------|------------------|----------|----------|------------|-------------|----------|-----------|
| | March. | | June. | | Sept.. 14 weeks. | | Dec. | | M. | F. | Total. |
| | M. | F. | M. | F. | M. | F. | M. | F. | | | |
| North... .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| South... .. | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 | 1 | 2 |
| East | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... |
| West | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Listerhills | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Great Horton ... | 2 | ... | 1 | ... | ... | ... | ... | ... | 3 | ... | 3 |
| Little Horton ... | ... | 1 | ... | .. | ... | ... | ... | ... | ... | 1 | 1 |
| East Bowling ... | 2 | ... | ... | ... | 1 | ... | ... | ... | 3 | ... | 3 |
| West Bowling ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Exchange | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Bradford Moor... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... |
| Manningham ... | ... | ... | ... | 1 | ... | ... | 1 | ... | 1 | 1 | 2 |
| Bolton | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Heaton | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Allerton | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 1 | 1 |
| BOROUGH TOTAL | 5 | 2 | 1 | 1 | 1 | 1 | 1 | ... | 8 | 4 | 12 |

Ages at Death.

| Under 1 Year. | 1— | 2— | 3— | 4— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | All Ages. |
|------------------|-----|----|-----|----|----|-----|-----|-----|-----|-----|-----|--------------|
| 1 | ... | 2 | ... | 3 | 3 | 1 | ... | 1 | 1 | .. | ... | 12 |

* Deaths in Public Institutions are referred to in the Wards from whence the patients came.

TABLE XXII.

*Deaths from Scarlet Fever.**

| WARDS. | QUARTERS. | | | | | | | | Year, 1896. | | |
|----------------------|-----------|----------|----------|----------|------------------|----------|----------|----------|-------------|-----------|-----------|
| | March. | | June. | | Sept., 14 weeks. | | Dec. | | M. | F. | Total. |
| | M. | F. | M. | F. | M. | F. | M. | F. | | | |
| North... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| South .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| East ... | 1 | ... | ... | ... | ... | 1 | ... | ... | 1 | 1 | 2 |
| West ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Listerhills ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Great Horton .. | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 | 1 |
| Little Horton ... | 1 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | 1 |
| East Bowling .. | ... | 1 | ... | ... | 1 | 2 | 1 | ... | 2 | 3 | 5 |
| West Bowling ... | ... | ... | 1 | ... | ... | 1 | ... | ... | 1 | 1 | 2 |
| Exchange ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Bradford Moor... | ... | ... | ... | ... | 1 | 2 | ... | ... | 1 | 2 | 3 |
| Manningham ... | 1 | ... | ... | ... | 1 | 1 | ... | 3 | 2 | 4 | 6 |
| Bolton ... | ... | 1 | ... | ... | ... | 1 | 1 | ... | 1 | 2 | 3 |
| Heaton ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | 1 | 1 |
| Allerton ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| BOROUGH TOTAL | 3 | 2 | 1 | 1 | 3 | 8 | 2 | 4 | 9 | 15 | 24 |

Ages at Death.

| Under 1 year. | 1— | 2— | 3— | 4— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | All Ages. |
|---------------|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----------|
| 1 | 5 | 1 | 4 | 4 | 7 | 1 | 1 | ... | ... | ... | ... | 24 |

* Deaths in Public Institutions are referred to in the Wards from whence the patients came.

TABLE XXIII.

Deaths from Diarrhœa.

| WARDS. | QUARTERS. | | | | | | | | Year 1896. | | |
|------------------------|-----------|----------|----------|----------|------------------|-----------|----------|-----------|------------|-----------|-----------|
| | March. | | June. | | Sept., 14 weeks. | | Dec. | | M. | F. | Total. |
| | M. | F. | M. | F. | M. | F. | M. | F. | | | |
| North | ... | ... | 1 | ... | 1 | 3 | 1 | ... | 3 | 3 | 6 |
| South... .. . | ... | ... | 1 | ... | ... | 2 | ... | ... | 1 | 2 | 3 |
| East | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | 2 | 2 |
| West | 1 | ... | ... | ... | 1 | ... | 1 | ... | 3 | ... | 3 |
| Listerhills | ... | ... | ... | ... | 2 | 2 | 1 | ... | 3 | 2 | 5 |
| Great Horton | ... | ... | ... | ... | 1 | 1 | ... | ... | 1 | 1 | 2 |
| Little Horton | ... | ... | ... | 1 | 2 | 1 | ... | ... | 2 | 2 | 4 |
| East Bowling | ... | ... | 3 | ... | 5 | 5 | 2 | ... | 10 | 5 | 15 |
| West Bowling | ... | ... | ... | ... | 2 | 2 | ... | ... | 2 | 2 | 4 |
| Exchange | 1 | ... | ... | ... | 2 | ... | ... | ... | 3 | ... | 3 |
| Bradford Moor... .. . | ... | ... | 1 | ... | 7 | 2 | 1 | ... | 9 | 2 | 11 |
| Manningham | ... | 1 | 1 | 1 | 3 | 4 | ... | ... | 4 | 6 | 10 |
| Bolton | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Heaton | 1 | ... | ... | ... | 1 | ... | ... | ... | 2 | ... | 2 |
| Allerton | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| BOROUGH TOTAL | 3 | 1 | 7 | 3 | 27 | 23 | 7 | .. | 43 | 27 | 70 |

Ages at Death.

| Under 1 Year. | 1— | 2— | 3— | 4— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | All Ages. |
|------------------|----|----|-----|----|-----|-----|-----|-----|-----|-----|-----|--------------|
| 50 | 5 | 2 | ... | 1 | ... | ... | 1 | 1 | ... | 3 | 7 | 70 |

* Deaths in Public Institutions are referred to in the Wards from whence the patients come.

TABLE XXIV.

*Deaths from other Zymotic Diseases.**

| WARDS. | Influenza. | | Erysipelas. | | Syphils. | | Rheumatic Fever. | | Puerperal Fever. | | 1896. |
|----------------------|------------|----------|-------------|----------|-----------|-----------|---------------------|-----------|---------------------|----------|-----------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | Total. |
| North... .. | ... | ... | ... | .. | 1 | 3 | 2 | ... | ... | ... | 6 |
| South... .. | 2 | ... | ... | ... | 1 | 2 | ... | ... | ... | 1 | 6 |
| East | 2 | 2 | ... | ... | ... | ... | 1 | 1 | ... | ... | 6 |
| West | 1 | ... | 2 | ... | 1 | 2 | 1 | 4 | ... | ... | 11 |
| Listerhills | 2 | 1 | 2 | ... | ... | 1 | 1 | ... | ... | .. | 7 |
| Great Horton | 2 | ... | 1 | ... | ... | ... | 1 | 3 | ... | ... | 7 |
| Little Horton | ... | ... | 2 | 1 | 1 | 1 | 3 | ... | ... | 1 | 9 |
| East Bowling | 1 | ... | ... | ... | 5 | ... | 2 | 2 | ... | 1 | 11 |
| West Bowling | ... | ... | ... | ... | 2 | ... | 2 | 2 | .. | 1 | 7 |
| Exchange | ... | ... | 1 | ... | 1 | 3 | .. | 1 | ... | ... | 6 |
| Bradford Moor | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | 4 |
| Manningham | ... | 1 | ... | ... | 1 | ... | 1 | 2 | ... | ... | 5 |
| Bolton | ... | 1 | ... | ... | ... | ... | ... | 2 | ... | 1 | 4 |
| Heaton | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... | ... | 3 |
| Allerton | ... | ... | ... | .. | ... | ... | .. | 1 | ... | ... | 1 |
| BOROUGH TOTAL | 12 | 7 | 8 | 2 | 14 | 12 | 15 | 18 | ... | 5 | 93 |

* Deaths in Public Institutions are referred to in the Wards from whence they come.

TYPHOID FEVER.—There were notified during the year 152 cases of this disease, 29 of which terminated fatally. An analysis of these cases is seen in Tables XXV. and XXVI.

TABLE XXV.

Shewing number of cases, deaths and case-mortality from Typhoid Fever during the year 1896.

| AGE. | CASES. | | DEATHS. | | Death-rate per cent. |
|----------------|--------|----------|---------|----------|----------------------|
| | Males. | Females. | Males. | Females. | |
| Under 5 | 3 | 3 | ... | 1 | 16·7 |
| 5—10 | 13 | 11 | 2 | 1 | 12·5 |
| 10—20 | 27 | 20 | 4 | 3 | 14·8 |
| 20—30 | 27 | 12 | 7 | 2 | 23·0 |
| 30—40 | 16 | 4 | 5 | . | 25 |
| 40—50 | 6 | 3 | 1 | ... | 11·1 |
| 50 and upwards | 4 | 3 | 2 | 1 | 42·8 |
| ALL AGES... | 96 | 56 | 21 | 8 | 19·0 |

TABLE XXVI.

Shewing number of deaths and percentage mortality from Typhoid Fever during each of the last 10 years.

| YEARS. | No. of Deaths. | Deaths per 100 cases notified. |
|--------|----------------|--------------------------------|
| 1887 | 32 | 20·9 |
| 1888 | 19 | 18·1 |
| 1889 | 48 | 28·7 |
| 1890 | 31 | 21·5 |
| 1891 | 27 | 17·2 |
| 1892 | 18 | 22·5 |
| 1893 | 48 | 22·3 |
| 1894 | 31 | 22·0 |
| 1895 | 39 | 22·0 |
| 1896 | 29 | 19·0 |

Every house in which a case of Typhoid Fever occurred was made the subject of special inspection and any sanitary errors discovered were remedied.

TABLE XXVII.

Notification of Typhoid Fever in different Streets, 1896.

NORTH WARD.

| | |
|--------------------|-----------------------|
| 1, Bolton Road. | 1, Valley Road. |
| 1, Captain Street. | 1, Wapping Road. |
| 2, Stanacre Place. | 1, Wellington Street. |
| 1, Sun Street. | |

SOUTH WARD.

| | |
|--------------------|---------------------|
| 1, Acorn Street. | 1, Thryberg Street. |
| 1, Mount Street. | 1, Florence Street. |
| 1, Cabinet Street. | |

EAST WARD.

| | |
|-----------------------|-----------------------|
| 1, Exeter Street. | 1, Valley View Grove. |
| 1, Sunnybank Terrace. | 1, Ripon Street. |
| 1, Barkerend Road. | 1, Wilfred Street. |

WEST WARD.

| | |
|------------------------|---------------------|
| 4, Infirmary. | 1, King Street. |
| 1, Gracechurch Street. | 1, Thornton Street. |
| 2, Thornton Road. | 1, Longcroft Place. |
| 1, Hanover Square. | 1, Sedgwick Street. |

LISTERHILLS WARD.

| | |
|---------------------|------------------------|
| 2, Abram Gate. | 1, Jonas Gate. |
| 5, Bower Street. | 1, Listerhills Road. |
| 1, Chester Street. | 1, Thornton Street. |
| 1, Earl Street. | 2, Fitzgerald Street. |
| 3, Sterling Street. | 1, Little Horton Lane. |
| 1, Woodhead Road. | 1, Manchester Road. |
| 1, Grafton Street. | 1, Portland Street. |
| 1, Grantham Road. | 1, William Street. |

GREAT HORTON WARD.

| | |
|------------------------|---------------------|
| 1, Beldon Road. | 1, Holly Bank Road. |
| 1, Harris Court. | 1, Southfield Lane. |
| 1, Princeville Street. | 1, Derby Street. |
| 1, Cragg Street. | 1, Lawrence Street. |

LITTLE HORTON WARD.

- 3, Belloe Street.
- 1, Giles Street.
- 1, Ida Street.
- 1, Mitchell Street.
- 1, Cleveland Street.

- 1, Herbert Street.
- 1, Jesse Street.
- 1, College Road.
- 1, Holme Top Street.
- 1, Little Horton Green.

EAST BOWLING WARD

- 1, Bolling Street.
- 2, Hall Lane.
- 3, Mill Lane.
- 1, Caledonia Street.

- 2, Lower Lane.
- 1, Pollard Street.
- 1, Frances Street.
- 1, Marsden Fold.

WEST BOWLING WARD.

- 1, Baird Street.
- 1, Evens Terrace.
- 3, Parsonage Road.
- 1, Birklea Street.
- 1, Faxfleet Street.

- 1, Round Street.
- 2, Bowling Old Lane.
- 2, Manchester Road.
- 1, Wootton Street.

EXCHANGE WARD.

- 1, Belmont Street.
- 1, East Street.
- 1, Cross Frederick Street.

- 1, Frederick Street.
- 1, Dryden Street.

BRADFORD MOOR WARD.

- 1, Dick Lane.
- 1, Leach Square.
- 1, Rufford Street.
- 1, Heath Street.

- 1, Leeds Road.
- 1, Herbert Place.
- 1, Parsonage Road.

MANNINGHAM WARD.

- 1, Arcadia Street.
- 1, Isaac Street.
- 1, Salt Street.
- 2, Tile Street.
- 1, Woodlands Road.
- 2, Arthington Street.
- 1, Jarratt Street.

- 1, Springfield Street.
- 1, Wallis Street.
- 1, Bowland Street.
- 1, Kensington Street.
- 1, St. Jude's Place.
- 1, White's Terrace.

BOLTON WARD.

- 2, Bolton Hall Road.
- 1, Lupton Street.
- 1, Valley Road.
- 1, Bute Street.

- 2, Manningham Lane.
- 1, Cornwall Terrace.
- 1, Midland Road.

HEATON WARD.

| | |
|------------------------|---------------------|
| 1, Chassum Street. | 1, Rose Bank. |
| 1, Devonshire Terrace. | 1, Westbourne Road. |
| 1, Lily street. | 1, Blenheim Road. |
| 1, Victor Terrace. | 1, Heidelberg Road. |
| 1, Cliffe Villas. | 1, Toller Lane. |
| 1, Fairfield Road. | |

ALLERTON WARD.

| | |
|------------------------|--------------------|
| 1, Argyle Street. | 1, Snakehill Lane. |
| 1, St. Leonard's Road. | 1, Four Lane Ends. |
| 1, Dean Lane Head. | |

SMALLPOX.—There was only one outbreak of this disease in Bradford in 1896. The sufferer, Thomas Davy, a labourer, lodging in Bell Street, had become infected whilst working for a Bradford Contractor in Gloucester, where a severe epidemic of Smallpox was then raging. Having finished the work he was engaged for he returned to his lodgings in Bradford on the 16th of March, and shared a bedroom with a fellow labourer. On the 19th inst., he became ill and on the 23rd was found to be suffering from a severe attack of Smallpox. Removal to the temporary Smallpox Hospital at Scholemoor was quickly effected, but the poor fellow rapidly became worse and died on the evening of the 25th. Davy said he had been vaccinated when a child but there was no evidence (vaccination marks) of vaccination having been successfully carried out.

The man with whom Davy had been lodging was taken to live at Bierley Hall, and found work on the estate, but he, too, on April 6th, or the 14th day after his last exposure to infection, developed Smallpox; his attack happily proved to be a mild one and I was able to discharge him after detention of 28 days.

The house from which these men had been removed was thoroughly cleansed and disinfected, and the sole occupant, a woman, kept under close observation for 16 days. These measures promptly taken, I am of opinion prevented a more or less widely spread epidemic to the district from which the first case was removed.

Vaccination.

The return for the year ending December, 1895, as to Vaccination supplied by the Clerk to the Guardians to the Local Government Board shows, I regret to say, continued neglect of the Vaccination Laws. Reference to this return in the appendix, demonstrates the lamentable fact that only 73·1 per cent of the children born in Bradford during 1895 were "accounted for" as regards Vaccination, in other words that without having any excuse for their action the parents of over 26 per cent. of the children failed to comply with the law. The accumulation, year by year, of large numbers of children unprotected by Vaccination against attack by Smallpox constitutes a serious menace to the public health. The introduction of Smallpox infection amongst such a community might, and probably would, light up such an epidemic of Smallpox as has lately been witnessed in the City of Gloucester, a City which had for years neglected the practice of Vaccination.

NOTIFICATION OF INFECTIOUS DISEASES. — There were reported during the year 833 cases of Infectious Diseases, Scheduled under the Infectious Diseases Notification Act, 1889, a slight increase upon the total for the previous year.

TABLE XXVIII.

| MONTH. | 1893. | 1894. | 1895. | 1896. |
|------------------|-------|-------|-------|-------|
| January | 108 | 241 | 103 | 79 |
| February | 116 | 175 | 60 | 65 |
| March | 122 | 130 | 48 | 60 |
| April | 135 | 126 | 42 | 43 |
| May | 175 | 173 | 64 | 50 |
| June | 199 | 117 | 36 | 76 |
| July | 528 | 118 | 72 | 75 |
| August... .. | 321 | 112 | 57 | 71 |
| September | 275 | 108 | 66 | 91 |
| October | 306 | 104 | 113 | 85 |
| November | 421 | 119 | 18 | 72 |
| December | 208 | 74 | 62 | 66 |
| | 2914 | 1597 | 805 | 833 |

The diseases were specified as follows: -

| | 1893. | | 1894. | | 1895. | | 1896. |
|---------------------|-------|-----|-------|-----|-------|-----|-------|
| Scarlet Fever ... | 1445 | ... | 1035 | ... | 379 | ... | 397 |
| Typhoid Fever ... | 215 | .. | 141 | ... | 177 | ... | 152 |
| Typhus Fever ... | — | ... | — | ... | — | ... | — |
| Smallpox ... | 995 | ... | 196 | ... | — | ... | 1 |
| Continued Fever... | 5 | ... | 2 | ... | — | ... | 2 |
| Relapsing Fever... | 1 | ... | — | ... | — | ... | — |
| Puerperal Fever ... | 18 | ... | 22 | ... | 22 | ... | 18 |
| Diphtheria ... | 71 | ... | 49 | ... | 39 | ... | 41 |
| Membranous Croup | 18 | ... | 8 | ... | 17 | ... | 12 |
| Erysipelas ... | 146 | ... | 144 | ... | 169 | ... | 210 |
| English Cholera ... | — | ... | — | ... | 2 | ... | — |
| | <hr/> | | <hr/> | | <hr/> | | <hr/> |
| | 2914 | | 1597 | | 805 | | 833 |
| | <hr/> | | <hr/> | | <hr/> | | <hr/> |

The Table following gives the number of notified cases of Scarlet Fever, together with the number of deaths, and death-rate for each year since 1870.

TABLE XXIX.--Scarlet Fever.

| YEAR. | No. of Deaths. | No. of Notification | Death-rate per 10,000 living. |
|-------|----------------|---------------------|-------------------------------|
| 1870 | 241 | ... | 16.93 |
| 1871 | 144 | ... | 9.79 |
| 1872 | 81 | ... | 5.53 |
| 1873 | 47 | ... | 3.00 |
| 1874 | 289 | .. | 17.72 |
| 1875 | 458 | ... | 27.21 |
| 1876 | 143 | ... | 8.23 |
| 1877 | 110 | ... | 6.13 |
| 1878 | 156 | ... | 8.42 |
| 1879 | 184 | ... | 9.45 |
| 1880 | 190 | ... | 9.64 |
| *1881 | 118 | (6 mos) 424 | 6.41 |
| 1882 | 66 | 408 | 3.29 |
| 1883 | 36 | 352 | 1.75 |
| 1884 | 33 | 493 | 1.54 |
| 1885 | 46 | 786 | 2.15 |
| 1886 | 89 | 1118 | 4.06 |
| 1887 | 98 | 1308 | 4.37 |
| 1888 | 33 | 407 | 1.43 |
| 1889 | 63 | 543 | 2.68 |
| 1890 | 46 | 546 | 1.91 |
| 1891 | 143 | 1163 | 6.59 |
| 1892 | 45 | 944 | 2.05 |
| 1893 | 71 | 1445 | 3.20 |
| 1894 | 72 | 1035 | 3.21 |
| 1895 | 25 | 379 | 0.11 |
| 1896 | 24 | 397 | 1.04 |

* First Year of Notification.

TABLE XXX.

Notifications, Deaths, and Death-rate from Scarlet Fever at different Age Periods during 1896.

| AGES. | Notifications. | Deaths. | Death-rate per 100 notified. |
|-----------------------------|----------------|---------|------------------------------|
| Under 1 year | 2 | 1 | 50.00 |
| 1 year and under 2 | 13 | 5 | 38.46 |
| 2 years ,, ,, 3 | 29 | 1 | 3.44 |
| 3 years ,, ,, 4 | 32 | 4 | 12.50 |
| 4 years ,, ,, 5 | 49 | 4 | 8.16 |
| 5 years ,, ,, 10 | 186 | 7 | 3.76 |
| 10 years ,, ,, 15 | 50 | 1 | .20 |
| 15 years and upwards | 36 | 1 | 2.77 |
| TOTALS | 397 | 24 | 6.04 |

Shewing the number of Notifications from each Disease during 1896 in the different Wards.

| WARDS. | Smallpox. | Scarlet Fever. | Typhoid Fever. | Typhus Fever. | Diphtheria | * Erysipelas | * Puerperal Fever. | * M'bran's Croup. | * Continued Fever. | Relapsing Fever. | TOTAL. |
|---------------------------|-----------|----------------|----------------|---------------|------------|--------------|--------------------|-------------------|--------------------|------------------|------------|
| North | ... | 13 | 8 | ... | 2 | 7 | ... | 1 | ... | ... | 31 |
| South | ... | 5 | 5 | ... | 2 | 12 | ... | ... | ... | ... | 24 |
| East | ... | 16 | 6 | ... | 2 | 9 | 1 | ... | ... | ... | 34 |
| West | 1 | 8 | 12 | ... | 2 | 26 | 1 | ... | ... | ... | 50 |
| Listerhills | ... | 16 | 24 | ... | 1 | 23 | ... | ... | ... | ... | 64 |
| Great Horton | ... | 41 | 8 | ... | 6 | 14 | 2 | 4 | 1 | ... | 76 |
| Little Horton | .. | 14 | 12 | ... | 4 | 19 | 3 | 2 | 1 | ... | 55 |
| East Bowling | ... | 33 | 12 | ... | 5 | 18 | 1 | ... | ... | ... | 69 |
| West Bowling | ... | 27 | 13 | ... | 4 | 8 | 5 | 1 | ... | ... | 58 |
| Exchange | ... | 2 | 5 | ... | ... | 6 | 1 | ... | ... | ... | 14 |
| Bradford Moor | ... | 39 | 7 | .. | 4 | 14 | ... | 2 | ... | ... | 66 |
| Manningham | ... | 60 | 15 | ... | 4 | 21 | 2 | .. | ... | ... | 102 |
| Bolton | ... | 43 | 9 | ... | 2 | 3 | ... | 2 | ... | ... | 59 |
| Heaton | ... | 60 | 11 | ... | 3 | 14 | 2 | ... | ... | ... | 90 |
| Allerton | ... | 20 | 5 | ... | ... | 16 | ... | ... | ... | ... | 41 |
| BOROUGH TOTALS ... | 1 | 397 | 152 | — | 41 | 210 | 18 | 12 | 2 | — | 833 |

* Notification of these diseases brought into force Feb. 1st, 1893.

TABLE XXXVII.

Showing the Death-rate per 1,000 in Bradford, and in each of its 15 Wards from Zymotic Diseases, and from all causes during 1887—1896.

| WARDS. | Seven Principal Zymotic Diseases. | | | | | | | All Causes. | | | | | | | | | | | | |
|-----------------|-----------------------------------|-------|-------|-------|-------|-------|-------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1887. | 1888. | 1889. | 1890. | 1891. | 1892. | 1893. | 1894. | 1895. | 1896. | 1887. | 1888. | 1889. | 1890. | 1891. | 1892. | 1893. | 1894. | 1895. | 1896. |
| North ... | 2.4 | 1.4 | 3.0 | 3.5 | 1.7 | 2.2 | 3.4 | 1.4 | 2.1 | 1.1 | 27.4 | 20.1 | 21.7 | 24.9 | 25.1 | 21.6 | 23.4 | 19.0 | 17.1 | 20.7 |
| South ... | 3.2 | 2.0 | 1.8 | 2.6 | 2.0 | 2.1 | 4.4 | 2.0 | 3.7 | 3.3 | 24.5 | 20.1 | 23.3 | 25.9 | 25.3 | 20.6 | 25.1 | 18.9 | 25.2 | 19.6 |
| East ... | 2.4 | 0.9 | 1.3 | 1.4 | 1.8 | 1.9 | 1.6 | 1.2 | 1.3 | 1.0 | 16.3 | 16.2 | 17.2 | 18.9 | 21.6 | 16.6 | 17.8 | 15.5 | 19.3 | 16.5 |
| West ... | 5.1 | 1.7 | 3.7 | 3.5 | 2.3 | 1.5 | 4.9 | 2.0 | 3.6 | 0.8 | 24.5 | 18.0 | 25.8 | 27.0 | 24.8 | 20.0 | 23.7 | 18.6 | 24.1 | 18.1 |
| Listerhills ... | 1.7 | 1.1 | 2.6 | 1.2 | 1.3 | 0.7 | 1.0 | 1.4 | 1.9 | 0.9 | 16.4 | 16.3 | 18.6 | 21.2 | 22.4 | 18.1 | 18.6 | 15.8 | 17.1 | 14.3 |
| Great Horton .. | 3.4 | 1.1 | 2.3 | 0.7 | 2.7 | 1.3 | 2.7 | 1.5 | 1.9 | 1.6 | 20.7 | 15.2 | 18.7 | 19.0 | 20.4 | 17.9 | 17.5 | 16.9 | 19.2 | 17.2 |
| Little Horton | 2.1 | 1.6 | 3.4 | 2.0 | 1.5 | 1.8 | 2.8 | 1.8 | 2.6 | 2.2 | 15.9 | 16.3 | 15.6 | 19.2 | 21.1 | 19.0 | 20.3 | 16.8 | 18.6 | 18.3 |
| East Bowling .. | 2.6 | 2.6 | 2.3 | 4.0 | 2.5 | 1.4 | 3.9 | 2.9 | 3.2 | 2.4 | 22.3 | 13.4 | 23.4 | 24.1 | 24.5 | 17.6 | 20.3 | 18.7 | 22.6 | 19.9 |
| West Bowling | 2.3 | 3.1 | 4.1 | 1.4 | 2.0 | 1.8 | 4.5 | 1.8 | 2.4 | 1.6 | 17.3 | 17.8 | 18.9 | 18.8 | 21.9 | 11.4 | 21.4 | 18.3 | 21.3 | 18.0 |
| Exchange .. | 2.4 | 1.8 | 4.6 | 3.2 | 1.1 | 2.5 | 3.0 | 1.9 | 2.3 | 1.3 | 24.9 | 27.5 | 26.1 | 28.3 | 19.4 | 20.8 | 22.2 | 16.0 | 19.3 | 19.8 |
| Bradford Moor | 3.1 | 2.4 | 2.1 | 2.0 | 2.1 | 1.1 | 2.8 | 2.1 | 3.6 | 1.6 | 22.1 | 21.2 | 20.6 | 20.4 | 24.6 | 17.2 | 20.3 | 17.4 | 20.3 | 16.6 |
| Manningham .. | 3.0 | 1.1 | 2.7 | 1.9 | 3.1 | 0.9 | 3.3 | 1.8 | 3.0 | 1.4 | 19.1 | 14.3 | 17.2 | 18.7 | 22.1 | 17.6 | 20.2 | 18.9 | 19.8 | 16.3 |
| Bolton ... | 3.0 | 0.5 | 1.5 | 1.9 | 0.7 | 2.0 | 2.6 | 1.0 | 1.5 | 0.4 | 16.2 | 13.6 | 14.4 | 17.9 | 15.3 | 14.3 | 19.7 | 14.5 | 14.8 | 11.8 |
| Heaton ... | 2.9 | 0.5 | 2.9 | 1.0 | 2.3 | 1.1 | 2.7 | 0.9 | 1.2 | 0.5 | 18.5 | 13.7 | 15.6 | 15.8 | 19.1 | 14.3 | 17.4 | 12.9 | 15.3 | 11.8 |
| Allerton ... | 1.8 | 1.2 | 1.9 | 1.1 | 1.7 | 1.0 | 3.2 | 1.3 | 1.9 | 1.3 | 16.1 | 14.2 | 14.8 | 16.6 | 18.4 | 15.7 | 21.2 | 12.4 | 16.4 | 14.1 |
| BOROUGH TOTAL | 2.8 | 1.6 | 2.65 | 2.08 | 2.35 | 1.46 | 3.22 | 1.65 | 2.47 | 1.50 | 19.86 | 17.15 | 19.11 | 20.14 | 22.12 | 17.91 | 20.90 | 16.95 | 19.80 | 16.77 |

PHTHISIS.—The deaths attributed to this disease amounted to 366, as compared with 367 for the previous year. The accompanying Chart shows that apart from the large increase in the number of deaths from this disease during the Influenza Epidemic of 1889-90-91, there has been a steady though small diminution in the Mortality from Phthisis.

CHART B.
DEATHS FROM PHTHISIS.

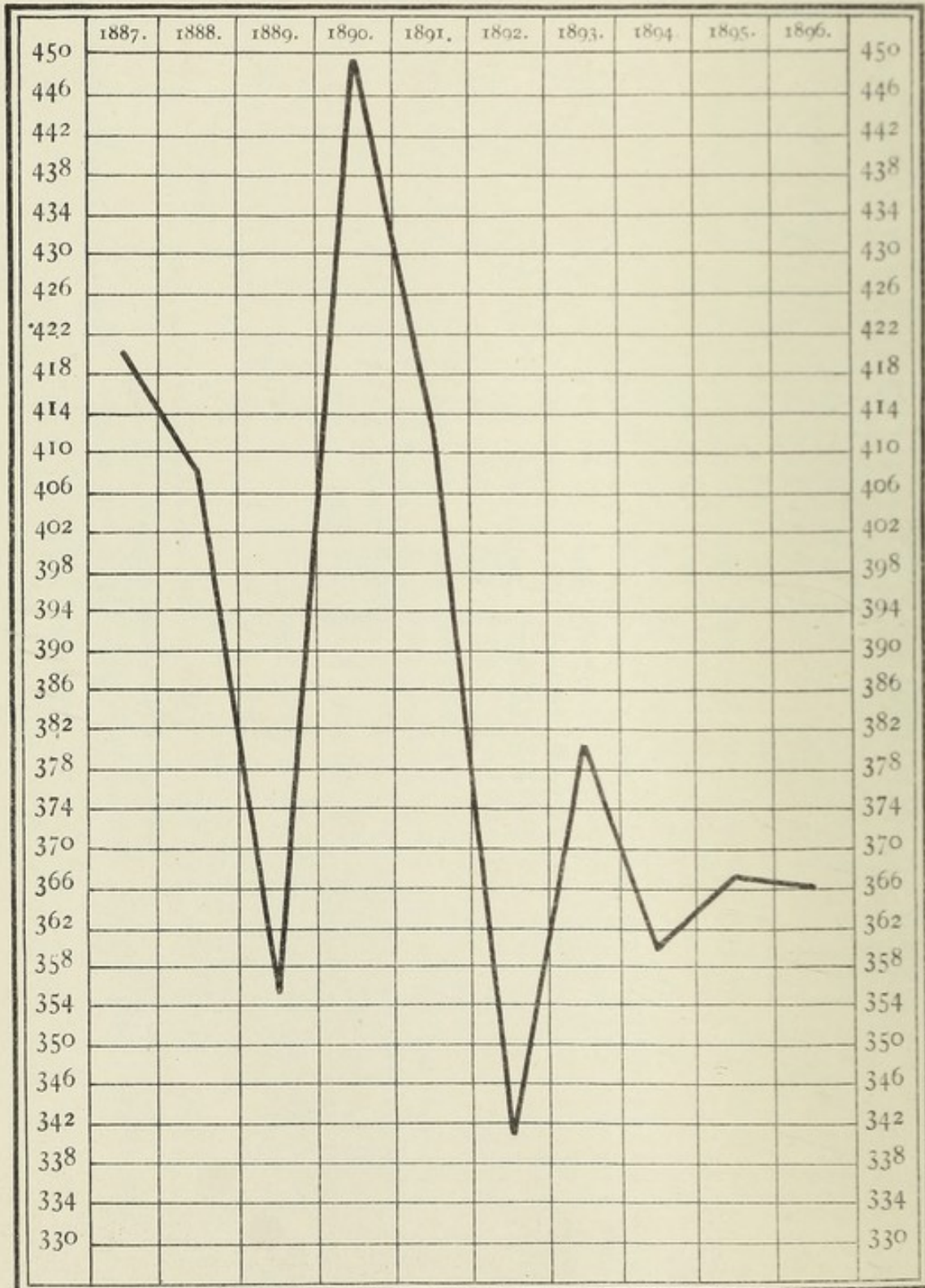


TABLE XXXIII.
Deaths from Phthisis.*

| WARDS. | QUARTERS. | | | | | | | | Year 1896. | | |
|----------------------|-----------|-----------|-----------|-----------|-----------------------|-----------|-----------|-----------|------------|------------|------------|
| | March. | | June. | | Sept. 14 weeks. | | Dec. | | M. | F. | Total. |
| | M. | F. | M. | F. | M. | F. | M. | F. | | | |
| North | 5 | 3 | 7 | 2 | 2 | 2 | 3 | 2 | 17 | 9 | 26 |
| South | 8 | 7 | 2 | 3 | 5 | 3 | 5 | 2 | 20 | 15 | 35 |
| East | 9 | 2 | 4 | 2 | 2 | 1 | 1 | 9 | 16 | 14 | 30 |
| West | 6 | 5 | 4 | 4 | 5 | 6 | 4 | 3 | 19 | 18 | 37 |
| Listerhills | 4 | 4 | 9 | 1 | 5 | 6 | 5 | 6 | 23 | 17 | 40 |
| Great Horton ... | 1 | 5 | 3 | 2 | 3 | ... | 3 | 1 | 10 | 8 | 18 |
| Little Horton ... | 2 | 3 | 2 | 1 | 4 | 2 | 3 | 1 | 11 | 7 | 18 |
| East Bowling ... | 2 | 5 | 8 | ... | 1 | 3 | ... | 3 | 11 | 11 | 22 |
| West Bowling ... | 5 | 5 | 4 | 2 | 8 | 4 | 4 | 1 | 21 | 12 | 33 |
| Exchange | 3 | 2 | 2 | 4 | .. | ... | 4 | 2 | 9 | 8 | 17 |
| Bradford Moor ... | 3 | 3 | 4 | 5 | 8 | ... | 3 | 4 | 18 | 12 | 30 |
| Manningham ... | 3 | 4 | 6 | 1 | 2 | 5 | 2 | 3 | 13 | 13 | 26 |
| Bolton | 4 | ... | 3 | ... | 3 | 2 | ... | 1 | 10 | 3 | 13 |
| Heaton... .. | 2 | ... | 2 | 2 | 3 | 1 | 2 | 2 | 9 | 5 | 14 |
| Allerton | ... | 1 | ... | 2 | 2 | ... | 2 | ... | 4 | 3 | 7 |
| BOROUGH TOTAL | 57 | 49 | 60 | 31 | 53 | 35 | 41 | 40 | 211 | 155 | 366 |

Ages at Death.

| Under 1 Year. | 1— | 2— | 3— | 4— | 5— | 10— | 15— | 20— | 30— | 40— | 50— | All Ages. |
|------------------|----|----|----|-----|----|-----|-----|-----|-----|-----|-----|--------------|
| 2 | 2 | 1 | 1 | ... | 2 | 7 | 37 | 96 | 90 | 68 | 60 | 366 |

*Deaths in Public Institutions are referred to in the Wards
from whence the patients came.

TABLE XXXIV.

*Deaths from other Tuberculous Diseases.**

| WARDS. | Tuberculous Diseases. | | Tabes Mesenterica. | | Hydrocephalus. | | 1896. | | |
|-----------------------------|-----------------------|-----------|--------------------|-----------|----------------|-----------|-----------|-----------|-----------|
| | M. | F. | M. | F. | M. | F. | M. | F. | Total. |
| North | 4 | 1 | ... | 3 | ... | ... | 4 | 5 | 9 |
| South | ... | 2 | ... | ... | ... | 4 | ... | 6 | 6 |
| East | 1 | 2 | 5 | 1 | 1 | 2 | 7 | 5 | 12 |
| West | 3 | 2 | ... | ... | 1 | 1 | 4 | 3 | 7 |
| Listerhills | ... | 2 | 2 | ... | ... | 3 | 2 | 5 | 7 |
| Great Horton | 1 | ... | ... | ... | ... | ... | 1 | ... | 1 |
| Little Horton | ... | ... | ... | ... | 6 | 6 | 6 | 6 | 12 |
| East Bowling | ... | ... | ... | ... | 2 | ... | 2 | ... | 2 |
| West Bowling | ... | ... | 1 | ... | 1 | 2 | 2 | 2 | 4 |
| Exchange | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Bradford Moor | 3 | 1 | 3 | 3 | 2 | 1 | 8 | 5 | 13 |
| Manningham | 1 | 1 | 2 | 3 | 2 | 1 | 5 | 5 | 10 |
| Bolton | ... | ... | ... | ... | 3 | 2 | 3 | 2 | 5 |
| Heaton | ... | 1 | ... | ... | 2 | 3 | 2 | 4 | 6 |
| Allerton | 1 | ... | 1 | ... | ... | ... | 2 | ... | 2 |
| BOROUGH TOTAL | 14 | 12 | 14 | 10 | 20 | 26 | 48 | 48 | 96 |

* Deaths in Public Institutions are referred to in the Wards from whence the patients came.

BRONCHITIS, PNEUMONIA AND PLEURISY.—To these there were due 702 deaths, a decrease of 159 upon the total for the year 1895. The death-rate from these three diseases alone, was equal to 3.0 per 1000 of the population.

CANCER.—The synopsis appended shows that there has been during recent years a material increase in the number of deaths from this form of disease. This inexplicable fact is not confined to Bradford, nor to the United Kingdom, but is noticed in the death statistics of most European Countries. The Colonies too are not exempt from the scourge, and I notice that in a report on the health of New South Wales, published by the Government Statistician, the death-rate from cancer has steadily increased from $\cdot 14$ per 1000 of the population in 1856, to $\cdot 42$ per 1000 in 1894.

TABLE XXXV.

Synopsis of Deaths from Cancer during the Years 1887-1896.

| | 1887. | 1888. | 1889. | 1890. | 1891. | 1892. | 1893. | 1894. | 1895. | 1896. |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Total No. of Deaths ... | 122 | 129 | 137 | 129 | 142 | 159 | 129 | 146 | 182 | 182 |
| Males | 29 | 28 | 50 | 52 | 44 | 52 | 40 | 44 | 60 | 64 |
| Females | 93 | 101 | 87 | 77 | 98 | 107 | 89 | 102 | 122 | 118 |

VIOLENCE.—Various forms of violence, 108 deaths, 23 of which were of children under 5 years of age. Of the 108 deaths, 45 were attributed to fractures and contusions, 19 to burns and scalds, and 12 to accidental suffocation.

Inquests.

Two hundred and thirty-five inquests were held by the City Coroner during the year, as compared with 259 for the previous year. Fifty-four of the inquests were upon children under 5 years of age.

Uncertified Deaths.

The deaths of 29 persons were registered without certificate from a Medical Practitioner or Coroner, consisting of $\cdot 7$ per cent. of the total deaths; the average for the thirty-three great towns being $2\cdot 1$ per cent.

Analysis of the Vital and Mortal Statistics of Thirty-three of the Largest English Towns during the Year 1896.

| TOWNS. | Estimated Population middle of 1896. | Births. | Deaths. | Annual Rate per 1,000 living. | | | Deaths from Principal Zymotic Diseases. | Small-pox. | Measles. | Scarlet Fever. | Diphtheria. | Whooping-Cough. | Fever. | Diarrhoea. | Deaths of Children under 1 year of age to 1,000 Births. | Rate per cent. of Uncertified Deaths. |
|---------------------|--|---------|---------|----------------------------------|---------|-----------------------------------|---|------------|----------|----------------|-------------|-----------------|--------|------------|---|--|
| | | | | Births. | Deaths. | Principal Zymotic Diseases. | | | | | | | | | | |
| 33 Towns | 10,846,971 | 339,115 | 208,534 | 30.7 | 18.9 | 2.86 | 31,550 | 25 | 7,839 | 2,406 | 4,202 | 6,245 | 2,073 | 8,760 | 167 | 1.5 |
| 32 Provincial Towns | 6,425,016 | 203,319 | 125,023 | 31.1 | 19.1 | 2.67 | 17,450 | 16 | 4,142 | 1,464 | 1,519 | 3,308 | 1,464 | 5,537 | 172 | 2.1 |
| London | 4,421,955 | 135,796 | 83,511 | 30.2 | 18.6 | 3.14 | 14,100 | 9 | 3,697 | 942 | 2,683 | 2,937 | 609 | 3,223 | 161 | 0.6 |
| West Ham | 261,297 | 8,658 | 4,268 | 32.6 | 16.1 | 3.00 | 797 | 4 | 117 | 55 | 187 | 158 | 61 | 215 | 165 | 3.7 |
| Croyden | 118,006 | 3,009 | 1,706 | 25.1 | 14.2 | 1.94 | 233 | ... | 67 | 5 | 29 | 62 | 18 | 52 | 150 | ... |
| Brighton | 120,499 | 3,022 | 1,975 | 24.7 | 16.1 | 1.63 | 199 | ... | 55 | 6 | 19 | 32 | 14 | 73 | 135 | 1.7 |
| Portsmouth | 178,639 | 5,006 | 3,009 | 27.6 | 16.6 | 2.11 | 383 | ... | 125 | 20 | 20 | 52 | 27 | 132 | 154 | 0.7 |
| Plymouth | 90,276 | 2,643 | 1,796 | 28.8 | 19.6 | 2.30 | 210 | ... | 95 | 3 | 13 | 17 | 6 | 76 | 178 | 0.5 |
| Bristol | 230,623 | 6,465 | 3,961 | 27.6 | 16.9 | 1.90 | 444 | 5 | 143 | 59 | 37 | 61 | 18 | 121 | 142 | 1.2 |
| Cardiff | 162,690 | 5,591 | 2,784 | 33.8 | 16.8 | 2.27 | 376 | 3 | 38 | 28 | 62 | 105 | 13 | 127 | 165 | 1.3 |
| Swansea | 98,645 | 3,061 | 1,689 | 30.5 | 16.8 | 1.18 | 118 | 2 | 6 | 4 | 10 | 56 | 15 | 25 | 161 | 1.1 |
| Wolverhampton ... | 86,530 | 3,023 | 1,755 | 34.4 | 20.0 | 3.11 | 274 | ... | 9 | 21 | 53 | 31 | 36 | 127 | 184 | 1.3 |
| Birmingham | 501,241 | 16,603 | 10,600 | 32.6 | 20.8 | 3.57 | 1,823 | .. | 307 | 148 | 270 | 378 | 107 | 613 | 197 | 5.0 |
| Norwich | 108,630 | 3,400 | 1,919 | 30.8 | 17.4 | 2.33 | 257 | ... | 117 | 4 | 24 | 9 | 21 | 82 | 164 | 1.6 |

| | | | | | | | | | | | | | | | | | |
|-------------------|-----|----------------|--------------|--------------|-------------|-------------|-------------|------------|----------|------------|-----------|-----------|------------|-----------|-----------|------------|------------|
| Leicester | ... | 198,659 | 6,212 | 3,376 | 30.8 | 16.7 | 2.97 | 599 | ... | 121 | 50 | 64 | 51 | 40 | 273 | 187 | 2.7 |
| Nottingham | ... | 229,775 | 6,758 | 4,087 | 28.9 | 17.5 | 2.47 | 575 | ... | 205 | 26 | 13 | 90 | 79 | 162 | 168 | 1.4 |
| Derby | ... | 101,770 | 2,901 | 1,619 | 28.0 | 15.7 | 1.91 | 197 | ... | 34 | 11 | 10 | 54 | 21 | 67 | 151 | 0.4 |
| Birkenhead | ... | 109,343 | 3,527 | 2,133 | 31.7 | 19.2 | 2.97 | 330 | .. | 115 | 32 | 22 | 59 | 26 | 76 | 177 | 1.0 |
| Liverpool | ... | 632,512 | 22,416 | 14,617 | 34.9 | 22.7 | 3.01 | 1,938 | ... | 306 | 227 | 157 | 294 | 206 | 748 | 173 | 3.4 |
| Bolton | ... | 120,380 | 3,831 | 2,536 | 31.3 | 20.7 | 2.80 | 344 | ... | 6 | 40 | 14 | 102 | 48 | 134 | 168 | 0.3 |
| Manchester | ... | 529,561 | 17,787 | 12,184 | 33.0 | 22.6 | 3.42 | 1,834 | ... | 570 | 197 | 81 | 360 | 122 | 504 | 176 | 1.3 |
| Salford | ... | 210,707 | 7,480 | 4,848 | 34.9 | 22.6 | 4.10 | 879 | .. | 202 | 104 | 49 | 189 | 71 | 264 | 199 | 2.1 |
| Oldham | ... | 143,442 | 3,971 | 2,955 | 27.2 | 20.3 | 2.91 | 425 | ... | 167 | 56 | 35 | 53 | 23 | 91 | 184 | 0.3 |
| Burnley | ... | 102,805 | 3,245 | 1,830 | 31.0 | 17.5 | 2.19 | 229 | ... | 63 | 4 | 48 | 28 | 13 | 73 | 170 | 1.4 |
| Blackburn | ... | 129,459 | 3,649 | 2,351 | 27.7 | 17.9 | 1.82 | 238 | ... | 41 | 9 | 10 | 47 | 34 | 97 | 171 | 2.7 |
| Preston | ... | 113,864 | 3,776 | 2,403 | 32.6 | 20.8 | 1.86 | 217 | ... | 4 | 3 | 12 | 43 | 26 | 129 | 203 | 4.3 |
| Huddersfield | ... | 100,463 | 2,096 | 1,682 | 20.5 | 16.5 | 1.60 | 163 | ... | 28 | 19 | 21 | 55 | 13 | 27 | 166 | 2.5 |
| Halifax | ... | 94,775 | 2,337 | 1,669 | 24.3 | 17.3 | 1.10 | 105 | ... | 16 | ... | 21 | 33 | 20 | 15 | 149 | 1.7 |
| BRADFORD | ... | 228,809 | 5,945 | 3,838 | 25.9 | 16.7 | 1.50 | 344 | 1 | 105 | 24 | 12 | 105 | 28 | 69 | 142 | 0.7 |
| Leeds | ... | 402,449 | 12,574 | 7,670 | 30.7 | 18.8 | 2.28 | 937 | 1 | 199 | 71 | 49 | 246 | 87 | 284 | 169 | 0.6 |
| Sheffield | ... | 347,278 | 12,011 | 6,797 | 34.0 | 19.3 | 2.91 | 1,024 | ... | 200 | 102 | 56 | 205 | 101 | 360 | 173 | 3.5 |
| Hull | ... | 220,844 | 7,171 | 4,245 | 31.9 | 18.9 | 3.32 | 745 | ... | 260 | 57 | 51 | 113 | 62 | 202 | 173 | 2.8 |
| Sunderland | ... | 140,386 | 4,873 | 2,828 | 34.2 | 19.8 | 3.00 | 428 | ... | 143 | 27 | 8 | 76 | 53 | 121 | 158 | 0.9 |
| Gateshead | ... | 98,436 | 3,583 | 1,910 | 35.8 | 19.1 | 3.10 | 310 | ... | 137 | 26 | 18 | 35 | 22 | 72 | 172 | 0.9 |
| Newcastle-on-Tyne | ... | 212,223 | 6,701 | 3,981 | 31.1 | 18.5 | 2.08 | 450 | ... | 139 | 26 | 39 | 103 | 33 | 110 | 165 | 0.5 |

Disinfecting Station.

The following Table sets forth the work done in connection with the Disinfecting Station during 1896.

| | |
|--------------------------|------|
| Houses fumigated | 429 |
| Articles disinfected :— | |
| Beds | 364 |
| Mattresses | 123 |
| Pillows | 669 |
| Bolsters | 285 |
| Blankets... .. | 584 |
| Counterpanes | 593 |
| Curtains | 7 |
| Carpets | 45 |
| Rugs | 44 |
| Coats | 103 |
| Waistcoats | 50 |
| Trousers | 65 |
| Drawers | 24 |
| Flannel Vests | 11 |
| Dresses | 74 |
| Petticoats | 75 |
| Hose | 102 |
| Dressing Gowns | 14 |
| Shawls | 123 |
| Cushions | 49 |
| Mats and Sundries | 1099 |
| TOTAL | 4503 |

Table A shews that 490 new houses have been erected during the year and certified as fit for habitation in accordance with the Bradford Waterworks and Improvement Act, 1875.

TABLE A.

Shewing number of New Buildings certified as fit for habitation in each of the Wards, and in the whole Borough, during the years 1889-96.

| WARDS. | 1889. | 1890. | 1891. | 1892 | 1893. | 1894. | 1895. | 1896. |
|----------------------|------------|-------------|------------|------------|------------|------------|------------|------------|
| North | 29 | 9 | ... | 64 | 43 | 8 | 11 | 2 |
| South | 92 | 104 | 104 | 69 | 35 | 16 | 1 | 6 |
| East | 78 | 77 | 20 | 49 | 98 | 54 | 45 | 26 |
| West | 4 | 3 | ... | 3 | 4 | 9 | ... | ... |
| Listerhills | 82 | 173 | 72 | 30 | 17 | 13 | 3 | 48 |
| Great Horton ... | 27 | 67 | 59 | 37 | 53 | 106 | 134 | 70 |
| Little Horton ... | 16 | 15 | 40 | 42 | 4 | 19 | 21 | 33 |
| East Bowling .. | 27 | 31 | 61 | 48 | 60 | 78 | 15 | 18 |
| West Bowling ... | 162 | 187 | 98 | 59 | 103 | 115 | 58 | 72 |
| Exchange | 3 | 2 | 1 | ... | ... | 1 | ... | 7 |
| Bradford Moor .. | 131 | 85 | 98 | 76 | 110 | 87 | 47 | 55 |
| Manningham ... | 76 | 130 | 125 | 116 | 148 | 44 | 67 | 94 |
| Bolton... .. | 86 | 41 | 48 | 30 | 20 | 24 | 13 | 7 |
| Heaton | 68 | 98 | 31 | 35 | 65 | 18 | 34 | 10 |
| Allerton | 57 | 48 | 69 | 16 | 22 | 49 | 47 | 42 |
| BOROUGH TOTAL | 938 | 1070 | 826 | 674 | 782 | 641 | 498 | 490 |

SANITATION.

Refuse Removal.

The present system of refuse removal was initiated many years ago, and although at that time it may have been considered a satisfactory one, there can be little doubt in the mind of any who have given much thought to the matter that it is becoming antiquated and is not such an one as is worthy of so large a city. Instead of having to depend upon the Nuisance Inspectors to report those Ashpits that require emptying in the more congested parts of the city and upon the particular request of many who live in the suburbs, there should be a systematic removal of refuse from the dust-bin or ash-place of every house.

This can be accomplished by having the city mapped out in sections and by so arranging the work that each section is cleared at regular intervals. Any exceptional case could be dealt with by means of a special cart kept for emergencies.

It is a moot point as to whether this work could best be done by the Corporation working directly or through a contractor, and upon this I do not propose to express any opinion.

Housing of the Working Classes.

The Housing of the Working Classes Acts, 1890 and 1894, consolidate and amend the previous Acts on the same subject. Houses unfit for habitation can be more satisfactorily dealt with by means of these Acts than by the Public Health Act. Their object is to bring about the closure of insanitary dwellings and their replacement by sanitary dwellinghouses. It is in force throughout the United Kingdom.

PART I.—UNHEALTHY AREAS. This part places upon the Medical Officer of Health the duty of making an official report to the Sanitary Authority when he finds that (*a*) any houses, courts or alleys, are unfit for human habitation, or that (*b*) the narrowness, closeness, and bad arrangement, or the bad condition of the streets and houses, or groups of houses within an area, or the want of light, air, ventilation, or proper conveniences, or any other sanitary defect, make the given area dangerous or injurious to the health of the inhabitants of the area, or of their neighbours : and that the evils connected with such houses, courts, or alleys, cannot be effectually remedied otherwise than by an improvement scheme for their re-arrangement and re-construction : the Authority, if satisfied of the truth of the information thus given them, and of the sufficiency of their resources, are required to make a scheme for the improvement of the area. The Medical Officer of Health is required on complaint from ratepayers to report on the condition of any area complained of as being unhealthy. The improvement scheme must provide for the re-housing of the members of the working classes displaced by it. In assessing compensation to be paid owners of houses in the condemned area, deductions are made for sanitary defects, and where a house cannot reasonably be made fit for human habitation, only the value of land and building materials need be paid.

PART II.—UNHEALTHY DWELLING-HOUSES.—It is made the duty of the Medical Officer of Health of every District to officially inform his Authority of any dwelling-house which appears to him in a state so dangerous or injurious to health as to be unfit for human habitation ; and he may be called upon on complaint of householders to report on the condition of any house. The Authority are required to cause inspections to be made from time to time of their District, to ascertain whether any dwelling-house is unfit for human habitation, and they must forthwith take the necessary proceedings, before a Justice, to obtain a closing order on receiving a report of a house unfit from their Officer. When a closing order has been made, and the Authority are of opinion that the dwelling-house has not been

rendered fit for human habitation, they may order the demolition of the building, time being given the owner to attend and state his objections. It is also made the duty of the Medical Officer of Health to officially inform his Authority of "obstructive" buildings. If any building in his District, though not in itself unfit for human habitation, stops ventilation, or otherwise conduces to make other buildings unfit for human habitation, or prevents proper measures being taken to abate nuisances, it is his duty to report the facts to his Authority, who shall order the demolition of the buildings, after compensating the owner.

PART III. -- This gives to the Sanitary Authority the power of erecting dwellings for the benefit of the labouring classes. It is an "adoptive" part of the Act and is not in force unless adopted by special resolution of the Sanitary Authority.

Food Poisoning.

During the month of September there occurred several cases of poisoning by cream obtained from cows which had been overdriven to a local country cattle market and not milked for about two days. Fortunately none of the cases ended fatally, although in one instance the issue was for a few days in doubt. A detailed examination of the cream was made, but owing, probably to its having been five days old before being submitted to examination, the cause of the poisoning was not discovered. A Report of the Bacteriological and Chemical Examination, together with a circular addressed by me to the medical practitioners in the City, will be found in the appendix.

ICE-CREAM POISONING.—A quantity of this delicacy supplied by an ice-cream vendor in Manchester Road caused the death of one person and the serious illness of thirty or forty others. The symptoms produced were those of irritant poisoning, but I had no opportunity to make an examination of the noxious material. Inspection of the premises showed that the ice-cream had been manufactured close to the open mouth of a drain, under such conditions as would not be permitted if there existed powers to register people engaged in the business.

REPORT

OF THE

CHIEF INSPECTOR OF NUISANCES.

TO THE MEDICAL OFFICER OF HEALTH,

SIR,—The following statement shews the nature and amount of work done in the Sanitary Department during the year 1896, including an abstract of work carried out in the previous nine years.

| <i>Particulars of work done.</i> | <i>No. of Cases</i> | | | | | | | | | |
|---|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1887. | 1888. | 1889. | 1890. | 1891. | 1892. | 1893. | 1894. | 1895. | 1896. |
| Drains opened and cleansed ... | 1125 | 1011 | 1356 | 1298 | 1429 | 1178 | 1236 | 1518 | 1573 | 1710 |
| Drains provided for premises which had been previously without drainage | 36 | 41 | 17 | 13 | 17 | 32 | 16 | 87 | 29 | 50 |
| Sink drains disconnected from the sewer or otherwise effectually trapped | 788 | 345 | 623 | 871 | 632 | 508 | 365 | 565 | 341 | 377 |
| Street gullies cleansed | 2656 | 2976 | 2184 | 2867 | 3648 | 3602 | 4064 | 4831 | 4237 | 3927 |
| Water Conductors provided and down spouts connected with the drains | 665 | 828 | 1062 | 1251 | 1143 | 1127 | 947 | 1977 | 2105 | 1980 |
| Swine and Swine Styes removed from objectionable situations | 45 | 45 | 24 | 30 | 29 | 13 | 31 | 20 | 35 | 41 |
| Fowls, etc., removed from dwelling-houses | 114 | 99 | 162 | 219 | 114 | 127 | 87 | 144 | 113 | 90 |
| Accumulations of offensive matter removed | 193 | 187 | 479 | 596 | 689 | 399 | 257 | 317 | 409 | 497 |
| Filthy Yards and Passages cleansed | 508 | 416 | 484 | 578 | 1099 | 561 | 481 | 955 | 753 | 808 |
| Surface of back yards and defective pavement repaired... .. | 125 | 143 | 219 | 270 | 191 | 199 | 287 | 395 | 335 | 433 |
| Defective Water Closets repaired | 119 | 114 | 236 | 100 | 111 | 137 | 216 | 310 | 549 | 763 |

No. of Cases.

| <i>Particulars of work done.</i> | 1887. | 1888. | 1889. | 1890. | 1891. | 1892. | 1893. | 1894. | 1895. | 1896. |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Stagnant Water removed from Ashpits | 214 | 251 | 495 | 376 | 345 | 286 | 285 | 419 | 292 | 295 |
| Privies and Ashpits repaired and provided with suitable doors and covers | 927 | 1051 | 1177 | 957 | 779 | 924 | 964 | 1623 | 1698 | 1505 |
| Foul Urinals repaired | 25 | 30 | 32 | 35 | 20 | 13 | 46 | 32 | 47 | 73 |
| Filthy Cellar Areas cleansed ... | 71 | 131 | 80 | 81 | 84 | 74 | 57 | 85 | 79 | 80 |
| Offensive Manure Pits removed | 38 | 36 | 46 | 48 | 26 | 27 | 27 | 29 | 39 | 29 |
| Defective Baths and Wash Basins repaired and disconnected from the drains ... | 155 | 124 | 35 | 54 | 25 | 59 | 51 | 77 | 49 | 55 |
| Privies and Ashpits removed from objectionable positions and re-constructed on improved sites | 326 | 334 | 370 | 391 | 265 | 196 | 2 | 291 | 40 | 67 |
| New Water Closets erected ... | 159 | 120 | 156 | 179 | 242 | 321 | 507 | 378 | 425 | 492 |
| Stagnant Water drained off premises | 101 | 133 | 130 | 132 | 92 | 83 | 132 | 190 | 238 | 166 |
| Filthy Privies cleansed and lime-washed | 939 | 1327 | 1198 | 1167 | 1148 | 1026 | 1063 | 1365 | 1129 | 922 |
| Houses and Cellar Dwellings white-washed... .. | 151 | 224 | 295 | 283 | 237 | 258 | 254 | 341 | 203 | 165 |
| Houses and Cellar Dwellings disinfected | 1081 | 456 | 639 | 532 | 1081 | 779 | 1979 | 1015 | 451 | 392 |
| Houses closed unfit for human habitation | ... | ... | 5 | 16 | 13 | 8 | 1 | 20 | 1 | 61 |
| Cellar Dwellings closed as unfit for human habitation | 1 | 2 | 15 | 11 | 18 | 9 | 1 | 16 | ... | 2 |
| Workshops closed as unfit for human habitation | ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... |
| General repairs of houses... .. | 27 | 71 | 42 | 34 | 29 | 42 | 36 | 78 | 149 | 56 |
| Improvement and Ventilation of premises by the removal of out-buildings, etc., from back yards | 127 | 172 | 197 | 127 | 81 | 92 | 20 | 54 | 91 | 65 |
| Abatement of Nuisances from over-crowding of houses, etc. | 15 | 14 | 18 | 41 | 26 | 24 | 24 | 24 | 12 | 18 |
| Foul Wells closed | ... | ... | ... | ... | ... | 2 | ... | 2 | 2 | 6 |

No. of Cases.

| <i>Particulars of work done.</i> | 1887. | 1888. | 1889. | 1890. | 1891. | 1892. | 1893. | 1894. | 1895. | 1896. |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Offensive businesses discontinued | ... | 1 | 2 | ... | 2 | 2 | 1 | ... | ... | ... |
| Foul Mill Dams cleansed... .. | 2 | 1 | 1 | 2 | 1 | 1 | 4 | ... | 2 | 2 |
| Rag Warehouses cleansed | 14 | 21 | 2 | 6 | ... | 4 | 2 | 2 | 2 | 4 |
| Tripe Boilers' premises inspected | 301 | 343 | 209 | 88 | 107 | 86 | 112 | 243 | 44 | 475 |
| Fellmongers' premises inspected | 14 | 97 | 194 | 10 | 24 | 34 | 12 | 20 | 12 | 21 |
| Houses inspected where infectious diseases have occurred... | 1180 | 399 | 563 | 522 | 1148 | 1031 | 2606 | 2670 | 709 | 724 |
| Bakehouses inspected | ... | ... | 11 | 33 | 62 | 43 | 34 | 25 | 28 | 24 |
| Mills and Workshops Closets inspected | ... | ... | ... | ... | 1613 | 269 | 140 | 509 | 349 | 357 |

The above particulars represent only those cases where Statutory Notices have been served and do not include Nuisances prevented or abated on the verbal request of the Inspectors.

The number of persons summoned for non-abatement of Nuisances after Notices given is forty-six.

Night Scavenging.

During the year the Contractors have according to the returns of the Sanitary Officers, emptied 91,706 ash-pits and removed therefrom 5,533 loads of soil, and 63,486 loads of rubbish, a total of 69,019 loads.

Burial Grounds.

During the year 145 visits have been made by the Sanitary Officers to the various graveyards within the Borough, but no irregularities have been observed.

Dangerous and Unfenced Places.

Three hundred and sixteen places, including houses and other buildings, have been reported by the Sanitary Officers as

being in a dangerous condition. These have been dealt with and made secure from personal danger, either under the direction of the Borough Surveyor or the Chief Inspector of Nuisances.

Public Urinals.

The number of Public Urinals within the Borough is 38, as against 40 last year.

During the year three Public Urinals have been removed by order of the Sanitary Committee on the grounds of their occupying improper positions, viz.: one from Tetley Street, one from Westholme Street, and one from the Workhouse grounds at Little Horton Lane. The latter has since been re-erected at Thornton Road, on premises belonging to Messrs. E. and W. H. Haley, ironfounders, who kindly gave their consent thereto.

Arrangements have been made for the erection of a Public Urinal near the Brownroyd Hotel, Thornton Road, by permission of the owners of the premises, Messrs. Wm. Whitaker and Co., and also one at Great Horton Road, opposite Park Avenue, by permission of the Trustees of the late George Turner, Esq.

Canal Boats.

There is only one Canal Boat registered with the Borough, and this, along with 207 others registered with other Authorities, but plying on the Canal within the Borough, has been examined by Mr. Rhodes, the Canal Boats Inspector, and all boats inspected were free from bilge water, ventilation very good, and suitable provision for the storage of water for domestic use. In 12 cases the boats were found to be not in accordance with the Regulations, 4 having defective decks, 2 defective chimneys, 3 cabins required painting, and 3 had no certificate of registration on board. The master of one boat was summoned before the Justices for having the cabins in dirty condition, and also

with failing to produce certificate of registration when requested so to do by the Officer, and a penalty of 5s., and 8s. 9d. costs in each charge were inflicted.

The owners of the other defective boats were formally notified by the Chief Inspector of Nuisances to have the boats thoroughly repaired, and accordingly the whole of the necessary repairs have since been carried out. The owners and masters of the boats where certificates of registration were not produced on request of the Officer were formally cautioned against a recurrence of the offence.

Common Lodging-houses.

The number of Common Lodging-houses within the Borough is 41, the same as last year.

The houses contain 192 rooms for sleeping purposes, and are registered to accommodate 1,903 persons nightly.

The number of persons who have been accommodated during the year is 437,881, the nightly average being 1,199.

The number of visits paid to these houses during the year by the Sanitary Officers is 1,972, and their reports, with one exception, shew the houses to have been fairly well conducted. One person was summoned and convicted by the Justices for allowing a greater number of lodgers to be accommodated than fixed and determined by the Common Lodging-house Regulations.

Adulteration of Food and Drugs.

During the year ending December, 1896, 269 samples of food have been submitted to the Borough Analyst by the Food Inspector for analysis. Of these 245 were certified by the Analyst as not adulterated, and 24 were found to be adulterated. Nine of the offenders were prosecuted before the Justices, seven of which were convicted, and penalties amounting with costs to £30 18s. were inflicted, two summonses were dismissed, one

person who refused to supply the Food Officer with a sample of margarine absconded, or legal proceedings would have been instituted against the offender. In 15 other cases the amount of adulteration was trivial, and did not warrant proceedings against the offenders beyond being formally cautioned against a repetition of the offence.

The Food Inspector seized and destroyed 111 boxes of kippers, 17 boxes of finnon haddock, 6 boxes of haddock, 1 box of cod fish, 20 boxes of bloaters, 9 bags of cockles, 3 bags of mussels, 3 bags of oysters, 38 bottles of pickled cabbage, 7 bottles of onions, 6 bottles of relish, 5 jars of marmalade, 3 jars of honey, 2 jars of preserved fruit, and 14 cases of tomatoes.

The following Table shews the nature of articles submitted for analysis, together with the amount of penalties inflicted against the offenders for the year ending 1896.

REPORT for year ending December, 1896.

| NATURE OF FOOD. | Total. | Pure. | Adulterated. | Summoned. | Convicted. | Censured. | No proceed- ings. | Exposed with- out label. | Dismissed. | Penalties. | | Costs. | | REMARKS. | |
|---------------------------|--------|-------|--------------|-----------|------------|-----------|----------------------|-----------------------------|------------|------------|-------|--------|-------|----------|--|
| | | | | | | | | | | £ | s. d. | £ | s. d. | | |
| Milk | 200 | 177 | 23 | 8 | 6 | .. | 15 | .. | 2 | 23 | 0 | 5 | 10 | 0 | |
| Butter | 22 | 21 | 1 | 1 | 1 | .. | .. | .. | .. | 2 | 0 | 0 | 8 | 0 | |
| Lard | 13 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Pepper | 4 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Baking Powder | 5 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Ginger | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Sugar | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Whisky | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Flour of Brimstone | 3 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Milk of Sulphur | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Coffee | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Flour | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Sweets | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Ice Cream | 6 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Mustard | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Cocoa | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Green Peas | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Olive Oil... .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| Nitre | 2 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | |
| *Margarine | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | |
| Totals | 269 | 245 | 24 | 10 | 7 | .. | 15 | 1 | 2 | 25 | 0 | 5 | 18 | 0 | |

* Refused to supply, afterwards absconded.

Dairies, Cow-sheds, and Milk-shops.

There are at present within the Borough, registered under the "Contagious Diseases (Animals) Act, 1878," 246 Cow-sheds, and 1,068 Dairies, Milk-shops, and Purveyors, as against 249 and 1,075 respectively last year.

During the year 118 applications have been made for registration of premises for the sale of milk, and upon inspection by the Medical Officer of Health or the Dairies and Cow-sheds Inspector, 24 of these were found to be suitable, and were registered accordingly. Seven milk dealers have during the year voluntarily given up their premises, which were found to be unsuitable, and have since been registered for other premises more compatible with the proper preservation of the cleanliness of the milk and milk vessels used therein.

Inspection has been frequently made as heretofore of the milk and milk vessels coming into the town by railway and otherwise from places beyond the Borough, and numerous samples thus delivered have been taken by the Food Inspector, and the results with one exception shew the milk to have been genuine and of good quality.

One milk dealer whose milk vessels were found to be in dirty condition was summoned before the Justices, and a penalty inflicted, and two others appeared before the Sanitary Committee, and were cautioned against repeating the offence.

One cow-keeper was summoned before the Justices for neglecting to make the necessary improvements to his cow-sheds after notice had been given requiring him so to do, and a penalty of 5s. and 12s. costs were inflicted.

Special attention has again been paid to the Fried Fish Shops and Ice Cream Makers' premises within the Borough, and it is satisfactory to note that considerable improvement has been

effected in these places in regard to cleanliness, and more careful manipulation of the commodities produced thereat.

The number of visits and inspections made by the Officers has been as follows:—Cow-sheds, 910; Milk-shops, 2,792; and Milk-vessels, 1,487.

Inspection of Meat, Slaughter-houses, Potted Meat and Sausage Manufactories.

There have been 129 seizures of Unsound Meat, Fish, and Fruit. In one case the offender was summoned before the Justices for exposing for sale a quantity of rabbits which were unfit for human food, and a penalty amounting with costs to £5 8s. was inflicted.

There have been seized and destroyed 8,660 lbs. of beef, 890 lbs. of mutton, 745 lbs. of veal, 10,592 lbs. of pork, 21,217 lbs. of fish, 179 boxes of kippers, 65 boxes of herrings, 10 boxes of mackerel, 5 barrels of oysters, 14 bags of cockles, 53 bags of mussels, 16 baskets of mushrooms, 30 cases of onions, 147 rabbits, 97 hares, 22 pheasants, and 11 brace of grouse.

The above seizures are exclusive of those made by and specified in the Food Inspector's Report.

The number of Slaughter-houses under the old regulations is 7, and there are 4 others for which licences have to be applied for annually, being one less than last year, the licence referred to having lapsed by reason of the death of the occupier, and no application having been made by his successor for a renewal thereof within the period allowed by Act of Parliament.

The number of places at which Potted Meat and Sausages are made is 76, as against 71 last year. These places are regularly visited and reported upon by the Inspectors.

The number of visits made during the year has been as follows:—Private Slaughter-houses, 365; Potted Meat and Sausage Works, 1,221. The Public Abbatoirs are visited daily.

Cattle Disease.

During the year there have been four outbreaks of Swine Fever within the Borough, 72 animals being affected with the disease, all of which died or were compulsorily slaughtered, and the carcasses burned at the Corporation Refuse Destructor Works, under the supervision of the Officers of the Board of Agriculture.

There has been one outbreak of Sheep Scab, viz., at the farm premises at Shuttleworth Hall, Fairweather Green, in the occupation of Mr. Frank Dickenson, 72 animals being affected with the disease, all of which were isolated and periodically visited and examined either by the Veterinary Surgeon, Mr. Collins, or the Cattle Inspector, until the disease disappeared.

Another case of Farcy occurred at Messrs. North & Sons' Dye Works, Fairweather Green, one horse being affected with the disease, the animal was slaughtered by consent of the owners, and the carcase burned at the Hammerton Street Refuse Destructor, under the direction of the Cattle Inspector.

The Committee appointed in October last Mr. William Hemingway, as Meat and Cattle Inspector, in place of Mr. Elgin, who resigned the position in July last, he having been elected to carry out the duties of Meat Inspector to the Metropolitan Board of Works.

Yours obediently,

JAS. CHAMBERS.

REPORT

OF

MANAGER OF DESTRUCTOR WORKS.

Hamerton Street.

The number of loads of refuse destroyed is as follows :—

| | | |
|----------------|--------|---|
| Ashpit Refuse | | 20,862 |
| Markets Refuse | | 1376 |
| Rubbish | | 1519 |
| | | <hr style="width: 50%; margin: 0 auto;"/> |
| Total | | <u>23,757</u> |

As against a total of 22,787 loads destroyed last year.

There has also been destroyed the carcasses of 3 horses, 9 beasts, 111 stones of beef, 9 calves, 17 sheep, 63 pigs, 5 goats, and 117 couples of rabbits; 58 boxes fruit, 3 tons carrots, 4 tons cabbage, 19 bags of cockles and mussels, 5 boxes of oysters, 2 cases of eggs, 13 stones of tongues, 901 dogs, 103 cats, 400 pairs of mattresses and 4 beds.

4159 tons of mortar have been made and sold, as against 2800 tons made and sold last year.

2826 loads of clinker have been sold during the year.

The works erected by Messrs. Currie & Rowlands, for the treatment of fish refuse continue to be carried on in a satisfactory manner.

During the year the whole of the Stable and Destructor Buildings has been put into good repair and painted.

Sunbridge Road.

The number of loads of refuse destroyed is as follows:—

| | | | |
|----------------|-----|-----|---------------|
| Ashpit Refuse | ... | ... | 16,422 |
| Markets Refuse | ... | ... | 576 |
| Rubbish | ... | ... | 509 |
| | | | <hr/> |
| Total | ... | | <u>17,507</u> |

As against a total of 17,574 loads destroyed last year.

There have also been destroyed the carcasses of 2 sheep and 2 pigs; 104 pairs of mattresses and 4 beds.

1294 tons of mortar have been made and sold, as against 720 tons made and sold last year.

Southfield Lane.

The number of loads of refuse destroyed is as follows:—

| | | | |
|---------------|-----|-----|------|
| Ashpit Refuse | ... | ... | 9879 |
|---------------|-----|-----|------|

As against 8141 loads destroyed last year.

There have also been destroyed 47 pigs, 10 dogs, 47 mattresses and 14 beds.

Cliffe Road.

The quantity of refuse destroyed is as follows:—

| | | | |
|----------------|-----|-----|---------------|
| Ashpit Refuse | ... | ... | 12,814 |
| Markets Refuse | ... | ... | 140 |
| | | | <hr/> |
| Total | ... | | <u>12,954</u> |

Compared with 7495 loads for last year.

There has also been destroyed the carcasses of 2 pigs, 1 goat, 16 fowls, 44 couples rabbits, 74 dogs and 69 cats; 21 beds and 88 pairs of mattresses.

17 tons of mortar has been made and sold.

During the year an Engine-house and Mortar-pan stand has been erected, and the works have been lighted by electricity, an Engine and Dynamo having been installed for the purpose. These extensions and improvements are now complete and are giving every satisfaction.

Yours obediently,

JOHN McTAGGART.

APPENDIX 1.

BRADFORD UNION.—Vaccination Report for the Year 1895.

ABSTRACT OF RETURNS made on the 8th day of February, 1897, by the Vaccination Officers of the Bradford Union, respecting the Vaccination of Children whose Births have been Registered from January 1st, 1895, to December 31st, 1895, inclusive.

| Registration— Sub-Districts. | Number of Births registered from 1st Jan., 1895, to 31st Dec., 1895. | Number of these Births duly entered by 8th February, 1897, in "Vaccination Register." | | | | Per centage of cases finally accounted for to total Births. | Number of these Births which on 8th Feb., 1897, remained unentered in the "Vaccination Register" on account (as shewn by Report Book) of | | All cases not accounted for in preceding columns. | | | |
|---------------------------------|--|---|---------------------------------|------------------|----------------------------------|---|--|--------------------------------------|---|-------------------------------|-----|-----|
| | | Col. 10. "Successfully Vaccinated." | Col. 11. | | Col. 13. "Dead Unvaccinated." | | Total duly entered in the Register as finally accounted for. | Postponement by Medical Certificate. | | Removals and Cases not found. | | |
| | | | "Insusceptible of Vaccination." | "Had Small Pox." | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 1. Bowling ... | 1015 | 616 | 7 | ... | 151 | 774 | 76.25 | 13 | 70 | ... | ... | 158 |
| 2. Bradford East | 1870 | 1070 | 8 | ... | 310 | 1388 | 74.25 | 33 | 160 | ... | ... | 289 |
| 3. Bradford West | 1501 | 910 | 3 | ... | 241 | 1154 | 76.88 | 26 | 171 | ... | ... | 150 |
| 4. Horton ... | 1205 | 563 | 7 | ... | 202 | 772 | 64.0 | 11 | 97 | ... | ... | 325 |
| TOTAL ... | 5591 | 3159 | 25 | ... | 904 | 4088 | 73.11 | 83 | 498 | — | — | 922 |

APPENDIX II.

Analytical and Biological Report upon a Sample of CREAM received from Dr. Evans, Medical Officer of Health, Bradford, on the evening of September 10th, 1896.

The Cream was contained in an eight ounce medicine bottle and weighed $2\frac{1}{2}$ ounces.

THE BIOLOGICAL ANALYSIS showed entire absence of all or any vegetable or animal alkaloids; also the microbes present when grown in sterilised milk kept at different temperatures produced the ordinary lactic fermentation,—not a trace of poisonous or non-poisonous animal alkaloids (Ptomaines, &c). being formed.

In every case special research was made for Ptomaines of the Lacto-toxicon and Tyro-toxicon class (occurring in cream and milk poisoned by microbial action) and for Neuridine and Diamine Bases; in every case with a negative result.

The Cream when received was *very sour* and contained in every grain several millions of microbes (chiefly of the lactic and butyric acid species) and *it is quite possible that any bacterian poison originally present in the Cream may have been completely decomposed by this enormous multiplication of microbes.*

The butyric bacillus is notable for its power of bringing about the dissolution of a large number of organic compounds.

As the Biological Analysis failed to reveal any poison or poisonous germs, I resorted to a

CHEMICAL ANALYSIS.

The Cream gave:—

| | | | | | Per cent. |
|-----------------|-----|-----|-----|-----|-----------|
| Total Solids | ... | ... | ... | ... | 41·9 |
| Fat | ... | ... | ... | ... | 35·0 |
| Solids, not Fat | ... | ... | ... | ... | 6·9 |
| Mineral matter | ... | ... | ... | ... | ·46 |

These results show that there is nothing abnormal in the composition of the Cream.

Special research was made for mineral or metallic irritant poisons with the result that *not a trace* of any of the following substances was found:—

| | |
|----------|-----------------|
| Arsenic. | (Lead). |
| Mercury. | (Borax). |
| Copper. | (Boracic Acid). |

The percentage of Ash is quite the average of that present in normal cream and indicates the absence of any appreciable amount of mineral or metallic substances.

F. W. RICHARDSON.

September 16th, 1896.

[*Copy of letter addressed to Medical Practitioners,
September 22nd, 1896.*]

TOWN HALL,

BRADFORD,

SEPTEMBER 22ND, 1896.

DEAR SIR,

You are doubtless aware that quite recently a serious case of poisoning by cream at Allerton was brought under my notice for investigation.

I regret to say that the result of my inquiries and examination was not so satisfactory as I could wish, the chief reason being that the cream had not been handed over to me, until a considerable time after the occurrence of the poisoning, when, owing to the changes that had taken place bacteriological examination failed to be of any service.

If any such case should come under your care in the future may I ask to be supplied with information at the earliest possible moment, in order that any necessary bacteriological examination may be made under favourable conditions.

Believe me,

Yours faithfully,

W. ARNOLD EVANS,

Medical Officer of Health.

The first part of the report was made for the purpose of ascertaining the extent of the disease in the following...

...and the result of the investigation was as follows:—

The disease was found to be present in the following...

...and the result of the investigation was as follows:—

The disease was found to be present in the following...

...and the result of the investigation was as follows:—

The disease was found to be present in the following...

...and the result of the investigation was as follows:—

The disease was found to be present in the following...

...and the result of the investigation was as follows:—

REPORT

MEDICAL SUPERINTENDENT

CITY HOSPITAL

INFECTIOUS DISEASES

REPORT
OF THE
MEDICAL SUPERINTENDENT
OF THE
CITY HOSPITAL
FOR
INFECTIOUS DISEASES.

—:O:—

TO THE CHAIRMAN AND MEMBERS OF THE SANITARY
COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I beg to lay before you the Report on the Fever Hospital for the year 1896.

During the year 346 patients were admitted to the Hospital. These, together with 45 remaining in the Hospital at the end of the previous year, make a total of 391 patients who have passed through the Wards.

The number of Scarlet Fever patients admitted to the Wards was 248, the percentage mortality being 5·6.

There were 77 cases of Enteric Fever, with a mortality of 19·4 per cent.

There were only 5 cases of Diphtheria admitted, and of these two died.

Sixteen cases other than those scheduled in the Notification Act were admitted, viz., 5 cases of Pneumonia, 3 cases of Measles, 2 cases of Chicken-pox, and 1 case each of Cerebral Abscess, Meningitis, Empyema, Constipation, Phthisis pulmonalis, and Whooping-Cough. Four deaths occurred among these patients.

A new Ironing Machine has been added to the Laundry, resulting in a great saving of labour and increase in efficiency. The lead pipes which connected the cold water to Wards I., II., and III. had become worn, and were replaced by new lead pipes. The corridors and the outside wood-work of the Hospital were repainted and varnished, and all the Wards have been washed down. New copper boilers have been placed in Wards I., II., III., and IV., and have been found very satisfactory.

The Ambulance which has been in daily use since 1887 has become much the worse for wear, and requires renewal.

The health of the Staff has been satisfactory. One of the nurses contracted Scarlet Fever, but made a good recovery.

I have the honour to be, Gentlemen,

Your Obedient Servant,

JAS. TYSON KITCHEN.

APPENDIX.

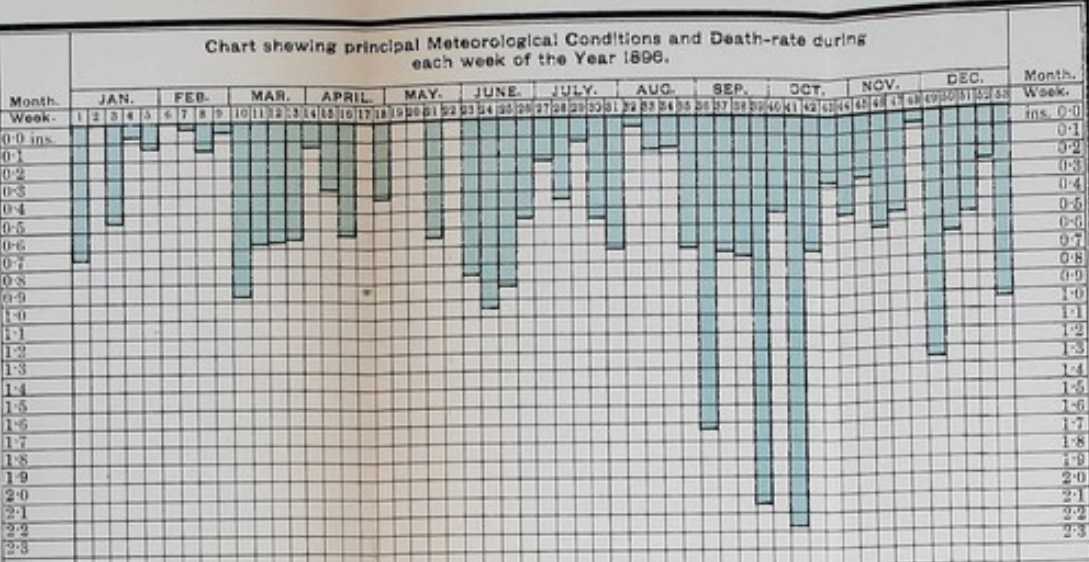
TABLE A.—General Statement.

| | |
|--|-----|
| Remaining in Hospital 31st December, 1895 | 45 |
| Admitted during 1896 | 346 |
| | 391 |
| | 391 |
| Discharged, relieved, or cured | 321 |
| Died | 35 |
| Remaining in Hospital 31st December, 1896... .. | 35 |
| | 391 |

COUNTY BOROUGH OF BRADFORD.

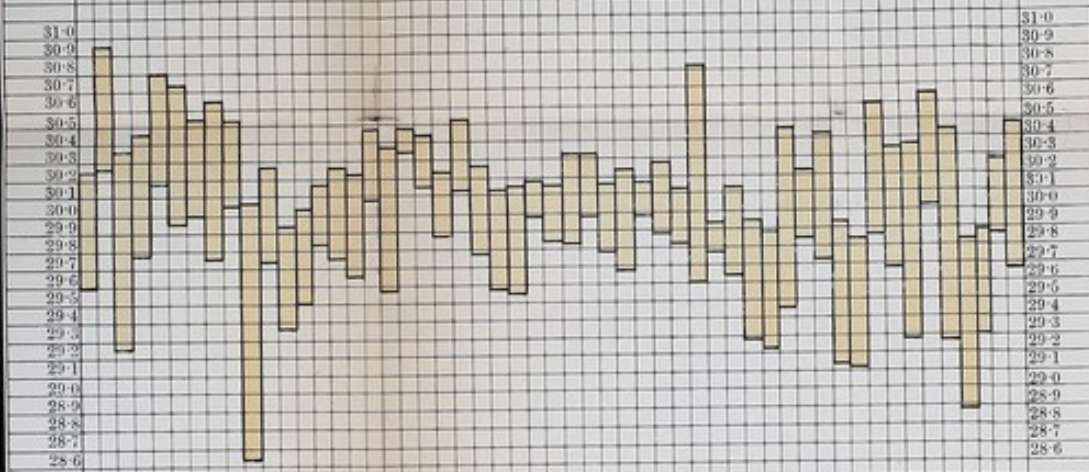
Chart showing principal Meteorological Conditions and Death-rate during each week of the Year 1896.

RAINFALL.



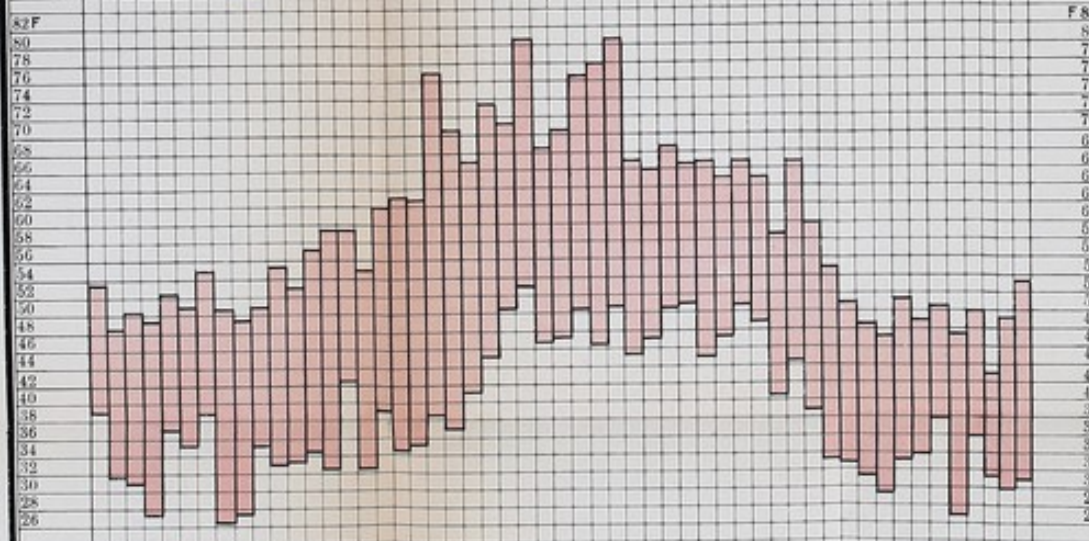
RAINFALL.

BAROMETRIC READINGS.



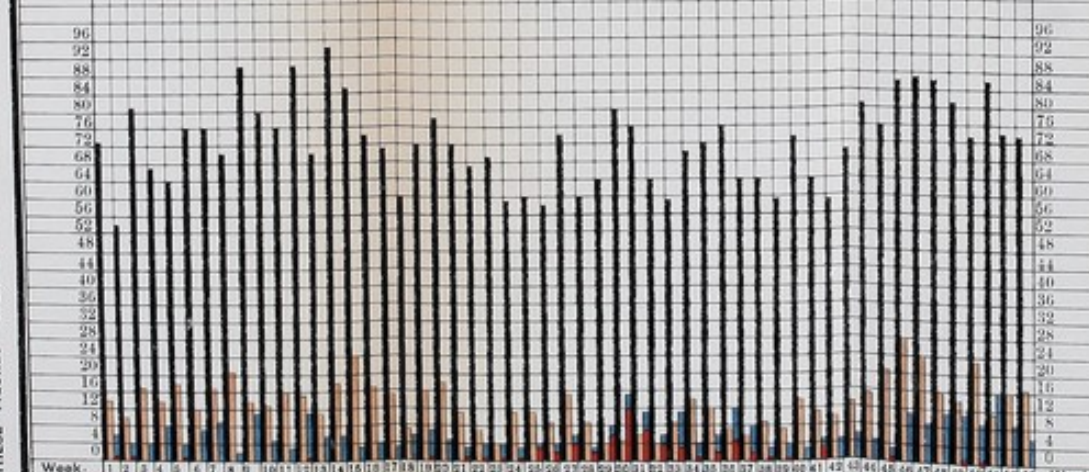
BAROMETRIC READINGS.

WEEKLY RANGE OF TEMPERATURE.



WEEKLY RANGE OF TEMPERATURE.

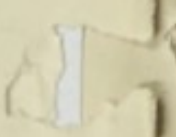
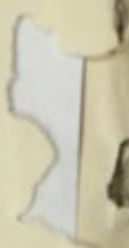
THESE FIGURES REFER TO THE NUMBER OF DEATHS.



THESE FIGURES REFER TO THE NUMBER OF DEATHS.

█ BLACK shows No. of Deaths weekly from ALL CAUSES.
█ BROWN shows No. of Deaths Weekly from Diseases of the Respiratory System (not including Consumption).
█ RED shows No. of Deaths weekly from Diarrhoea. █ BLUE shows No. of Deaths Weekly from other Zymotic Diseases.

COUNT



BYINELTT

TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS,
Coming to the knowledge of the Medical Officer of Health, during the year 1896, in the Urban Sanitary District
of Bradford, classified according to Diseases, Ages, and Localities.

| Names of Localities adopted for the purpose of these Statistics. (a) | POPULATION AT ALL AGES. | | Registered Births. (d) | Aged under 5 or over 5 (e) | NEW CASES OF SICKNESS IN EACH LOCALITY, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH. | | | | | | | | | | | | NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL. | | | | | | | | | | | | | | | | | |
|---|-------------------------|-------------------------------------|---------------------------|-------------------------------|---|-------------|-------------|-------------------|---------|---------------------|------------|------------|------------|----------|-------------|---------|--|-------------|-------------|-------------------|---------|---------------------|------------|------------|------------|----------|-------------|---------|-----|-----|-----|-----|-----|---|
| | Census 1891. (b) | Estimated to middle of 1896. (c) | | | FEVERS. | | | | | | | | | | | | FEVERS. | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | | | | | | |
| | | | | | Small-pox. | Scarlatina. | Diphtheria. | Membranous Group. | Typhus. | Enteric or Typhoid. | Continued. | Relapsing. | Puerperal. | Cholera. | Erysipelas. | TOTALS. | Small-pox. | Scarlatina. | Diphtheria. | Membranous Group. | Typhus. | Enteric or Typhoid. | Continued. | Relapsing. | Puerperal. | Cholera. | Erysipelas. | TOTALS. | | | | | | |
| North | 12783 | 13519 | 362 | Under 5 | ... | 2 | ... | 1 | ... | 8 | ... | ... | ... | ... | 1 | 4 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| South (H) | 13124 | 13879 | 422 | Under 5 | ... | 2 | 1 | ... | ... | 1 | ... | ... | ... | ... | 2 | 6 | ... | 1 | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | | |
| East | 15583 | 16480 | 418 | Under 5 | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | | |
| West | 14216 | 15028 | 359 | Under 5 | ... | 4 | ... | ... | ... | ... | ... | ... | ... | 1 | ... | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | | |
| West | 14216 | 15028 | 359 | 5 and upwards | 1 | 4 | 1 | ... | ... | 12 | ... | ... | 1 | ... | 26 | 45 | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 10 | | | |
| Listerhills | 18690 | 19773 | 418 | Under 5 | ... | 2 | ... | ... | ... | 1 | ... | ... | ... | ... | 2 | 5 | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | | |
| Listerhills | 18690 | 19773 | 418 | 5 and upwards | 14 | 1 | ... | ... | ... | 23 | ... | ... | ... | ... | 20 | 58 | ... | 9 | ... | ... | ... | 17 | ... | ... | ... | ... | ... | ... | ... | ... | 26 | | | |
| Great Horton (H) | 14768 | 15623 | 404 | Under 5 | ... | 11 | 1 | 3 | ... | 8 | ... | ... | ... | ... | 1 | 18 | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | | |
| Great Horton (H) | 14768 | 15623 | 404 | 5 and upwards | 28 | 5 | 1 | ... | ... | 1 | ... | ... | 2 | ... | 13 | 58 | ... | 19 | ... | ... | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 22 | | |
| Little Horton | 15306 | 16185 | 461 | Under 5 | ... | 9 | 2 | 2 | ... | 2 | ... | ... | ... | ... | 1 | 16 | ... | 8 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 10 | | |
| Little Horton | 15306 | 16185 | 461 | 5 and upwards | 5 | 3 | ... | ... | ... | 10 | 1 | ... | 3 | ... | 19 | 41 | 1 | ... | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | | |
| East Bowling | 16068 | 16988 | 473 | Under 5 | ... | 12 | 2 | ... | ... | 12 | ... | ... | 1 | ... | 1 | 15 | ... | 11 | ... | ... | ... | 9 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 11 | | |
| East Bowling | 16068 | 16988 | 473 | 5 and upwards | 21 | 3 | ... | ... | ... | ... | ... | ... | ... | ... | 17 | 54 | ... | 17 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 27 | | |
| West Bowling | 17250 | 18244 | 548 | Under 5 | ... | 6 | 1 | ... | ... | 2 | ... | ... | ... | ... | ... | 9 | ... | 4 | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | | |
| West Bowling | 17250 | 18244 | 548 | 5 and upwards | 21 | 3 | 1 | ... | ... | 11 | ... | ... | 5 | ... | 7 | 48 | ... | 11 | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 16 | | |
| Exchange | 4846 | 5126 | 113 | Under 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| Exchange | 4846 | 5126 | 113 | 5 and upwards | 2 | ... | ... | ... | ... | 5 | ... | ... | 1 | ... | 6 | 14 | ... | 2 | ... | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 7 | | |
| Bradford Moor | 17520 | 18528 | 532 | Under 5 | ... | 10 | 2 | 2 | ... | ... | ... | ... | ... | ... | ... | 14 | ... | 7 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 7 | |
| Bradford Moor | 17520 | 18528 | 532 | 5 and upwards | 30 | 2 | ... | ... | ... | 7 | ... | ... | ... | ... | 15 | 54 | ... | 23 | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 27 | |
| Manningham | 22469 | 23762 | 597 | Under 5 | ... | 17 | 1 | ... | ... | ... | ... | ... | ... | ... | 20 | 18 | ... | 9 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 9 | |
| Manningham | 22469 | 23762 | 597 | 5 and upwards | 43 | 3 | ... | ... | ... | 15 | ... | ... | 2 | ... | 20 | 83 | ... | 31 | ... | ... | 8 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 39 | |
| Bolton | 8425 | 8910 | 205 | Under 5 | ... | 18 | ... | 2 | ... | ... | ... | ... | ... | ... | 3 | 20 | ... | 10 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 10 | |
| Bolton | 8425 | 8910 | 205 | 5 and upwards | 24 | 2 | ... | ... | ... | 9 | ... | ... | ... | ... | 3 | 38 | ... | 15 | 1 | ... | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 19 | |
| Heaton | 16108 | 17036 | 375 | Under 5 | ... | 18 | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 21 | ... | 9 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 9 |
| Heaton | 16108 | 17036 | 375 | 5 and upwards | 43 | 3 | ... | ... | ... | 11 | ... | ... | 2 | ... | 11 | 70 | ... | 34 | ... | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 38 | |
| Allerton | 9199 | 9728 | 258 | Under 5 | ... | 9 | ... | ... | ... | 5 | ... | ... | ... | ... | 1 | 10 | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | |
| Allerton | 9199 | 9728 | 258 | 5 and upwards | 10 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 15 | 30 | ... | 3 | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5 | |
| Borough Totals | 216361 | 228809 | 5945 | Under 5 | 1 | 125 | 10 | 10 | ... | 6 | ... | ... | ... | ... | 13 | 164 | ... | 73 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 78 | | |
| Borough Totals | 216361 | 228809 | 5945 | 5 and upwards | ... | 272 | 31 | 2 | ... | 146 | 2 | ... | 18 | ... | 197 | 669 | 1 | 184 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 274 | |

(H) Indicates Locality of Hospitals for Infectious Diseases.

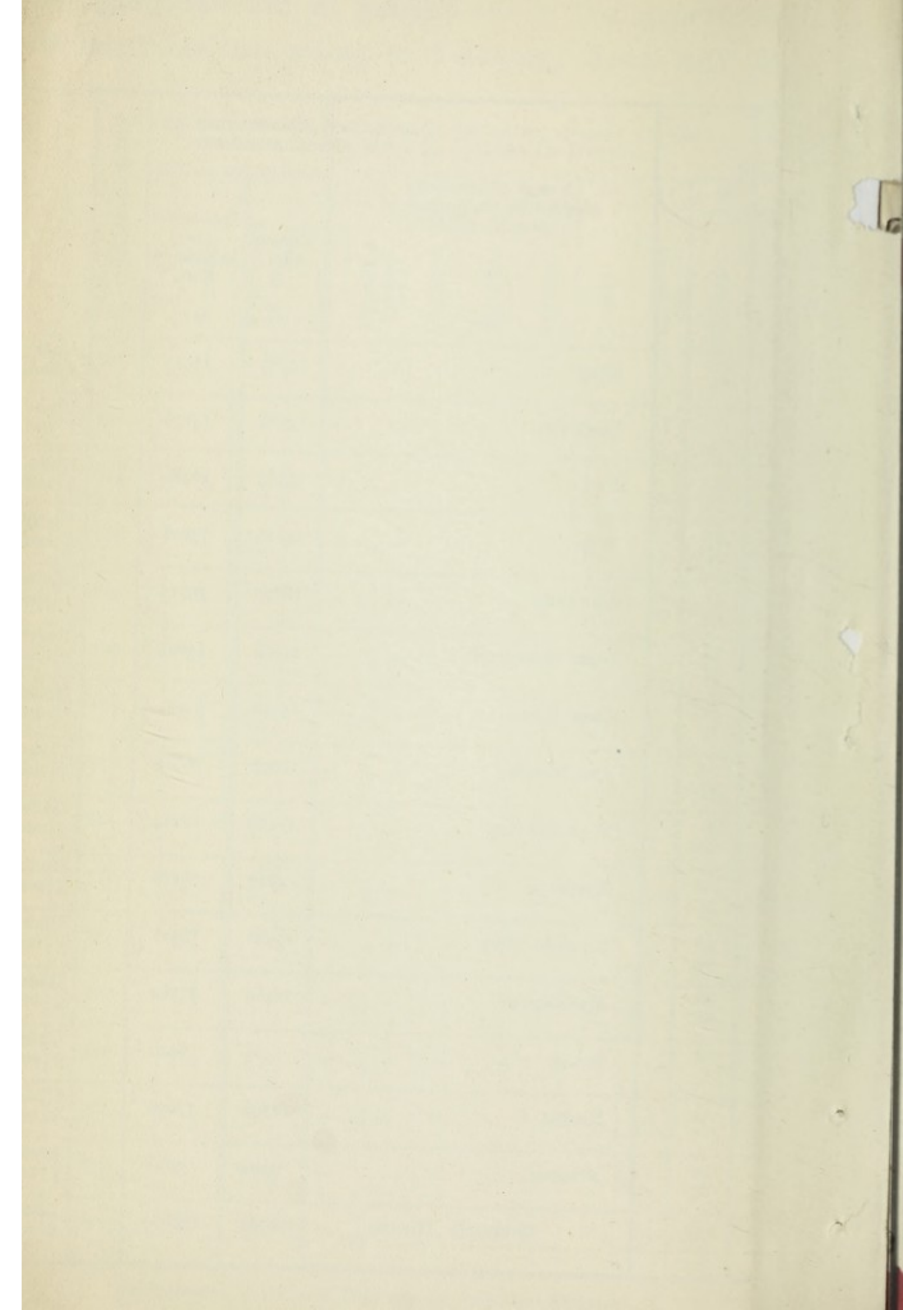


TABLE OF DEATHS DURING THE YEAR 1896,
 In the Urban Sanitary District of Bradford, classified according to Diseases, Ages, and Localities.

| Names of Localities adopted for the purpose of these Statistics. (a) | MORTALITY FROM ALL CAUSES AT SUBJOINED AGES. | | | | | | | (i) | MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE. | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|----------------------|-----------------------|------------------------|-------------------------|-------------------------|------------------------|---------------------------|---|-------------|-------------|-------------------|---------|---------------------|------------|------------|------------|----------|-------------|----------|-----------------|-------------------------|------------------|-----------|---------------------------------|----------------|---------|-----------|---------------------|---------|------|-----|-----|
| | At all ages. (b) | Under 1 year. (c) | 1 and under 5. (d) | 5 and under 15. (e) | 15 and under 25. (f) | 25 and under 60. (g) | 60 and upwards. (h) | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | | | |
| | | | | | | | | | Small-pox. | Scarletina. | Diphtheria. | Membranous Croup. | Typhus. | Enteric or Typhoid. | Continued. | Relapsing. | Puerperal. | Cholera. | Erysipelas. | Measles. | Whooping Cough. | Diarrhea and Dysentery. | Rheumatic Fever. | Phthisis. | Roseola, Erythema and Plethora. | Heart Disease. | Pyæmia. | Injuries. | All other Diseases. | TOTALS. | | | |
| North | 245 | 69 | 34 | 9 | 12 | 60 | 61 | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 7 | 3 | 4 | ... | 2 | 19 | ... | ... | ... | ... | ... | ... | ... | 67 | 103 |
| South † | 275 | 69 | 32 | 17 | 19 | 84 | 54 | Under 5 ... 5 and upwards | ... | 9 | 2 | ... | ... | 14 | ... | ... | ... | ... | 3 | 6 | 2 | ... | 1 | 20 | 1 | ... | ... | ... | 3 | 53 | 101 | | |
| East | 239 | 50 | 30 | 11 | 14 | 83 | 45 | Under 5 ... 5 and upwards | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 9 | 4 | 2 | ... | 2 | 30 | 19 | ... | ... | ... | ... | ... | 51 | 86 | |
| West † | 406 | 68 | 35 | 22 | 32 | 171 | 78 | Under 5 ... 5 and upwards | ... | ... | ... | 1 | ... | 1 | ... | ... | ... | ... | 2 | 5 | 4 | ... | 1 | 20 | 1 | ... | ... | ... | 5 | 63 | 103 | | |
| Listerhills | 248 | 50 | 19 | 9 | 20 | 73 | 77 | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 10 | 1 | 4 | ... | 5 | ... | ... | ... | ... | ... | 1 | 47 | 69 | |
| Great Horton † | 236 | 41 | 37 | 15 | 11 | 65 | 67 | Under 5 ... 5 and upwards | ... | 1 | 1 | 3 | ... | ... | ... | ... | ... | ... | ... | 15 | 3 | 1 | ... | 17 | 27 | 2 | ... | ... | ... | 1 | 37 | 78 | |
| Little Horton † | 496 | 76 | 49 | 11 | 19 | 172 | 169 | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 14 | 13 | 3 | ... | 20 | ... | ... | ... | ... | ... | 1 | 67 | 125 | |
| East Bowling | 296 | 75 | 45 | 6 | 17 | 84 | 69 | Under 5 ... 5 and upwards | ... | 1 | 2 | ... | ... | ... | ... | ... | ... | ... | ... | 7 | 16 | 14 | ... | 2 | 25 | 1 | ... | ... | ... | 1 | 51 | 120 | |
| West Bowling | 288 | 62 | 43 | 11 | 15 | 80 | 77 | Under 5 ... 5 and upwards | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | 9 | 15 | 2 | ... | 3 | 23 | 1 | ... | ... | ... | 2 | 52 | 105 | |
| Exchange | 89 | 20 | 6 | 4 | 5 | 32 | 22 | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 3 | 1 | ... | 4 | ... | ... | ... | ... | ... | 1 | 15 | 26 | |
| Bradford Moor | 269 | 84 | 43 | 7 | 14 | 69 | 52 | Under 5 ... 5 and upwards | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 16 | 10 | ... | 1 | 29 | 21 | ... | ... | ... | 3 | 64 | 127 | |
| Manningham | 339 | 97 | 31 | 8 | 10 | 110 | 77 | Under 5 ... 5 and upwards | ... | 2 | 1 | ... | ... | 3 | ... | ... | ... | ... | ... | 7 | 9 | 8 | ... | 2 | 24 | 41 | 22 | ... | ... | 5 | 110 | 211 | |
| Bolton | 92 | 17 | 12 | 2 | 10 | 33 | 18 | Under 5 ... 5 and upwards | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | 2 | 1 | ... | ... | 2 | 13 | 7 | ... | ... | ... | 1 | 17 | 29 | |
| Heaton † | 199 | 41 | 18 | 13 | 8 | 50 | 63 | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 2 | 2 | ... | 1 | 12 | 25 | ... | ... | ... | 2 | 39 | 59 | |
| Allerton | 121 | 24 | 18 | 4 | 2 | 31 | 42 | Under 5 ... 5 and upwards | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 8 | 4 | ... | ... | 8 | 19 | 16 | ... | ... | ... | 1 | 20 | 42 | |
| BOROUGH TOTALS ... | 3838 | 849 | 452 | 149 | 214 | 1203 | 971 | Under 5 ... 5 and upwards | ... | 15 | 6 | 6 | ... | 2 | ... | ... | ... | ... | 2 | 100 | 101 | 57 | ... | 6 | 260 | 6 | ... | ... | 23 | 715 | 1301 | | |
| | | | | | | | | Under 5 ... 5 and upwards | ... | 1 | 9 | 6 | 1 | ... | 20 | ... | ... | ... | 8 | 5 | 4 | 12 | 25 | 300 | 442 | 328 | 1 | ... | 85 | 1219 | 2537 | | |
| PUBLIC INSTITUTIONS. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Eye and Ear Hospital (West) ... | 1 | ... | ... | ... | ... | 1 | ... | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 | |
| St. Catherine's Home (West) ... | 14 | ... | ... | ... | ... | 14 | ... | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 9 | 14 | |
| Children's Hospital (Heaton) ... | 22 | 10 | 5 | 7 | ... | ... | ... | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 2 | 3 | 15 | |
| Fever Hospital (South) ... | 37 | ... | 12 | 11 | 7 | 7 | ... | Under 5 ... 5 and upwards | ... | 8 | 2 | ... | ... | 14 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 12 | |
| Scholemoor Small-pox Hospital (Great Horton) ... | 1 | ... | ... | ... | ... | 1 | ... | Under 5 ... 5 and upwards | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | |
| Infirmery (West) ... | 172 | 13 | 18 | 14 | 18 | 86 | 23 | Under 5 ... 5 and upwards | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | ... | 6 | ... | ... | ... | ... | ... | 4 | 17 | 31 | |
| Workhouse (Little Horton) ... | 236 | 13 | 10 | 2 | 6 | 105 | 100 | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | ... | 1 | ... | 2 | ... | ... | ... | ... | 1 | 16 | 23 | | |
| TOTAL DEATHS IN PUBLIC INSTITUTIONS. | 483 | 30 | 45 | 34 | 31 | 214 | 123 | Under 5 ... 5 and upwards | ... | 8 | 2 | 1 | ... | 1 | ... | ... | ... | ... | ... | 4 | ... | 4 | ... | 12 | ... | ... | ... | ... | ... | 5 | 44 | 81 | |
| | | | | | | | | Under 5 ... 5 and upwards | ... | 1 | 5 | 2 | ... | 14 | ... | ... | ... | ... | ... | 2 | ... | 1 | ... | 52 | 52 | 38 | ... | ... | 21 | 214 | 401 | | |
| THE SUBJOINED NUMBERS HAVE ALSO TO BE TAKEN INTO ACCOUNT IN JUDGING OF THE ABOVE RECORDS OF MORTALITY. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deaths occurring outside the district among persons belonging thereto. | 57 | ... | ... | ... | ... | 47 | 10 | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 3 | 3 | 15 | ... | ... | ... | 36 | 57 | | |
| Deaths occurring within the district among persons not belonging thereto. | 38 | 2 | 3 | 3 | 7 | 18 | 5 | Under 5 ... 5 and upwards | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | 4 | 5 | | |

† Public Institutions included.

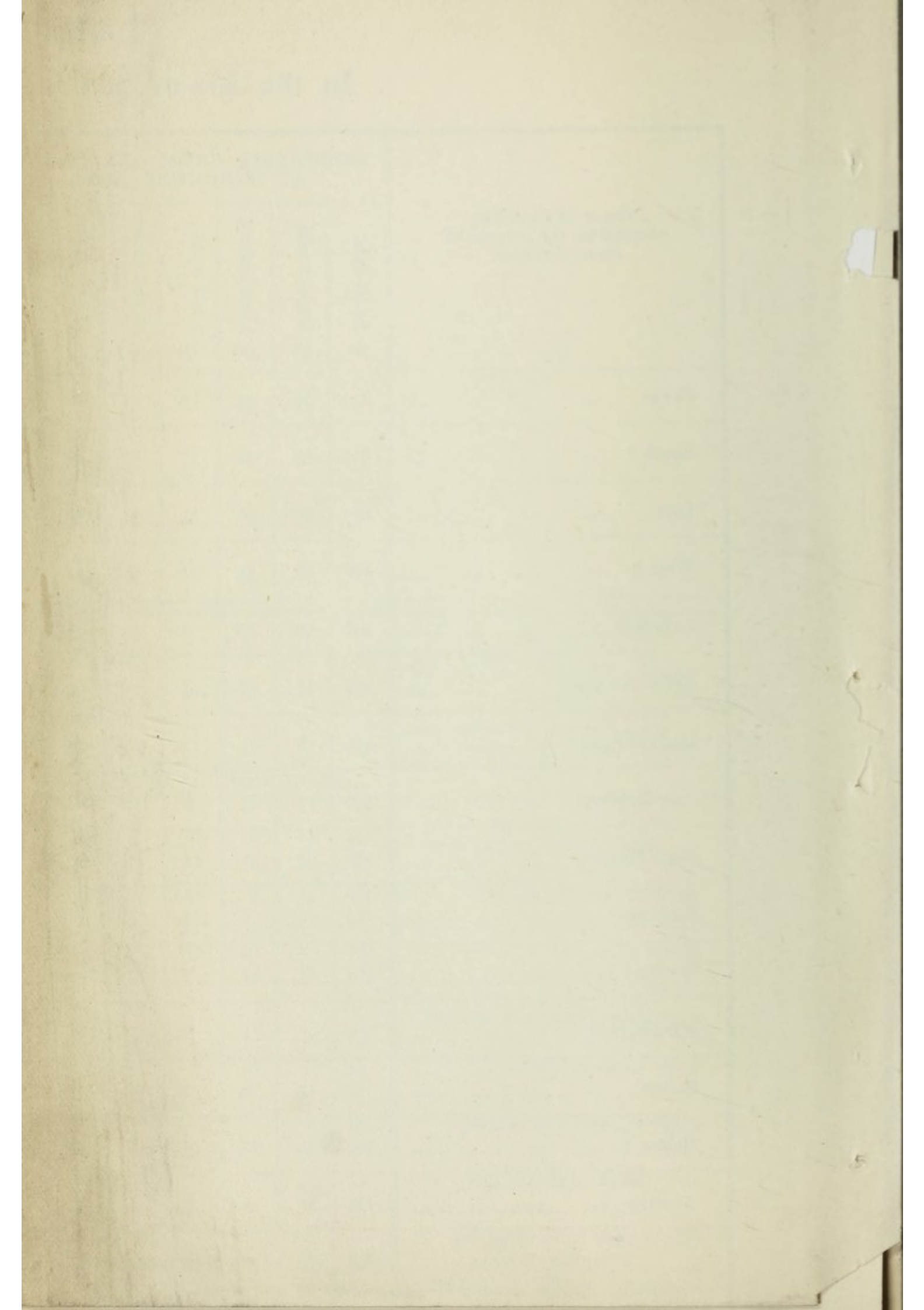


TABLE B.—SCARLET FEVER.

Showing Admissions, Deaths, and Percentage Mortality for the year 1896.

| Age. | MALES. | | FEMALES. | | TOTAL. | | |
|---------------|---------------|-----------|---------------|-----------|---------------|-----------|-------------|
| | No. Admitted. | No. Died. | No. Admitted. | No. Died. | No. Admitted. | No. Died. | Death Rate. |
| Under 1 | 1 | ... | ... | ... | 1 | ... | ... |
| 1—2 | 2 | ... | 2 | 1 | 4 | 1 | 25·0 |
| 2—3 | 6 | ... | 7 | 1 | 13 | 1 | 7·6 |
| 3—4 | 7 | 1 | 15 | 3 | 22 | 4 | 18·1 |
| 4—5 | 14 | 1 | 13 | ... | 27 | 1 | 3·7 |
| Total under 5 | 30 | 2 | 37 | 5 | 67 | 7 | 10·4 |
| 5—10 | 54 | 1 | 69 | 4 | 123 | 5 | 4·0 |
| 10—15 | 22 | ... | 16 | ... | 38 | ... | ... |
| 15—20 | 5 | 2 | 4 | ... | 9 | 2 | 22·2 |
| 20—25 | 2 | ... | 4 | ... | 6 | ... | ... |
| 25—30 | 1 | ... | 2 | ... | 3 | ... | ... |
| 30—35 | 1 | ... | 1 | ... | 2 | ... | ... |
| 35—40 | ... | ... | ... | ... | ... | ... | ... |
| 40—50 | ... | ... | ... | ... | ... | ... | ... |
| TOTAL ... | 115 | 5 | 133 | 9 | 248 | 14 | 5·6 |

TABLE C.—ENTERIC FEVER.

Showing Admissions, Deaths, and Percentage Mortality for the
Year 1896.

| Age. | MALES. | | FEMALES. | | TOTAL | | |
|---------|---------------|-----------|---------------|-----------|---------------|-----------|-------------|
| | No. Admitted. | No. Died. | No. Admitted. | No. Died. | No. Admitted. | No. Died. | Death Rate. |
| Under 5 | 2 | ... | 1 | 1 | 3 | 1 | 33.3 |
| 5—10 | 5 | 1 | 13 | .. | 15 | 1 | 6.6 |
| 10—15 | 6 | 1 | 6 | 1 | 12 | 2 | 16.6 |
| 15—20 | 12 | 2 | 6 | 1 | 18 | 3 | 16.6 |
| 20—25 | 9 | 3 | 1 | ... | 10 | 3 | 30.0 |
| 25—30 | 7 | 3 | 2 | 1 | 9 | 4 | 44.4 |
| 30—35 | 1 | ... | ... | ... | 1 | ... | ... |
| 35—40 | 3 | ... | .. | ... | 3 | ... | ... |
| 40—50 | 4 | 1 | .. | ... | 4 | 1 | 25.0 |
| 50—60 | ... | ... | 2 | .. | 2 | ... | ... |
| TOTAL | 49 | 11 | 28 | 4 | 77 | 15 | 19.4 |

TABLE D.

Showing Number of Cases admitted during each month of 1896.

| 1895. | Scarlet Fever. | | | Enteric Fever. | | | Other Diseases. | | | Total Admissions. | | |
|------------------|----------------|-----|-------|----------------|-----|-------|-----------------|-----|-------|-------------------|-----|-------|
| Months. | M. | F. | Total | M. | F. | Total | M. | F. | Total | M. | F. | Total |
| January... .. | 16 | 8 | 24 | ... | 3 | 3 | ... | 4 | 4 | 16 | 15 | 31 |
| February | 6 | 7 | 13 | 4 | 5 | 9 | 2 | 1 | 3 | 12 | 13 | 25 |
| March | 5 | 8 | 13 | 2 | ... | 2 | 2 | ... | 2 | 9 | 8 | 17 |
| April | 7 | 4 | 11 | ... | 3 | 3 | 2 | ... | 2 | 9 | 7 | 16 |
| May | 10 | 8 | 18 | ... | 1 | 1 | 1 | ... | 1 | 11 | 9 | 20 |
| June | 17 | 16 | 33 | 1 | 1 | 2 | 1 | ... | 1 | 19 | 17 | 36 |
| July | 15 | 22 | 37 | 2 | 1 | 3 | 1 | 1 | 2 | 18 | 24 | 42 |
| August | 12 | 18 | 30 | 7 | 1 | 8 | 1 | 1 | 2 | 20 | 20 | 40 |
| September | 13 | 17 | 30 | 4 | 2 | 6 | 1 | ... | 1 | 18 | 19 | 37 |
| October... .. | 6 | 8 | 14 | 18 | 5 | 23 | ... | ... | ... | 24 | 13 | 37 |
| November | 6 | 12 | 18 | 7 | 4 | 11 | 1 | 1 | 2 | 14 | 17 | 31 |
| December | 2 | 5 | 7 | 4 | 2 | 6 | 1 | ... | 1 | 7 | 7 | 14 |
| TOTAL | 115 | 133 | 248 | 49 | 28 | 77 | 13 | 8 | 21 | 177 | 169 | 346 |

SUMMARY.

| YEAR. | SMALL-POX. | | | ENTERIC FEVER. | | | SCARLET FEVER. | | | OTHER DISEASES. | | | TOTALS. | | | FROM 1872 TO 1896. | |
|-------|------------|---------|---------------------|----------------|---------|---------------------|----------------|---------|---------------------|-----------------|---------|---------------------|---------|---------|---------------------|--|---------------------------------------|
| | Cases. | Deaths. | Death-rate per 100. | Cases. | Deaths. | Death-rate per 100. | Cases. | Deaths. | Death-rate per 100. | Cases. | Deaths. | Death-rate per 100. | Cases. | Deaths. | Death-rate per 100. | Aggregate No. of days spent in Hospital. | Average No. of days for each Patient. |
| 1872 | 63 | 6 | 9.5 | 48 | 9 | 18.7 | 14 | ... | ... | 37 | 6 | 16.2 | 162 | 21 | 13.01 | 4,546 | 28 |
| 1873 | 94 | 15 | 16.0 | 54 | 16 | 29.7 | 19 | 1 | 5.2 | 36 | 7 | 18.9 | 203 | 29 | 14.28 | 6,211 | 30½ |
| 1874 | 249 | 48 | 19.27 | 51 | 11 | 21.56 | 58 | 6 | 10.34 | 53 | 12 | 22.6 | 412 | 76 | 18.44 | 11,715 | 28½ |
| 1875 | 20 | 2 | 10.0 | 44 | 6 | 13.59 | 103 | 19 | 18.4 | 37 | 3 | 8.1 | 204 | 30 | 13.59 | 6,275 | 30¾ |
| 1876 | 12 | ... | ... | 40 | 5 | 12.5 | 35 | 9 | 26.0 | 26 | 5 | 19.2 | 113 | 19 | 18.8 | 2,876 | 27¼ |
| 1877 | 19 | 4 | 21.05 | 65 | 13 | 20.0 | 72 | 9 | 12.5 | 27 | 8 | 29.6 | 183 | 34 | 18.5 | 5,579 | 31½ |
| 1878 | 5 | 1 | 20.0 | 55 | 13 | 23.6 | 148 | 17 | 11.5 | 27 | 3 | 11.1 | 237 | 34 | 14.3 | 9,263 | 39 |
| 1879 | 8 | ... | .. | 24 | 3 | 12.5 | 159 | 14 | 8.8 | 23 | 4 | 17.39 | 214 | 21 | 9.8 | 8,414 | 39 |
| 1880 | 2 | 1 | 50.0 | 60 | 8 | 13.3 | 248 | 38 | 15.3 | 54 | 7 | 12.9 | 364 | 54 | 14.8 | 13,192 | 36¼ |

| | | | | | | | | | | | | | | | | | |
|------|-----|-----|-------|-----|----|-------|-----|----|-------|----|-----|-------|------|-----|-------|--------|-------|
| 1882 | 26 | 3 | 9.5 | 61 | 7 | 11.5 | 317 | 42 | 13.2 | 27 | ... | ... | 426 | 51 | 11.97 | 16,073 | 37½ |
| 1883 | 5 | 3 | 8.8 | 88 | 17 | 19.3 | 213 | 31 | 14.5 | 39 | 5 | 12.8 | 366 | 56 | 15.32 | 14,766 | 40 |
| 1884 | 3 | ... | ... | 119 | 17 | 14.2 | 233 | 17 | 7.2 | 23 | 2 | 8.6 | 375 | 36 | 9.6 | 15,949 | 42½ |
| 1885 | 28 | 2 | 7.14 | 89 | 17 | 18.2 | 237 | 11 | 4.6 | 29 | 4 | 13.7 | 362 | 32 | 8.8 | 14,215 | 39½ |
| 1886 | 4 | ... | ... | 83 | 6 | 6.74 | 456 | 19 | 4.16 | 23 | 8 | 34.7 | 596 | 35 | 5.89 | 21,391 | 36 |
| 1887 | 3 | ... | ... | 79 | 8 | 9.63 | 625 | 29 | 4.64 | 14 | 2 | 14.3 | 726 | 39 | 5.37 | 29,305 | 40½ |
| 1888 | 16 | ... | ... | 57 | 7 | 8.86 | 830 | 21 | 2.27 | 9 | 5 | 55.5 | 921 | 33 | 3.58 | 38,609 | 42½ |
| 1889 | 9 | 2 | 12.5 | 90 | 6 | 10.53 | 283 | 12 | 4.24 | 11 | 1 | 9.9 | 367 | 21 | 5.72 | 16,479 | 46 |
| 1890 | ... | 1 | 11.11 | 59 | 26 | 28.89 | 355 | 40 | 11.27 | 36 | 6 | 16.67 | 490 | 73 | 14.90 | 21,315 | 43½ |
| 1891 | ... | ... | ... | 76 | 11 | 18.64 | 380 | 22 | 5.78 | 43 | 12 | 27.90 | 484 | 45 | 9.30 | 19,940 | 41½ |
| 1892 | 25 | 4 | 16.6 | 41 | 15 | 19.6 | 780 | 83 | 10.6 | 39 | 10 | 25.6 | 897 | 108 | 12.04 | 39,838 | 44 |
| 1893 | 935 | 100 | 10.6 | 11 | 4 | 36.3 | 228 | 17 | 7.8 | 12 | 1 | 8.3 | 1186 | 122 | 10.2 | 34,203 | 28.8 |
| 1894 | ... | ... | ... | 42 | 8 | 19.0 | 525 | 30 | 5.7 | 16 | ... | ... | 583 | ... | ... | ... | ... |
| 1895 | ... | ... | ... | 97 | 20 | 20.6 | 250 | 16 | 6.4 | 28 | 9 | 32.14 | 375 | 45 | 12.0 | 17,331 | 46.21 |
| 1896 | ... | ... | ... | 77 | 15 | 19.4 | 248 | 14 | 5.6 | 21 | 6 | 28.5 | 346 | 35 | 10.1 | 17,368 | 50.1 |

The first part of the paper is devoted to a general
 discussion of the problem. It is shown that the
 problem is equivalent to the problem of finding
 the minimum of a certain functional. This is
 done by means of the method of Lagrange
 multipliers. The second part of the paper
 is devoted to the construction of the
 algorithm for the solution of the problem.
 It is shown that the algorithm is very simple
 and can be easily implemented on a computer.
 The results of the numerical solution of the
 problem are presented in the third part of
 the paper. It is shown that the algorithm
 converges very rapidly to the minimum of the
 functional. The results of the numerical
 solution are compared with the results of
 the analytical solution. It is shown that the
 numerical solution is in excellent agreement
 with the analytical solution.