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REPORT

ON THE

HEALTH OF THE CITY

OF

BIRMINGHAM,

FOR THE YEAR 1893;

ALSO,

ON THE PROCEEDINGS TAKEN UNDER THE ACTS FOR THE

PREVENTION OF ADULTERATION

OF ARTICLES OF FOOD AND DRINK,

BY

ALFRED HILL, M.D., F.R.S.E., F.I.C.,

Past-President of the Society of Medical Officers of Health; Past-President of the Society of Public Analysts; Late Examiner in Public Health to the University of Aberdeen; Fellow of the Sanitary Institute; Fellow of the College of State Medicine; Fellow of the Incorporated Society of Medical Officers of Health;

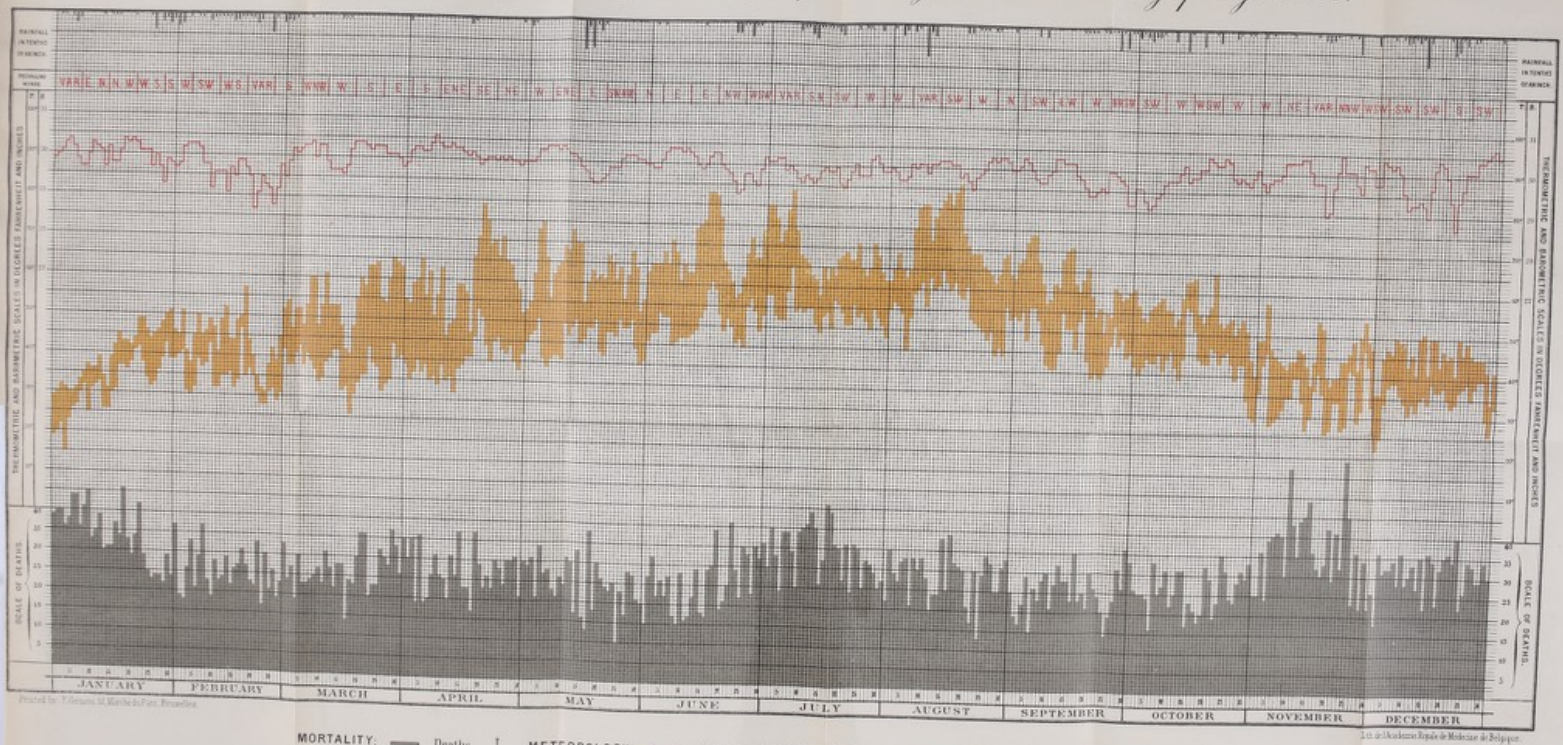
MEDICAL OFFICER OF HEALTH AND ANALYST TO THE CITY.

PRINTED BY ORDER OF THE HEALTH COMMITTEE.

BIRMINGHAM:
GEO. JONES & SON, TOWN HALL PRINTING OFFICES, 87-89, EDMUND STREET.

City of Birmingham.

Chart illustrating the relations of the number of deaths to the principal meteorological conditions on each day of the year 1893.



MORTALITY: Deaths | METEOROLOGY: Temperature (maximum and minimum) — BAROMETRIC PRESSURE (corrected and reduced to 32° Fahrenheit and sea level) — RAINFALL.

Printed by P. Weissenbruch, M. Member de l'Acad. Royale de Médecine de Belgique.

With the Medical Officer of Health's

Compliments.

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HEALTH DEPARTMENT,

THE COUNCIL HOUSE, BIRMINGHAM,

March 17th, 1894.

TO THE HEALTH COMMITTEE.

MR. CHAIRMAN AND GENTLEMEN,

I beg to present to you my twenty-first Annual Report on the Health of the City, being my report for the year 1893. Introductory Remarks.

It is to be regretted that the death-rate for 1893 was one of the highest recorded in recent years. This result was brought about very largely by the exceptional prevalence of Diarrhœa, which caused nearly twice as many deaths as usual. In the fourth quarter of the year the mortality from Influenza, Bronchitis, and Pneumonia was also very large. Although the death-rate compared unfavourably with the death-rates of recent years, it was nevertheless a little lower than that for the thirty-three largest towns.

The mortality amongst infants under one year of age was extraordinarily high, the increase being principally due to Diarrhœa.

The zymotic death-rate was higher than in either of the five preceding years, but lower than in most other years. Smallpox, Whooping Cough, Typhoid Fever, and Diarrhœa caused more than the average number of deaths; while Measles, Scarlet Fever, and Diphtheria occasioned a smaller number than usual.

A severe outbreak of Smallpox of an epidemic character occurred during the year, and showed no signs of abatement at its close. I am pleased to say that the necessity for more extensive and more suitable accommodation for the isolation of Smallpox patients has been recognised, and that a new hospital is now in course of erection. Scarlet Fever was rather prevalent, a greater number of cases being notified than in 1892. Typhoid Fever also was reported to me in a larger number of instances. I am pleased to say that the cases of Diphtheria were less numerous than in 1892.

I. VITAL STATISTICS.

Elevation.

The City of Birmingham has the benefit of a considerable elevation, its highest part being 679 feet, and its lowest about 261 feet, above the mean level of the sea. Owing to this disposition of surface there is much less stagnation of air than would be the case if the town occupied a lower situation, and indeed Birmingham is somewhat distinguished for the prevalence of sharp winds.

Geological position.

It is built for the most part on sand or gravel, and the porosity of the soil together with the undulating nature of the site are great advantages from a hygienic standpoint.

Population.

The population of the City at the census of 1881 was 400,774, or including the districts which have since been annexed, 436,971; in 1891 the latter figure had increased to 478,116. Assuming that the same rate of increase has been maintained since 1891, the population at the middle of 1893 is estimated to have been 487,897.

Natural increase.

The estimated population for 1893 is 4,371 higher than that for the preceding year. The excess of births over deaths, which constitutes the natural increase of population, was 5,436.

Area.

Density.

The area of the City is 12,705 acres, so that the average number of persons to an acre is 38·4. This of course is only the mean density of the population; in many parts of the town it is much higher than this, while in such districts as Edgbaston, Harborne, Saltley, and Little Bromwich, it is very much lower. With some few exceptions the older parts of the town are far more densely populated than the newer, owing to the space allowed around each dwelling in the former being so small, a grave defect which is prohibited by the Bye-laws under which the more modern buildings have been erected.

In the statement below, the estimated population of Birmingham and its mean density for each of the past seven years is given.

	Estimated Population at middle of each year.	Average Number of Persons per acre.
1886 ...	458,110 ...	36·1
1887 ...	462,251 ...	36·4
1888 ...	466,430 ...	36·7
1889 ...	470,646 ..	37·0
1890 ...	474,900 ...	37·4
1891 ...	479,193 ...	37·7
1892 ...	483,526 ..	38·1
1893 ...	487,897 ...	38·4

Population and Density in certain large towns.

At various points in my report I shall have occasion to compare the statistics relating to Birmingham with those of other large towns. The populations of these towns and their respective densities will be found in the following Table :—

	Estimated Population, 1893.	No. of Persons to an acre.
33 Large Towns ...	10,327,846	34·4
London	4,306,411	57·7
Liverpool	510,514	97·9
Manchester	515,598	39·9
Birmingham ...	**487,897**	**38·4**
Leeds	382,093	17·7
Sheffield	333,922	17·0
Bristol	225,028	50·4
Bradford	221,611	20·5
West Ham	227,405	48·3
Nottingham	220,551	20·1

I regret that I am unable to obtain statistics relating to the enlarged area now included in the City of Birmingham for any years prior to 1886, though my own records respecting the old City extend as far back as 1873.

MARRIAGES.

Marriages. Marriage-rate.

The number of Marriages recorded in the City during 1893 was 4,103, equal to a marriage-rate of 16·9 per 1,000 persons living. In the preceding year the Marriages were at the rate of 17·9 per 1,000.

BIRTHS.

Births. Birth-rate.

The total number of Births recorded in the City during 1893 was 15,881, 7,949 of the children born being males, and 7,932 females. The Births were at the rate of 32·6 per 1,000 persons living; the average rate for the seven preceding years was 33·1. The Births and Birth-rates for the past eight years have been as follows :—

	Number of Births.	Birth-rate per 1,000 persons living.
1886	15,622	34·2
1887	15,315	33·2
1888	15,076	32·4
1889	15,357	32·7
1890	15,487*	32·1
1891	16,166	33·8
1892	16,026	33·2
1893	15,881	32·6

* 53 weeks.

Birth-rates in ten large towns

Though the Birmingham Birth-rate was much lower than it had been some fifteen years ago, when rates of over 40 per 1,000 were recorded, it was nevertheless above that of the

Birth-rates, &c. (*continued*).

thirty-three largest English towns, and also above the rates for London, Leeds, Bristol, Bradford, and Nottingham. This will be seen from the subjoined Table of Birth-rates :—

33 large Towns	31·9
London	31·0
Liverpool	36·0
Manchester	33·6
Birmingham	**32·6**
Leeds	32·4
Sheffield	34·8
Bristol...	30·4
Bradford	27·7
West Ham	35·6
Nottingham	30·2

Birth-rate of England and Wales.

In the whole of England and Wales, an almost continuous decline has taken place in the Birth-rate during the last 18 years. The maximum rate was reached in 1876, and since then the Birth-rate has declined from 36·3 to 30·8.

VACCINATION.

Vaccination.

I have obtained from Messrs. Blanche, Knight, Stephens, and Johnson, returns of Vaccination for the year ending June 30th, 1893. Copies of these returns will be found in Table XI.

The figures for the whole City are rather more satisfactory than they were in the previous year. The Births of 16,181 children were reported to the Vaccination Officers, and of these 2,051 died before being Vaccinated. Of the 14,130 survivors, 86·0 per cent. were successfully Vaccinated as compared with 84·9 in the preceding year. The percentage of cases lost sight of owing to the impossibility of finding the addresses given as those of certain children, or to their removal to some undiscovered place, was also less unsatisfactory, being 8·1 against 9·6, so that on the whole the returns for the entire City show some improvement.

Birmingham Parish.

On looking at the figures for the three poor-law districts separately, I find that the improvement is practically confined to Birmingham Parish, where the percentage of successful Vaccination rose from 87·9 to 90·2, while the cases lost sight of fell from 8·6 to 6·8 per cent.

Aston Union.

In the City portion of Aston Union there has been very little variation from the figures for the preceding year, the number of successful Vaccinations being just a trifle better, while the number of cases lost sight of shows some reduction: but the postponements on medical grounds are much more numerous.

King's Norton Union.

The figures for King's Norton Union within the City are distinctly less satisfactory than in the previous year. The percentage of children successfully Vaccinated has fallen from

83·9 to 81·4, and although the cases lost sight of were fewer, the number not accounted for from some other reason increased from 11·8 to 14·7 per cent. Vaccination (*continued*).

The following Table gives particulars respecting Vaccination for the year ending June 30th, 1893 :—

	Percentage of Surviving Children			
			Unaccounted for, from	
	Successfully Vaccinated.	Insusceptible of Vaccination or had Smallpox.	Removal to places unknown ; and not having been found.	Postponement by Medical Certificate ; Removal to other Vaccination Districts, etc.
Birmingham Parish	90·2	0·4	6·8	2·6
Aston Union (within the City) ..	81·6	0·5	11·3	6·6
King's Norton Union (within the City) ..	81·4	0·9	2·9	14·7
Whole City ..	86·0	0·5	8·1	5·5

It is to be hoped that the great benefits which have been shown to result from efficient Vaccination during the present epidemic of Smallpox will alter the opinions of those who are opposed to it, and will result in a far more general compliance with, and where necessary a more rigid enforcement of, the Vaccination laws in all parts of the town.

DEATHS.

The Deaths registered during 1893 numbered 10,445, and comprised those of 5,315 males and 5,130 females. This is a higher number than in either of the seven preceding years. The Death-rate for the year was 21·5 per 1,000 of the population. I regret to say that this is one of the highest Death-rates recorded in recent years. The average for the seven preceding years was 20·0, or 1·5 below the rate for the year under review, while in 1888 the Death-rate was as low as 18·2, or 3·3 below the figure for 1893. The following Table shows the Deaths and Death-rates for the past eight years :— Deaths. Death-rate.

	Number of Deaths.	Death-rate per 1,000 Persons living.
1886 ...	9,182 ...	20·1
1887 ..	9,225 ...	20·0
1888 ...	8,465 ...	18·2
1889 ...	9,035 ...	19·2
1890 ...	10,329* ...	21·4
1891 ...	10,077 ...	21·1
1892 ..	9,642 ...	20·0
1893 ..	10,445 ...	21·5

* 53 weeks.

Deaths. (*continued*).

Diarrhœa was the chief factor in raising last year's Death-rate to so high a point. It caused no less than 828 Deaths, against an average of 486 in the seven preceding years. Although the mortality from Diarrhœa is largely dependent on insanitary conditions, there is ample proof that a high temperature, such as that experienced during the past summer, is the immediate exciting cause of its unusual prevalence, which is invariably associated with a spell of very warm weather; if, however, the insanitary conditions were removed, there is little doubt that the ill effects of a hot summer would be greatly reduced.

It is a matter of regret that the death-rate during the last five years has not maintained its improved position. In 1874 it was 26·8 per 1,000 of the population, and by the year 1888 it had been gradually reduced to 18·2 per 1,000, but in the following year it rose to 19·2, in 1890 to 21·4, in 1891 it was 21·1, and in 1892 it sank to 20·0; but last year it rose again to 21·5, so that there has been no improvement in the death-rate for the past five years.

When the favourable situation of Birmingham is taken into account—I mean its elevation, soil, and large acreage—it is justifiable to expect it to improve still more and take a permanently higher sanitary status than it has ever done before, or than similar towns not enjoying the same natural advantages. It is true that in years of climatic extremes all towns are exceptionally affected, but this climatic influence exerts very different effects accordingly as the sanitary condition of the town is more or less perfect.

The occurrence of very hot summer weather is invariably productive of bowel disorders, especially Diarrhœa, Typhoid Fever, and in some cases, Cholera; but the severity of such visitations bears a distinct relation to the sanitary conditions existing. Great stress was laid upon this point by the Local Government Board in its *Memoranda* issued in 1892, in anticipation of the possible visitation of Cholera. After recommending care in the choice of suitable water, it went on to emphasise, among other things, "immediate thorough removal of every sort of house refuse and filth, and the prevention of the accumulations of such matters," and special attention was directed to the condition of courts. It is impossible to deny the enormous value of these suggestions, or to ignore the fact that they have been very little acted upon. For instance, out of 8,306 ashpit privies existing in 1892, only 717 were removed last year, while the number of pans abolished was only 92. These arrangements, the most primitive, filthy, and dangerous, perpetuate the very conditions against which the above recommendations are directed, while the condition of a great number of courts, as to unpaved surfaces and the absence of scavenging, has undergone no material improvement.

I fear that until these cardinal points of sanitation receive due attention, there is little prospect of such an amelioration of the public health as to materially affect the present death-rate.

Death-rates of Birmingham and large towns compared

A comparison of the Death-rates of Birmingham and other great towns is afforded by the Table below :—

	1893.	1892.	1891.	1890.	1889.
33 large Towns ...	21·6	20·7	-	—	—
London	21·3	20·6	21·4	21·5	18·3
Liverpool	27·3	24·7	27·0	27·8	25·0
Manchester	24·9	23·8	26·5	29·7	26·1
Birmingham	**21·5**	**20·0**	**21·1**	**21·4**	**19·2**
Leeds	22·3	19·8	22·9	22·7	22·1
Sheffield	22·3	20·8	23·9	25·8	21·5
Bristol	18·9	19·5	20·9	20·2	18·4
Bradford	21·0	18·0	22·2	22·8	21·2
West Ham	18·9	18·6	19·1	21·7	18·0
Nottingham	18·5	18·7	19·9	19·2	19·5

The foregoing figures show that Birmingham is by no means the only town which had a higher Death-rate last year than in the preceding year; in fact there were only two of the ten towns given in the Table in which an increase did not take place, these two being Bristol and Nottingham. Moreover the Death-rate for 1893 in the thirty-three largest towns regarded as a whole was just a trifle above that of Birmingham, while Liverpool, Manchester, Leeds, and Sheffield all had Death-rates higher than our own. Birmingham occupied the sixth position amongst the ten largest towns in respect of its Death-rate; its previous positions had been sixth in 1892, fourth in 1891, third in 1890, and fourth in 1889.

Discrepancy between Registrar General's and own figures.

The figures in the annual summary issued by the Registrar General do not quite agree with mine, owing to the fact that, for the purposes of that return, the deaths of paupers belonging to Birmingham who died in the Workhouses at Selly Oak and Erdington have been added to the deaths which occurred in the City itself. This would be a very desirable course if it were possible at the same time to eliminate from the mortality returns the deaths of non-residents who died in hospitals within the City; but as this is not possible, I can see no reason for following the practice of the Registrar General, by which the mortality in Birmingham is always made to appear rather higher than it actually is.

A few years ago I endeavoured to obtain sufficient information to enable me to state both the number of persons who did not belong to Birmingham, but who died in the various Medical Institutions in the town, and the number of Birming-

ham residents who died in Workhouses and Hospitals outside the city. If I had been able to obtain this, I could have given a corrected death-rate, based upon the number of deaths of persons who actually belonged to Birmingham; but, unfortunately, the information I required was not available. So far as I could learn, however, the deaths of non-residents who die within the city practically counterbalance the deaths of residents who die outside its boundary, and the deaths which are registered in the city may therefore be taken as correctly representing the number with which the town may be fairly debited.

Death-rate in each quarter of the year.

The Death-rates in the four quarters of the year, and the numbers of Deaths amongst males and females are shown below:—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.
Total Deaths	2,650	2,346	2,633	2,816	10,445
Males ...	1,369	1,194	1,320	1,432	5,315
Females ...	1,281	1,152	1,313	1,384	5,130
Death-rate	21·8	19·3	21·6	23·2	21·5

In the first quarter the Death-rate was a satisfactory one for that part of the year, which is almost always marked by a heavy mortality. In the second quarter also the Death-rate was fairly good, though not so low as in some recent years. The third quarter was credited with one of the highest Death-rates recorded in corresponding quarters for many years past, the exceptional mortality being principally due, as already stated, to Diarrhœa, and occurring amongst infants. The Death-rate for the fourth quarter was the highest recorded in that quarter since 1878, Influenza, Bronchitis, and Pneumonia proving very fatal, a result probably attributable in a large measure to the exceptionally sudden changes in the atmospheric temperature.

Chart.

I have appended to my report a chart showing the Death-rate and the average age at death for each week of the year. The line showing the weekly Death-rate indicates that the mortality was very high at three different periods during the year. The first of these periods was the month of January, when respiratory diseases were causing a large number of deaths, chiefly amongst adults, as shown by the average age of those who died. Then in July Diarrhœa produced a great rise in the Death-rate, and the average age at death fell at one time to sixteen years, showing how large a part of the mortality must have been amongst children. Again, in November the mortality rose to an unusual extent, this being at the time when respiratory diseases were once more proving very fatal; and it is obvious that persons of advanced years suffered at this time, for the average age of those who died was higher than at any other period during the year.

Deaths in various localities.

In the next statement will be found the numbers of deaths in various localities, those occurring in large institutions not being included in the districts in which they actually took place, but shown separately.

	1893.	1892.	1891.	1890.*	1889.
Ladywood Registration Sub-District ...	944	956	962	1,017	930
St. Martin's ,, ,, ...	1,413	1,311	1,346	1,478	1,264
St. George's ,, ,, ...	1,249	1,173	1,283	1,378	1,120
All Saints' ,, ,, ...	900	823	800	859	805
Deritend ,, ,, ...	1,809	1,735	1,645	1,715	1,502
Duddeston ,, ,, ...	1,395	1,222	1,371	1,250	1,172
Edgbaston ,, ,, ...	309	294	289	292	262
Balsall Heath	495	476	470	467	432
Saltley and Little Bromwich ...	193	147	137	159	130
Harborne	107	94	124	114	98
Children's Hospital	64	76	84	80	65
Queen's ,, ...	161	173	160	174	151
General ,, ...	380	284	311	306	255
Birmingham Workhouse	784	711	862	735	627
Lunatic Asylum	102	85	127	104	86
City Hospital	125	61	77	173	113
St. Joseph's Home...	15	21	29	28	23

* 53 weeks.

Death-rates in various localities.

I have estimated the populations of the above districts for the purpose of calculating the Death-rates in them. Unfortunately I cannot allot the deaths in institutions to the localities to which they properly belong, and I am obliged to assume that those deaths should be distributed *pro ratâ* over the various districts; an assumption which is obviously not quite correct. The approximate Death-rates obtained by this means are as follows:—

	Estimated Population, 1893.	Death-rate. 1893.	Death-rate. 1892.
Ladywood Reg. Sub-District	57,392 ...	19·8	19·8
St. Martin's ,, ,,	70,643 ...	23·4	21·3
St. George's ,, ,,	61,198 ..	23·8	22·0
All Saints' ,, ,,	56,406 ...	19·3	17·7
Deritend ,, ,,	100,234 ...	21·4	20·6
Duddeston ,, ,,	65,215 ...	24·8	21·9
Edgbaston ,, ,,	24,789 ..	15·8	14·9
Balsall Heath ...	32,528 ...	18·6	18·0
Saltley and Little Bromwich	11,216 ...	20·6	16·5
Harborne	8,276 ...	16·3	14·5
Whole City ...	**487,897** ...	**21·5**	**20·0**

The three highest Death-rates were again recorded in St. Martin's, St. George's, and Duddeston Registration Sub-districts, the three localities which had the heaviest mortality in 1892. In every district there was an increase upon the

Death-rate for the previous year, the greatest advances being in Duddeston and St. Martin's Registration Sub-districts, and in Saltley and Little Bromwich.

Distribution of deaths amongst the Wards.

The next table shows the number of deaths in each Ward of the City both in 1893 and in the preceding year, the deaths in the larger institutions having again been excluded.

	1893.	1892.
Rotton Park	602	549
All Saints	628	612
Ladywood	462	467
St. Paul	279	299
St. George...	403	372
St. Stephen	533	496
St. Mary	362	313
St. Bartholomew	628	588
Market Hall	186	203
St. Thomas	472	372
St. Martin...	471	426
Edgbaston and Harborne	381	381
Deritend	581	546
Bordesley	630	676
Duddeston	510	459
Nechells	728	615
Balsall Heath	503	476
Saltley	455	381

In Ladywood, St. Paul's, Market Hall, and Bordesley Wards the mortality was smaller than in 1892. In Edgbaston Ward no alteration took place, but in all the others the deaths were more numerous than in the previous year. An increase of 113 deaths occurred in Nechells, of 100 in St. Thomas', of 74 in Saltley, of 53 in Rotton Park, and of 51 in Duddeston Ward.

Distribution of deaths amongst the ætal periods.

The following figures show the distribution of the Deaths over certain ætal periods during the last two years :—

	1893.	1892.
Under 1 year	3,146	2,664
Between 1 and 5 years	1,306	1,570
„ 5 „ 15 „	334	375
„ 15 „ 25 „	436	343
„ 25 „ 45 „	1,556	1,289
„ 45 „ 65 „	1,961	1,812
At 65 years and upwards	1,706	1,589

Infant Mortality.

The most remarkable feature in the foregoing figures is the extraordinary mortality amongst infants. The Deaths under one year of age numbered 3,146, and were in the proportion of

198 per 1,000 Births. No such Infant Death-rate as this has been recorded in Birmingham for very many years; in fact, one has to go back to the year 1875 to find a mortality amongst infants at all approaching that of the year under review. In 1875, the Infant Deaths in the old City were in the proportion of 196 per 1,000 Births, while the average number from 1873 to the time of the extension of the City in 1891 was only 169, and the average number in the enlarged City in the five years 1888-1892 was only 166. Infant Mortality (*continued*).

The great increase in the mortality amongst Infants was principally due to the very large number of Deaths from Diarrhœa. Compared with the immediately preceding year, there was an increase of 306 in the deaths under one year attributed to this disease, which, as I have already pointed out, is largely influenced by atmospheric conditions.

In a recent Report on Infant Mortality, I pointed out that improved sanitary surroundings appear to have less effect upon the Death-rate amongst infants than at the later periods of life, and this opinion is strengthened by the fact that, although the sanitary condition of England is probably better to-day than it has ever before been, yet the Infantile Death-rate last year was 159 per 1,000 births, against an average of 144 in the ten preceding years, although the total Death-rate showed no increase upon the average rate for the same ten years.

The subjoined figures show that Birmingham has been by no means alone in having a heavy Infantile Mortality :— Infant deaths per 1,000 births in large towns.

	1893.	1892.	1891.	1890.	1889.
33 large towns	181	164	—	—	—
London	164	155	154	163	141
Liverpool...	211	181	188	195	188
Manchester	203	179	192	187	176
Birmingham	**198**	**166**	**165**	**181**	**168**
Leeds	206	169	177	172	177
Sheffield	191	171	170	195	174
Bristol	141	147	146	151	146
Bradford	197	155	181	169	182
West Ham	170	153	150	161	130
Nottingham	170	167	169	159	182

Three of the ten largest towns had higher proportions of Infant Deaths to Births than Birmingham had, viz., Liverpool, Manchester, and Leeds, while Sheffield and Bradford had Infantile Death-rates almost as high as ours. Of the thirty-three largest towns, there were eleven in which the Infant Mortality was higher than it was in Birmingham.

Deaths at ages above one year.

The Deaths at ages between one and fifteen years were fewer in 1893 than in 1892, but at all other ages the mortality showed a marked increase, the augmentation being particularly large amongst persons between 15 and 45 years old.

Average age at death.

The average age at death during each of the last two years is given below :—

	1893.	1892.
First Quarter ...	31 years and 7 months.	32 years and 6 months.
Second „ ...	30 „ „ 3 „	28 „ „ 10 „
Third „ ...	22 „ „ 7 „	23 „ „ 9 „
Fourth „ ...	31 „ „ 8 „	27 „ „ 8 „
Whole Year ...	29 „ „ 0 „	28 „ „ 5 „

Chart.

The average age at death in each week of the year is shown on a chart appended to my Report.

SPECIFIED CAUSES OF DEATH.

Specified causes of death.

The Deaths recorded during 1893 were distributed amongst the various classes of disease as shown below :—

Class I.—Zymotic Diseases	1,761, or 16·9	per cent. of total mortality
„ II.—Parasitic Diseases	7, or 0·1	„ „
„ III.—Dietic Diseases	51, or 0·5	„ „
„ IV.—Constitutional Diseases	1,500, or 14·4	„ „
„ V.—Developmental Diseases	950, or 9·1	„ „
„ VI.—Local Diseases...	5,048, or 48·3	„ „
„ VII.—Violent Deaths	341, or 3·3	„ „
„ VIII.—Deaths from ill-defined and not specified causes	787, or 7·5	„ „

Details respecting the deaths from various causes both at certain age periods and in different localities will be found in the Table on pages 24-27.

CLASS I.—*ZYMOTIC DISEASES.*

Zymotic Diseases.

This important class of diseases, which embraces all disorders of a Miasmatic, Diarrhœal, Malarial, Zoogenous, Venereal and Septic origin, had 1,761 Deaths ascribed to it during the past year, giving a proportion of 3·6 per 1,000 persons living: in the previous year the proportion was 3·1 per 1,000. The greater part of the mortality was attributed to the

Seven Principal Zymotic Diseases,

Zymotic Death-rate.

from which 1,480 Deaths were registered against an average of 1,242 in the seven preceding years. The Zymotic Death-rate was 3·0 per 1,000, a higher figure than had been recorded in either of the five preceding years, but lower than most of the rates recorded prior to 1888. It is interesting to compare the Zymotic Mortality of the first five years of sanitary régime in Birmingham with that of the last quinquennium, the average Death-rate in the former period being 5·3 per 1,000 per annum, against 2·6 in the latter.

One disease was almost solely responsible for the increase in the Zymotic Mortality above that usually recorded in recent years, viz., Diarrhœa, which caused 828 Deaths, against 486, the average number in the seven preceding years. Of the other diseases Smallpox, Whooping Cough, and Typhoid Fever had more deaths than usual set down to them, while Measles, Scarlet Fever, and Diphtheria caused a smaller mortality than had generally been recorded of late years.

Zymotic Death-rates in large towns.

The Zymotic Death-rates in Birmingham and other large towns during the last five years are shown in the table below:—

	1893.	1892.	1891.	1890.	1889.
33 large towns	3·2	2·6	—	—	—
London	3·1	2·8	2·3	2·9	2·3
Liverpool	3·9	2·9	3·6	4·7	4·5
Manchester	3·7	3·0	3·1	4·0	4·0
Birmingham	**3·0**	**2·6**	**2·0**	**2·9**	**2·7**
Leeds	3·5	2·2	2·4	2·4	3·4
Sheffield	3·5	3·1	2·7	3·7	3·4
Bristol	1·6	2·1	1·9	2·1	2·2
Bradford	3·4	1·7	2·3	2·3	2·9
West Ham	3·4	2·9	2·3	4·1	1·9
Nottingham	2·6	2·3	2·5	1·9	2·6

The Zymotic Death-rate for Birmingham was lower than that of the thirty-three large towns, and also lower than in any of the other towns given in the table, except Bristol and Nottingham. The Zymotic Mortality was high in almost all parts of the country, and the comparative position of Birmingham with regard to its Zymotic Death-rate was indeed rather better than usual notwithstanding its higher figure.

Diarrhœa.

The Deaths from DIARRHŒA numbered 828, and, so far as I am aware, exceeded those recorded in any previous year with the exception of 1875. Thirty-four of the Deaths were ascribed to the choleraic form of the disease. The Deaths were in the proportion of 1·7 per 1,000 persons living; the rate varying very much in different localities, as shown below:—

Diarrhœal Death-rate.

	Diarrhœal Death-rate per 1,000.
Ladywood Registration Sub-District	1·2
St. Martin's ,, ,, ...	1·7
St. George's ,, ,, ...	2·2
All Saints' ,, ,, ...	1·1
Deritend ,, ,, ...	1·6
Duddeston ,, ,, ...	2·6
Edgbaston ,, ,, ...	0·4
Balsall Heath ,, ...	1·4
Saltley and Little Bromwich	1·7
Harborne	0·2

It appears from the above figures that Duddeston and St. George's Sub-districts suffered far more from Diarrhœa than did the rest of the town, while in Edgbaston and Harborne the mortality was very small.

I have more than once pointed out in my reports that a high summer temperature is the great exciting cause of the epidemic prevalence of Diarrhœa. But while this is quite indisputable it is equally certain that the high temperature is not in itself the essential cause of the disease, but is rather a necessary condition to the operation of that cause. The remarkably unequal incidence of the disease to which I have just referred, and which is as noticeable throughout the country as it is in Birmingham, would of itself be sufficient to prove this; for if the hot weather experienced during the past summer had been the only actual condition by which the mortality from Diarrhœa was produced, it is clear that the disease must have affected all parts of the town alike. Moreover, I showed in a recent report that the improvement in the sanitary condition of Birmingham has been accompanied by a reduction in the Diarrhœal Mortality in spite of the fact that no reduction was observed in the average summer temperature. It appears, therefore, that although heat is no doubt the chief exciting cause, yet it is not the primary cause of summer Diarrhœa.

Dr. Ballard on prevention of Diarrhœa.

After a lengthy enquiry into this subject, made on behalf of the Local Government Board, Dr. Ballard came to the conclusion that Diarrhœal Mortality is very largely dependent on insanitary conditions which it is within the power of Local Authorities to remedy. This point is so well and fully set forth by Dr. Ballard that I cannot, I think, do better than quote again the following remarks extracted from his Report.

"PROVISIONAL PRACTICAL SUGGESTIONS TO SANITARY AUTHORITIES.

Dr. Ballard on prevention of Diarrhœa (*continued*).

"These are based upon the foregoing results of the enquiry as to causation, in so far as the 'causes' above enumerated are such as a Local Authority has statutory power to deal with and to modify, or such as it may endeavour to get modified by appropriate advice.

"1. The first object which a Local Authority desirous of lessening its Diarrhœal Mortality should have in view is to prevent the fouling of the soil with matters out of which the material of Diarrhœa can be produced. This object is to be obtained by providing (*a*) for the constant removal of liquid filth and sewage by means of proper conduits (drains and sewers)—proper in the sense that they shall even to their very inlets be constructed or imbedded in such a manner that there can be no passage of the liquid material they are intended to carry away, outwards into the soil; (*b*) for the daily removal of all filth (useless organic matters) of a nature not conveyable by drains, etc. No prolonged storage of such matter in ashpits, dustbins, dungpits, about pigsties, etc., should be allowed.

"2. The cleanliness of the interior of domestic premises should be sedulously looked to and maintained, for filth (organic matter which can be infected by the contagium) often lodges here, as well as in storage receptacles purposely provided for it.

"3. The dryness and cleanliness of the soil in towns (and especially in the poorer parts of towns) should be further provided for by procuring the effectual sealing of the surface of the ground immediately about dwellings by means of uniform impermeable material (such as cement), from the surface of which all water that falls may, with certainty, be carried off into the sewers, and which shall further prevent free passage of air from and into the soil. The same applies to the surface of such places as cowsheds, stables, pigsties, etc.

"4. In places where the ground water rises at any time to within such a distance of the surface as to render the first few feet of the soil habitually damp by capillary attraction from it, the most strenuous endeavours should be made by the authority to lower it permanently to such a point as shall prevent this dampness of the soil, and so ensure that the first few feet of earth shall be dry.

"5. In places where the soil is already polluted by or contains organic matter (as is the case with all soils which are not absolutely hard and rocky), the whole surface of the earth beneath houses should be so effectually and uniformly sealed with impervious material, such as concrete, as to prevent any chance of emanations rising into them from the soil. This should be done even in the case of new houses, not only as a precaution against the rise of ground air which may by chance

Dr. Ballard on prevention of Diarrhœa (*continued*).

become infected hereafter, but because the earth of fields and of land which has been cultivated (*e.g.*, of the former sites of market gardens) is more or less loaded with organic débris. Hence also a common practice of not only leaving unremoved the sods of the interior of buildings in process of erection, but of adding to them the sods from the footings of the walls, should be prohibited.

"6. Free atmospheric dilution of polluted air, to be brought about only by free movement of air among and within dwellings—which is what the term 'free ventilation' means—is an effectual means of lessening the energy of a present contagium. Of this I am perfectly certain. There can be no question whatever that to attain this end, and to attain it with the greatest completeness, should be one grand object of a Sanitary Authority wishing to lessen its Diarrhœal Death-rate. For attaining it in older parts of a town, Parliament has given ample powers, under such Acts as the Artisans and Labourers, Dwellings Acts, so far as the free ventilation about dwellings is concerned. For new dwellings it is in the power of the Authority to prescribe the width of streets, the provision of free space about dwellings, and to regulate the laying out of new streets. So far as it is practicable the line of new streets should be such as will permit the free traversing of them by the prevailing wind in the summer season of the year. In any case free movement of air should be secured at the back as well as in the front of every house; and, in addition, the line of houses in a street should be broken at frequent intervals by a cross street or open space, to permit also of the transverse passage of the wind. Domestic ventilation is provided for by the Public Health and Nuisances Removal Acts, which Local Authorities are not only empowered, but which it has now been made their duty to enforce. The erection of 'back-to-back' houses should not be permitted.

"7. I am not prepared to name any kind of food which may not become infected with the contagium of this malady. Care should be taken to protect food of all kinds from this infection, but special care should be taken for the protection of milk, the staple article of food of artificially-fed infants. Milk may become infected at any time from that of its leaving the cow's udder to the time of its being used as food. Hence the necessity of guarding it from infection in the cowshed, in the storing place of the dairyman, in the house of the retailer, and in the dwelling of the consumer. Over every one of these places a Local Sanitary Authority now has control. This control should be exercised by taking care that the cowsheds themselves are paved with uniform and impermeable material, and kept constantly clean and airy, and that all the manure and filth is removed daily from their neighbourhood; the most perfect models of such places being adopted as patterns. The conventional cleanliness is insufficient. Next, the dairy should be similarly protected from the rise of ground air, and very freely ventilated indeed. No milk retailer should be registered who

Dr. Ballard on prevention of Diarrhœa (*continued*).

has not a proper place outside his dwelling in which to keep his milk; a place similarly perfectly clean, protected against ground air, and very freely ventilated. The practice often adopted in Leicester and some other towns of storing milk on the ground floor of a dwelling house or in some underground cellar should be altogether discouraged. Lastly, there is a rule, not only applicable to the keeping of milk, but of food of all kinds, that the pantries of houses should be properly constructed; certainly they should not be underground cellars or cellar 'stair-heads,' as is commonly the case in Leicester, but be open to free ventilation, light, cool and dry, and protected against the rise of ground air. Local Authorities cannot enforce this recommendation, but they may take measures to make the importance of the provision known generally through their district.

"As to the offering for sale of stale and over-ripe fruit or doubtfully-wholesome meat, and as to the sanitary condition of bakehouses and other places where food is prepared and sold, the Local Authorities have ample powers of control, and these powers they should exercise. They may usefully recommend that consumers should boil all milk on its receipt into their houses.

"8. It may be observed that, except in one respect, I have made no reference to sewers or drains, and to sewer and drain emanations, as conveyers of Diarrhœa contagium. This is not because I am not perfectly aware that foul emanations from such conduits may occasion Diarrhœal disease. Indeed, I have, I think, solid grounds for believing that outbreaks of Diarrhœa are sometimes thus occasioned, as well as by foul emanations from cesspools and other receptacles of decomposing organic filth. But the public mind is, I believe, fully aware of this danger, and nothing that I can say is likely to enhance the appreciation of it. Nor need I add that the abolition of improper receptacles of filth, and the free flushing and ventilation of drains and sewers, with due provision against the entry of foul air from them into dwellings and work places, is a matter which a sanitary authority is bound to see to. I have preferred to dwell most upon such points of precaution as are less likely to receive attention.

"9. And lastly, I have to say that whatever may be the essential cause of the malady, everything that promotes general ill-health in a population probably renders it more liable to attack, and certainly inclines the illness towards a fatal issue.

"To carry out the advice given will no doubt be a most costly proceeding. With that I have nothing to do. Sanitary faults are and ever must be costly—costly in human life or costly in pecuniary expenditure."

Whooping Cough

Whooping Cough.

caused 321 Deaths, against an annual average of 266 in the preceding seven years. This disease, which is very lightly regarded by so many, and against which so little precaution is taken, caused more than twice as many Deaths as Smallpox and Scarlet Fever put together, and yet its mortality is almost entirely preventable.

Fever.

Fever.

The Deaths from Fever numbered 102, 94 being ascribed to Typhoid, and 8 to Simple Continued Fever. This is an exceptionally high number, the average for the seven years prior to the one under notice having been 66, and the number in 1892 only 41. It is indeed many years since so large a mortality from Fever was recorded, though in the first few years after my appointment as Medical Officer of Health the deaths frequently amounted to twice as many as occurred last year. The Death-rates from Fever during the past eight years have been as follows:—

Fever Death-rate.

DEATH-RATE FROM FEVER PER 1,000 PERSONS LIVING.

1886	1887	1888	1889	1890	1891	1892	1893
·15	·18	·15	·10	·14	·17	·08	·21

In the thirty-three large towns the Death-rate from Fever was ·24 per 1,000, and as many as twenty-one of these towns had higher Fever Death-rates than that of Birmingham. It appears, too, that the mortality from Fever in the country generally has been much heavier than usual, a result I believe of the great heat and drought which characterised the past year.

Map.

Particulars as to the prevalence of Typhoid Fever will be found on pages 39 and 46, and the streets in which fatal cases occurred are marked with blue crosses on the map in the appendix.

Smallpox.

Smallpox.

The Deaths registered during 1893 from Smallpox numbered 70, against an annual average of 1 in the seven years 1886-1892. It is now just ten years since the last epidemic of Smallpox, which occurred in 1883, when 110 Deaths were registered in the old City, while in 1874 the Deaths numbered 637.

Smallpox Death-rate.

In the thirty-three large towns the Smallpox Death-rate last year was ·07 per 1,000, while in Birmingham it was ·14 per 1,000.

Further information respecting the epidemic of Smallpox is given on pages 39–45.

Scarlet Fever.

Scarlet Fever.

The Deaths from Scarlet Fever amounted to 68 as compared with 95, the average number in the seven previous years. The Scarlet Fever Death-rate compares very favourably with that of thirty-three large towns, being ·14 against ·29; and 22 of those towns had higher Death-rates from Scarlet Fever than that of Birmingham.

Scarlet Fever (*continued*)

During the year there were 1,614 cases of Scarlet Fever notified to me, so that the mortality was at the rate of one in twenty-four, an unusually small proportion. Information as to the number of cases of Scarlet Fever is given on page 46 and in Tables VIII. and IX.

Map.

The map at the end of my report is marked with red spots to denote the streets in which the fatal cases of Scarlet Fever occurred, as well as their number.

Measles.

Measles.

The Deaths from Measles numbered 48, this being the smallest mortality I have ever had to report. In the seven years 1886–1892 the average number of Deaths from Measles was 267. Measles is a disease which is subject to extraordinary fluctuations, the Deaths recorded from it having varied during the past ten years from 402 in 1886 to 48 last year. It is moreover a disease which sanitation has done nothing to reduce, the Deaths being as numerous in recent years as they were before sanitary improvements were introduced. It is one of those intensely infectious diseases against which all precautions, except the strictest isolation of the patients, seem to be quite useless, and even this is of little use unless employed at the very onset of the disease.

Map.

The Deaths from Measles are represented on the map by red crosses.

Diphtheria.

Diphtheria

The Deaths ascribed to Diphtheria numbered 43, against an average of 61 in the seven preceding years. I have only once recorded so small a mortality from this disease, viz., in 1891, when the number of Deaths was identical with that of the year under review. The Death-rate from Diphtheria compares very well with those of other years, as seen below :—

Diphtheria Death-rate.

Death-rate from Diphtheria per 1,000 Persons Living.							
1886	1887	1888	1889	1890	1891	1892	1893
·17	·14	·10	·13	·14	·09	·14	·09

Of the thirty-three large towns twenty-five had a higher mortality from Diphtheria than Birmingham, and the Deaths in the whole of the towns were equal to a Death-rate of ·43 per 1,000, or five times as high as that of Birmingham.

Map.

The streets in which fatal cases of Diphtheria occurred are shown on the map appended to my report.

The following Table shows that, except in regard to Small-pox, Birmingham held a very good position amongst the large

towns in relation to its mortality from those zymotic diseases over which sanitary authorities are able to exercise the greatest control.

	Death-rate per 1,000 from			
	Smallpox.	Scarlet Fever.	Diphtheria.	Fever.
33 large Towns	0·07	0·29	0·43	0·24
London	0·05	0·37	0·76	0·17
West Ham	0·24	0·35	0·42	0·30
Croydon	0·01	0·10	0·78	0·11
Brighton	0·00	0·10	0·28	0·13
Portsmouth	0·00	0·20	0·17	0·31
Plymouth	0·00	0·25	0·16	0·12
Bristol	0·08	0·16	0·22	0·11
Cardiff	0·00	0·27	0·68	0·19
Swansea	0·00	0·35	0·05	0·20
Wolverhampton ...	0·01	0·31	0·06	0·33
Birmingham ...	**0·14**	**0·14**	**0·09**	**0·21**
Norwich	0·00	0·19	0·22	0·36
Leicester	0·08	0·43	0·11	0·25
Nottingham	0·02	0·37	0·07	0·31
Derby	0·07	0·14	0·07	0·23
Birkenhead	0·01	0·12	0·15	0·26
Liverpool	0·02	0·45	0·12	0·53
Bolton	0·06	0·29	0·10	0·31
Manchester	0·09	0·27	0·32	0·25
Salford	0·11	0·20	0·29	0·49
Oldham	0·48	0·12	0·13	0·19
Burnley	0·06	0·55	0·15	0·30
Blackburn	0·06	0·04	0·02	0·24
Preston	0·00	0·25	0·13	0·46
Huddersfield	0·00	0·26	0·03	0·12
Halifax	0·38	0·03	0·25	0·14
Bradford	0·52	0·32	0·10	0·22
Leeds	0·05	0·08	0·16	0·29
Sheffield...	0·02	0·27	0·18	0·27
Hull	0·04	0·16	0·11	0·48
Sunderland	0·04	0·19	0·08	0·98
Gateshead	0·02	0·10	0·21	0·23
Newcastle	0·00	0·12	0·16	0·13

Disease Map.

Disease Map.

In the appendix to my report will be found a map, showing in what streets the Deaths occurred from Scarlet Fever, Measles, Diphtheria, and Typhoid Fever. As far as possible I have allotted those Deaths which took place in Public Institutions to the streets in which the patients lived prior to admission to such institutions. There is very little to be said about the map, except that the Deaths from the four diseases dealt with were scattered over all the populous parts of the town, and that, with the exception of those from Typhoid Fever, they were by no means numerous.

II.—*PARASITIC*, AND III.—*DIETIC DISEASES.*

Parasitic and Dietic Diseases.

The Deaths from Parasitic Diseases numbered only 7, and those from Dietic Diseases 51.

IV.—*CONSTITUTIONAL DISEASES.*

Constitutional Diseases.

To this important class of diseases 1,500 Deaths were ascribed, giving a Death-rate of 3·1 per 1,000, against 3·0 in the preceding year. The Deaths from Phthisis showed a considerable increase upon those for 1892, and an increase also occurred in the mortality from Cancer.

V.—*DEVELOPMENTAL DISEASES.*

Developmental Diseases.

The Deaths from these diseases numbered 950, and were equal to a rate of 2·0 per 1,000, against 1·6 in 1892. The greater part of the increase occurred in the Deaths set down to Old Age, which numbered 541 last year, and 348 in 1892.

VI.—*LOCAL DISEASES.*

Local Diseases

The Deaths from Local Diseases numbered 5,048, and were in the proportion of 10·4 per 1,000 persons living, against 10·1 in the previous year. The Deaths from Heart Disease were considerably less numerous than in the last few years. Those from Bronchitis also showed a reduction, but the Deaths from Pneumonia were unusually numerous. The Deaths from Enteritis, a disease which, like Diarrhœa, is largely affected by hot weather, were fully twice as many as usual.

VII.—*VIOLENT DEATHS.*

Violent deaths

The Deaths in this class numbered 341, and included 296 returned as accidental and 40 as due to suicide. I am pleased to say that for some years the Deaths of children from Accidental Suffocation have steadily declined, last year's number being smaller than in any other year of the decade.

VIII.—*ILL-DEFINED AND NOT SPECIFIED DISEASES.*

Deaths from Ill-defined and not specified causes.

The Deaths from ill-defined and not specified causes numbered 787, of which 750 were due to Wasting Diseases of children, a much higher number than usual. These diseases are intimately connected with errors of diet, and are no doubt greatly assisted by those conditions which cause the spread of Diarrhœa, and which were present in a very large degree during the past summer.

CERTIFICATION OF CAUSES OF DEATH.

Certification of causes of death.

The Deaths recorded during the year included 9,631 of which the causes were certified by Registered Medical Practitioners, and 284 regarding which the Coroner held inquests, the remaining 530 Deaths being uncertified. The percentage of Deaths certified by medical men was 92·2, of inquest cases 2·7, and of uncertified Deaths 5·1. These figures show some improvement on those for 1892.

Table of Deaths Registered in the City of Birmingham during the Year ending December 30th, 1893.

1893.	AGES.							REGISTRATION SUB-DISTRICTS & INSTITUTIONS																
	0–1	1–5	5–15	15–25	25–45	45–65	65 and up.	Ladywood.	Children's Hospital.	St. Martin.	Queen's Hospital.	St. George.	General Hospital.	All Saints.	Workhouse.	Lunatic Asylum.	City Hospital.	Deritend.	Duddeston.	Edgbaston.	Balsall Heath.	Saltley and L. Bromwich	Harborne.	St. Joseph's Home.	City.
ALL CAUSES	3146	1306	334	436	1556	1961	1706	944	64	1413	161	1249	380	900	784	102	125	1809	1395	309	495	193	107	15	10445
I.—Specific Febrile or Zymotic Diseases.																									
1.—Miasmatic Diseases.																									
Small-pox	7	11	3	8	31	8	2	..	..	1	..	1	..	..	..	..	67	1	..	..	..	..	..	..	70
Measles	8	39	1	..	..	..	..	3	..	4	..	..	..	7	..	..	..	12	14	..	1	7	..	..	48
Scarlet Fever	6	31	22	5	4	..	..	..	..	2	..	3	..	6	..	..	54	2	..	1	..	..	..	..	68
Typhus Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Whooping Cough	150	164	7	..	..	..	..	31	..	60	..	36	..	32	6	..	..	94	39	4	15	3	1	..	321
Diphtheria	..	26	11	3	2	1	..	3	6	3	7	3	4	3	..	..	..	5	7	1	..	1	..	..	43
Membranous Croup	6	30	4	..	..	..	..	5	2	3	1	6	6	3	1	..	..	5	4	1	2	1	..	..	40
Simple Continued, or Ill-defined Fever	2	1	2	1	2	..	..	..	..	4	..	..	..	..	1	..	..	3	..	..	..	..	..	..	8
Enteric or Typhoid Fever	..	8	20	24	33	9	..	3	3	10	4	6	9	4	7	1	..	23	15	..	4	3	2	..	94
Influenza	2	5	3	9	39	34	31	10	..	14	..	14	..	10	4	6	..	30	18	6	4	6	1	..	123
Other Miasmatic Diseases	2	1	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	3	..	..	..	..	..	4
2.—Diarrhœal Diseases.																									
Simple Cholera	26	4	..	1	2	..	1	7	..	1	..	3	..	1	..	..	..	..	20	..	..	2	..	..	34
Diarrhœa, Dysentery	604	120	5	3	7	11	44	61	3	121	2	134	3	61	19	..	1	164	152	10	44	17	2	..	794
3.—Malarial Diseases.																									
Remittent Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ague	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4.—Zoogenous Diseases																									
Cowpox and effects of Vaccination	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other Diseases (*e.g.*, Hydrophobia, Glanders, Splenic Fever)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5.—Venereal Diseases.																									
Syphilis	27	4	..	..	1	1	1	5	..	4	..	3	..	5	4	..	..	2	7	1	2	1	..	..	34
Gonorrhœa, Stricture of Urethra	.	..	..	..	2	5	1	1	..	..	..	..	4	..	3	..	..	..	..	..	..	..	..	..	8
6.—Septic Diseases.																									
Erysipelas	6	1	1	..	6	7	3	4	1	4	..	1	1	1	3	1	..	3	4	1	..	..	..	..	24
Pyæmia, Septicæmia	1	..	..	2	3	4	..	..	..	3	3	1	..	1	..	..	..	1	..	1	..	..	..	..	10
Puerperal Fever	..	..	..	10	28	..	..	2	..	7	..	2	..	3	..	..	..	12	9	..	2	..	1	..	38
II.—Parasitic Diseases.																									
Thrush, and other Vegetable Parasitic Diseases	5	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	1	1	..	..	..	..	..	5
Worms, Hydatids, and other Animal Parasitic Diseases	..	1	..	1	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2
	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*i*	*j*	*k*	*l*	*m*	*n*	*o*	*p*	*q*	*r*	*s*	*t*	*u*	*v*	*w*	*x*	*y*

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y
III.—Dietic Diseases.																									
Want of Breast Milk, Starvation	13	1	..	..	..	..	..	..	..	5	..	2	..	4	1	..	..	2	..	..	..	..	..	..	14
Scurvy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chronic Alcoholism, Delirium Tremens	..	..	..	..	19	15	3	1	..	10	1	3	..	3	2	1	..	11	..	2	3	..	..	..	37
IV.—Constitutional Diseases.																									
Rheumatic Fever, Rheumatism of the Heart	..	1	5	17	19	4	..	4	..	3	..	8	..	6	2	..	..	6	8	1	5	2	1	..	46
Rheumatism	..	..	..	1	1	..	5	1	..	..	..	1	..	1	..	..	..	2	..	2	..	..	..	..	7
Gout	..	..	..	..	1	3	5	..	..	1	..	3	..	1	2	..	..	1	..	1	..	..	..	..	9
Rickets	12	20	1	..	..	..	..	4	..	6	1	4	1	5	1	..	..	1	6	..	4	..	..	..	33
Cancer, Malignant Disease	..	..	..	2	57	171	83	22	..	39	6	28	24	31	44	2	..	42	29	16	18	8	4	..	313
Tabes Mesenterica	38	24	3	1	..	..	..	16	..	10	..	7	..	5	..	..	..	15	9	1	2	1	..	..	66
Tubercular Meningitis, Acute Hydrocephalus	21	30	11	1	..	..	..	5	3	8	1	9	1	8	2	..	..	10	7	2	5	1	1	..	63
Phthisis	16	10	27	127	377	200	18	78	4	99	7	89	17	70	119	8	..	130	79	14	32	16	13	..	775
Other forms of Tuberculosis, Scrofula	38	41	19	13	16	12	2	13	6	11	5	18	7	10	17	..	..	24	22	3	3	1	1	..	141
Purpura, Hæmorrhagic Diathesis	1	1	..	..	..	1	..	..	..	1	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	3
Anæmia, Chlorosis, Leucocythœmia	..	3	..	2	7	2	..	..	..	..	2	1	2	2	1	..	..	3	..	2	..	1	..	..	14
Glycosuria, Diabetes Mellitus	..	..	..	3	12	8	5	..	..	3	1	3	3	4	2	..	..	1	3	5	2	1	..	..	28
Other Constitutional Diseases	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2
V.—Developmental Diseases.																									
Premature Birth	359	..	..	..	..	..	..	61	..	36	1	47	..	51	12	..	1	74	41	9	18	6	2	..	359
Atelectasis	20	..	..	..	..	..	..	..	..	5	..	3	..	1	1	..	..	5	4	..	1	..	..	..	20
Congenital Malformations	25	3	1	1	..	..	..	5	2	2	1	4	1	4	..	1	..	1	3	1	3	..	2	..	30
Old Age	..	..	..	..	..	33	508	44	..	61	..	52	..	50	111	12	..	74	61	26	29	6	5	10	541
VI.—Local Diseases.																									
1.—Diseases of Nervous System.																									
Inflammation of Brain or Membranes	43	62	29	7	16	12	4	21	3	27	..	21	2	10	4	16	..	24	31	4	7	1	2	..	173
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis	..	1	..	3	36	130	140	32	..	54	2	30	4	17	21	3	..	49	47	14	18	9	9	1	310
Insanity, General Paralysis of the Insane	..	..	2	2	22	16	12	3	..	1	..	1	..	1	12	27	..	3	2	1	2	..	1	..	54
Epilepsy	3	2	4	5	18	11	1	6	..	6	1	4	1	1	7	4	..	5	5	2	2	..	..	..	44
Convulsions	159	34	2	..	1	..	..	15	..	32	..	34	1	18	3	..	..	44	27	4	12	3	3	..	196
Laryngismus Stridulus (Spasm of Glottis)	11	6	..	..	..	..	..	3	..	1	..	2	..	..	.	..	..	7	4	..	..	..	..	..	17
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	..	1	2	2	11	19	17	2	..	1	..	6	..	7	7	1	..	11	4	4	5	..	2	2	52
Other Diseases of Nervous System	17	14	6	4	14	9	5	1	..	6	4	4	..	9	3	2	..	23	9	3	4	..	1	..	69
2.—Diseases of Organs of Special Sense (*e.g.*, of Ear, Eye, and Nose).	5	2	1	1	3	..	..	2	..	1	1	..	4	1	..	..	..	1	1	1	.	..	..	..	12
3.—Diseases of Circulatory System.																									
Pericarditis	..	..	1	..	3	2	..	1	..	..	1	..	1	1	..	..	..	1	..	..	..	1	..	..	6
Acute Endocarditis	..	1	1	2	4	1	..	1	1	2	..	1	2	..	1	..	..	1	..	..	..	..	..	..	9
Valvular Diseases of Heart	..	2	8	8	38	38	26	7	..	10	4	15	8	10	14	8	..	23	8	5	4	2	2	..	129
Other Diseases of Heart	15	1	13	24	88	188	120	40	1	66	4	52	12	40	23	..	..	83	61	27	26	8	6	..	449
Aneurism	..	..	..	..	3	10	..	..	.	..	..	2	2	1	2	..	..	4	1	1	..	..	..	..	13
Embolism, Thrombosis	..	1	..	..	2	2	2	..	1	1	..	..	1	..	..	..	..	3	..	1	..	..	..	..	7
Other Diseases of Blood Vessels	1	..	..	1	4	7	1	1	..	2	1	..	1	1	1	..	..	3	4	..	..	..	..	..	14

TABLE OF DEATHS REGISTERED IN THE CITY OF BIRMINGHAM DURING THE YEAR ENDING DECEMBER 30TH, 1893—(*continued*).

1893.	AGES.							REGISTRATION SUB-DISTRICTS & INSTITUTIONS.														City.
	0—1	1—5	5—15	15—25	25—45	45—65	65 and up.	Ladywood.	Children's Hospital.	St. Martin.	Queen's Hospital.	St. George.	General Hospital.	All Saints.	Workhouse.	Lunatic Asylum.	City Hospital.	Deritend.	Duddeston.	Edgbaston.	Balsall Heath.	Saltley and L. Bromwich	Harborne.	St. Joseph's Home.	
Local Diseases—*continued.*																									
4.—DISEASES OF RESPIRATORY SYSTEM.																									
Laryngitis	4	6	2	..	2	2	1	2	..	3	..	1	2	1	..	..	..	4	1	..	1	..	2	..	17
Croup	3	11	1	..	..	..	..	2	..	4	..	4	..	..	..	..	..	2	3	..	..	..	..	..	15
Emphysema, Asthma	..	..	..	..	5	12	6	1	..	5	..	6	..	3	1	..	..	..	5	..	2	..	..	..	23
Bronchitis	270	157	11	5	69	369	368	139	..	212	4	172	6	114	78	2	1	238	158	36	59	16	13	1	1249
Pneumonia	126	161	24	44	209	216	106	64	13	105	12	104	55	65	88	2	1	185	107	19	44	18	4	..	886
Pleurisy	..	13	2	4	13	17	4	2	2	5	3	10	13	4	5	..	..	1	7	1	..	..	..	..	53
Other Diseases of Respiratory System	19	15	6	5	34	34	14	7	..	30	1	14	2	12	10	..	..	21	16	5	4	4	1	..	127
5.—DISEASES OF DIGESTIVE SYSTEM.																									
Dentition	63	33	..	..	..	..	..	8	..	13	..	22	..	8	..	..	..	18	15	2	6	3	1	..	96
Sore Throat, Quinsy	..	4	1	..	1	1	..	..	..	..	..	1	..	3	..	..	..	1	1	..	..	1	..	..	7
Diseases of Stomach	57	11	3	8	6	21	14	8	..	26	1	6	2	18	2	..	..	30	15	4	2	5	1	..	120
Enteritis	135	34	4	4	8	7	8	12	5	29	..	37	9	21	1	1	..	37	20	3	15	6	4	..	200
Obstructive Diseases of Intestines	8	1	3	2	6	9	4	1	1	5	2	6	4	..	1	..	..	1	4	4	3	1	..	..	33
Hernia	3	..	..	..	1	12	6	2	..	1	2	1	7	2	1	..	..	..	4	..	1	..	1	..	22
Peritonitis	2	2	6	10	24	15	7	7	..	2	4	13	5	5	7	..	..	9	7	4	..	2	1	..	66
Ascites	..	..	..	..	3	2	..	1	..	2	..	..	..	..	..	..	..	..	1	1	..	..	..	..	5
Cirrhosis of Liver	..	.	..	..	22	36	6	9	..	7	5	6	1	4	5	..	..	10	7	3	2	4	1	..	64
Jaundice, and other Diseases of Liver	18	..	1	..	9	24	14	7	..	9	..	10	1	7	3	..	..	13	4	2	4	3	3	..	66
Other Diseases of Digestive System	11	6	1	1	7	6	1	1	..	4	2	6	3	6	1	..	..	3	1	3	3	..	..	..	33
6 & 7.—DISEASES OF LYMPHATIC SYSTEM AND OF DUCTLESS GLANDS.																									
Diseases of Lymphatic System	1	..	..	..	2	1	..	..	..	1	..	1	..	..	1	..	..	..	..	1	..	..	..	..	4
Diseases of Spleen	..	1	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	2
Bronchocele, Addison's Disease	..	..	..	..	1	2	1	..	..	..	1	..	1	1	..	..	..	..	..	1	..	..	..	..	4
8.—DISEASES OF URINARY SYSTEM.																									
Acute Nephritis	3	3	3	5	10	10	4	2	1	5	1	3	2	3	10	..	..	3	7	..	..	1	..	..	38
Bright's Disease, Albuminuria	..	3	2	6	40	78	29	21	1	18	2	11	5	11	51	4	..	10	10	2	9	2	1	..	158
Disease of Bladder or of Prostate	..	2	1	..	1	9	11	1	1	4	3	..	6	1	1	..	..	1	1	4	..	..	1	..	24
Other Diseases of the Urinary System	..	1	.	2	14	14	5	1	..	5	..	7	6	3	4	..	..	3	2	3	2	..	..	..	36
9.—DISEASES OF REPRODUCTIVE SYSTEM.																									
(A) Of Organs of Generation.																									
Male Organs	..	.	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	.	..	1
Female Organs	..	2	..	4	15	7	1	4	..	1	3	4	3	4	2	..	..	2	2	1	2	..	1	..	29
	a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	*i*	*j*	*k*	*l*	*m*	*n*	*o*	*p*	*q*	*r*	*s*	*t*	*u*	*v*	*w*	*x*	*y*

(b) Of Parturition.																									
Abortion, Miscarriage	..	..	..	..	2	..	..	..	..	..	..	.	..	1	..	..	..	..	..	..	..	1	..	..	2
Puerperal Convulsions	..	..	..	..	4	..	..	..	..	1	..	.	..	..	..	..	..	..	1	2	..	..	..	..	4
Placenta Prævia, Flooding	..	..	..	..	3	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	3
Other Accidents of Child-birth	..	..	..	9	21	..	..	..	..	5	..	5	1	4	..	..	..	9	4	..	1	1	..	..	30
10.—Diseases of Bones and Joints.																									
Caries, Necrosis	..	..	3	2	13	..	..	2	..	3	..	2	1	2	1	..	..	5	1	1	..	..	..	..	18
Arthritis, Ostitis, Periostitis	..	1	..	1	..	2	1	3	..	..	..	..	2	2	..	3	..	..	..	.	..	1	..	..	8
Other Diseases of Bones and Joints	..	4	2	3	5	3	3	2	1	2	2	2	3	3	1	..	..	..	4	3	1	..	..	..	22
11.—Diseases of Integumentary System.																									
Carbuncle, Phlegmon	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
Other Diseases of Integumentary System	..	10	1	..	1	4	9	12	2	..	4	2	1	7	1	10	..	..	7	2	..	..	..	1	37
VII.—Deaths from Violence.																									
1.—Accident or Negligence.																									
Fractures and Contusions	..	3	2	5	7	20	18	12	2	..	3	14	3	32	2	3	..	..	1	2	2	2	..	1	..	67
Gunshot Wounds	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Cut, Stab	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Burn, Scald	..	6	42	15	4	8	4	8	3	..	..	21	1	53	..	1	..	..	3	2	1	1	..	1	..	87
Poison	..	..	1	1	2	6	6	..	2	..	2	2	1	4	1	..	..	..	3	1	..	..	..	..	..	16
Drowning	..	..	3	6	2	..	5	2	3	..	..	..	1	..	6	..	..	..	2	2	1	..	3	..	..	18
Suffocation	..	54	1	1	..	..	..	1	7	..	18	..	3	..	2	..	..	..	9	12	1	3	1	1	..	57
Otherwise	..	3	5	8	3	9	15	7	1	..	6	5	6	10	5	1	..	..	1	5	2	4	2	2	..	50
2.—Homicide.																									
Manslaughter	..	..	..	..	1	2	1	..	..	..	..	1	..	2	..	1	..	..	..	..	..	..	..	..	..	4
Murder	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
3.—Suicide.																									
Gunshot Wounds	..	..	..	.	..	..	1	..	..	..	1	..	..	..	..	..	..	..	.	..	..	..	..	..	..	1
Cut, Stab	..	..	..	..	..	2	4	2	3	..	1	..	..	2	..	..	..	..	..	1	..	1	..	..	..	8
Poison	..	..	..	..	2	4	2	..	1	..	1	1	..	2	2	..	..	..	..	..	..	1	..	..	..	8
Drowning	..	..	..	..	1	4	1	..	..	..	..	..	..	..	1	..	..	..	2	1	2	..	..	..	..	6
Hanging	..	..	..	..	1	6	3	1	3	..	2	..	3	..	1	..	..	..	1	1	..	..	..	..	..	11
Otherwise	..	..	..	..	..	3	1	2	1	..	..	2	..	1	..	2	..	..	..	..	..	.	..	..	..	6
4.—Execution.																									
Hanging	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
VIII.—Deaths from Ill-defined and not Specified Causes.																									
Dropsy	..	..	..	..	1	1	..	..	..	1	..	..	.	..	..	..	..	1	..	..	..	..	..	..	2
Debility, Atrophy, Inanition, Marasmus	..	677	69	2	..	..	..	2	83	2	109	1	101	..	61	26	..	..	111	186	16	39	10	5	..	750
Mortification	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1
Tumour	..	.	1	..	1	1	..	1	1	..	..	..	..	1	..	..	..	..	..	1	1	..	..	..	..	4
Abscess	..	10	3	1	..	..	3	..	1	..	1	..	2	1	2	..	..	..	7	2	..	1	..	..	..	17
Hæmorrhage	..	1	..	..	..	1	1	..	..	..	1	..	..	1	..	..	..	..	..	1	..	..	..	..	..	3
Causes Ill-defined or not Specified	..	3	3	..	1	2	1	..	..	..	2	2	1	..	..	..	..	..	3	..	..	1	1	..	..	10

METEOROLOGY AND MORTALITY.

Year.

The year 1893 was remarkable for its very high temperature and the great dryness by which it was characterised. The

Mean Temperature.

mean temperature was 49°·2, or 2°·4 above the average for the previous six years. Three months only had mean temperatures below the average, these being January, September, and November. Remarkably warm weather for the time of year was experienced in March and April, and again in August the temperature was abnormally high.

Rainfall.

The total rainfall for the year was 20·76 inches, or 3·93 inches less than the average quantity in the previous six years, and 10·38 inches below the amount measured in 1891, which was a very wet year. The exceptional drought experienced last year, together with the very high temperature, apparently had the effect of causing a considerable amount of illness of a septic nature, such diseases as Typhoid Fever and Erysipelas having been unusually prevalent.

January.

The first half of *January* was very cold, and the severe weather was accompanied by a heavy mortality, death-rates of 30·6 and 29·4 per 1,000 being recorded in the first two weeks. It is popularly supposed that very cold weather is not injurious to health, but experience in this

February.

country shows the reverse to be the case. In *February* the mean temperature was higher than usual, but the rainfall was

March.

large, and hardly a day passed without some rain. *March* was an extraordinarily fine month, with a mean temperature nearly seven degrees above the average, and a very small rainfall, the number of days on which rain fell being only seven, while the amount of bright sunshine was decidedly large, being on an average six hours *per diem*.

In the second quarter of the year there was a great preponderance of bright, warm and dry weather, which, though very pleasant in itself, had the effect of causing a larger mortality from diarrhœa than had ever before been experienced.

April.

April was marked by very warm and very dry weather, the temperature being 6°·5 above the average, and the rainfall amounting to only 0·33 inch against 1·72 inches, the average quantity in the six preceding years. With the exception of

May.

one wet week, *May* also was very fine and warm. In the

June.

middle of *June* unusually hot weather was experienced, the mean temperatures being 82°·8, 82°·6, and 82°·1 on three successive days.

July. August.

The warm, dry, sunshiny weather of the second quarter was continued into *July* and *August*, and was accompanied by

September.

one of the greatest outbreaks of summer diarrhœa on record. In *September*, however, a change came, the temperature of this month falling a little below the average, and the rainfall being about a normal quantity.

October was warm, but rather wet. *November* had a mean temperature 2°·9 below the average, and many sudden changes in temperature were recorded. For instance, the thermometer stood at 51° on the morning of the 17th; the next morning, at the same hour, it registered 36°, showing a variation of 15 degrees. Again on the 27th the temperature at 9 o'clock was 32°; while on the 28th, at the same time, it was 49°, a difference of 17 degrees. These rapid alternations of heat and cold were almost sufficient to account for the great mortality from bronchitis and pneumonia, even without the additional circumstance that influenza was present in the town at the same time. In *December* the weather was more favourable, and some reduction in the mortality from respiratory diseases took place.

October. November. December.

The figures in the table below show the mean temperature and the total rainfall in each month of the year, together with the amount of variation from the average observed during the previous six years, the period during which records have been kept at the Edgbaston Observatory.

MONTHS.	TEMPERATURE.			RAINFALL.		
	Mean Temperature in Degrees and Parts.	Average for 6 years, 1887–1892 inclusive.	Above or below the average.	Rainfall for Month in Inches and Parts.	Average for 6 years, 1887–1892 inclusive.	Above or below the average.
January	35°·1	36°·6	— 1°·5	1·75	1·49	+ 0·26
February.....	39·2	37·3	+ 1·9	2·56	0·83	+ 1·73
March	45·3	38·5	+ 6·8	0·50	1·66	— 1·16
April	49·6	43·1	+ 6·5	0·33	1·72	— 1·39
May	54·5	51·2	+ 3·3	2·08	2·34	— 0·26
June	59·0	57·5	+ 1·5	1·08	2·08	— 1·00
July.....	61·0	58·5	+ 2·5	1·64	2·43	— 0·79
August	63·2	58·3	+ 4·9	2·25	3·27	— 1·02
September	54·8	55·2	— 0·4	1·72	1·92	— 0·20
October	48·8	46·6	+ 2·2	2·45	2·56	— 0·11
November	39·9	42·8	— 2·9	1·38	2·50	— 1·12
December	39·5	36·5	+ 3·0	3·02	1·89	+ 1·13
Year.....	49·2	46·8	+ 2·4	20·76	24·69	— 3·93

The table on the next page shows the Meteorological conditions in each week of the year, side by side with the total mortality and the mortality from certain specified causes.

Meteorology, Births, Deaths, and Mortality from certain Prevalent Diseases for each Week of 1893.

Week. Number.	Week. Date of Ending.	Temperature of the Air. Highest during week.	Temperature of the Air. Lowest during week.	Temperature of the Air. Mean Temperature.	Hours of Sunshine.	Horizontal Movement of Air in Miles.	Mean Humidity, complete Saturation = 100.	Rainfall in inches.	Births.	Deaths at All Ages.	Deaths at Under 1 year.	Deaths at 1 to 5 years.	Deaths at Over 65.	Deaths from Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Wh'ping Cough.	Fever.	Diarrhœa.	Phthisis.	Respiratory Diseases.
	1893.	°	°	°																		
1	Jan. 7	32·5	15·0	26 0	2·8	1800	...	0·47	309	286	61	39	71	...	1	1	3	19	...	2	23	90
2	„ 14	39·4	25·1	32·9	1·8	2322	...	0·02	327	275	51	38	59	...	...	...	1	8	1	4	18	107
3	„ 21	45·2	26·0	36·5	4·9	2757	83	0·16	319	242	52	35	52	...	2	2	1	12	1	1	18	86
4	„ 28	49·4	32·2	40·8	13·2	2314	88	0·62	303	213	50	32	43	...	1	1	...	14	...	6	18	59
5	Feb. 4	50·8	30·6	43·0	12·5	2339	91	0·97	292	165	38	26	22	...	...	...	...	13	2	2	9	41
6	„ 11	50·4	29·9	40·3	24·9	3220	82	0·37	348	195	51	30	27	...	...	1	2	8	...	7	15	53
7	„ 18	51·6	32·5	41·7	10·0	2659	90	0·48	303	176	49	18	34	...	...	...	...	12	2	1	13	40
8	„ 25	56·6	28·0	35·8	8·4	2094	91	0·94	359	177	51	29	28	...	...	...	...	14	1	2	9	31
9	Mar. 4	54·1	28·8	40·8	18 6	2744	91	0·61	341	162	41	27	24	...	1	1	...	9	...	3	16	42
10	„ 11	59·8	34·2	44·9	28·7	2407	82	0·03	343	195	68	27	30	...	...	1	1	6	...	2	11	45
11	„ 18	60·9	25·6	42·8	29·4	2666	79	0·11	294	163	48	31	21	...	...	...	2	15	3	3	11	36
12	„ 25	64·2	31·4	46·5	71·0	1058	66	0·00	345	202	40	34	39	...	1	1	...	11	5	3	20	40
13	April 1	64·8	32·2	47 6	48·6	1592	74	0·10	288	199	49	29	24	...	2	1	2	10	7	3	21	46
14	„ 8	64·9	35·0	46·5	53·7	1544	78	0·00	312	205	52	29	43	1	...	2	1	10	...	2	13	51
15	„ 15	63·0	32·3	44·4	43·6	2032	75	0·00	357	177	49	22	28	2	2	2	...	10	2	3	14	48
16	„ 22	79·0	40·3	55·2	51·5	1632	67	0·19	288	203	45	22	37	3	1	...	2	4	2	5	17	55
17	„ 29	71·3	38·2	52·9	57·1	1639	69	0·03	310	181	38	20	37	...	...	2	...	6	...	2	13	42
18	May 6	74·8	39·2	53·6	43·6	1822	69	0·17	282	200	44	17	33	2	...	1	...	3	1	5	14	50
19	„ 13	73·0	41·3	54·9	71·8	2213	59	0·00	307	168	41	16	29	1	1	...	...	6	2	2	15	30
20	„ 20	70·2	42·8	54·7	21·4	2066	84	1·90	255	186	45	16	34	1	...	1	1	6	2	5	17	31
21	„ 27	67·3	42·5	54·8	37·4	1973	75	0·00	303	146	47	15	23	2	...	1	...	5	1	3	13	26
22	June 3	67·7	40·1	53·7	19·5	1405	72	0·06	347	168	56	14	23	...	1	2	...	3	...	5	15	38
23	„ 10	71·0	45·4	56·6	39·4	1394	79	0·08	349	166	44	20	34	2	1	2	...	3	2	11	20	29
24	„ 17	82·8	47·0	61·9	46·0	1702	71	0·01	341	144	46	20	22	2	1	4	...	1	...	13	12	35
25	„ 24	82·1	46·1	59·1	30·4	1751	69	0·50	271	193	79	19	27	2	2	2	1	3	1	21	11	36
26	July 1	80·3	45·5	61·2	40·0	2144	69	0·42	305	209	87	28	18	...	...	3	...	1	...	38	14	25
27	„ 8	83·7	52·0	66·6	47·7	1964	62	0·15	290	234	106	34	28	2	...	2	1	2	1	78	7	23
28	„ 15	67·6	49·5	58·4	12·4	1766	78	0·71	347	263	129	29	30	...	1	5	1	2	3	76	11	19
29	„ 22	69·3	50·0	59·2	33·0	1913	69	0·47	305	239	134	26	22	...	...	1	...	5	5	81	16	14
30	„ 29	71·5	49·8	59·9	19·8	1889	75	0·31	297	233	107	27	29	...	1	1	1	5	4	56	13	17
31	Aug. 5	69·2	45·3	58·1	30·7	2626	74	0·35	298	203	82	30	23	1	4	1	2	5	2	41	9	16
32	„ 12	81·5	52·8	66·8	45·3	1758	67	1·26	277	189	87	17	18	...	...	1	3	5	3	38	16	16
33	„ 19	85·6	58·5	70·7	61·1	1361	69	0·18	332	204	88	19	24	1	...	3	1	3	3	41	15	22
34	„ 26	71·5	48·2	59·9	44·6	2669	75	0·38	293	192	63	17	29	...	...	2	...	2	3	31	17	21
35	Sept. 2	69·3	44 0	56·9	23·6	1938	8[illegible]	0·08	331	190	77	25	20	1	1	...	1	3	2	43	16	21
36	„ 9	73·8	41·9	59·4	36·4	1712	72	0·38	271	158	61	20	22	...	1	1	1	3	1	35	15	10
37	„ 16	71·0	40·6	55·7	38·7	1700	74	0·00	268	200	71	28	29	2	...	1	...	6	3	37	20	21
38	„ 23	66·5	39·0	51·1	27·3	2123	78	0·23	315	175	59	22	24	1	...	...	...	4	3	20	13	25
39	„ 30	61·3	42·0	52·1	22·8	2435	83	1·11	284	153	39	18	18	1	...	2	1	3	4	19	15	23
40	Oct. 7	61·5	40·2	48·9	36 0	1578	85	0·91	305	198	58	25	32	1	1	1	...	3	4	16	21	30
41	„ 14	63·3	39·2	50·3	23·2	2055	82	0·76	292	178	53	16	23	2	1	1	2	...	4	12	22	25
42	„ 21	64·7	42·7	52·8	12·7	1936	88	0·60	267	163	42	12	19	1	1	1	1	3	4	9	12	24
43	„ 28	54·5	39·0	47·6	16·3	2441	79	0·15	295	183	53	12	39	2	1	2	...	2	...	10	13	46
44	Nov. 4	57·7	28·3	41·5	9·4	2019	85	0·14	337	210	48	26	39	4	...	1	...	2	1	1	21	50
45	„ 11	47·4	29·4	38·6	14·3	2362	84	0·00	287	248	51	38	56	4	1	...	3	7	4	5	17	78
46	„ 18	53·9	25·9	39·2	4·4	2556	89	0·56	307	291	55	31	81	4	2	...	...	7	...	6	23	83
47	„ 25	49·3	27·0	37·5	7·7	3218	86	0·50	304	266	58	28	62	4	2	...	...	3	2	4	11	89
48	Dec. 2	54·0	22·0	38·9	6·7	2740	88	0·20	287	208	51	23	40	5	2	1	1	5	3	2	10	54
49	„ 9	49·6	31·0	40·8	12·0	2579	87	0·44	291	233	55	30	51	4	4	3	1	5	3	3	15	60
50	„ 16	51·3	31·7	41·0	11·1	2901	86	1·15	279	198	44	38	31	3	1	6	4	6	1	3	13	66
51	„ 23	49·6	33·0	40·1	12·7	2862	88	1·34	277	244	74	37	33	4	4	1	2	8	3	3	13	63
52	„ 30	49·0	26·5	39·5	5·9	1731	88	0·19	247	196	79	25	22	5	3	...	...	10	1	4	11	53

II.—SANITATION.

i.—*Influences affecting or threatening to affect injuriously the public health.*

Ashpit Middens

The abolition of the midden system of refuse disposal is steadily, but slowly, proceeding. The following statement shows the number of ashpits and privies, and also of pan privies converted to water-closets, at the instance of your officers :—

Number of ashpits and privies removed during 1893	717
Number of pans abolished during 1893	92
Number of water-closets substituted	1048
Number of waste-water flush closets substituted ...	54

At the beginning of the year there were 8,306 ashpits and privies still existing in the City. In addition to those which were converted to water-closets at the instance of the Health Department, a number of ashpits and privies have no doubt been re-constructed voluntarily by property owners.

Offensive Pan Privy

In consequence of a complaint, I visited a house in Turner Street, where the occupier, his wife, and six children had all been suffering from Sore Throat and Diarrhœa, which was attributed to the offensive emanations from the pan privy. I found the privy door was only three feet from the house, while the privy itself was situated against the end of the house. I strongly recommended that the privy should be converted to a water-closet, and after some little delay this was done.

Water-closets without flush.

On visiting a house in Bloomsbury Street in which a case of Typhoid Fever occurred I found a water-closet to which no flushing cistern was attached, in fact no water supply at all was laid on to the closet, which had to be flushed by water fetched from the house. It is quite certain that such a method of flushing is altogether unsuitable and inadequate to the proper efficiency of a water-closet. Nothing is more improbable than that a person using it should take the trouble to fetch water to flush it. Owing in this case to the imperfect or insufficient flushing the drain became obstructed and was opened by the patient's father, with the result that he was afterwards taken ill with Diarrhœa and Vomiting, making the second case of preventable sickness coming to my knowledge in connection with this closet. The patient before her illness had complained of the stench from the closet, another proof that the alleged hand-flushing was insufficient. A number of closets in the town are constructed on the same principle, and I recommended that the Town Clerk's opinion should be taken as to whether it was possible to enforce a constant supply of water to them. The Town Clerk considered that your Committee ought to make bye-laws, in pursuance of the powers

Water-closets without flush (*continued*).

given by Section 23 of the Public Health Act Amendment Act, 1890, for prescribing the means by which an adequate supply of water to all water-closets shall be provided. He further reported that until such bye-laws are made, the only proceedings that can be taken are under Section 36 of the Public Health Act, 1875. on the ground that the water-closets are insufficient. As closets of the type I have described are rarely if ever properly flushed and are sure to become a nuisance, I would strongly urge your Committee to frame bye-laws under which they could be dealt with, and in the meantime to take action under the Public Health Act to enforce a constant supply of water by means of cisterns or similar appliances; for although a water-closet is the best form of closet, it is evident that if it be not properly constructed it may constitute as great a nuisance as a common privy, inasmuch as it then intercepts and retains the excreta instead of at once conveying them away as it is intended, and as it is its distinguishing function to do.

Water-closets in Basements.

Early in the year the question of allowing the introduction of water-closets in basements was brought forward by the architects of two buildings, situated in Aston Road and Jamaica Row respectively. The Building Surveyor had refused to pass the plans, and the architects waited upon me with a view to obtaining my sanction to the erection of the closets as proposed. I entirely disapprove, however, on sanitary grounds, of such an arrangement, and consequently declined to give my sanction, believing as I do that water-closets in basements are likely to become a standing nuisance and injury to health. The whole question was laid before your Committee, and the architects made several suggestions with a view to mitigate any possible evils arising from the proposed plan, but your Committee upheld my view and eventually decided that the closets could not be allowed in the proposed situations.

Smoke.

In a large manufacturing town like Birmingham, the prevention as far as practicable of pollution of the air by smoke is a matter demanding constant attention. Four Assistant Inspectors are deputed to make observations of the emission of dense smoke from factory chimneys, and last year 5,031 such observations were made, and 196 breaches of the regulations were reported. In 129 instances letters of caution were sent to the offenders; the remaining manufacturers had previously been cautioned, and were now summoned. Convictions were obtained in all cases, the penalties amounting to £45 15s., and the costs to £26 16s.

Insanitary Property.

Towards the end of 1892 I received a complaint of the insanitary condition of Monro Square, Pershore Street. I inspected the premises at that time, and suggested certain improvements. Last year I visited the property again, and found that the improvements had not been carried out. The principal insanitary conditions were a large ashpit with two privies in

connection with it, a dirty unpaved yard, and a well providing the water supply for the whole of the houses, which was found on analysis to be seriously polluted. I recommended that steps should be taken to enforce the conversion of the ashpit privies to water-closets, the paving of the yard, and the substitution of Corporation water for that supplied from the well. I am pleased to say that all these improvements have since been effected.

Insanitary Property (*continued*).

Under the Housing of the Working Classes Act I made the following representation to the Improvement Committee :—

Housing of the Working Classes Act.

"I beg to report that I have recently inspected the sanitary condition of two areas in the City, containing together about two acres.

"The first area is bounded on two sides by Woodcock Street and Holt Street, and on a third partly by Heneage Street, and includes the houses numbered 3 to 24 inclusive in Woodcock Street, 2 and 3 in Heneage Street, and 89 to 101 inclusive in Holt Street, with all houses and premises at their rear.

"The second area is bounded on two sides by Little Ann Street and Milk Street, and includes the houses numbered 22 to 39 inclusive in Milk Street, 21 to 30 inclusive in Little Ann Street, with all the houses and premises at the rear of the same.

"It cannot be said that all the property is in an equally bad condition, but none of it is good, and in dealing with the worst property it will be necessary to include all upon the area.

"The defects may be summarised as follows :—

1.—Bad arrangement or distribution of the buildings over the areas, causing the dwellings in most cases to be crowded, but sometimes waste of land surface.

2.—Houses "back-to-back."

3.—Yards unpaved, sodden with filth, or pavement and gutters defective.

4.—Houses and washhouses more or less dilapidated as to roofs, walls, floors, and sinks.

5.—Walls and floors damp from absence of damp-courses in the walls, and from the floors being of porous quarries in direct contact with the damp ground, also from defective roofs admitting rain.

6.—Obstructive buildings.

"The results of these conditions are deficiency of air, ventilation and light, dampness, and organic impurity; and I am therefore of opinion that the narrowness, closeness, bad arrangement, and bad condition of

Housing of the Working Classes Act. (*continued*).

the houses within such areas, the want of light, air, and ventilation, and other sanitary defects, are dangerous to the health of the inhabitants of the buildings in the said areas, and that the evils connected with such houses, courts, or alleys, and the sanitary defects in such areas cannot be effectually remedied otherwise than by an improvement scheme for the re-arrangement and reconstruction of the streets and houses within such areas, and therefore beg to submit these facts to your notice as an Official Representation under the provisions of Part I. of the Housing of the Working Classes Act, 1890.

"I submit herewith plans of the areas."

Rubery Hill Asylum.

In the early part of the year some cases of Typhoid Fever occurred at the Rubery Hill Asylum, and I was requested to analyse a sample of the water in use there. I found it to be of excellent quality, well suited for domestic purposes, and exempt therefore from the suspicion of being the cause of the illness. I subsequently made an analysis of the effluent from the sewage farm, which proved to be practically unpurified, and of much the same character as raw sewage. This showed that the means employed to purify the sewage were inoperative. An examination of the farm revealed the fact that the sewage flowed over the surface instead of passing through the soil as it should have done, owing to the rather impervious nature of the soil, and to the lack of proper subsoil drainage. The application of the smoke test showed that the drains of the institution were generally defective, the pipes not being properly jointed, apparently from having sunk in places. All the wards have since been connected with a new system of drains, and the arrangements for purifying the sewage have been improved It is gratifying to learn that no case of Typhoid Fever has occurred in the Asylum since April last.

Pollution of River Rea.

With a view of improving its condition, the bed of the River Rea has recently been lowered and "inverted," and efforts are now being made to keep the river free from pollution. During 1893 I analysed 18 samples of liquid taken either from the river itself or from outlets discharging into it, and reported upon them to the Public Works Committee. In August I gave evidence in an action brought by the Corporation under the Birmingham Consolidation Act, against a manufacturer in Charles Henry Street, for allowing filth to pass from his premises into the river. I stated that the sample sent to me for analysis contained impurities partly liquid and partly solid. The liquid portion was dirty and of the character of sewage and on this account was unfit to be received into a stream. The solid matter was considerable in amount, and contained a very large proportion of organic matter. This organic matter getting into the bed of the stream would undergo decomposition there, and become offensive and dangerous to health. The rest of the solid matter was of a mineral character, the total amount of solid matter being between one third and one

quarter of a pound per gallon. The mineral matter was chiefly objectionable on the ground of its contributing to the effect of silting up the river. The whole of the solids ought to have been intercepted on the manufacturer's premises, and not discharged into the stream. The Magistrates convicted the defendant, but as he seemed to have taken some steps to prevent the filth escaping into the river, and as this was the first case of its kind, they inflicted a penalty of only £2 and costs. Pollution of River Rea (*continued*).

The following return, made to me by the Inspector of Nuisances, furnishes some interesting information on the sanitary position in the districts added to the City in the year 1891 :— Sanitary position of recently annexed districts.

	Balsall Heath.	Saltley.	Harborne.
No. of Houses...	7,821 ...	2,496 ..	1,697
" Ashpits	2,269 ...	712 ..	997
" Privies...	2,978 ...	1,056 ...	1,119
" Water-closets	3,152 ...	1,058 ...	517
" Flush-closets	— ...	33 ...	21
" Closets flushed by hand	452 ...	31 ...	4
" Pans	— ...	4 ...	11
" Pumps...	250 ..	60 ...	64

ii.—*Examination of and action in regard to Suspected, Diseased, and Unwholesome Food.*

The returns of the Superintendent of Markets show that 1,332 lots of bad meat were voluntarily surrendered to the Inspectors, and that 15 seizures were effected. The total amount of meat destroyed was over 184 tons. Four persons were summoned and three convicted, the penalties imposed amounting to £25. Unwholesome Food.

Fourteen seizures and 570 surrenders of fish, poultry, rabbits, etc., were made, the amount destroyed being upwards of 77 tons. Twelve persons were summoned and convicted. Two of them were sentenced to two months' imprisonment, and three others were sent to gaol for one month. Fines amounting to £33 were inflicted on the other seven offenders, one of whom went to prison for one month in default of paying the fine.

The amount of unsound fruit, etc., surrendered to the officers and destroyed was more than 6 tons.

iii.—*Duties under Sanitary Bye-Laws and Regulations.*

Lodging Houses.

At the close of 1893 there were 79 common lodging houses and 101 houses let in lodgings in the city, the former being registered to accommodate 1,786 lodgers, and the latter 555. These houses are kept under constant inspection, the visits paid to them last year being 12,352 by day and 2,263 by night. Two keepers were summoned for infringing the Bye-Laws, one being fined 10s. and 8s. costs, and the other 5s. Lodging Houses.

Slaughter Houses.

Slaughter Houses

At the end of the year there were 119 licensed slaughter houses and 107 registered slaughter houses in use in the city. The officers of the Markets and Fairs Committee paid 8,911 visits to them last year, and ordered 57 of them to be cleansed. Five persons were summoned for slaughtering on unlicensed premises or for contravention of the Bye-Laws, the penalties inflicted amounting to £8 5s.

In January I visited a building formerly in use as a slaughter house, and which the occupier wished to use again for the same purpose. I found it to be about ten feet square, and the pavement to be defective. There was no water supply inside the building, no intercepting pit on the drain for the retention of blood and refuse, and no fasting pen. The business carried on at the shop seemed to be small, and as most of the stock appeared to be purchased as dead meat, the application for permission to slaughter seemed to be rather in view of convenience than of necessity. I consider it very undesirable to increase the number of private slaughter houses, and after taking all the circumstances of the case into account, I reported that it seemed to me a question for serious consideration whether the application for a revival of the license should be entertained. If, however, it was thought desirable to grant a license, I considered it necessary that the floor should be relaid in cement, that a proper supply of water should be laid on, that the drainage should pass through a catch-pit in which blood, excrement, and other refuse would be intercepted, and that the ventilation should be improved by the removal of the obstruction to one of the windows.

Public Slaughter Houses in Montague Street.

In November an application was made by the Corporation for a license for the newly-erected public slaughter houses in Montague Street. As the Magistrates wished to have my opinion upon them, I made a report of which the following is a copy:—

> 'The public slaughter houses in Montague Street are arranged in three compartments. The first is for the killing of pigs, the second for slaughtering cattle and sheep, and the third is a cooling room.
>
> 'The pig slaughter house is the smallest. It is generally triangular in shape, and the ventilation is effected by a large door and two openings in the front, by openings in the side wall, and by a tube ventilator in the roof.
>
> 'Number 2 has in front two large doors with louvres above them, three windows, all of which open, and wall openings. In the roof a louvre ventilator runs nearly the whole length. This apartment is very capacious and airy, and ventilation very free.

Public Slaughter Houses in Montague Street (*continued*).

'Number 3, the cooling room, is constructed on exactly the same plan as Number 2, and I observed that the meat placed there, and, indeed, that in Number 2, which had remained there some time, was perfectly well "set."

'The whole of the apartments are paved with Yorkshire flags laid in cement, which is impervious to liquids, and the walls are constructed of glazed bricks, which are non-absorbent. The rooms are well lighted, and there is a plentiful supply of hot and cold water. There is no drain opening within the building. The blood during slaughtering is caught in pans, and then placed in receptacles until disposed of, and the drain openings outside are provided with catch-pits to intercept offal and excreta. There is no accumulation of refuse, nothing being allowed to remain there over one day.

'I am of opinion that in a sanitary sense the slaughter houses are well adapted to their object.'

Dairies, Milkshops, and Cowsheds.

Dairies, Milkshops, and Cowsheds.

At the end of 1893 there were 22 dairies, 1,819 milkshops, 58 purveyors, and 74 cowsheds on the register. The visits paid during the year to dairies numbered 107, to milkshops and milkstores 3,788, and to cowsheds 2,480. The applications made for permission to open milkshops amounted to 366, but in 140 instances the applications were refused owing to the unsuitability of the premises.

The number of shops ordered to be cleansed and whitewashed was 71, of cellars 46, and of pantries 42. The sale of lamp oil was prohibited in 34 instances, of tripe in 11, of fish in 19, and of vinegar, pickles, etc., in 85. In three cases dirty vessels were found, and were ordered to be cleansed.

Eight cases of Smallpox, sixteen of Scarlet Fever, two of Diphtheria, and five of Typhoid Fever occurred at places used for the storage or sale of milk. In each case the milk found on the premises was destroyed, and the business was suspended during the time required for disinfection.

Pleuro-Pneumonia

No case of Pleuro-pneumonia in cows was discovered during the year.

Bakehouses.

Bakehouses.

The Assistant Inspector entrusted with the supervision of Bakehouses paid 1,185 visits to them last year. In the great majority of cases they were found to be in good order. Limewashing was required in 140 instances; drains were removed from inside the buildings in two cases; animals were found in one bakehouse; and rubbish in 13 others. Information of the employment of 63 youths was sent to H.M. Inspectors of Factories; no women were found working in any of the bakehouses.

Workshops.

Workshops.

The visits paid to Workshops under the Factory and Workshops Act, 1891, numbered 4,744, and resulted in 1,004 improvements in their condition being effected. The latter included the limewashing of 671 shops; the provision of 79 additional water-closets for the use of females; the cleansing and repairing of 36 water-closets; the provision of 25 urinals; the removal of 26 ashpits and 11 pan-privies from underneath workshops; the conversion of 16 ashpits and privies to water-closets; the trapping of 44 drains; the improvement of ventilation in 37, and the stoppage of overcrowding in 8 instances.

Canal Boats Acts, 1877 and 1884.

Canal Boats Acts.

The number of Canal Boats on the register of your Authority was 395. During the year the Assistant Inspector whose time is devoted to this work examined 801 boats, on which he found 1,296 men, 430 women, and 544 children. Seventy-two infringements of the regulations were detected, and caution notes were issued respecting them. Legal proceedings were taken in two instances, and resulted in fines of 5s. and costs and 10s. and costs respectively.

iv.—*Offensive Trades.*

Offensive Trades.

No complaint was made during the year of the manner of carrying on any offensive trade, and no application was made for permission to establish any such trade.

v.—*Fortnightly Reports of the Medical Officer of Health to the Health Committee.*

Fortnightly Reports of Medical Officer of Health.

I have from time to time reported to your Committee on various questions, including the following:—

1. The general health of the City, as shown by the total Death-rate, Zymotic Death-rate, and Mortality from special diseases.
2. The occurrence of Infectious Disease, and the results of the investigations of certain of the most dangerous cases.
3. The Waters supplied by the Corporation, and from other sources.
4. Articles of Food, Drink, and Drugs, obtained for analysis, and the analysis of articles of a miscellaneous character.
5. Diseased and unwholesome food.
6. Reports on special questions in pursuance of resolutions, instructions, and otherwise.

vi.—*Outbreaks and prevalence of Infectious, Contagious, and Epidemic Disease.*

Prevalence and Distribution of Infectious Diseases.

During the past year the City suffered from a serious epidemic of Smallpox, while at the same time Scarlet Fever, Typhoid Fever, and Erysipelas were more prevalent than in the preceding year, and as a result, the total number of cases of Infectious Disease rose to 4,404, against 2,853 in 1892.

The cases reported in various localities corresponded to the following rates per 1,000 of their populations, the cases in institutions being excluded from the individual localities, but included in the figures for the whole city :—

	Total Notified Cases.	Total Case-rate per 1,000.	Case-rates from				
			Smallpox.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Erysipelas.
Ladywood Reg. Sub-Dist. ...	619	10·8	3·8	3·2	0·9	1·0	1·6
St. Martin „ „ ...	599	8·5	1·1	2·3	0·7	1·3	2·5
St. George „ „ ...	598	9·8	2·0	3 5	1·4	0·7	1·9
All Saints „ „ ...	707	2·5	5·9	4·1	0·5	0·8	1·0
Deritend „ „ ...	714	7·1	0·7	3·3	0·3	1·0	1·6
Duddeston „ „ ...	429	6·6	0·9	2·1	0·5	1·2	1·5
Edgbaston „ „ ...	144	5·8	0·4	2·9	0·8	0·6	1·0
Balsall Heath	303	9·3	1·0	4·6	0·7	1·1	1·8
Saltley and Little Bromwich...	68	6·1	0·4	1·2	1·0	1·7	1·6
Harborne	97	11·7	0·0	9·1	0·1	0·4	2·1
City	4,404	9·0	2·0	3·3	0·7	1·0	1·7

The cases notified show increases in every locality except Saltley and Little Bromwich. All Saints and Ladywood Sub-districts suffered heavily from Smallpox, while in Harborne there was a most unusual amount of Scarlet Fever.

Smallpox.

The first case of *Smallpox* occurred on January 2nd, the patient being an inmate of the Casual Ward at the Birmingham Workhouse. He had been in Leicester a fortnight before his illness commenced, and probably became infected there. The second case was reported on January 18th, and in this instance the patient had been on tramp since January 8th, and had previously lived at a common lodging house in the City. He too had slept in the Casual Wards of several Workhouses shortly before his illness. The third patient was a man who was found to be suffering from Smallpox while in the Casual Ward at Solihull Workhouse. Previous to going there he had lived at a common lodging house in Rea Street. The fourth case was that of a man who was in the Tramp Ward at the Birmingham Workhouse at the time that Case 1 was removed to the City Hospital. Thus the four cases notified during

Smallpox

January were all in vagrants, who probably brought the infection to the town from other parts of the country. During February seven cases broke out, two of the patients being vagrants and two others being connected with tramps who had been previously removed to the City Hospital. With the beginning of March a considerable increase took place in the number of cases, and as the disease became more prevalent much difficulty was experienced in many instances in tracing the infection. In April the cases became still more numerous, and it was evident that the infection was being spread to a considerable extent by means of the association of patients with their fellow-workpeople. Thus six cases occurred in a short period amongst the workpeople at a factory in Ingleby Street. All through May the cases were numerous, but during June, July, and August the numbers fell off to so large an extent as to encourage the hope that the epidemic was passing away. Unfortunately, however, this was not the case, for in the latter part of September the cases began to increase again, and from then till the end of December they were more numerous than at any other time during the year.

Smallpox in years 1872-1893.

Altogether 979 cases were notified, a number which had been exceeded on three occasions during the last 22 years, viz., in 1872, 1874, and 1883. The following statement shows the number of cases reported and deaths registered in each year since 1872, prior to which no records exist. The figures for all years, except 1892 and 1893, apply to the City as constituted previous to its extension.

DATE.	Cases Notified.		Deaths Registered.	
1872.				
1st Quarter	798		96	
2nd "	632		92	
3rd "	355		67	
4th "	192		44	
Total		1,977		299
1873.				
1st Quarter	171		29	
2nd "	246		37	
3rd "	124		18	
4th "	253		38	
Total		794		122
1874.				
1st Quarter	757		123	
2nd "	1,303		196	
3rd "	1,059		165	
4th "	672		153	
Total		3,791		637
1875.				
1st Quarter	366		85	
2nd "	347		72	
3rd "	95		14	
4th "	16		2	
Total		824		173
1876.				
1st Quarter	2		0	
2nd "	2		0	
3rd "	2		0	
4th "	5		0	
Total		11		

Smallpox in years 1872–1893 (*continued*).

DATE.	Cases Notified.		Deaths Registered.	
1877.				
1st Quarter	7		1	
2nd "	20		3	
3rd "	20		3	
4th "	3		1	
Total	—	50	—	8
1878.				
1st Quarter	3		0	
2nd "	4		0	
3rd "	10		2	
4th "	10		3	
Total	—	27	—	5
1879.				
1st Quarter	1		0	
2nd "	0		0	
3rd "	3		0	
4th "	0		0	
Total	—	4	—	0
1880.				
1st Quarter	2		0	
2nd "	5		1	
3rd "	8		1	
4th "	3		0	
Total	—	18	—	2
1881.				
1st Quarter	5		5	
2nd "	9		1	
3rd "	2		0	
4th "	0		0	
Total	—	16	—	6
1882.				
1st Quarter	0		0	
2nd "	43		6	
3rd "	33		9	
4th "	13		2	
Total	—	89	—	17
1883.				
1st Quarter	48		7	
2nd "	152		9	
3rd "	567		54	
4th "	435		40	
Total	—	1,202	—	110
1884.				
1st Quarter	384		54	
2nd "	64		8	
3rd "	13		1	
4th "	10		1	
Total	—	471	—	64
1885.				
1st Quarter	69		12	
2nd "	4		0	
3rd "	9		0	
4th "	2		0	
Total	—	84	—	12
1886.				
1st Quarter	1		0	
2nd "	1		0	
3rd "	0		0	
4th "	0		0	
Total	—	2	—	0
1887.				
1st Quarter	0		0	
2nd "	1		1	
3rd "	1		0	
4th "	10		1	
Total	—	12	—	2

Smallpox in years 1872–1893 (*continued*).

DATE.	Cases Notified.		Deaths Registered.	
1888.				
1st Quarter	13		0	
2nd "	4		0	
3rd "	1		0	
4th "	0		0	
Total	—	18	—	0
1889.				
1st Quarter	0		0	
2nd "	0		0	
3rd "	0		0	
4th "	0		0	
Total	—	0	—	0
1890.				
1st Quarter	0		0	
2nd "	0		0	
3rd "	0		0	
4th "	0		0	
Total	—	0	—	0
1891.				
1st Quarter	1		0	
2nd "	15		0	
3rd "	23		2	
4th "	8		5	
Total	—	47	—	7
1892.				
1st Quarter	0		0	
2nd "	20		0	
3rd "	5		1	
4th "	2		0	
Total	—	27	—	0
1893.				
1st Quarter	35		0	
2nd "	245		18	
3rd "	116		9	
4th "	583		43	
Total	—	979	—	70

It will be seen that the cases of Smallpox reported last year were less numerous than in 1883, and little more than a quarter of the number which came to my knowledge in 1874. Moreover, last year's figures compare still more favourably when it is remembered that they apply not only to a larger area, but to a year in which notification of Smallpox was compulsory, whereas in 1883, 1875, and 1872, it was only optional, and a certain proportion of cases escaped notice.

Smallpox and Vaccination

Of the 979 patients, 847 had been Vaccinated and 105 were unvaccinated, while the vaccination of the remaining 27 was doubtful, no scars being visible. The total number of Deaths occurring amongst them either during the year or after its close was 77, the mortality in the three classes of patients being as follows:—

	No. of Cases.	No. of Deaths.	Proportion of Deaths to Cases.
Vaccinated	847	38	4·5 per cent.
Unvaccinated	105	32	30·5 "
Doubtful	27	7	25·9 "

Smallpox and Vaccination (*continued*).

The figures speak for themselves, but it is surprising that in face of such facts there should still be persons who do not believe that vaccination affords any protection against Death from Smallpox. Most of the 35 vaccinated patients who died in the City Hospital had been very imperfectly vaccinated, 26 of them having less than three scars.

The different age-incidence of Smallpox upon vaccinated and unvaccinated subjects is shown by the figures below :—

	Vaccinated.	Unvaccinated.	Doubtful.
Under 1 year	0	14	1
Between 1 and 5 years ...	6	21	0
" 5 and 15 " ...	101	34	3
" 15 and 25 " ...	358	18	11
" 25 and 45 " ...	316	16	7
" 45 and 65 " ...	58	1	3
At 65 years and upwards ...	8	1	2

No case of Smallpox occurred amongst the large number of vaccinated infants in the town, while 14 occurred among the small number who were unvaccinated. Only 6 vaccinated children between 1 and 5 years old were attacked, as compared with 21 unvaccinated, in spite of the fact that the vaccinated must be quite five times as numerous as the unvaccinated, and should therefore have contributed over 100 cases if their vaccination had not made them insusceptible.

The figures show that recent vaccination confers practical immunity from Smallpox, and this is borne out by the actual experience at the City Hospital. Over 100 persons have been engaged on the staff of the Smallpox Hospital, all of whom had recently been re-vaccinated. They have waited upon the patients and have come into close contact with them, have prepared their food, washed their clothes, and have breathed an atmosphere charged with exhalations; and they have thus been exposed to the fullest extent to the Smallpox virus. Yet not one of them has contracted Smallpox. It is inconceivable that a similar number of unprotected persons could have passed through the same experiences and have enjoyed the same immunity from the disease; indeed, we know from actual experience that the unprotected do not so escape.

After the first five years, the protective effect of vaccination appears to diminish, and this points to the necessity for re-vaccination, which should be performed at about the age of ten, and should be repeated in case of epidemic prevalence of Smallpox.

The following figures show the case mortality amongst vaccinated and unvaccinated at different ages : —

Smallpox and Vaccination (*continued*).

AGES.	VACCINATED.			UNVACCINATED.		
	Cases.	Deaths.	Case Mortality per cent.	Cases.	Deaths.	Case Mortality per cent.
Under 1 year	0	0	—	14	6	43
Between 1 and 5 years ...	6	0	—	21	12	57
„ 5 and 15 „ ...	101	0	0	34	2	6
„ 15 and 25 ...	358	6	2	18	4	22
„ 25 and 45 „ ...	316	22	7	16	7	44
„ 45 and 65 „ ...	58	8	14	1	0	—
At 65 years and upwards ...	8	2	—	1	1	—

It is evident that the protection against death afforded by vaccination lasts longer than the protection against attack, for of the vaccinated patients under 15 years of age not one died; in other words, no patient who had been vaccinated within fifteen years of the date of his attack succumbed to the disease. But amongst the 69 unvaccinated patients under 15 years old 20, or 29 per cent., died.

Mr. Blanche, one of the Vaccination Officers for Birmingham, recently obtained from the City Hospital information respecting the length of time spent in the Hospital by vaccinated and unvaccinated patients. As some of the cases admitted in December were still under treatment, his figures were made out for the first eleven months of the year. They are as follows:—

	Average Number of Days in Hospital.
All Vaccinated Cases	30
Cases with one Mark	34
„ two Marks	33½
„ three „	29¼
„ four „	28
„ five „	26½
Unvaccinated Cases	50

Thus the average duration of the illness in persons who had been vaccinated, was about three weeks less than in those who were unvaccinated.

Smallpox and Treatment in Hospital.

With only 18 exceptions, the cases of Smallpox in the City were removed to the City Hospital for treatment.

Smallpox and Treatment in Hospital (*continued*).

The advantage derived by patients from treatment in the Hospital, rather than at home, is very great. In the three years 1872-4, when the Smallpox Hospital belonging to the Birmingham Guardians was the only one in existence, and when the great majority of the patients were consequently treated at home, the case mortality was 16 per cent.; last year, when almost all the patients were treated in the City Hospital, it was only 8 per cent., or just half as much.

Smallpox. Precautions against spread.

After removal of patients to the hospital, their homes were purified by fumigation with sulphurous acid, the walls being subsequently stripped of paper and limewashed. All bedding and clothing, carpets, and other articles, exposed to infection, were sent to the Bacchus Road Station to be disinfected. Children in infected houses were kept from school, and in most cases it was necessary to temporarily stop the other inmates from going to work. Persons who were known to have been in danger of infection were urged to be vaccinated or re-vaccinated, and in October a handbill was issued calling attention to the prevalence of Smallpox, and urging all who were not protected by recent vaccination to avail themselves of the only sure preventive of an attack.

Smallpox. Causes of spread.

The rapid spread of Smallpox has been much favoured by several circumstances, among which must be reckoned (1) non-vaccination; (2) the loss of the protection which vaccination affords, owing to lapse of time; (3) the mildness and modification of the attacks in vaccinated persons, making it most difficult in some cases to decide the nature of the illness, and causing it to be mistaken for Chicken-pox and other trivial affections, and arousing no suspicion of its being Smallpox until severer forms of the disease subsequently appeared in the same family; (4) wilful concealment of cases; (5) unsuspected cases. A very considerable number of the latter have come to light, and are known to have disseminated the disease before attention was drawn to them.

Smallpox around City Hospital.

The occurrence of many cases in the district immediately surrounding the Hospital has been much commented upon and regarded as a conclusive proof of the aërial dissemination of the disease from the institution; but when it is remembered that the first cases of Smallpox occurred in tramps who came to the tramp ward of the Workhouse, which is situated in close proximity to the Hospital, and that they mixed freely and extensively with the population of that neighbourhood, begging in the locality, and sometimes sleeping in the outbuildings, it is not surprising that the first outbreak should have occurred there, or that the chief incidence of the cases should have been in that part of the town. On the other hand, it is to be noted that the large institutions, the Workhouse, the Asylum, and the Gaol, the first only a few yards, the second 500, and the third 550 yards distant from the Smallpox Hospital, have escaped with so few cases of the disease that it is reasonable to conclude that they were

the result of infection through the ordinary channels, and were not due to the Hospital. Only 33 cases occurred in the Workhouse during the year, two in the Asylum, and one in the Gaol.

Scarlet Fever.

The notifications of *Scarlet Fever* cases numbered 1,614, an increase of about two hundred on the previous year's record. During the earlier part of the year the disease was very rife at Harborne, and in the second quarter its prevalence there assumed the character of a serious epidemic, the cases reported corresponding to an annual rate of over 20 per 1,000 of the population of the district. Removal of the patients, if willing, to the City Hospital, disinfection of their homes and all infected articles, and the stopping of school attendance, were the steps taken to check the disease, and I am pleased to say that by the end of the year it had practically died out, the cases in the fourth quarter being at the rate of only 1 per 1,000.

Diphtheria.

The cases notified as *Diphtheria* numbered 322; in the previous year the number was 456. The cases corresponded to a rate of 0·7 per 1,000, the greatest prevalence of the disease being in St. George's Sub-District and in Saltley, where the rates were 1·4 and 1·0 respectively. The cases of *Membranous Croup* also showed a reduction, numbering 65 against 77 in the preceding year. This disease is an extremely fatal one, no less than 40 deaths being registered from it during the year.

Membranous Croup.

Typhus Fever.

Four cases were notified to me as *Typhus Fever*. They all occurred at a house in Long Acre, the first patient being a boy whose father, mother, and sister had all been certified previously by another medical man as suffering from Typhoid Fever. This fact, together with the circumstance that the surroundings of the case were not of the character usually associated with Typhus Fever, caused me to write to the medical attendant, who, however, adhered to his diagnosis, and subsequently reported three more cases in the same house. It is worthy of notice that no further spread of the disease took place, and that none of the cases terminated fatally.

Typhoid Fever.

The cases of *Typhoid Fever* numbered 489, a somewhat unusually high number, though not so very much in excess of the number notified in 1891. During a great part of the year the meteorological conditions were calculated to favour the spread of the disease, and its increased prevalence, not only in Birmingham, but in the country generally, is I think to be attributed to the great heat and drought which characterised the past summer. These undoubtedly led to rapid decomposition of organic matter wherever accumulated; to diminished flow of sewage in the public sewers and private drains, and consequent stagnation and evolution of offensive effluvia; and to the untrapping by evaporation of house drains. These conditions, if not sufficient in themselves to produce Typhoid Fever, would undoubtedly tend to its spread, both by affording better opportunities for the infection to become air-borne, and by lowering the general health of the community in such a way as to render the system more susceptible to an attack.

Simple Continued Fever. Puerperal Fever. Erysipelas.

The cases of *Simple Continued Fever* reported during the year numbered 25, and those of *Puerperal Fever* 54. *Erysipelas* was notified in 852 instances—an extraordinarily large number. Probably the same conditions which I have pointed out as being responsible for the increase in Typhoid Fever also caused this exceptional prevalence of Erysipelas.

City Hospital.

City Hospital.

Including a few patients not belonging to Birmingham, 1,339 cases of Scarlet Fever and 963 of Smallpox were admitted to the City Hospital during the registration year, which differs a little from the calendar year. The number of cases admitted in each year since 1874 is shown below :—

Year.	Smallpox.	Scarlet Fever.	Total Cases.
1874 ...	194	—	194
(2nd of November to the end of the year.)			
1875 ...	420	20	440
1876 ...	11	38	49
1877 ...	38	43	81
1878 ...	20	424	444
1879* ...	4	184	188
1880 ...	16	170	186
1881 ...	17	333	350
1882 ...	105	627	732
1883 ...	1090	638	1728
1884* ...	437	360	797
1885 ...	81	204	285
1886 ...	2	428	430
1887 ...	10	438	448
1888 ...	18	528	546
1889 ...	0	1801	1801
1890* ...	0	2525	2525
1891 ...	44	1225	1269
1892 ...	24	1131	1155
1893 ...	963	1339	2302

* 53 weeks.

During the fourth quarter of the year the cases of Smallpox requiring isolation became so numerous as to necessitate an increase of the Hospital accommodation. Accordingly two new temporary wards were erected at Western Road, and the use of a large house in Winson Green Road, capable of accommodating thirty patients, was obtained. As the number of cases continued to increase, permission was obtained from the Board of Guardians to make temporary use of some buildings in the stoneyard adjoining the Birmingham Workhouse, in which, if necessary, 140 cases could be treated.

New Smallpox Hospital.

The obvious necessity for more extensive and permanent accommodation for Smallpox patients, and the desirability of removing the Smallpox Hospital to a less populous district, caused a recommendation to be made to the City Council to erect a new building for the treatment of persons suffering from the disease. A large and very suitable site of nearly twenty-four acres has been obtained in Yardley Road, and the erection of a new Hospital is now being carried forward upon it.

Disinfecting Station.

Disinfecting Station.

The number of articles disinfected at the Bacchus Road Station was extremely large, owing to the epidemic of Small-pox. The total number was 50,138, and included 3,276 beds, 2,932 mattresses, 2,780 counterpanes, 4,037 blankets, 3,428 sheets, 2,295 bolsters, 4,973 pillows, 2,417 carpets, 18,394 garments, and 5,606 sundries.

Mortuaries.

Mortuaries

From the returns supplied to me by Mr. Farndale, I learn that 119 bodies were placed in the Mortuaries during 1893, 22 being taken to Moor Street, 9 to Ladywood Road, 37 to Kenyon Street, 32 to Duke Street, and 19 to Moseley Street.

Water Supply.

Water Supply

The usual monthly analysis was made of the Corporation Water Supply. The results given in Table X. show that the character of the water was pretty well maintained, though it had deteriorated to a very slight extent as shown by the trifling increase of Organic Nitrogen, Chlorine, and Hardness, the latter quality having increased in five years from 15°·3 to 20°·7.

Well Water.

I also examined and reported to your Committee upon twelve samples of water, eleven of which were drawn from shallow wells, and one from a spring. With one exception, they were seriously polluted, and steps were taken for substituting Corporation water for the existing supply. During the year seventeen wells were closed, nine of which had been examined in 1892. Tap water was laid on to one other house, where the pump was not removed, as it was useful for farm purposes and also to the houses which obtained their water supply from the spring already mentioned.

On behalf of the Water Committee I made 148 analyses of the streams and deep wells from which the Corporation Water is derived, and reported upon them month by month.

Miscellaneous Analyses.

Miscellaneous Analyses.

During the year I analysed the following articles sent to me from various Corporation Departments :—

Water or Sewage	... ...	37 samples.
Tea	... ...	12 ,,
Poudrette	... ...	7 ,,
Butter	... ...	7 ,,
Wines and Spirits	... ...	7 ,,
Vinegar	... ...	4 ,,
Margarine ..	... ...	2 ,,
Milk	... ...	2 ,,
Paint	... ...	2 ,,
Sulphuric Acid	... ...	2 ,,
Other Articles	... ...	4 ,,
Total	...	86

Reports upon the results were made to the different Committees concerned.

Public Baths.

Public Baths.

The total number of bathers at the Corporation Baths was 430,275, a much larger number than usual, as might be expected in a year which was marked by a prolonged season of warm weather. The numbers of men and women bathers in the last ten years have been as follows:—

	Men.	Women.	Total.
1884	423,490	22,055	445,545
1885	328,825	19,519	348,344
1886	320,303	18,712	339,015
1887	337,802	18,830	356,632
1888	284,173	16,669	300,842
1889	328,577	18,676	347,253
1890	327,936	18,816	346,752
1891	321,530	19,681	341,211
1892	311,527	20,367	331,894
1893	406,433	23,842	430,275

Sewerage Works.

Sewerage Works.

I am informed by the City Surveyor that at the end of March, 1893, the sewers under the charge of the City Council measured 260 miles, and that the total length of

Streets and Roads

Streets and Roads.

on March 31st, 1893, was 257½ miles; comprising 250½ miles of declared highways, and 7 miles of undeclared highways, private roads, and passages.

Nightsoil and Refuse Disposal.

Nightsoil and Refuse disposal.

During the year the contents of 1,850,289 pans were collected, and 72,867 loads of refuse were removed from the ashtubs in use in connection with pan privies. The loads of nightsoil numbered 50,051, and the ashes removed from premises supplied with water-closets amounted to 29,749 loads.

Sanitary Work.

Sanitary Work.

The amount of sanitary work constantly required in a town like Birmingham is extremely large, and the return supplied to me by Mr. Parker, Inspector of Nuisances, and given in Table V., shows that last year 17,181 notices were issued for the abatement of nuisances. Legal proceedings were taken in only five instances, and in each case a conviction was obtained.

With a view to improving their healthiness, 719 houses were cleansed, 790 were repaired, 2,188 were disinfected after the occurrence of Scarlet Fever or Smallpox, 130 were provided with better ventilation, and 30, which were unfit for habitation, were either thoroughly renovated or closed.

Sanitary Work (*continued*).

Owing largely to neglect on the part of the people who use them, drains are constantly becoming blocked and their traps unset. During the year 4,230 drains were opened and cleansed, and 2,026 were properly sealed so as to prevent the escape of sewer air in close proximity to houses. As many as 140 drain openings in cellars were removed, or if this was impossible were cut off from any direct connection with the sewer, a very necessary precaution inasmuch as the direct introduction of foul air from the sewer into houses cannot fail to be very dangerous to health. Similar precautions were taken in the case of sink drains, 271 of which were disconnected from the sewer. New drains were supplied to 208 premises.

The ashpit privies converted to water-closets numbered 1,100, and the number of pan privies abolished was 63; 1,249 ashpits and privies were repaired, and 292 were cleansed. In many instances urinals were found to be in bad condition, and 529 were cleansed, repaired, or reconstructed.

I remain,

Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D.,

Medical Officer of Health.

III. APPENDIX.

(TABLES, MAP, AND CHART.)

TABLE I.

Population, Births, and Deaths in the Eight Years 1886–1893.

Year.	Estimated Population.	Births.	Total Deaths.	Deaths.			
				Of Infants under One Year old.	Of Children under Five Years old.	From Seven chief Zymotic Diseases.	In Public Institutions.
1886 ...	458,110	15,622	9,182	2,712	4,244	1,462	1,239
1887 ...	462,251	15,315	9,225	2,670	4,137	1,424	1,259
1888 ...	466,430	15,076	8,465	2,293	3,652	924	1,195
1889 ...	470,646	15,357	9,035	2,579	4,096	1,270	1,320
1890 ...	474,900	15,487*	10,329*	2,798*	4,504*	1,391*	1,600*
1891 ...	479,193	16,166	10,077	2,673	4,015	976	1,650
1892 ...	483,526	16,026	9,642	2,664	4,234	1,244	1,411
1893 ...	487,897	15,881	10,445	3,146	4,452	1,480	1,631
Average of 7 years prior to 1893.	470,722	15,578	9,422	2,627	4,126	1,242	1,382

* 53 weeks.

1.—Population at Census 1891, 478,116.
2.—Number of Inhabited Houses at Census 1891, 95,516.
3.—Average number of Persons in each House at Census 1891, 5·0.
4.—Area of the City, in acres, 12,705.

TABLE II.

Birth-rates and Death-rates in the Eight Years 1886–1893.

Year.	Birth-rate per 1,000 persons living.	Death-rate per 1,000 persons living.	Death-rate in Infants under One Year per 1,000 Births.	Death-rate in Children under Five Years per 1,000 Children living.	Death-rate from Seven chief Zymotic Diseases.	Deaths in Public Institutions; Percentage on total deaths.
1886	34·2	20·1	174	70	3·2	13·5
1887	33·2	20·0	174	69	3·1	13·6
1888	32·4	18·2	152	61	2·0	14·1
1889	32·7	19·2	168	69	2·7	14·6
1890	32·1	21·4	181	75	2·9	15·5
1891	33·8	21·1	165	69	2·0	16·4
1892	33·2	20·0	166	73	2·6	14·6
1893	32·6	21·5	198	77	3·0	15·6
Average of 7 Years prior to 1893.	33·1	20·0	169	69	2·6	14·6

TABLE III.

SHOWING THE NUMBER OF DEATHS IN THE SEVEN YEARS, 1886 TO 1892, FROM THE SEVEN PRINCIPAL ZYMOTIC DISEASES, AND THE NUMBER IN 1893.

	1886.	1887.	1888.	1889.	1890.*	1891.	1892.	Annual Average of 7 years, 1886-1892.	Proportion of deaths to 1,000 deaths in 6 years, 1886-1891.	1893.	Proportion of deaths to 1,000 deaths in 1892.
Smallpox	0	2	0	0	0	7	0	1	0·1	70	6·7
Measles	402	251	202	214	354	107	340	267	28·3	48	4·6
Scarlet Fever	42	37	40	162	218	95	68	95	10·1	68	6·5
Diphtheria	80	67	48	59	66	43	67	61	6·5	43	4·1
Whooping Cough	99	403	248	297	224	303	285	266	28·2	321	30·7
Fever — Typhus	0	0	0	0	0	0	0	0	0·0	0	0·0
Fever — Typhoid or Enteric ...	63	77	64	45	64	80	39	62	6·6	94	9·0
Fever — Continued	6	8	5	4	2	1	2	4	0·4	8	0·8
Diarrhœa	770	579	317	489	463	340	443	486	51·6	828	79·3
TOTAL	1,462	1,424	924	1,270	1,391*	976	1,244	1,242	131·8	1,480	141·7

* 53 weeks.

TABLE IV.

Deaths from certain causes in the years 1891–1893.

DEATHS FROM	1891	1892	1893
Cancer	324	293	313
Phthisis	815	716	775
Other Tubercular Diseases	266	265	270
Bronchitis, Pneumonia, and Pleurisy	2,469	2,100	2,188
Diseases of Nervous System ...	902	864	915
Diseases of Heart	673	684	584
Diseases of Digestive System ...	570	597	712
Diseases of Urinary System ...	222	225	256
Accident or Negligence	356	292	296
Debility, Atrophy, Inanition, and Marasmus	593	592	750
Premature Birth	295	345	359

TABLE V.

HEALTH DEPARTMENT.

SUMMARY OF NUISANCES ABATED AND OTHER WORK DONE DURING THE YEAR 1893.

(RETURN MADE BY MR. PARKER, *Inspector of Nuisances.*)

No of Drains opened and cleared from obstruction	4,230
,, Drains efficiently trapped	2,026
,, Drains in cellars disconnected from the sewer or removed...	140
,, Drains removed from interiors of Slaughter Houses ...	29
,, Sink Drains disconnected from the sewer	271
,, Overflow Pipes from Water Cisterns disconnected	38
,, Premises supplied with drains	208
,, Houses disinfected, cleansed, and purified, after infectious disease	2,188
,, Houses cleansed and whitewashed	719
,, Houses repaired	790
,, Houses supplied with wholesome water	3
,, Houses rendered fit for human habitation or closed ...	30
,, Houses provided with efficient ventilation	130
,, Cases of overcrowding of houses remedied	39
,, Accumulations of water in cellars removed	280
,, Spouts repaired	283
,, Soilpipes removed from the interiors of dwelling houses ...	29
,, Privies cleansed	292
,, Ashpit Privies converted to water closets	1,100
,, Pan Privies converted to water closets	63
,, Ashpits and Privies repaired	1,249
,, Urinals cleansed, repaired, or re-constructed	529
,, Back Yards paved or repaired...	334
,, Premises from which fowls have been removed	195
,, Nuisances from swine and swine styes abated	120
,, Accumulations of wash, manure, etc., removed	622
,, Premises reported to the City Surveyor's Department as dangerous, and rendered safe	816
,, Defective Water Fittings reported to the Water Department, and repaired	777
Total	17,530

Number of Notices issued for the abatement of Nuisances ...	17,181	
Number of Cases Summoned	5	
,, Withdrawn	0	
,, Convicted	5	
Amount of Costs	£1 2 0	
,, Penalties	£0 15 0	

SMOKE NUISANCES.

No. of Observations made by the Inspectors	5,031
,, Manufacturers Reported for the emission of dense smoke ...	196
,, ,, Cautioned	129
,, ,, Summoned	67
Amount of Penalties	£45 15 0
,, Costs	£26 16 0

WORKSHOPS.

No. of Visits to Workshops	4,744
,, Sanitary Defects and Contraventions of Regulations Remedied	1,004

DAIRIES, COW SHEDS, AND MILKSHOPS.

No. of Visits to Cow Sheds	2,480
,, Visits to Dairies	107
,, Visits to Milk Shops and Milk Stores	3,788
,, Sanitary Defects and Contraventions of Regulations Remedied	311

BAKEHOUSES.

No. of Visits to Bakehouses	1,185
,, Sanitary Defects and Contraventions of Regulations Remedied	156

COMMON LODGING HOUSES.

No. of Registered Common Lodging Houses	79
,, Lodgers allowed	1,786
,, Houses Registered under the Public Health Act, 1875 ...	101
,, Lodgers allowed	555
,, Visits by day	12,352
,, Visits by night	2,263
,, Lodgers found occupying the Houses	33,523
,, Persons Summoned	2

THE CANAL BOATS ACTS, 1877 AND 1884.

No. of Canal Boats inspected	801
,, Canal Boats registered	50
,, Contraventions of Regulations Remedied	72
,, Persons Summoned	2

SLAUGHTER HOUSES.

(Return made by MR. EDWARDS, *Superintendent of the Markets.)*

No. of Visits	8,911
Voluntary Surrenders of Meat	1,332
Seizures of Bad Meat...	15
Weight Destroyed	184 tons
Voluntary Surrenders of Fish, &c.	570
Seizures of Fish, &c.	14

CONTAGIOUS DISEASES (ANIMALS) ACT.

(Return made by MR. EDWARDS, *Superintendent of the Markets.)*

No. of Visits to Railway Stations	941
No. of Visits to Cow Houses	78

TABLE VI.

METEOROLOGICAL CONDITION OF THE AIR AND AMOUNT OF RAINFALL FOR THE YEAR ENDING DECEMBER 31ST, 1893.

Observed at the Birmingham and Midland Institute Observatory, Edgbaston, by Mr. ALFRED CRESSWELL.

1893. Months.	Pressure of Air. Barometer	TEMPERATURE. Of the Air.			Degree of Humidity. Complete Saturation = 100	Hours of Sunshine.	RAINFALL.	
	Mean Monthly Reading (reduced to 32 degrees Fahrenheit, & sea level).	Highest in Shade.	Lowest in Shade.	Mean Temperature in the Month.			Depth of Rain deposited in inches and parts.	Number of Days on which Rain fell.
	In Parts.	Dg. Prts.	Dg. Prts.	Dg. Prts.			In Parts.	
January ..	30·030	50·6	15·0	35·1	...	30·3	1·75	16
February ...	29·627	56·6	28·0	39·2	88	56·4	2·56	22
March	30·095	64·8	25·6	45·3	77	186·3	0·50	7
April	30·179	79·0	32·3	49·6	73	212·0	0·33	4
May	30·060	74·8	39·2	54·5	73	179·9	2·08	9
June	30·010	82·8	45·4	59·0	72	159·2	1·08	11
July	29·897	83·7	48·1	61·0	70	130·6	1·64	16
August ...	30·014	85·6	44·0	63·2	74	192·9	2·25	16
September ...	29·857	73·8	39·0	54·8	77	128·7	1·72	15
October ...	29·873	64·7	29·0	48·8	83	97·5	2·45	17
November ...	29·984	57·7	25·9	39·9	87	29·8	1·38	12
December ...	29·925	51·3	22·0	39·5	88	45.4	30·2	17

PRICES OF COAL, FLOUR, POTATOES, AND BUTCHERS' MEAT, AND THE NUMBER OF PAUPERS RELIEVED IN THE PARISH OF BIRMINGHAM DURING EACH OF THE FIVE YEARS ENDED MICHAELMAS, 1889-1893.

Years.	Average Prices of Food and Fuel.				PAUPERISM. Weekly Average of Paupers relieved during the Year.	
	Coal per ton.	Flour - per 224lbs.	Potatoes per ton.	Butchers' Meat per lb.	In-door.	Out-door.
1893	9/3	16/9	60/–	Beef -/4¼ Mut'n -/6¾	2,652	725
1892	9/2	22/3	75/–	Beef -/4½ Mut'n -/7	2,627	834
1891	9/7	22/9	80/–	Beef -/4½ Mut'n -/7¼	2,688	1,058
1890	9/8	20/–	60/–	Beef -/4¾ Mut'n -/8	2,680	1,138
1889	9/3	20/–	70/–	Beef -/5 Mut'n -/8	2,876	1,591

TABLE VII.

TEMPERATURE AND RAINFALL IN EACH MONTH AND YEAR FROM 1887 TO 1893.

MONTH.	TEMPERATURE.								RAINFALL.							
	1887	1888	1889	1890	1891	1892	Average for six years 1887-1892.	1893	1887	1888	1889	1890	1891	1892	Average for six years 1887-1892.	1893
	°	°	°	°	°	°	°	°								
JANUARY	35·2	37·2	36·8	41·1	34·4	35·2	36·6	35·1	1·19	0·50	0·59	2·80	1·92	1·98	1·49	1·75
FEBRUARY	38·3	34·8	36·5	36·8	40·2	37·3	37·3	39·2	0·62	0·11	1·66	0·52	0·69	1·41	0·83	2·56
MARCH	37·6	36·9	39·5	42·6	38·8	35·6	38·5	45·3	1·38	2·41	2·64	1·47	1·22	0·85	1·66	0·50
APRIL	41·6	42·1	43·7	44·0	42·4	44·9	43·1	49·6	1·47	1·89	2·91	0·69	2·13	1·23	1·72	0·33
MAY	47·6	51·1	54·3	52·7	48·4	53·2	51·2	54·5	1·88	0·83	4·00	2·12	3·38	1·85	2·34	2·08
JUNE	59·9	5·52	59·0	57·1	57·4	56·5	57·5	59·0	2·17	2·16	0·49	1·62	3·27	2·74	2·08	1·08
JULY	63·9	55·9	59·0	57·6	58·0	56·8	58·5	61·0	0·93	5·11	1·53	2·39	2·08	2·52	2·43	1·64
AUGUST	60·2	57·4	58·6	57·5	56·9	59·2	58·3	63·2	2·38	3·27	2·92	3·74	3·56	3·73	3·27	2·25
SEPTEMBER	52·5	53·7	55·1	58·6	57·2	54·0	55·2	54·8	2·31	1·20	2·17	1·26	1·63	2·97	1·92	1·72
OCTOBER	44·4	46·6	46·8	49·2	48·4	44·5	46·6	48·8	2·11	0·32	3·19	1·56	5·36	2·84	2·56	2·45
NOVEMBER	40·1	45·5	44·0	42·5	41·3	43·2	42·8	39·9	1·78	4·41	1·04	3·22	2·74	1·79	2·50	1·38
DECEMBER	37·3	40·3	37·9	29·8	39·2	34·7	36·5	39·5	1·58	2·41	1·80	0·71	3·16	1·69	1·89	3·02
YEAR	46·5	46·4	47·6	47·5	46·9	46·3	46·8	49·2	19·80	24·62	24·94	22·10	31·14	25·60	24·69	20·76

TABLE VIII.

Number of Cases Reported under the Infectious Disease (Notification) Act, 1889, during each Week of the Year 1893.

Week. Number.	Week. Date of ending.	Smallpox.	Scarlet Fever.	Diphtheria.	Membranous Croup.	Typhus Fever	Typhoid Fever.	Simple Continued Fever.	Relapsing Fever.	Puerperal Fever.	Cholera.	Erysipelas.	Total.
	1893.												
1	January 7th	1	19	8	2	...	2	...	...	2	...	15	49
2	„ 14th	...	15	2	...	...	5	...	...	1	...	11	34
3	„ 21st	2	22	3	...	...	8	...	...	1	...	15	51
4	„ 28th	1	22	4	2	...	8	...	..	...	...	12	49
5	February 4th	1	26	5	...	...	10	...	...	...	...	11	53
6	„ 11th	1	23	7	...	...	6	...	...	1	...	12	50
7	„ 18th	...	15	2	1	...	7	...	..	1	...	7	33
8	„ 25th	4	14	3	1	...	4	.	...	...	...	10	36
9	March 4th	3	20	1	1	...	8	...	...	...	...	8	41
10	„ 11th	7	16	6	3	...	7	...	...	3	...	8	50
11	„ 18th	2	34	5	...	...	11	1	...	1	...	8	62
12	„ 25th	7	28	5	1	...	10	...	...	...	...	10	61
13	April 1st	6	23	2	4	...	13	1	..	...	...	16	65
14	„ 8th	11	27	9	...	...	7	1	...	1	...	14	70
15	„ 15th	23	25	6	2	...	11	...	...	...	...	12	79
16	„ 22nd	30	30	4	4	...	8	...	...	2	...	11	89
17	„ 29th	23	33	8	...	...	5	2	...	...	...	10	81
18	May 6th	21	41	5	2	...	6	...	...	1	...	14	90
19	„ 13th	17	32	7	1	...	6	1	...	2	...	11	77
20	„ 20th	30	36	2	...	...	4	2	...	1	...	15	90
21	„ 27th	26	36	4	2	...	3	1	...	1	...	17	90
22	June 3rd	15	38	4	1	...	2	1	...	...	...	15	76
23	„ 10th	16	39	6	1	...	4	1	...	1	...	17	85
24	„ 17th	18	36	9	..	...	10	2	...	...	...	18	93
25	„ 24th	9	33	5	...	...	7	1	...	1	...	16	72
26	July 1st	6	45	7	3	...	11	1	...	...	...	18	91
27	„ 8th	10	48	9	...	...	2	...	...	1	...	13	83
28	„ 15th	12	39	4	1	...	16	...	...	...	...	14	86
29	„ 22nd	7	36	13	2	...	11	1	...	1	...	14	85
30	„ 29th	8	28	11	1	...	6	1	...	...	..	15	70
31	August 5th	5	38	11	2	...	7	...	...	2	...	19	84
32	„ 12th	4	31	5	1	...	14	...	...	2	...	16	73
33	„ 19th	4	37	7	...	...	10	2	...	2	...	9	71
34	„ 26th	4	27	7	2	...	11	1	...	2	...	24	78
35	September 2nd	4	22	5	1	...	11	...	...	1	...	13	57
36	„ 9th	3	38	9	...	...	15	...	...	...	...	8	73
37	„ 16th	19	31	8	...	...	18	1	...	2	...	19	98
38	„ 23rd	7	22	11	1	...	26	...	...	...	...	18	85
39	„ 30th	29	39	8	3	...	9	...	...	1	...	34	123
40	October 7th	17	31	9	2	...	24	2	...	2	...	17	104
41	„ 14th	18	51	11	...	...	13	1	...	...	...	29	123
42	„ 21st	30	52	6	1	...	11	...	...	2	...	32	134
43	„ 28th	35	36	12	2	1	13	...	...	2	...	28	129
44	November 4th	17	35	6	...	3	14	...	...	2	...	20	97
45	„ 11th	69	38	10	...	...	7	...	...	1	...	23	148
46	„ 18th	74	29	4	2	...	9	...	...	4	...	28	150
47	„ 25th	39	40	3	2	...	11	...	...	3	...	19	117
48	December 2nd	69	23	6	4	...	7	1	...	...	..	25	135
49	„ 9th	66	38	1	1	...	6	...	...	2	...	28	142
50	„ 16th	48	24	9	4	...	12	...	...	1	...	15	113
51	„ 23rd	63	27	5	2	...	14	...	...	1	...	19	131
52	„ 30th	38	26	3	...	...	9	...	...	...	...	22	98
	Totals ...	979	1614	322	65	4	489	25	...	54	...	852	4404

TABLE IX.

Cases of Infectious Disease Notified during the Year ending December 30th, 1893.

Classified according to ages and localities.

DISEASES.	AGES.							REGISTRATION SUB-DISTRICTS AND INSTITUTIONS.																CITY.
	0 to 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.	45 to 65.	65 and up.	Ladywood.	Children's Hospital.	St. Martin.	Queen's Hospital.	St. George.	General Hospital.	All Saints.	Workhouse.	Lunatic Asylum.	City Hospital.	Deritend.	Duddeston.	Edgbaston.	Balsall Heath.	Saltley and Little Bromwich.	Harborne.	St. Joseph's Home.	
SMALLPOX	15	27	138	387	339	62	11	220	..	78	.	125	..	332	33	2	13	68	60	11	33	4	.	..	979
SCARLET FEVER ..	16	402	971	169	52	4	..	185	3	166	3	217	5	232	15	3	6	332	139	71	149	13	75	..	1614
DIPHTHERIA	3	43	80	100	78	17	1	49	1	47	..	84	..	26	1	..	.	27	33	20	22	11	1	..	322
MEMBRANOUS CROUP.	5	51	8	1	..	..	..	8	..	10	1	15	..	5	..	..	..	11	8	2	3	2	..	..	65
TYPHUS FEVER.. ..	..	..	1	1	2	..	..	..	..	..	..	..	..	..	..	..	.	..	4	..	..	.	..	..	4
TYPHOID FEVER ..	..	34	159	137	130	28	1	58	1	92	2	41	2	46	2	..	..	98	75	15	35	19	3	..	489
SIMPLE CONTINUED FEVER	..	9	11	3	..	2	..	1	.	21	..	..	..	2	..	..	..	1	..	..	..	..	..	..	25
RELAPSING FEVER ..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
PUERPERAL FEVER ..	..	..	..	14	40	..	..	5	..	7	..	2	..	7	..	.	..	16	12	1	2	1	1	..	54
CHOLERA..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
ERYSIPELAS	21	31	76	139	270	246	69	93	..	178	11	114	1	57	18	3	..	161	98	24	59	18	17	..	852
TOTALS ..	60	597	1444	951	911	359	82	619	5	599	17	598	8	707	69	8	19	714	429	144	303	68	97	..	4404

TABLE X.—WATER: RESULTS OF ANALYSES

Date of Receipt of Samples.	DESCRIPTION.	Temp. C.	Total Solid Impurity	Organic Carbon.	Organic Nitrogen.
1893.	**CORPORATION SUPPLY.**				
Jan. 5th	4 Court, Moseley Street	2·8	30·20	·269	·038
Feb. 8th	14 Court, Navigation Street	6·7	31·60	·246	·040
Mar. 7th	34, Wiggin Street	8·3	31·80	·160	·033
April 5th	Back 57 and 58, Lower Fazeley St.	10·0	27·20	·181	·035
May 3rd	24 Court, Cheapside	12·2	28·20	·145	·030
June 5th	3 Court, Parker Street	15·0	29·70	·142	·027
July 3rd	67, Cromwell Street	18·3	32·90	·437	·065
Aug. 1st	35 and 36, Clement Street	14·4	27·60	·111	·046
Sept. 22nd	11 and 13, Winson Green Road	12·8	26·60	·117	·034
Oct. 10th	51 Court, Farm Street	11·7	28·90	·142	·031
Nov. 7th	9 Court, Princip Street	8·3	34·60	·166	·027
Dec. 6th	Matlock Place, High St., Harborne	7·2	32·50	·120	·033
	Average Results ... 1893...	10·6	30·10	·186	·037
	,, ,, ... 1892...	10·1	28·15	·185	·028
	,, ,, ... 1891...	10·2	29·26	·195	·028
	,, ,, ... 1890...	11·4	28·00	·164	·024
	,, ,, ... 1889...	11·1	29·39	·188	·034
	WELL WATER.				
Jan. 4th	Mr. Thorneycroft's Farm, Hagley Road	...	84·0	...	...
,, 23rd	1 and 3, Park Road, Saltley	...	109·0	...	...
,, 23rd	2, Heath Place, Washwood Heath Road	...	159·0	...	...
,, 23rd	Westdonald Place, Washwood Heath Road	...	123·0	...	...
,, 23rd	Back of "Cross Guns" Inn, Washwood Heath Road	...	158·0	...	...
May 4th	Britannia Terrace, Landor Street	...	180·0	...	...
,, 4th	Ashdown Villas, Cotterill's Lane	...	120·0	...	...
,, 4th	Heath House, Highfield Road, Saltley	...	134·0	...	...
July 7th	159, Pershore Road	...	71·0	...	...
Oct. 5th	58, Beaufort Road	...	45·5	...	...
,, 5th	Moorfield, Beech Lane, Harborne	...	16·5	...	...
Nov. 24th	26, 28, and 30, Tennal Road, Harborne	...	33·0	...	...

EXPRESSED IN PARTS PER 100,000.

Ammonia	Nitrogen as Nitrates and Nitrites.	Total Combined Nitrogen.	Previous Sewage or Animal Contamination. (Estimated.)	Chlorine.	Hardness.			REMARKS
					Temporary.	Permanent.	Total.	
·001	·242	·281	2,110	1·6	8°6	13°6	22°2	Clear; yellowish green
none	·374	·414	3,420	2·1	9·1	13·3	22·4	Slightly turbid; yellowish green
·001	·352	·386	3,210	2·2	9·4	13·6	23·0	Very slightly turbid; green
none	·242	·277	2,100	1·7	7·7	11·6	19·3	Clear; pale green
·001	·330	·360	2,990	2·2	5·9	11·8	17·7	Clear; green
none	·242	·269	2,100	2·0	6·6	11·9	18·5	Very slightly turbid; pale green
·001	·044	·110	130	2·0	5·7	16·6	22·3	Turbid; green; contained vegetable matter and a few living organisms
none	·286	·332	2,540	2·0	6·6	12·7	19·3	Very slightly turbid; pale green
·001	·242	·277	2,110	2·3	5·4	12·3	17·7	Very slightly turbid; green
·001	·297	·327	2,660	2·0	7·8	11·8	19·6	Very slightly turbid; green
none	·275	·302	2,430	2·5	8·2	15·0	23·2	Very slightly turbid; pale green
none	·275	·308	2,430	2·2	8·7	14·8	23·5	Very slightly turbid; green
·001	·267	·304	2,350	2·1	7·5	13·2	20 7	
·001	·263	·291	2,320	1·9	8·0	12·2	20·2	
·001	·214	·243	1,820	2·0	6·2	14·4	20·6	
·001	·234	·259	2,030	1·8	6·6	9·8	16·4	
·001	·219	·253	1,880	1·7	5·7	9·6	15·3	
·080	5·22	...	52,540	9·4	...	...	...	Slightly turbid
·110	1·65	...	17,100	5·0	...	...	...	Very slightly turbid; contained a considerable quantity of nitrite
·001	10·23	...	101990	18·4	...	...	...	Very slightly turbid
·003	7·48	...	74,510	9·8	...	...	...	Very slightly turbid
·009	8·69	...	36,650	14·4	...	...	...	Very slightly turbid; contained a trace of nitrite
·280	1·65	...	18,500	13·2	...	...	...	Trace of nitrite; clear; floating particles
·001	4·95	...	49,190	9·1	...	...	...	Very slightly turbid; floating particles
·002	6·87	...	68,450	11·3	...	...	...	Very slightly turbid; floating particles
·001	1·10	...	10,690	4·2	...	...	...	Clear
·002	2·97	...	29,400	2·8	...	...	...	Turbid; brown; containing living animalculæ and vegetable fibres, etc.
·001	·11	...	790	1·2	...	...	...	Very slightly turbid; containing fine floating particles
·100	trace	...	none	1·1	...	...	...	Very turbid; brown; containing living and dead animal and vegetable matter

TABLE XI.

RETURN FOR THE PERIOD 1ST JULY, 1892, TO 30TH JUNE, 1893, RESPECTING THE VACCINATION OF CHILDREN WHOSE BIRTHS WERE REGISTERED IN THE CITY DURING THE SAID PERIOD.

	Number of Births returned in the "Birth List Sheets" as Registered.	Number of these Births duly entered in Columns 10, 11, and 13 of the "Vaccination Register" (Birth List Sheets), viz.:				Number of these Births which remained unentered in the "Vaccination Register" on account (as shown by Report Book) of			Number of these Births remaining neither duly entered in the "Vaccination Register" (cols. 3, 4, 5, and 6 of this Return) nor temporarily accounted for in the "Report Book" (cols. 8, 9, and 10 of this Return).
		Col. 10.	Col. 11.		Col. 13.				
		"Successfully Vaccinated."	"Insusceptible of Vaccination."	"Had Smallpox."	"Dead, Unvaccinated."	Postponement by Medical Certificate.	Removal to Districts the Vaccination Officer of which has been duly apprised.	Removal to places unknown or which cannot be reached; and cases not having been found.	
1	2	3	4	5	6	8	9	10	11
Birmingham Parish ...	8,213	6,442	25	3	1,074	83	49	482	55
Aston Union (within the City)	6,311	4,487	25	—	813	154	31	622	179
King's Norton Union (within the City) ...	1,657	1,216	14	—	164	54	20	43	146
Total	16,181	12,145	64	3	2,051	291	100	1,147	380

Table of the Number of Deaths occurring in each Street in the City of Birmingham during the Year 1893.

STREETS.	Zymotic Diseases.	Other Diseases.
A		
A B Row		1
Abberley Street		
Abbey Street, All Saints'	1	3
Abbey Street, Harborne		
Aberdeen Street	2	21
Ada Street	1	2
Adams Street	10	24
Adderley Road		16
Adderley Street	4	8
Addison Road	5	
Adelaide Street	2	12
Albany Road		1
Albert Road		
Albert Street		
Albion Street		1
Alcester Street	5	11
Alder Drive		
Alder Road		1
Alexandra Road		3
Alexandra Street		7
Alfred St., Balsall Heath		4
Alfred Street, St. Paul's		
Algernon Road		4
Allcock Street	3	11
Allen's Road	4	3
Allesley Street	3	14
Allison Street	3	10
Allport Street		
All Saints' Road	1	2
All Saints' Street	1	2
Alma Crescent	1	4
Alma Street		
Alston Street		13
Alum Rock Road	3	17
Ampton Road		2
Anderton Road		6
Anderton Street	2	12
Andover Street	1	
Angelina Street	1	20
Anthony Road		
Arden Road	2	7
Argyle Street	2	18
Armoury Road		
Arsenal Street		5
Arthur Road, Edgbaston		
Arthur Road, Saltley		4
Arthur Street	9	45
Artillery Street		5
Ashford Street		4
Ashley Street		27
Ashted Row	2	15
Aston Road	6	33
Aston Street		6
Aston Brook Street	1	8
Aston Church Road		1
Asylum Road	3	7
Athole Street		1
Atlas Road		1
Auckland Road	1	3
Augusta Street		
Augustus Road		4
Austin Street	1	3
Avenue Road		
B		
Bacchus Road	1	10
Bagot Street	2	14
Bailey Street		1
Baker Street	2	6
Balsall Heath Road	3	32
Banbury Street		3
Barford Road	1	13
Barford Street	14	28
Barker Street	1	7
Barlow's Road		
Barn Street	2	17
Barnsley Road		
Barr Street	6	19
Barrack Street		3
Bartholomew Row		2
Bartholomew Street	1	15
Barwell Road	1	3
Barwick Street		
Baskerville Passage		
Baskerville Place		
Bath Passage		3
Bath Row	1	10
Bath Street		3
Beach Street	1	9
Beak Street		4
Beaufort Road		9
Bedford Road		2
Beech Lanes		2
Beechfield Road	1	7
Belcher Lane		6
Belgrave Road		10
Belgrave Street	4	21
Bell Street		
Bell Barn Road	5	54
Bellefield Road	1	5
Bellis Street		5
Belmont Passage	2	3
Belmont Row		6
Benacre Street	3	16
Bennett's Hill		1
Berkley Street		1
Berners Street	1	1
Bertram Road		2
Betholom Row		
Birchall Street	2	7
Birchwood Road		
Bishop Street	3	14
Bishop Street South		
Bishopsgate Street	7	14
Bissell Street	2	19
Black Pit Lane		
Blake Lane		1
Blakeland Street		1
Blews Street	2	13
Blews Street West		7
Bloomsbury Street	4	23
Blucher Street	3	7
Blythe Street	1	21
Bolton Road	7	38
Bolton Street		2
Bond Street		
Bordesley Green	3	8
Bordesley Green Road	3	6
Bordesley Park Road	3	28
Bordesley Street	3	16
Bow Street	2	11
Bowyer Street		2
Bowyer Road		
Bracebridge Street	2	15
Bradford Street	4	28
Braithwaite Road		4
Branston Street	1	1
Brass Street	1	2
Brasshouse Passage	1	1
Bread Street	1	7
Brearley Street	7	42
Brewery Street	1	4
Brickiln Street		
Bridge Road	1	2
Bridge Street		
Bridge Street West	6	32
Brighton Road	3	8
Bristol Road	1	10
Bristol Street		17
Broad Street	1	22
Bromford Lane		
Bromsgrove Street	2	19
Brook Road		
Brook Street		1
Brookfield Road	1	5
Broom Street		4
Brueton Street		
Brunswick Road	1	11
Buck Street		4
Buckingham Street		11
Bull Ring		1
Bull Street, Harborne		2
Bull Street, Market Hall		3
Bullock Street	2	5
Burbury Street	3	12
Burlington Passage		
Burney Lane		
Butler Street		1
Butler Street South	2	1
Butlin Street		
Byron Road		
C		
Calthorpe Road		6
Cambridge Crescent		3
Cambridge Street	2	6
Camden Drive	1	1
Camden Grove		
Camden Street	6	37
Camp Hill	1	5
Camp Street		4
Canal Street	3	5
Cannon Street		
Cannon Hill Road		
Cape Lane		
Cape Street		1
Cardigan Street	2	8
Carlisle Street		5
Carlton Road	1	6
Carlyle Road		3
Carnarvon Road		
Caroline Street		2
Carpenter Road		1
Carrington Road	1	5
Carr's Lane		
Cartland Road		
Carver Street	2	12
Castle Street		
Cathcart Street	2	8
Cato Street	3	16
Cato Street North		5
Cattell Road	6	35
Cattell Grove	3	3
Cavendish Road	1	3
Cecil Street	6	20
Chad Road		1
Chandos Road		
Chapel Street	1	2
Chapel House Street	2	5
Chapman Road		1
Charles Road		4
Charles Arthur Street	3	6
Charles Henry Street	9	33
Charlotte Road		3
Charlotte Street	1	4
Chattaway Street		6

STREETS.	Zymotic Diseases	Other Diseases
Cheapside .. .	12	35
Cheatham Street ..	1	3
Chequers Walk ..		3
Cherry Street		
Cherry Wood Road ..	3	11
Chester Street.. ..		5
Chesterton Road ..		
Cheston Road ..		
Chicheley Street ..		1
Chiswell Road ..		
Christ Church Passage		
Church Lane		
Church Road, Edgbaston		1
Church Road, Harborne		
Church Road, Nechells..	2	6
Church Road, Saltley ..	3	11
Church Street.. ..		2
City Road		
Claremont Road ..	1	3
Clarence Road ..		3
Clarendon Road ..		2
Clark Street	1	19
Claverdon Street ..		10
Claybrook Street ..		1
Clayton Road	1	1
Clement Street ..		6
Cleve Terrace ..	1	1
Clevedon Road ..		10
Clifton Road	2	21
Clissold Street ..	2	2
Clive Passage.. ..		
Cliveland Street ..	2	2
Clyde Street ..		2
Coleman Street ..	5	17
Coleshill Street ..	4	15
College Road		2
College Street		6
Colmore Row	1	4
Colville Road.. ..	3	6
Commercial Street ..		3
Common Lane.. .		
Communication Row ..	2	3
Congreve Street ..		
Constance Road ..		
Constitution Hill ..		7
Conybere Street ..	2	22
Cook Street	3	8
Cooksey Road ..	3	31
Cope Street		4
Coplow Street ..	1	9
Coralie Street ..	1	4
Cornwall Street ..		
Corporation Street ..		2
Cotterill's Lane ..		3
Couchman Road ..		2
Court Road	2	1
Court Oak Road ..		
Coventry Road ..	6	37
Coventry Street ..	2	11
Cowper Street ..	3	15
Cox Street		4
Cox Street West ..	1	12
Coxwell Road ..		4
Crabtree Road ..		11
Cranemore Lane ..		2
Cranemore Street ..		5
Cregoe Street	4	22
Crescent		6
Crompton Road ..	2	2
Cromwell Passage ..		
Cromwell Street ..	14	40
Crooked Lane		
Cuckoo Road	3	17
Cumberland Street ..		1
Curzon Street	2	7
Cuthbert Road ..	1	6
Cyril Road		3

STREETS.	Zymotic Diseases	Other Diseases
D		
Dale End	1	5
Dalton Street		1
Darnley Road ..		
Dart Street		
Dartmouth Street ..	1	16
Darwin Street ..	5	26
Dawson Street ..	1	
Dean Street	1	4
Dearman Road ..	3	5
Denbigh Street ..		1
Derby Street . ..	5	12
Devon Street	2	25
Devonshire Street ..	2	15
Digbeth	2	9
Digby Street		1
Dixon Road		2
Doe Street		4
Dolman Street ..	1	10
Dolobran Road ..		12
Don Street		1
Dora Road		
Dorset Road		
Dover Street		
Dr. Johnson Passage ..		
Drury Lane	1	2
Dryden Road		
Duchess Road.. ..		2
Duddeston Row ..	1	7
Duddeston Mill Road ..	4	19
Dudley Road	1	10
Dudley Street	1	1
Dugdale Street ..	2	17
Duke Street	2	10
Dymoke Street ..	3	14
E		
Earl Street		
Eastern Road		
Easy Row		2
Eden Place		
Edgbaston Road ..		1
Edgbaston Park Road..		
Edgbaston Street ..		3
Edmond Road.. ..		
Edmund Street ..		
Edward Road		
Edward Street ..	2	5
Edwardes Street ..	7	21
Eldon Road		
Elkington Street ..	2	1
Ellen Street	3	15
Ellis Street	2	5
Elvetham Road ..		2
Emily Street	1	17
Emmeline Street ..		
Enfield Road		
Erasmus Road ..		4
Ernest Street		
Erskine Street.. ..	1	3
Essex Street	4	5
Essington Street ..	1	10
Ethel Road		
Ethel Street		
Eva Road	2	8
Eversley Road ..	3	4
Exeter Street		1
Eyre Street		7
F		
Factory Road .. .		4
Falconer Road .		

STREETS	Zymotic Diseases	Other Diseases
Farm Road		1
Farm Street	12	47
Farquhar Road ..		
Farquhar Road East ..		
Fazeley Street ..	1	6
Fellows Lane		
Fisher Street	2	4
Fleet Street		
Floodgate Street ..	3	8
Florence Street ..		5
Ford Street	3	17
Fordrough Lane ..		1
Fordrough Street ..		
Fordroughs		
Forge Street		
Forster Street	1	3
Foundry Road ..		9
Fowler Street	1	1
Fox Street		3
Francis Road	1	8
Francis Street ..	3	17
Frank Street	1	3
Frankfort Street ..	1	11
Franklin Street ..	1	2
Frederick Road ..		5
Frederick Street ..		4
Freeman Road ..	3	14
Freeman Street ..		2
Freeth Street	1	17
Friston Street ..		11
Fulham Road	1	5
G		
Galton Street	1	3
Garbett Street ..	4	11
Garrison Lane ..	7	33
Garrison Street ..	7	18
Gas Street		
Gate Street		5
Geach Street	3	4
Gee Street	2	2
Gem Street		3
George Road		2
George St., Balsall H'th	2	9
George Street, St. Paul's		3
George Street West ..	4	14
Gibb Street		2
Gillhurst Lane ..		
Gillott Road		
Gladstone Road ..		4
Glebe Street		3
Gloucester Street ..		
Glover Road		1
Glover Street ..	2	10
Godwin Street.. ..	4	15
Golden Hillock Road ..	1	8
Gooch Street	3	24
Goode Street	1	10
Goodman Street ..		
Goodrick Street ..		8
Gopsall Street ..		3
Gordon Road		
Gordon Street		8
Gosta Green	1	3
Gough Road		8
Gough Street	1	6
Grace Road	1	4
Grafton Road		1
Graham Street ..	1	10
Grange Rd., Bordesley	4	9
Grange Rd., Harborne		
Grant Street		9
Grantham Road ..		3
Granville Street ..	1	7
Gray Street	1	1
Gray's Road		3
Great Barr Street ..	4	17
Great Brook Street ..	5	14
Great Charles Street .		3

STREETS.	Zymotic Diseases	Other Diseases
Great Colmore Street ..	5	32
Great Francis Street ..	13	44
Great Hampton Row ..	2	13
Great Hampton Street..		6
Great King Street ..	1	22
Great Lister Street ..	5	26
Great Russell Street ..	7	18
Great Tindal Street ..	2	6
Green Lane	4	30
Green St., Deritend ..		5
Green Street, Saltley ..	1	
Greenfield Crescent ..		
Greenfield Road ..	1	8
Greenway Street ..	5	11
Grosvenor Road ..		
Grosvenor Row .		
Grosvenor Street ..		
Grosvenor Street West	3	20
Grove Lane		
Grove Street ..		
Guest Street ..	1	6
Guildford Street ..	5	10
H		
Haden Street		4
Hadley Street.. ..		5
Hagley Road	1	12
Halberton Street ..	1	3
Hall Road		1
Hall Street		7
Hampden Street ..		2
Hampton Street ..	4	16
Han dsworth New Road		1
Hanley Street ..	3	8
Hanover Street ..		2
Harborne Lane ..		
Harborne Road ..		9
Harding Street ..		
Harford Street ..		4
Harold Road		1
Harrison's Road ..		
Hatchett Street ..	1	13
Havelock Road ..	2	12
Hawkes Street ..	2	14
Hawthorn Road ..		
Heath St., All Saints ..	5	21
Heath St., Balsall H'th		5
Heath Street South ..		1
Heath Mill Lane ..	1	17
Heaton Street	3	21
Helena Street.. ..		
Heneage Street ..	11	28
Henley Street	1	3
Henn's Walk		
Henrietta Street ..		2
Henry St., Balsall H'h..		
Henry St., Duddeston..	2	7
Herbert Road	3	26
Hermitage Road ..		1
Hertford Street ..		1
Hick Square		
Hick Street	1	8
Hickman Road ..		1
High Street	1	4
High Street, Bordesley..		3
High Street, Deritend ..	6	32
High St., Harborne ..		19
High St., Saltley ..	3	5
Highfield Rd., Edgb'n..		2
Highfield Rd.,H'borne..		2
Highfield Rd., Saltley..	1	6
Highgate Place ..		
Highgate Road ..	4	13
Highgate Square ..		
Highgate Street ..	5	21
High Park Street ..	1	2
Hill Street		
Hinckley Street ..		
Hingeston Street ..	5	27
Hobmoor Road .		
Hockley Hill		18
Hockley Street ..		5
Holborn Hill	1	8
Holland Street ..		2
Holliday Street ..	1	14
Hollier Street		4
Holloway Head ..	2	12
Holly Road		1
Holt Street	1	7
Homer Street		4
Hooper Street.. ..		5
Hope Street	4	29
Horse Fair		4
Hospital Street ..	8	42
Howard Street ..	1	4
Howe Street		12
Hubert Street ..		1
Humpage Road ..	1	3
Hunter's Road ..		2
Hunter's Vale		
Hurst Street		11
Hutton Road	1	
Hutton Street	1	7
Hyde Road	2	6
Hylton Street	1	4
I		
Icknield Square ..	2	4
Icknield Street ..	2	22
Icknield Port Road ..	6	44
Inge Street		12
Ingleby Street ..	1	8
Inkerman Street ..	1	17
Irving Street	9	38
Islington Row.. ..		4
Ivy Lane	1	2
J		
Jakeman's Road ..		5
Jakeman's Walk ..	1	2
Jamaica Row	1	
James Street		2
James Turner Street ..		4
James Watt Street ..		1
Jenkins Street ..		3
Jennens Row	2	4
John Bright Street ..		2
John's Road		
Johnson Street ..		3
Johnstone Street ..	1	8
K		
Keeley Street		4
Kelynge Street ..	12	14
Kendall Road		3
Kent Street		15
Kent Street North ..	7	7
Kenyon Street ..		4
Key Hill	1	10
King St., Balsall Heath		2
King Street, Bordesley..		3
King Alfred's Place ..		1
King Edward's Place ..		1
King Edward's Road ..		20
Kingsecte Road.. ..	1	1
Kingsley Road ..		
Kingston Road ..		4
Kingswood Road ..		2
Knutsford Street ..		3
Kyott's Lake Road ..		2
Kyrwick's Lane ..	3	16
L		
Ladypool Road ..	3	18
Ladywell Passage ..		
Ladywell Walk ..	2	2
Ladywood Road ..	2	20
Lancaster Street ..	3	12
Landor Street	1	7
Langley Road ..		2
Lansdowne Street ..	1	3
Larches Street ..	3	10
Latimer Street ..	1	6
Latimer Street South ..	5	20
Lawden Road ..	1	5
Lawley Street ..	7	34
Lawrence Street ..	3	7
Leach Street	1	3
Lease Lane		4
Ledsam Street ..	2	23
Lee Bank Road ..	3	1
Lee Crescent .. .		
Lee Mount		
Leek Street		2
Lees Street	3	9
Legge Lane		
Legge Street		5
Leigh Road		
Lench Street		1
Lennox Street ..	1	7
Leopold Street ..	2	16
Lilly Green		1
Lime Grove		1
Lingard Street ..	3	9
Link Road		2
Lionel Street		5
Lister Street	1	8
Little Ann Street ..		5
Little Barr Street ..		2
Little Bow Street ..		
Little Broom Street ..		1
Little Edward Street ..	1	2
Little Francis Street ..		1
Little Green Lane ..	5	21
Little King Street ..	1	11
Little Shadwell Street..		
Liverpool Street ..		8
Livery Street		1
Lloyd Street		1
Lodge Rd., All Saints ..	1	23
Lodge Road, Harborne..	1	8
Lombard Street ..	5	9
Long Acre	8	38
Long Street		8
Longbridge Road ..		4
Longmore Street ..	2	11
Lonsdale Road ..		2
Lord Street		10
Lordswood Road ..		3
Louisa Street		1
Love Lane	1	1
Loveday Street ..		3
Lowe Street		1
Lower Dartmouth Street	1	11
Lower Darwin Street ..		1
Lower Edwardes Street		3
Lower Essex Street ..	4	15
Lower Fazeley Street ..	3	5
Lower Hurst Street ..	3	21
Lower Hurst Street East		2
Lower Lawrence Street		
Lower Loveday Street..		3
Lower Priory.. ..		1
Lower Temple Street ..		
Lower Tower Street ..	2	21
Lower Trinity Street ..	1	4
Loxton Street.. ..	1	2
Ludgate Hill.. ..		5

STREETS.	Zymotic Diseases	Other Diseases
Ludgate Hill Passage		
Lupin Street	2	15
Lyttelton Road		
M		
Macdonald Street	2	11
Main Street	1	8
Malthouse Lane	1	3
Malvern Street		
Malvern Hill Road	2	4
Manchester Street		6
Manor Road		
Margaret Road		
Margaret Street		
Mark Lane	1	1
Market Street	1	2
Marroway Street	1	7
Marshall Street		6
Marshall Street South	1	2
Martineau Street		
Mary St., Balsall Heath	2	17
Mary Street, St. Paul's		
Mary Ann Street	1	1
MasshouseLane		2
Maxstoke Street		
Meadow Road		
Melville Road		
Meriden Street	1	10
Metchley Lane	1	9
Metchley Park Road		1
Metropolitan Road		1
Midland Street	3	3
Miles Street	2	14
Milk Street	3	5
Mill Lane, St. Martin's		
Mill Lane, Harborne		
Mill Lane, Saltley	1	6
Mill Street	1	1
Miller Street	3	22
Mills Lane		
Milton Street		3
Milward Street		3
Minories		
Moat Lane		1
Moat Row		
Moilliett Street	2	4
Moland Street		23
Mole Street	4	11
Mona Road	2	
Montague Road		
Montague Street	1	1
Montgomery Street		4
Montpellier Street		2
Monument Road	4	33
Moor Street	1	6
Moore's Row		
Moorsom Street	1	14
Moreton Street		5
Morville Street	5	13
Moseley Road	3	35
Moseley Street	9	26
Mostyn Road		
Mott Street	3	8
Mount Pleasant, B H'th		3
Mount Pleasant, B'ley		3
Mount Street	1	12
Muntz Street	2	14
Musgrave Road		4
N		
Navigation Street	3	4
Nechells Park Road	1	26
Nechells Place		8
Needham Street		2
Needless Alley		
Nelson Street	3	18
New Street		5
New Bartholomew St.		2
New Bond Street	2	3
New Brunswick Road		2
New Canal Street	1	8
Newdegate Street	1	5
Newhall Hill	1	3
Newhall Street		12
New John Street	4	25
New John Street West	9	51
New Market Street		
New Meeting Street		3
Newport Road	1	3
New Spring Street		15
New Summer Street	7	22
Newton Road		1
Newton Street		6
Newtown Row	7	36
Nile Street	1	1
Nineveh Road		
Noel Road		1
Norfolk Road		3
Norman Street	3	7
Northampton Street		2
North Road		5
Northbrook Street		9
Northfield Road		3
Northumberland Street	1	6
North Warwick Street		1
Northwood Street	2	4
Norton St., All Saints	1	2
Norton St., Balsall H'th	1	12
Norwood Road		3
Nova Scotia Street		3
Nursery Road		2
O		
Oakfield Road		
Oakley Road		4
Old Square		
Old Church Road		1
Old Cross Street	1	1
Oldfield Road	4	15
Old Meeting Street		
Oliver Road		
Oliver Street	1	8
Ombersley Road	1	9
Oozells Street		1
Oozells Street North		3
Orchard Road		4
Ormond Street	1	7
Osler Street	3	22
Oughton Place		3
Owen Street	3	8
Oxford Street	2	11
Oxygen Street		4
P		
Paddington Street		3
Pakenham Road		
Palmer Street	3	7
Palmerston Road		1
Parade		1
Paradise Street		2
Park Lane	2	
Park Road, All Saints	10	50
Park Road, Harborne	1	5
Park Road, Saltley		1
Park Street		8
Park Hill Road		1
Parker Street		7
Parliament Street	2	9
Paternoster Row		
Paxton Road	1	4
Pebble Mill Road		
Peel Street	1	12
Pembroke Road		
Penn Street, Deritend	1	5
Penn Street, Duddeston	1	3
Perrot Street		4
Pershore Road	1	24
Pershore Street	1	8
Phillip Street		
Pickford Street	1	2
Piddock Street		3
Pigott Street		5
Pinfold Street		
Pitney Street		
Pitsford Street		4
Pitt Street		1
Plough & Harrow Road		1
Plume Street		
Pope Street	2	16
Poplar Avenue		
Poplar Road		
Porchester Street		4
Porthope Road		1
Portland Road		
Potter Street	1	2
Powell Street		4
Prescott Street	2	15
Price Street		14
Priestley Road		6
Prince Albert Street		4
Princes Row		1
Princes Street		2
Princess Road	1	3
Princess Street		1
Princip Street	2	8
Priory Road, B'lsll H'th		1
Priory Road, Edgbaston		2
Pritchatt's Road		
Pritchett Street	8	28
Proctor Street	2	9
Prospect Row		
Poplar Road	1	1
Q		
Queen Street	1	5
R		
Radnor Street	1	1
Raglan Road		
Railway Ter., Duddeston	1	3
Railway Ter., Nechells	2	11
Ralph Road		1
Rann Street		5
Ravenhurst Road		1
Ravenhurst Street	1	11
Rawlins Street	1	4
Rea Street	2	15
Rea Street South		6
Regent Parade		
Regent Place		3
Regent Road		
Regent Row	1	1
Regent Street		
Regent Park Road	2	3
Reginald Road		4
Reservoir Retreat		1
Reservoir Road	1	6
Richard Street	3	13
Richmond Hill Road		2
Ridley Street		1
River St., Balsall Heath	2	4
River St., St. Barthol'w's	1	3
Robert Road		1
Rocky Lane	3	8
Rodway Street		8
Rope Walk		1

STREETS.	Zymotic Diseases.	Other Diseases.
Rosalie Street		4
Roshven Street ..		
Rotton Park Road ..		1
Rotton Park Street ..		
Rowland Street ..	1	2
Rupert Street	3	15
Russell Street		
Ruston Street	1	9
Ruston Street North ..	3	12
Rutland Road		1
Ryder Street		6
Ryland Road	1	13
Ryland Street .. .	1	20
S		
Salop Street	1	4
Saltley Road	4	14
Saltley Street	2	4
Sampson Road ..	1	4
Sampson Road North ..	1	3
Sand Pits		3
Sand Street		1
Sandon Road		
Sandy Lane	2	13
Sarah Street		
St. Andrew's Road ..	3	25
St. Andrew's Street ..		
St. Augustine's Road ..		1
St. Clement's Road ..	1	2
St. George's Place ..		2
St. George's Street ..	3	18
St. James' Place ..	1	6
St. James' Road ..		
St. James' Street ..		9
St. John's Rd., B'll H'th		5
St. John's Rd., H'borne		
St. Luke's Road ..	2	12
St. Mark's Street ..	1	27
St. Martin's Lane ..		
St. Martin's Place ..	1	4
St. Martin's Row ..		2
St. Martin's Street ..	1	14
St. Mary's Road ..		
St. Mary's Row ..		1
St. Mary's Street ..		5
St. Oswald's Road ..		1
St. Paul's Road ..	1	13
St. Paul's Square ..		
St. Peter's Place ..		1
St. Philip's Place ..		
St. Stephen's Street ..		
St. Vincent Street ..	1	20
Scholefield Street ..	3	25
Scotland Street ..		3
Scott Street		
Sefton Road		1
Serpentine Road ..	1	5
Severn Street	1	3
Seymour St., B'sall H'th		1
Seymour St , St. Barth.		
Shadwell Street ..		5
Shakespeare Road ..	2	10
Sheep Street	1	8
Sheepcote Lane ..		4
Sheepcote Street ..	2	14
Shefford Road ..		2
Shenstone Road ..		
Sherborne Street ..	2	18
Sherbourne Road ..	1	26
Sherlock Street ..	7	30
Sir Harry's Road ..		1
Skinner Lane		4
Skinner Street .		5
Sladefield Lane ..		
Slaney Street	2	4
Slough Lane		
Smallbrook Street ..	1	2
SmithStreet, St.George's	1	16
Smith Street, Duddeston		3
Smithfield Passage ..		2
Smithfield Street ..		
Snow Hill	1	7
Soho Road .. .	4	5
Somerset Road ..		2
Somerset Street ..		1
South Road	3	10
South Street		3
Southgate		
Spark Street	1	4
Speaking Stile Walk ..		
Speedwell Road ..		
Spencer Street ..		6
Spiceal Street		1
Spon Terrace		
Spooner Street ..		7
Spring Hill	1	14
Spring Hill Passage ..	1	2
Spring Road	1	3
Spring Street		3
Spring Vale		4
Springfield Street ..	3	14
Stafford Street ..		2
Stanhope Street ..	2	5
Staniforth Street ..	3	15
Stanley Road		
Stanmore Road ..		3
Station Road, Harborne		2
Station Road, Rotton Pk		
Station Street		
Stechford Lane ..		
Steelhouse Lane ..		4
Stella Street	3	3
Stephenson Place ..		
Stephenson Street ..		
Steward Street ..	4	16
Stirling Road ..	1	3
Stoke Street		8
Stone Yard		
Stoney Lane		7
Stour Street	2	14
Stratford Place ..		2
Stratford Road ..		14
Stratford Street ..		4
Strensham Road ..		1
Stuart Street	2	3
Suffolk Street		10
Summer Lane	7	46
Summer Road		14
Summer Row .. .		2
Summer Street ..		2
Summerfield Crescent ..		2
Summerfield Road ..	1	1
Summer Hill Road ..		4
Summer Hill Street ..	1	12
Summer Hill Terrace .		2
Summerville Road ..		
Sun Street	2	7
Sun Street West ..	1	3
Sutton Street	1	5
Swallow Street ..		
Sydenham Road ..		
Sydney Road	2	3
T		
Talbot Street	3	15
Talfourd Street ..	2	16
Taunton Road		1
Taylor Street		5
Temple Row		1
Temple Row West ..		
Temple Street		2
Templefield Street ..	3	4
Tenby Street		3
Tenby Street North ..	1	4
Tennal Road		
Tennant Street ..	7	17
Tennyson Road ..	1	1
Theodore Street ..	3	9
Theresa Road	1	3
Thimble Mill Lane ..	4	18
Thomas St., B'sall H'th	4	5
Thomas St., Deritend ..		3
Thorp Street	1	7
Tillingham Street ..		4
Tilton Road		1
Tindal St., Balsall H'th		7
Tindal St., Ladywood ..	3	7
Tower Street	5	37
Trafalgar Road ..		
Trent Street	1	5
Trevor Street	5	11
Trinity Terrace ..		1
Tudor Street	6	5
Turk's Lane		
Turner Street	3	6
Tyndall Street. ..		6
U		
Unett Street ..	3	28
Union Passage ..		
Union Street		
Union Terrace ..		
Upper Cox Street ..	5	7
Upper Dean Street ..		
Upper Gough Street ..		9
Upper Highgate Street	2	13
Upper Marshall Street ..		5
Upper Mary Street ..		3
Upper Mill Lane ..		
Upper Priory		4
Upper Ryland Road ..		7
Upper Trinity Street ..	4	6
V		
Varna Road		8
Vaughton Street ..	5	9
Vaughton Street South		2
Vauxhall Grove ..		2
Vauxhall Road ..	6	19
Vauxhall Street	1	3
Ventnor Road		2
Vere Street	2	7
Vernon Road		
Vesey Street		
Viaduct Street		
Vicarage Rd., Edgbaston		
Vicarage Rd., H'borne ..		
Victoria Grove ..	1	1
Victoria Road ..		1
Victoria St., B'sall H'th		6
Victoria St., Bordesley	1	3
Villa Street	1	2
Villiers Street	1	2
Vincent Crescent ..		
Vincent Parade ..	1	6
Vincent Street ..	1	17
Vine Street		1
Vittoria Street		5
Vyse Street .		4

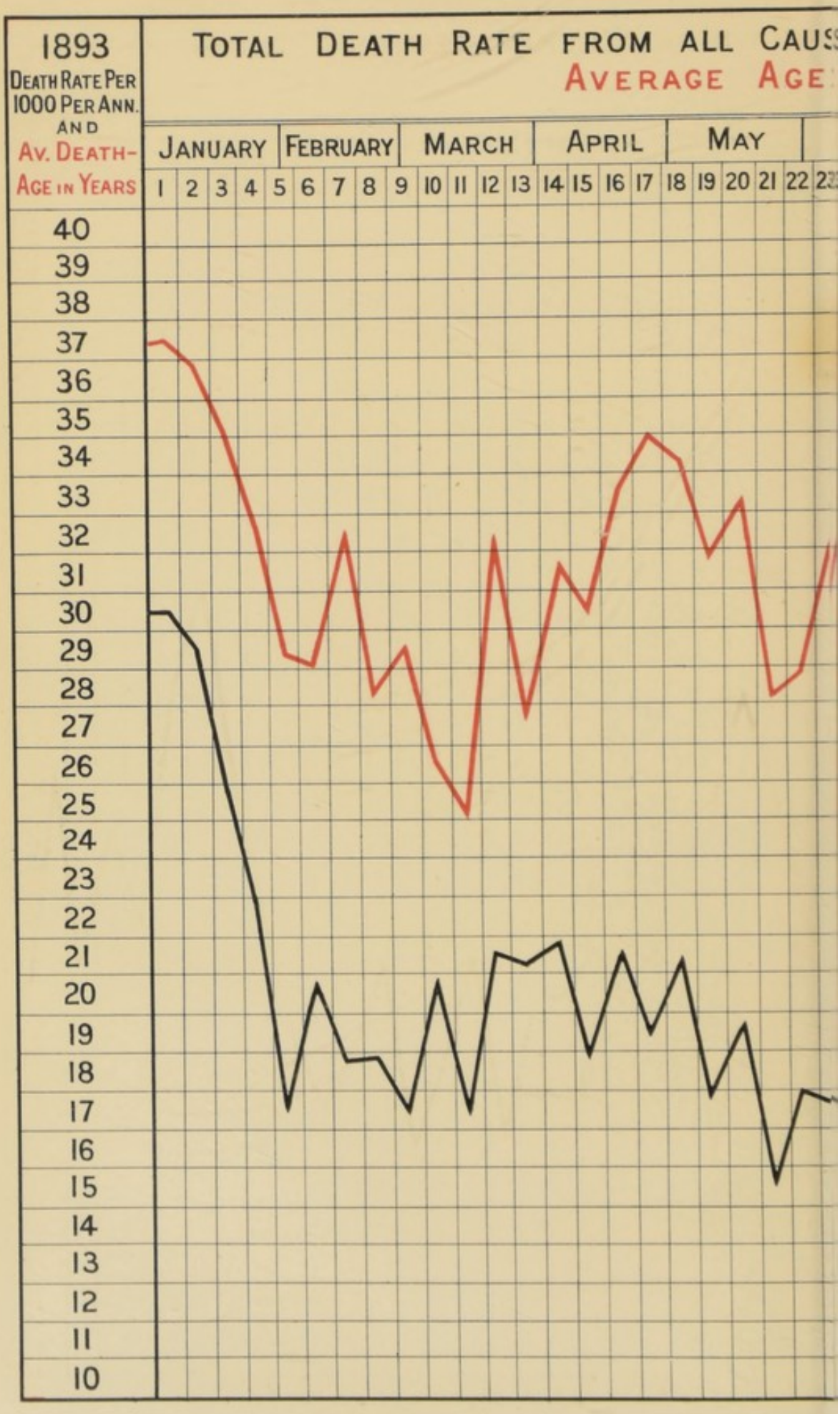
STREET.	Zymotic Diseases	Other Diseases.
W		
Walter Street		5
War Lane		
Ward End	1	1
Ward Street	2	7
Warner Street.. ..		4
Warren Road	1	1
Warstone Lane ..	3	18
Warstone Parade East..		1
Warwick Street ..	1	10
Washington Street ..	2	5
Washwood Heath Road	6	8
Water Street		3
Waterloo Street ..		2
Waterworks Road ..		4
Watery Lane	9	33
Watts Road		
Waverley Road ..		
Weaman Row		
Weaman Street ..	1	9
Well Lane		
Well Street	3	18
Wellesley Street ..		3
Wellington Rd., Edg'ton		4
Wellington Rd., H'borne		3
Wellington Street ..		21
Wenman Street ..	1	6
Westbourne Road ..		1
Western Road		
Westfield Road ..		3
Westley Street ..		4
Weston Street		2
Wharf Lane	2	2
Wharf Street		3
Wharton Street ..	3	
Wheeler Street ..	2	18
Wheeley's Lane ..	1	1
Wheeley's Road ..		3
Whitby Road		
White Road	1	9
White Lion Passage ..		
White Street		2
Whitehall Road ..		5
Whitmore Road ..		3
Whitmore Street ..	3	16
Whittall Street ..		6
Wiggin Street ..		5
William Street, Deritend		3
William St., St. Thomas'	4	19
William Street, Saltley		5
William Street North ..		5
William Edward Street		8
William Henry Street ..	4	5
Willis Street		16
Willow Avenue ..		
Willow Crescent ..		
Willow Road	1	3
Wilton Street	1	5
Windmill Street ..		1
Windsor Street ..	8	33
Winson Green Road ..	2	12
Winson Street... ..		15
Witton Street	4	11
Wolseley Street ..	3	9
Wood Lane		
Wood Street		1
Woodbourne Road ..		
Woodcock Street ..	1	6
Woodfield Road ..		4
Woodville Road ..		
Worcester Street ..		3
Wordsworth Road ..		8
Wrentham Street ..	2	14
Wright Road	1	5
Wright Street	2	8
Wrottesley Street ..		1
Wyndcliffe Road ..		2
Wyndham Road ..		2
Wynn Street		13
X		
Y		
Yardley Road		
Yateley Road		
Yew Tree Road ..		1
York Passage		
York Road		4
York Street, Harborne		2
York Street, St. Mary's		2
Z		
AT INSTITUTIONS.		
Children's Hospital ..	12	52
Queen's Hospital ..	13	148
General Hospital ..	16	364
City Hospital	122	3
Workhouse	33	751
City Asylum	1	101
St. Joseph's Home ..		15
Gaol		5
Eye Hospital ..		1
Blind Institution ..		
Homœopathic Hospital..		8
Orthopædic Hospital ..		1
ADDENDA.		
Canals		15
Railways		4
Not located		12
TOTALS ..	1480	8965

Grand Total 10,445

REPORT

ON

ADULTERATION.


1893
Death Rate Per 1000 Per Ann. and Av. Death-Age in Years
Total Death Rate from all Caus
Average Age
January
February
March
April
May
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
40
39
38
37
36
35
34
33
32
31
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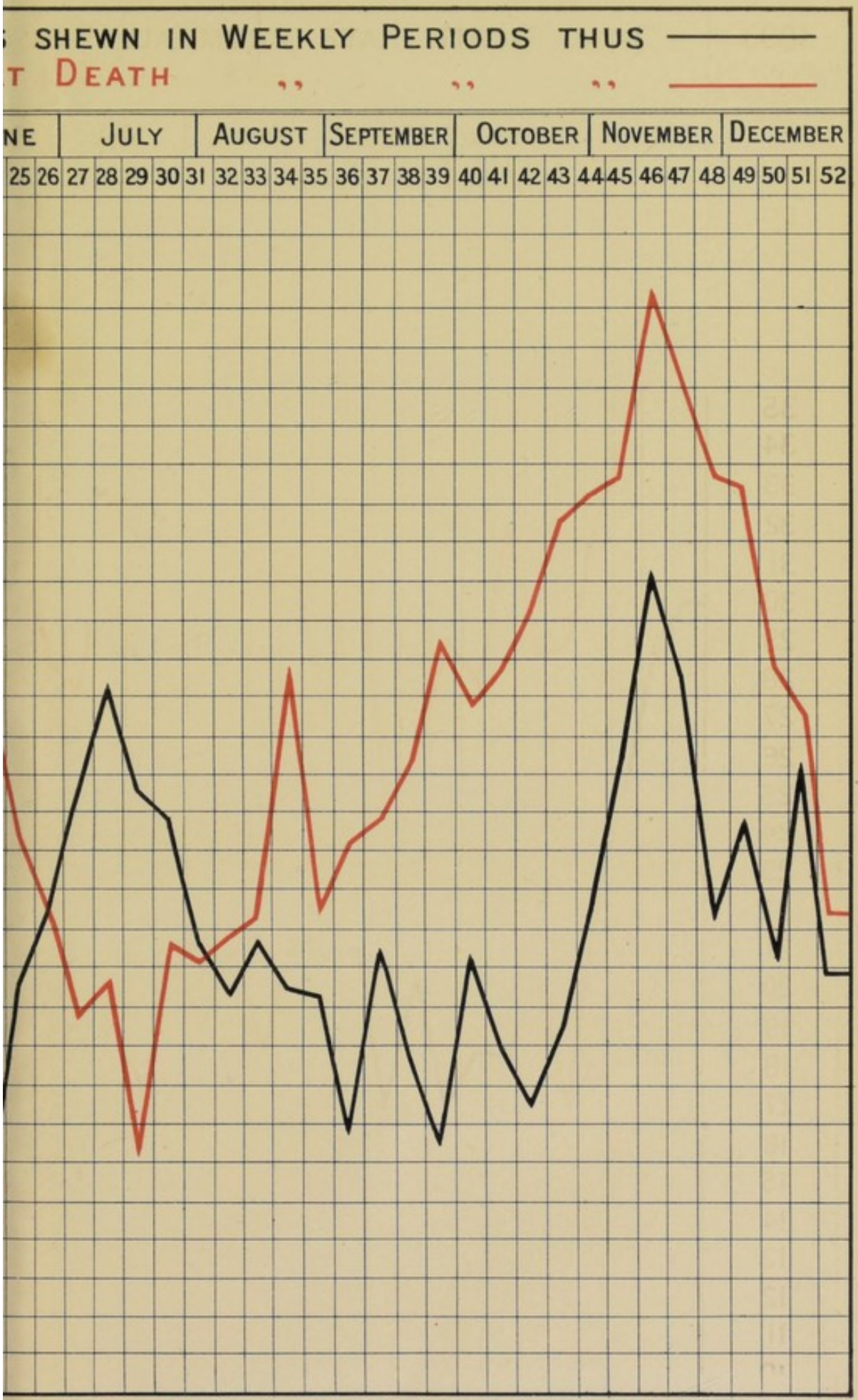
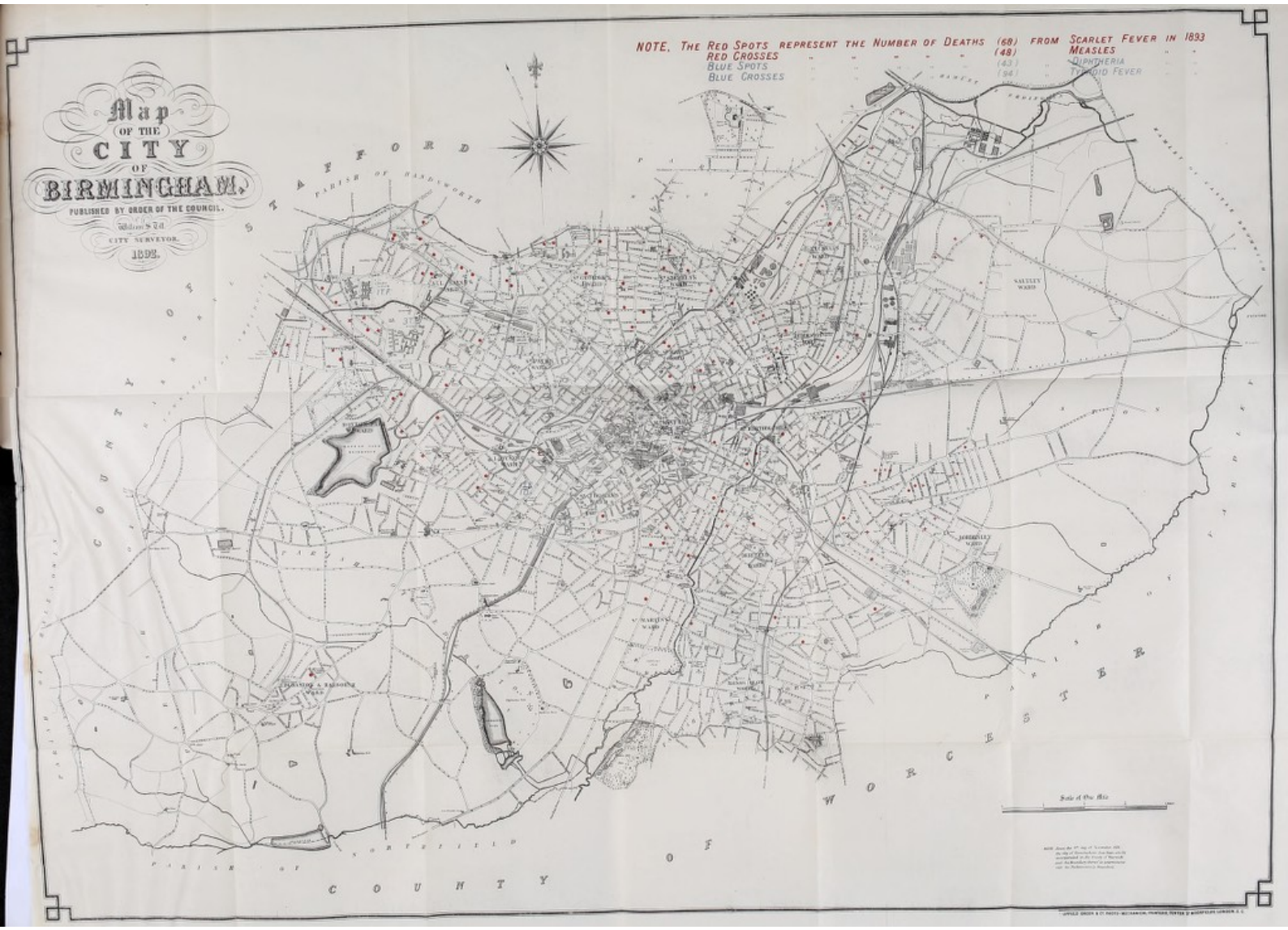

SHEWN IN WEEKLY PERIODS THUS
T DEATH
NE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52


Map
OF THE
CITY
OF
BIRMINGHAM.
PUBLISHED BY ORDER OF THE COUNCIL.
CITY SURVEYOR.
1893.
NOTE. The Red Spots represent the Number of Deaths (68) from Scarlet Fever in 1893
Red Crosses (48) Measles
Blue Spots (43) Diphtheria
Blue Crosses (94) Typhoid Fever
STAFFORD
WORCESTER
COUNTY OF
PARISH OF HANDSWORTH
PARISH OF NORTHFIELD
PARISH OF KINGS NORTON
PARISH OF ALDRIDGE
PARISH OF SUTTON COLDFIELD
PARISH OF ERDINGTON
PARISH OF ASTON
PARISH OF BARR
Scale of One Mile

MAP
OF THE
CITY
OF
BURLINGAME
PUBLISHED BY ORDER OF THE COUNCIL

City Analyst's Laboratory,

The Council House, Birmingham,

March 18th, 1894.

TO THE HEALTH COMMITTEE.

Mr. Chairman and Gentlemen,

I beg to report that last year 993 samples were submitted to me for analysis by Inspector Davis, and eleven by private purchasers, making a total of 1,004.

The articles submitted were as follows:—

Milk	327	samples.
Butter	146	,,
Bread	73	,,
Ale	54	,,
Vinegar	48	,,
Oatmeal	41	,,
Coffee	40	,,
Pepper	40	,,
Lard	33	,,
Sugar Confectionery ...	24	,,
Flour	21	,,
Cream of Tartar ...	19	,,
Mustard	16	,,
Cheese	14	,,
Saffron	10	,,
Bicarbonate of Soda ...	10	,,
Whiskey...	9	,,
Linseed Meal	8	,,
Paregoric	8	,,
Ground Ginger	7	,,

Precipitated Sulphur ...	7	samples.
Spirit of Nitrous Ether	7	,,
Arrowroot	6	,,
Syrup of Tolu	5	,,
Tincture of Rhubarb ...	5	,,
Oxymel of Squills ...	4	,,
Tincture of Benzoin ...	4	,
Tartaric Acid	4	,,
Bicarbonate of Potash ...	3	,,
Olive Oil...	3	,,
Powdered Rhubarb ...	3	,,
Syrup of Squills ...	2	,,
Flowers of Sulphur ...	1	,,
Cream	1	,,
Sugar	1	,,
Total	1,004	

Of these 1,004 samples, 132 were found to have suffered adulteration, particulars of which are given in the subjoined list:—

NO.	DATE.	ARTICLE.	REMARKS.
1	Jan. 4th ..	Milk	Adulterated with 6 % of water. Cautioned by Health Sub-Committee.
2	,, 4th ...	Milk	Deprived of 22 % of its fat. Fined £5 and £2 17s. 6d. costs.
3	,, 4th ...	Milk	Deprived of 18 % of its fat. Cautioned by Health Sub-Committee.
7	,, 6th ...	Milk	Deprived of 36 % of its fat. Fined 40/- and 23/- costs.
8	,, 6th ..	Milk	Deprived of 14 % of its fat. Cautioned by Health Sub-Committee.
9	,, 6th ...	Milk	Deprived of 20 % of its fat. Fined £5 and 8/- costs.
10	,, 6th ..	Milk	Deprived of 14 % of its fat. Cautioned by Health Sub-Committee.
26	,, 13th ...	Milk	Adulterated with 16 % of water, and deprived of 7 % of its fat. Fined 10/- and 8/- costs.
28	,, 13th ...	Milk	Adulterated with 15 % of water. Fined 5/- and 9/- costs.
30	,, 13th ...	Milk	Deprived of 22 % of its fat. Fined 5/- and 9/- costs.
59	,, 24th ...	Milk	Deprived of 14 % of its fat. Cautioned by Health Sub-Committee.
63	,, 24th ...	Milk	Adulterated with 4 % of water, and deprived of 10 % of its fat. Cautioned by Health Sub-Committee.
78	,, 26th ...	Milk	Deprived of 14 % of its fat. Cautioned by Health Sub-Committee.

NO.	DATE.	ARTICLE.	REMARKS.
81—	Jan. 26th ...	Milk	Adulterated with 5 % of water, and deprived of 7 % of its fat. Cautioned by Health Sub-Committee.
83—	" 30th ...	Cream of Tartar ...	Contained a trace of lead. No action taken.
85—	" 30th ...	Tartaric Acid ...	Contained a trace of lead. No action taken.
86—	" 30th ...	Cream of Tartar ...	Contained a trace of lead. No action taken.
88—	" 30th ...	Tartaric Acid ...	Contained a trace of lead. No action taken.
89—	" 30th ..	Cream of Tartar ...	Contained a trace of lead. No action taken.
91—	" 30th ...	Tartaric Acid ..	Contained a trace of lead. No action taken.
92—	" 30th ...	Cream of Tartar ...	Contained a trace of lead. No action taken.
94—	" 30th ...	Tartaric Acid ...	Contained a trace of lead. No action taken.
98—	" 31st ...	Milk	Deprived of 14 % of its fat. Cautioned by Health Sub-Committee.
99—	" 31st ...	Milk	Deprived of 14 % of its fat. Cautioned by Health Sub-Committee.
114—	Feb. 3rd ...	Milk	Adulterated with 15 % of water. Fined 10/- and 8/- costs.
117—	" 3rd ...	Milk	Deprived of 18 % of its fat. Fined 20/- and 8/- costs.
128—	" 7th ...	Butter	Adulterated with 5 % of water. Cautioned by Health Sub-Committee.
132—	" 7th ...	Milk	Adulterated with 8 % of water. Cautioned by Health Sub-Committee.
186—	Mar. 9th ...	Milk	Deprived of 14 % of its fat. Cautioned by Health Sub-Committee.
204—	" 17th ...	Ale	Contained 66 grains of salt per gallon. No action taken.
207—	" 17th ...	Ale	Contained 57 grains of salt per gallon. No action taken.
212—	" 17th ...	Ale	Contained 89 grains of salt per gallon. No action taken.
244—	" 24th ...	Milk	Adulterated with 2 % of water, and deprived of 12 % of its fat. Cautioned by Health Sub-Committee.
246—	" 24th ...	Milk	Adulterated with 2 % of water, and deprived of 15 % of its fat. Cautioned by Health Sub-Committee.
247—	" 24th ...	Milk	Adulterated with 2 % of water, and deprived of 6 % of its fat. Cautioned by Health Sub-Committee.
249—	" 24th ...	Milk	Adulterated with 6 % of water. Cautioned by Health Sub-Committee.
251—	" 24th ...	Milk	Deprived of 15 % of its fat. Cautioned by Health Sub-Committee.
252—	" 24th ...	Milk	Adulterated with 6 % of water, and deprived of 10 % of its fat. Case dismissed.
256—	" 29th ...	Milk	Adulterated with 2 % of water, and deprived of 18 % of its fat. Cautioned by Health Sub-Committee.
268—	April 6th ...	Milk	Deprived of 22 % of its fat. Fined 20/- and 19/6 costs. Appeal to the High Court of Justice dismissed.

NO.	DATE.	ARTICLE.	REMARKS.
269—	April 6th ...	Milk	Adulterated with 2 % of water, and deprived of 10 % of its fat. Cautioned by Health Sub-Committee.
271—	" 6th ...	Milk ...	Adulterated with 6 % of water. Cautioned by Health Sub-Committee.
272—	" 6th ...	Milk	Adulterated with 4 % of water, and deprived of 6 % of its fat. Cautioned by Health Sub-Committee.
277—	" 7th ...	Butter	Consisted of margarine. Fined 20/- and 8/- costs.
285—	" 12th ...	Butter	Consisted of margarine. Fined 10/- and 9/- costs.
289—	" 12th ...	Butter	Consisted of margarine. Fined 1/- and 8/- costs.
291—	" 12th ...	Butter	Consisted of margarine. Fined 5/- and 9/- costs.
295—	" 14th ...	Vinegar	Contained 70 % of pyroligneous acid. Fined 20/- and costs. Appeal to Quarter Sessions dismissed.
296—	" 14th ...	Vinegar	Contained 80 % of pyroligneous acid. Fined 20/- and 8/- costs.
297—	" 14th ...	Vinegar	Contained 80 % of pyroligneous acid. Fined 20/- and 8/- costs.
301—	" 14th ...	Vinegar	Contained 80 % of pyroligneous acid. Fined 5/- and 8/- costs.
303—	" 17th ...	Milk	Adulterated with 11 % of water, and deprived of 25 % of its fat. Case dismissed.
306—	" 17th ...	Milk	Adulterated with 6 % of water. Cautioned by Health Sub-Committee.
317—	" 20th ...	Milk	Deprived of 28 % of its fat. Fined 20/- and 8/- costs.
318—	" 20th ...	Milk	Adulterated with 4 % of water, and deprived of 8 % of its fat. Cautioned by Health Sub-Committee.
319—	" 20th ...	Milk	Adulterated with 7 % of water, and deprived of 6 % of its fat. Cautioned by Health Sub-Committee.
326—	" 22nd ...	Paregoric	Adulterated with 50 % of water. Fined £3 and 14/- costs.
331—	" 22nd ...	Spirit of Nitrous Ether	Double the strength prescribed by the British Pharmacopœia. Cautioned by Health Sub-Committee.
335—	" 27th ...	Milk	Adulterated with 4 % of water, and deprived of 15 % of its fat. Cautioned by Health Sub-Committee.
338—	" 28th ...	Milk	Adulterated with 12 % of water. Fined 10/- and 8/- costs.
339—	" 28th ...	Milk	Adulterated with 4 % of water, and deprived of 12 % of its fat. Cautioned by Health Sub-Committee.
341—	" 28th ...	Milk	Adulterated with 20 % of water. Fined 20/- and 8/- costs.
354—	May 2nd ...	Milk	Adulterated with 3 % of water, and deprived of 15 % of its fat. Cautioned by Health Sub-Committee.
357—	" 2nd ...	Milk	Adulterated with 6 % of water, and deprived of 7 % of its fat. Cautioned by Health Sub-Committee.

NO.	DATE.	ARTICLE.	REMARKS.
359—	May 2nd ...	Milk	Adulterated with 4 % of water. Cautioned by Health Sub-Committee.
360—	„ 4th ..	Pepper	Adulterated with 2 % of mineral matter. Cautioned by Health Sub-Committee.
369—	„ 4th ...	Pepper	Adulterated with 2 % of mineral matter. Cautioned by Health Sub-Committee.
380—	„ 12th ...	Milk	Adulterated with 9 % of water, and deprived of 10 % of its fat. Adjourned, pending an appeal case. No further action taken.
382—	„ 12th ...	Milk	Deprived of 22 % of its fat. Adjourned, pending an appeal case. No further action taken.
384—	„ 12th ...	Milk	Deprived of 26 % of its fat. Adjourned, pending an appeal case. No further action taken.
404—	„ 17th ...	Vinegar	Contained 80 % of pyroligneous acid. No action taken pending an appeal case.
409—	„ 17th ...	Vinegar	Contained 90 % of pyroligneous acid. No action taken pending an appeal case.
412—	„ 17th ...	Milk	Deprived of 24 % of its fat. Fined 1/- and 25/- costs.
424—	„ 19th ...	Milk	Adulterated with 26 % of water, and 8% of added cream. Cautioned by Health Sub-Committee.
426—	„ 19th ...	Milk	Deprived of 19 % of its fat. Cautioned by Health Sub-Committee.
435—	„ 27th ...	Milk	Adulterated with 13 % of water. Fined 10/- and 8/- costs.
436—	„ 27th ...	Milk	Adulterated with 16 % of water. Fined 20/- and 8/- costs.
437—	„ 27th ...	Milk	Adulterated with 18 % of water, and deprived o 9 % of its fat. Fined 10/- and 8/- costs.
438—	„ 27th ...	Milk	Adulterated with 30% of water. Fined £3 and 8/- costs.
464—	„ 30th ...	Milk	Adulterated with 5 % of water, and deprived of 8 % of its fat. Cautioned by Health Sub-Committee.
465—	„ 30th ...	Milk	Deprived of 20 % of its fat. Cautioned by Health Sub-Committee.
467—	June 1st ...	Milk	Deprived of 20 % of its fat. Cautioned by Health Sub-Committee.
469—	„ 1st ...	Milk	Deprived of 18 % of its fat. Cautioned by Health Sub-Committee.
500—	„ 8th ...	Pepper	Contained an excess of mineral matter. Cautioned by Health Sub-Committee.
517—	„ 15th ...	Linseed Meal ...	Contained 10 % of barley starch, and foreign vegetable matter containing mustard. Cautioned by Health Sub-Committee.
559—	„ 28th ...	Milk	Adulterated with 5 % of water, and deprived of 6 % of its fat. Cautioned by Health Sub-Committee.
564—	„ 30th ...	Cream of Tartar ..	Contained a trace of lead. No action taken.
566—	„ 30th ...	Cream of Tartar ...	Contained a trace of lead. No action taken.
568—	„ 30th ..	Cream of Tartar ...	Contained a trace of lead. No action taken.
570—	„ 30th ...	Pepper	Adulterated with 2 % of mineral matter. Cautioned by Health Sub-Committee.

NO.	DATE.	ARTICLE.	REMARKS.
571—	June 30th...	Butter	Contained 4 % of water in excess of the normal amount. Cautioned by Health Sub-Committee.
583—	July 6th ...	Ale	Contained 77 grains of salt per gallon. No action taken.
585—	„ 6th ...	Ale	Contained 91 grains of salt per gallon. No action taken.
586—	„ 6th ...	Ale	Contained 58 grains of salt per gallon No action taken.
613—	„ 14th ...	Cream of Tartar ...	Contained traces of lead. No action taken.
614—	„ 14th ...	Cream of Tartar ...	Contained traces of lead. No action taken.
615—	„ 14th ...	Cream of Tartar ...	Contained traces of lead. No action taken.
616—	„ 14th ..	Cream of Tartar ..	Contained traces of lead. No action taken.
617—	„ 14th ...	Cream of Tartar ...	Contained traces of lead. No action taken.
618—	„ 14th ...	Cream of Tartar ...	Contained traces of lead. No action taken.
626—	„ 14th ...	Cheese	Contained 1 grain of lead per pound. No action taken.
675—	Aug. 31st ...	Ale	Contained 52 grains of salt per gallon. No action taken.
676—	„ 31st ...	Ale	Contained 59 grains of salt per gallon. No action taken.
706—	Sept. 23rd ...	Butter	Consisted of margarine. Fined 10s. and 8s. costs.
725—	„ 30th ...	Butter	Consisted of margarine. Fined £3 and 9s. costs.
7?9—	Oct. 12th ...	Butter	Contained 20 % of foreign fat. Case dismissed on production of warranty.
762—	„ 12th ..	Butter	Adulterated with 2·5 % of water above 16 per cent. Cautioned by Health Sub-Committee.
767—	„ 12th ...	Vinegar	Adulterated with 70 % of dilute acetic acid and coloured. Fined 5/- without costs.
770—	„ 12th ...	Linseed Meal ...	Contained a little starch. No action taken.
778—	„ 14th ...	Butter	Consisted of margarine. Fined £5 and 9/- costs.
781—	„ 20th ...	Tincture of Rhubarb	Contained 15 % of extractive in excess. Deficient in saffron, and contained only 85 % of the proof spirit required by the Pharmacopœia. No action taken. Same vendor as No. 782.
782—	„ 20th ..	Saffron	Adulterated with 13 % of dyed calendula florets. Fined £1 and 10/- costs.
788—	„ 20th ..	Tincture of Rhubarb	Contained 10 % of proof spirit less than is required by the Pharmacopœia. Cautioned by the Health Sub-Committee.
793—	„ 20th ...	Saffron	Adulterated with 1 % of mineral matter. Cautioned by Health Sub-Committee.
815—	Nov. 2nd ...	Milk	Adulterated with 11 % of water. Fined 5/- and 9/- costs.
816—	„ 2nd ...	Milk	Adulterated with 10 % of water. Cautioned by Health Sub-Committee.
817—	„ 2nd ...	Butter	Consisted of margarine. Fined £2 and 9/- costs.
827—	„ 2nd ...	Butter	Consisted of margarine. Fined £2 and 9/- costs.
831—	„ 7th ...	Butter	Consisted of margarine. No action taken, as vendor gave notice that the invoice would be produced.
855—	„ 15th ...	Milk	Deprived of 30 % of its fat. Fined £1 and 8/- costs.
860—	„ 17th ..	Milk	Deprived of 32 % of its fat. Fined £1 and 8/- costs.

NO.	DATE.	ARTICLE.	REMARKS.
863	Nov. 17th	Milk	Adulterated with 11 % of water. Fined 5/- and 8/- costs.
884	" 22nd	Syrup of Tolu	Contained 20 % of water more than is allowed by the Pharmacopœia. Cautioned by Health Sub-Committee.
885	" 22nd	Spirit of Nitrous Ether	Contained only 20 % of the amount of Ethyl Nitrite required by the Pharmacopœia. Case dismissed owing to a technical objection to the misspelling of two words in the summons.
893	" 23rd	Butter	Adulterated with 20 % of foreign fat. Fined £1 and 10/- costs.
929	Dec. 6th	Vinegar	Adulterated with 60 % of acetic acid and water. No action taken.
932	" 6th	Butter	Contained 100 % of foreign fat. Fined 1/- and 9/- costs.
942	" 8th	White Pepper	Adulterated with 10 % of rice starch. Fined 10/- and 8/- costs.
943	" 8th	Ground Ginger	Contained 75 % of exhausted ginger. Fined 10/- and 8/- costs.
957	" 13th	Ale	Contained an excess of salt. No action taken.
961	" 13th	Ale	Contained an excess of salt. No action taken.
1006	" 22nd	Whiskey	Contained 17 % of added water, being 38 degrees under proof. Fined £2 and 8/- costs.

Percentages of Adulteration.

The 132 adulterated samples formed 13 per cent. of the total number analysed last year, a proportion which varied very little from those of recent years. The Table below shows the total percentage of adulteration and the percentages in certain classes of articles in the ten years, 1873–1882, and in each year since 1882. In drawing up the table, I have not calculated the percentage unless at least twenty samples were analysed, as such a statement, based on too small a number of analyses, might be very misleading:—

Years.	Number of Samples Analysed.	Total Percentage of Adulteration	Percentage of Adulteration of undermentioned Articles.								
			Milk.	Butter.	Lard and Cheese.	Bread and Flour.	Oatmeal, Arrowroot, Sago, Tapioca	Condiments and Spices	Tea, Coffee, Cocoa.	Beer and Spirits.	Drugs.
10 years 1873-82	1529	29	50	18	—	0	21	11	25	30	31
1883	151	38	47	—	—	—	—	25	—	—	—
1884	816	21	41	40	—	1	0	9	67	3	16
1885	914	15	24	40	—	0	0	11	—	2	30
1886	876	9	18	23	—	0	1	11	—	8	—
1887	818	12	15	52	—	0	1	20	18	1	0
1888	753	11	18	20	30	0	1	7	—	13	0
1889	873	16	19	32	—	2	2	11	48	6	17
1890	927	13	22	14	0	0	0	3	35	4	—
1891	811	11	18	23	—	0	0	0	0	12	6
1892	969	14	19	17	3	0	4	6	0	12	27
1893	1004	13	19	11	2	0	0	13	0	17	26

Milk.

The samples of *Milk* numbered as many as 327, and 19 per cent. of them were adulterated. Of recent years the percentage of adulteration of Milk has not varied very much. The adulterated samples last year included 17 to which water had been added; 25 from which cream had been abstracted; and 21 which had been both watered and skimmed. In addition to these samples, 18 others were of suspiciously low quality, though they could not be positively said to be adulterated. One sample of Milk contained 26 per cent. of water and 8 per cent. of fat in excess, a considerable quantity of cream having been put in, apparently to hide the adulteration with water; several others were found to contain upwards of 20 per cent. less fat than they should have done, and in one instance the deficiency amounted to as much as 36 per cent.

Butter.

Of the 146 samples of *Butter* handed to me, sixteen, or 11 per cent. were adulterated. This is a smaller percentage than usual.

Lard. Cheese.

Thirty-three samples of *Lard* and fourteen of *Cheese* were analysed, and of these one sample of Cheese was found to contain a little lead, all the other samples being genuine.

Bread, Flour, Oatmeal, Arrowroot

Ninety-four samples of *Bread* and *Flour* were procured, and all of them proved to be unadulterated. The samples of *Oatmeal* and *Arrowroot* were also pure.

Condiments and Spices.

The *Condiments* and *Spices* numbered 111, and comprised 48 of *Vinegar*, 16 of *Mustard*, 40 of *Pepper*, and 7 of *Ground Ginger*. Eight of the Vinegars consisted principally of acetic acid; the Mustards were all genuine; five Peppers were adulterated, four with mineral matter and one with rice starch; and one sample of Ground Ginger contained no less than 75 per cent. of exhausted ginger.

Coffee, Ale, Whiskey.

The samples of *Coffee* were all genuine. Ten of the *Ales* contained what must be considered an excess of salt, and one sample of *Whiskey* was diluted sufficiently to reduce it to 38 degrees under proof, or 13 degrees below the legal minimum limit.

Drugs.

It is unsatisfactory to find that 26 per cent. of the *Drugs* were not of the proper quality. Thirteen out of nineteen samples of *Cream of Tartar*, and all the four samples of *Tartaric Acid* contained traces of lead. Two samples of *Linseed Meal* were adulterated, one with a little starch and the other with 10 per cent. of starch and foreign vegetable matter, containing mustard husk. One *Paregoric* was adulterated with 50 per cent. of water; one *Saffron* contained 13 per cent. of calendula florets, and another a small amount of mineral matter. One

sample of *Spirit of Nitrous Ether* was double the strength prescribed by the Pharmacopœia, while another was deficient of 20 per cent. of ethyl nitrite, the active ingredient of the compound. One sample of *Syrup of Tolu* was adulterated with 20 per cent. of water; and two samples of *Syrup of Rhubarb* were not of the quality prescribed by the Pharmacopœia.

Legal Proceedings

Legal proceedings were taken against 49 vendors of adulterated articles, and 42 convictions were obtained, the penalties amounting to £51 8s., and the costs to £21 13s. In three instances the proceedings were adjourned pending the result of an appeal to the High Court of Justice, and no further action was taken. Four cases were dismissed, the vendors in two instances producing a warranty, while an action brought against a chemist, who had sold Spirit of Nitrous Ether with only 20 per cent. of ethyl nitrite in it, was dismissed owing to the mis-spelling of the two latter words on the summons. In many instances the fines inflicted were, in my opinion, altogether too small, amongst them being 5s. and 9s. costs for selling milk with 15 per cent. of added water, and a similar amount for selling margarine as butter. As the profit accruing from such adulteration must be very considerable, it cannot be expected that so small a fine will have any deterrent effect.

Milk Appeal Case.

A dealer who was convicted of selling milk which was deficient of 22 per cent. of the normal amount of fat, appealed to the High Court of Justice against the decision of the magistrates. At the original hearing evidence was given that the milk was from a dairy of twenty-six cows, and that no cream had been taken from it, and the poorness of the milk was ascribed to the exceptionally dry weather and to the quality of the cows' food. It was contended that, as the poorness of the milk might arise from natural causes, and as no actual adulteration was proved, the defendant could not be convicted. Objection was also taken to my certificate on the ground that it did not state the actual amounts of the various constituents present in the milk, but merely that it was deficient of 22 per cent of its fat, and also on the ground that it contained an observation which was not justified; the latter being a general remark that the abstraction of fat from a milk is a fraud, and may possibly be injurious to health. At the appeal, a further point was raised that I had not conducted the whole of the analysis myself, but this objection was at once overruled. Mr. Justice Charles and Mr. Justice Wright, in giving judgment, said that the conviction was obviously under Section 6 of the Food and Drugs Act, for selling something which was not of the nature, substance, and quality of the article demanded, and not under Section 9, which makes it illegal to sell an article from which any part has been abstracted. The certificate was valid, although it did not state the actual amount of the various

constituents of the milk, and although it contained an unauthorised observation, which should not have been made there. The appeal was accordingly dismissed.

Vinegar Appeal Case.

An appeal was made to the Court of Quarter Sessions against a conviction for selling as Vinegar an article containing 70 per cent. of pyroligneous acid. In this case, the question at issue was not one of law but of fact, the appellant arguing that such a substance consisting of dilute acetic acid, distilled from wood, came under the term vinegar, and that, therefore, no offence had been committed. After a lengthy hearing, during which the question of what constitutes vinegar was fully discussed, the Recorder dismissed the appeal, holding that the article sold was not entitled to the name of vinegar.

In forty-nine instances the vendors of adulterated samples were cautioned by your Committee, and in thirty-four cases no action was taken, chiefly because the amount of adulteration was very slight.

I remain, Mr. Chairman and Gentlemen,

Your obedient Servant,

ALFRED HILL, M.D., F.I.C.,

City Analyst.

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