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REPORT

ON THE

SANITARY CONDITION

OF THE

Borough of Birkenhead,

FOR THE YEAR 1882,

BY

FRANCIS VACHER,

MEDICAL OFFICER OF HEALTH.

BIRKENHEAD:
WILLMER BROS. AND CO., LIMITED, 64 AND 66 CHESTER STREET.

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THE SANITARY CONDITION
OF THE
BOROUGH OF BIRKENHEAD
DURING 1882.

*Report of the Medical Officer of Health to the Health
Committee.*

At the Census taken on April 4th, 1881, the population of the Borough of Birkenhead was found to be 84,006. For the purposes of this Annual Report an estimate is required of the number living at midsummer 1882. The number of births in the Borough during the last nine months of 1881 and the first six months of 1882 was 3,854, and the number of deaths in the Borough during the same period was 1,858 ; showing an increase of births over deaths of 1,996. The enumerated inhabitants, with the *natural* increase in the fifteen months since the date of the Census, would thus make the population 86,002 at midsummer 1882. The actual increase of population in the Borough has however always been in excess of the natural increase, and the Registrar-General's estimate of the local population—86,582—is, probably, not extravagant, and may be accepted. It is based upon the rate of increase that prevailed during the decade 1871-81.

The population of the several townships forming the Borough, as given in the Census returns, the natural increase, estimated increase, and the estimated population at midsummer, 1882, are conveniently arranged in tabular form as follows :—

TOWNSHIPS.	Popula- tion at Census.	Natural Increase for 15 Months.	Estimat'd Increase for 15 Months.	Populat'n at Mid- summer, 1882
Birkenhead	51610	1227	1583	53193
Claughton	2984	27	85	2969
Tranmere	23987	664	856	24843
Oxton	3312	61	80	3392
Higher Bebington (Part of)	2163	17	22	2185
Birkenhead Borough	84006	1996	2576	86582

The next table shows the area in statute acres of the townships forming the Borough, and the proportion of persons per acre in each. This is interesting, as showing what a great difference there is in the density of population between Birkenhead and Tranmere, and between these and the semi-rural districts of Claughton, Oxton and Bebington.

TOWNSHIPS.	Area in Acres.	Persons per Acre.
Birkenhead	1279 $\frac{3}{4}$	41.5
Claughton	438 $\frac{3}{4}$	6.7
Tranmere	1071 $\frac{1}{2}$	23.1
Oxton	814	4.1
Higher Bebington (Part of)	245 $\frac{3}{4}$	8.8
Birkenhead Borough	3849 $\frac{1}{2}$	22.4

During the year 1882 the returns of the local registrars recorded 3,156 births and 1,742 deaths in the Borough of Birkenhead. The natural increase in the population in 1882 was, therefore, 1,414. Of the births 1,562 were males and 1,594 were females; of the deaths 905 were males, and 837 were females.

During 1881 the births registered were 3,059, and the deaths registered were 1,462. During 1880 the births were 3,048, and the deaths were 1,624. During 1879 the births were 3,112, and the deaths were 1,631. During 1878 the births were 2,932, and the deaths were 1,656.

The number of births in 1882 does not, therefore, compare unfavourably with the number in recent years. The decrease in the mortality which was maintained from 1878 to 1881 is however not continued.

Further particulars as to the births and deaths in the Borough, in 1882, that is to say, the number returned in each quarter of the year, and the numbers referred to each township, are given in

the tables subjoined. The births and deaths in premises belonging to the Union, it will be seen, are entered separately.

BIRTHS.	1st Qr.		2nd Qr.		3rd Qr.		4th Qr.		1882.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Birkenhead	232	249	256	258	245	247	236	255	969	1009
Claughton	8	5	9	5	9	8	10	7	36	25
Tranmere	110	98	115	117	117	119	136	138	478	472
Oxton	4	14	17	15	9	10	15	12	45	51
Bebington	11	6	7	6	1	5	4	4	11	16
Union Hospital....	3	4	4	3	—	4	4	5	23	21
Birkenhead Boro'	368	376	408	404	381	393	405	421	1562	1594

DEATHS.	1st Qr.		2nd Qr.		3rd Qr.		4th Qr.		1882.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Birkenhead	144	149	151	123	123	140	140	127	563	539
Claughton	3	5	3	4	3	2	3	2	12	13
Tranmere	44	55	42	34	68	51	78	76	232	216
Oxton	5	6	3	6	3	3	10	4	21	19
Bebington	5	4	1	2	2	2	7	3	15	11
Union Hospital....	12	10	23	6	15	8	12	15	62	39
Birkenhead Boro'	213	229	223	175	219	206	250	227	905	837

The annual rates, per 1,000 living, of births and deaths, as regards the incorporated area and the townships within it, appear in the next table.

1882.	Annual Rate per 1,000 Living.	
	Births.	Deaths.
Birkenhead.....	37.18	20.71
Claughton	20.54	8.42
Tranmere	38.24	18.03
Oxton	28.30	11.79
Bebington	12.35	11.89
Birkenhead Borough, including B. & D. in Union premises	36.45	20.11

The birth-rate of the Borough, in 1881, as corrected, is 36.24, and the death-rate 17.32. The birth-rate in 1880, as corrected, is 36.99, and the death-rate 19.70. The birth-rate in 1879, as corrected, is 38.68, and the death-rate 20.27. The birth-rate in 1878, as corrected, is 37.34, and the death-rate 21.09.

The death-rate of Tranmere being so much lower than that of the township of Birkenhead is in part due to the density of population being so much lower in Tranmere, and partly to the

Borough Hospital, the Children's Hospital, the Fever Hospital, and Hemingford Lodge (an asylum for the infirm and aged) being all situated in the township of Birkenhead. Claughton, Oxtan, and Bebington being so thinly populated will also in some measure account for the low death-rate obtaining in these townships. The Claughton death-rate being so exceptionally low is to a great extent due to its having hardly any resident poor.

In order that the birth-rate and the death-rate of the Borough of Birkenhead, in 1882, may be compared with the corresponding rates returned by the most populous cities and boroughs in England, we have compiled the following tables from the Registrar General's "Quarterly Returns of Marriages, Births, and Deaths." They give the birth-rates and death-rates of the 28 largest towns in England, for the 52 weeks ending December 30th, 1882. The Registrar-General, in 1882, for the first time included Birkenhead in the list of the great towns of England. The list, as issued for 1881 and previously, contained 20 towns only; as issued in 1882 it included 28 towns; those added being Derby, Birkenhead, Bolton, Blackburn, Preston, Huddersfield, Halifax and Cardiff.

CITIES AND BOROUGHES.	Annual Birth-rate per 1,000 Living.				
	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.
London.....	36.2	33.3	33.6	34.2	34.3
Brighton.....	32.5	30.0	31.0	29.1	30.6
Portsmouth.....	35.2	34.6	32.8	33.4	34.0
Norwich.....	36.5	32.4	33.4	33.3	33.9
Plymouth.....	33.5	32.9	30.7	31.4	32.1
Bristol.....	34.9	33.3	32.7	31.3	33.0
Wolverhampton.....	36.6	37.2	35.9	34.8	36.1
Birmingham.....	39.0	37.0	34.3	35.9	36.5
Leicester.....	39.8	38.7	38.5	37.3	38.5
Nottingham.....	39.4	38.2	38.7	36.2	38.1
Derby.....	37.0	35.0	33.4	36.9	35.5
Birkenhead.....	34.5	37.8	35.7	38.4	36.6
Liverpool.....	36.7	37.6	36.5	36.0	36.6
Bolton.....	40.4	36.5	34.0	34.7	36.4
Manchester.....	38.5	37.2	36.0	35.2	36.7
Salford.....	40.6	39.8	37.2	37.9	38.8
Oldham.....	34.0	35.6	35.8	34.2	34.9
Blackburn.....	38.8	39.9	38.7	36.5	38.4
Preston.....	41.5	41.1	37.8	38.4	39.7
Huddersfield.....	31.8	29.4	32.7	29.3	30.8
Halifax.....	28.3	29.7	31.2	30.3	30.0
Bradford.....	32.5	31.2	32.5	31.3	31.8
Leeds.....	36.6	37.6	35.2	35.0	36.1
Sheffield.....	38.1	38.0	36.7	36.8	37.4
Hull.....	35.6	37.4	35.3	38.1	36.6
Sunderland.....	41.8	42.8	40.4	39.8	41.2
Newcastle.....	36.6	36.1	39.0	37.1	37.2
Cardiff.....	44.2	38.1	39.2	38.6	39.2
Mean.....	36.7	35.1	34.7	34.3	35.3

CITIES AND BOROUGHES.	Annual Death-rate per 1,000 Living.				
	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Year.
London.....	25.6	19.5	18.6	21.8	21.3
Brighton.....	29.2	21.8	17.8	18.1	21.7
Portsmouth.....	21.2	24.3	19.5	20.9	21.4
Norwich.....	23.9	19.0	13.4	21.0	20.5
Plymouth.....	24.4	20.1	18.6	21.7	21.2
Bristol.....	21.6	19.9	16.4	19.0	19.2
Wolverhampton.....	25.4	22.6	21.0	20.5	22.3
Birmingham.....	21.4	19.5	21.0	21.9	20.9
Leicester.....	19.8	18.7	23.4	19.1	20.1
Nottingham.....	25.9	22.6	23.6	22.3	23.6
Derby.....	20.6	18.6	14.9	20.7	18.7
Birkenhead.....	20.4	18.4	19.7	21.9	20.1
Liverpool.....	26.5	25.2	25.1	29.3	26.5
Bolton.....	25.9	25.3	21.1	19.4	22.9
Manchester.....	27.6	27.9	25.0	26.4	26.7
Salford.....	24.3	23.1	24.3	21.2	23.2
Oldham.....	26.7	24.1	21.8	26.0	24.6
Blackburn.....	28.9	24.2	22.6	24.7	25.1
Preston.....	28.7	26.8	25.7	29.1	27.5
Huddersfield.....	22.3	20.8	23.1	23.2	22.3
Halifax.....	20.0	19.0	18.6	23.9	20.3
Bradford.....	21.9	22.1	20.1	20.7	21.2
Leeds.....	22.4	21.1	22.9	26.5	23.2
Sheffield.....	22.9	19.8	21.1	23.0	21.7
Hull.....	21.4	20.9	25.6	24.9	23.2
Sunderland.....	23.1	22.2	28.3	32.5	26.5
Newcastle.....	22.9	21.1	24.5	24.0	23.1
Cardiff.....	20.9	16.3	18.7	23.8	19.9
Mean.....	24.7	20.9	20.6	22.9	22.2

It will be seen that out of the whole number of cities and boroughs only ten had higher birth-rates, and only three had lower death-rates than the Borough of Birkenhead. The mean birth-rate of the great cities and boroughs was 1.3 per 1,000 living lower, and the mean death-rate was 1.1 per 1,000 living higher than in the Borough of Birkenhead. Yet the density of the population in Birkenhead is greater than in some of the towns in this list : thus the number of persons to an acre, at the middle of 1882, was in Norwich 11.9, in Cardiff 12.7, in Leeds 14.6, in Sheffield 14.8, in Blackburn 15.3, in Bradford 18.6, in Nottingham 19.4, and in Halifax 20.2 ; while in Birkenhead it was, as already stated, 22.4. In point of population Birkenhead is greater than five of the towns on the list, that is to say Plymouth, Wolverhampton, Derby, Huddersfield and Halifax.

In instituting a comparison between the death-rate of Birkenhead and the death-rates of other towns, it should be noticed that whereas the union hospitals and workhouses of most of the cities and boroughs just named receive persons from within their

own boundaries only; the Union Hospital and Workhouse of Birkenhead receive from Seacombe, Egremont, Liscard, Little Brighton, &c. Six of those who died in the Birkenhead Union Hospital and Workhouse, during the year under review, were thus derived from outside the municipal boundary (reducing the death-rate from 20.11 to 20.05). Some of the patients who died in other hospitals were also derived from without the municipal boundary; but considering the contiguity of a large city to Birkenhead, it is probable that the number of strangers dying in such hospitals does not exceed those who, though ordinarily residing in Birkenhead, die in hospitals belonging to our neighbours.

The local birth-rate and death-rate also compare favourably with the mean of the corresponding rates returned by the fifty large towns in England and Wales next in importance to the twenty-eight English cities and boroughs just referred to. The mean birth-rate, in 1882, of the fifty large town districts, as given in the Registrar-General's "Quarterly Returns," is 35.4, and the mean death-rate is 20.4, per 1,000 living.

The birth-rate of the whole of England and Wales, in 1882, was, according to the same authority, 33.7, and the death-rate 19.6, per 1,000 living. Figures derived from the "Quarterly Returns" are subject to revision when the causes of death and other details are finally classified.

Tabular statements of the year's mortality, within the Borough of Birkenhead, classified according to diseases, ages, and localities, a weekly register of deaths, and of meteorological results, a monthly summary of deaths from all causes and zymotic diseases, with the rates per 1,000 per annum, together with a table specifying the occupation, or "description," of each person whose death was entered during the year, a return of deaths in the Birkenhead Union Hospital and Workhouse, and a sketch map showing the boundaries of the wards, &c., will be found appended.

Table I. shows the deaths registered in the whole Borough during 1882, arranged with reference to the age at which death occurred in each case. They are disposed in four sub-tables—the deaths in the townships of Birkenhead and Claughton in the first,

the deaths in Tranmere (exclusive of the Union premises) and Oxtun in the second, the deaths in the incorporated portion of Higher Bebington in the third, and the deaths in the Union Hospital and Workhouse in the fourth. The deaths of infants are entered up in three columns, those under one year, those of one year and under two years, and those turned two years and under five. Then follow the deaths of children and young persons, those turned five years and under twenty; and of adults, those turned twenty and under forty, and those turned forty and under sixty. In the last two columns are the deaths of old people turned sixty and under eighty, and those eighty and upwards. Reference to this table will show that, of the gross local mortality for 1882, the deaths of infants accounted for 733, children and young persons for 111, adults 560, old people 338. In the townships of Birkenhead and Claughton 493 deaths occurred among infants, 71 among children and young persons, 380 among adults, and 183 among old people. In the townships of Tranmere and Oxtun the number of deaths of those under five years was 222, of children and young persons 33, of adults 131, and of old people 102.

The relative proportion of deaths, in 1882, among infants, children and young persons, adults and old people, to the whole number of deaths, in certain sub-divisions of the Borough, in the premises controlled by the Guardians of the Poor, and in the entire area incorporated, is readily shown in tabular form, thus:—

PERCENTAGE OF DEATHS AT CERTAIN AGES TO TOTAL DEATHS.	Age below			60 and up- wards.
	5	20	60	
Birkenhead and Claughton	43·7	6·3	33·7	16·2
Tranmere and Oxtun	45·4	6·7	26·8	20·9
Bebington	19·2	11·5	26·9	42·3
Union Hospital and Workhouse ..	12·8	3·9	41·5	41·5
Birkenhead Borough	42·0	6·3	32·1	19·4

In this respect too the local mortality compares favourably with the urban mortality of the country in 1882. The proportion of deaths of infants, children and young persons to the sum of the deaths is less than it averages in town and populous districts. The

local mortality, in 1882, will also bear comparison with the local mortality of previous years. In the old Improvement District of Birkenhead for a number of years about fifty per cent. of the deaths returned were of children under five years, and little more than twelve per cent. were of persons sixty years and upwards. It is true that in 1881, an unprecedentedly healthy year, the percentage of deaths of those under five years was but 40·4 and the percentage of deaths of old people was 20·6. However in the three years 1878-80, 42·5 per cent. of the local deaths were of children under five years, and 18·5 were of persons of sixty or upwards. The figures opposite Bebington have little significance, the gross number of deaths being inconsiderable ; nor is there any special significance in the small proportion of infants and the large proportion of old people in the death returns from the Union, the inmates of a workhouse differing from a normal population in respect of age.

Another method of ascertaining whether the infant mortality be in excess is by finding the proportion of deaths under one year to the births registered. Measured thus, the rate of infant mortality for 1882, was equal to 153 per 1,000 in the townships of Birkenhead and Claughton, 128 per 1,000 in Tranmere and Oxtan, and 144 per 1,000 in Birkenhead Borough. In the 28 most populous cities and boroughs in England and Wales, among which Birkenhead is classed, the proportion of deaths under one year to births registered in 1882, averaged 162 per 1,000 births, in the fifty large town districts it averaged 153 per 1,000 births, in the whole of England and Wales it was 141 per 1,000 births.

Neither the general mortality nor the infant mortality were as low in 1882 as in 1881 ; and this is true not only of Birkenhead but of the whole country. The death-rate of England and Wales, in 1881, was lower than in any year since civil registration was established in 1837 ; and the death-rate of Birkenhead, in the same year, was considerably below the lowest previously recorded. The local death-rate and the death-rate of the whole country in 1882 do, however, compare favourably with the mean of the corresponding rates of previous years.

Table II. is the weekly register of deaths in the Borough of Birkenhead for 1882. The deaths are entered as in Table I. into four sub-tables, representing Birkenhead and Claughton, Tranmere and Oxton, Bebington, and the Union Hospital and Workhouse. The upper portion of Table III. is a summary of the weekly register of deaths, and the lower portion is a record of meteorological results.

By way of introduction to the few remarks we propose making on the noteworthy features of the meteorology of the year, we submit the following statement of the mean temperature and atmospheric pressure, and the amount of rainfall in each month of 1882. It has been kindly prepared for us by Mr. Hartnup, of the Bidston Observatory, who also furnishes particulars of the daily observations taken under his directions.

1882.	Mean Tempera- ture.	Mean Barometer.	Rainfall on Ground.
	°	Inches.	Inches.
January	42·3	30·258	2·218
February	43·8	30·144	1·512
March	46·4	29·917	2·082
April	47·3	29·736	3·144
May	53·1	30·017	1·052
June	55·4	29·851	4·248
July	59·1	29·772	4·548
August	58·8	29·872	2·193
September	54·2	29·845	2·558
October	50·1	29·811	2·457
November	42·9	29·620	4·612
December	38·9	29·620	3·848

The meteorological results show as follows:—(1) That the mean of the barometer was lower in 1882 than the average, and lower than in 1881. In January and February it was exceptionally high, far higher than the average; and in November and December it was exceptionally low, much lower than the average. (2) That the mean temperature of 1882 was just above the average mean, but a degree and a half above the mean temperature of 1881. The temperature was unusually equable, there being no excess of summer heat and exceedingly little winter cold. The only three hard winter days were on December 10th, 11th, and 12th, when the lowest temperature was respectively 23·9, 17·2, and 22·2 degrees.

(3) The rainfall of 1882 was three and a half inches above the rainfall of 1881, and about five inches above the average amount. Out of the total of 34 inches upwards of 24 fell during the last seven months of the year. The number of hours in which rain fell in 1882, was 654, about 75 hours more than the average number. The proportion of cloud to clear sky was just in excess of the mean proportion. Westerly winds were more prevalent than in most recent years. The humidity of the air in 1882 was less than in 1880 and 1881, but barely lower than the mean. The wind force in 1882 exceeded that of recent years: it was specially noticeable in the first quarter of the year.

The year's meteorology naturally introduces the next subject to be considered, the distribution of the mortality over the four quarters, as the relative mortality of different portions of the year must necessarily be affected by the atmospheric conditions which have marked its progress. Of the sum of the deaths registered in Birkenhead and Claughton 301 were entered to the first quarter, 281 to the second, 273 to the third, and 272 to the fourth; of the sum of the deaths in Tranmere and Oxton 110 appear in the first quarter, 85 in the second, 125 in the third, and 168 in the fourth. In Bebington the numbers of deaths registered in the four quarters were respectively 9, 3, 4, 10; and in the Union Hospital and Workhouse the numbers were 23, 29, 23, 27. Expressed in death-rates per 1,000 living the mortality of the whole Borough was, in 1882, 20·4 in the first quarter, 18·4 in the second, 19·7 in the third, and 21·9 in the fourth. Thus the second quarter, as is frequently the case, showed the lowest mortality; and the fourth quarter (which was wet and stormy and for a brief period exceptionally cold) the highest mortality. A large proportion of the mortality in this quarter was among children, the excess especially coming under the head—convulsions.

The causes of death, as they appear in Tables I. and II. in the appendix, are systematically classified according to the principles laid down by the late Dr. W. Farr, the nosology being that adopted by the Registrar-General, which experience has shown to be the best for statistical purposes. The death-causes are arranged under classes and orders, the latter corresponding to the families of Natural

History. Genera, or what in diseases would be called varieties, are not distinguished. All death-causes are thus conveniently classified under 116 heads, some of which, however, include diseases very distinct from one another.

At the beginning of Table I. are the totals of deaths from all causes, and on the next line the totals of deaths from specified causes. The deaths which we are obliged to refer to unspecified causes are not only those ascribed, in legal phraseology, to "visitation of God" or "natural causes," but also those which, with almost equal vagueness, are classified as due to "tumour," "abscess," "coma," &c. The deaths from specified causes are then divided into five classes. Class I. (the zymotic) embraces all diseases, either epidemic, endemic, or contagious, which are induced by some specific body, or by want of or by the bad quality of food. The diseases coming under Class II. (constitutional or cachectic) appear to be due to a bad habit of body, and are sometimes hereditary. Class III. takes in diseases the effects of which are manifest in disturbing or obliterating the functions of particular organs or systems. Class IV. includes the conditions tending to produce death, which are the incidental results of the formative, reproductive, and nutritive process. Class V. groups together all deaths which are the evident and direct result of physical or chemical forces.

Of the 1,718 deaths from specified causes registered in the Borough during the year 1882, 319 were ascribed to zymotic diseases, 213 to constitutional diseases, 821 to local diseases, 292 to developmental diseases, and 73 to violence. The proportion of zymotic deaths to the whole number of deaths was 18·3 per cent.; in the townships of Birkenhead and Claughton it was 18·9 per cent.; in Tranmere and Oxtan it was 18·8 per cent.; in Bebington 23·0 per cent.; and in the Union premises 6·9 per cent. The proportion deaths ascribed to zymotic diseases bear to deaths from all causes is, however, a matter of no great significance, as of course the general death-rate varies considerably from year to year; and any increase in the fatality of non-zymotic diseases, such as phthisis, bronchitis, or pneumonia, makes the proportion of deaths from zymotic diseases compare more favourably.

An accurate estimate of the relative fatality from zymotic diseases, and from the other four classes of death-causes just referred to, can only be made by taking out the death-rate per 1,000 living, as respects each of the five classes. This has been done, and the results are displayed in the following table. Parallel with the column containing the death-rates for 1882 are the corresponding death-rates for 1878, 1879, 1880, and 1881. The calculations are based upon the corrected census returns.

CLASSES.	Annual Death-rate per 1,000 Living.				
	1878	1879	1880.	1881.	1882.
Zymotic Diseases	4.87	3.81	4.01	2.73	3.68
Constitutional Diseases	3.08	2.49	3.28	2.79	2.46
Local Diseases	8.58	9.11	8.53	8.04	9.48
Developmental Diseases	3.36	3.53	2.86	2.61	3.37
Violent Deaths	0.86	0.95	0.71	0.86	0.84

The table shows that the zymotic death-rate and the rate as regards violent deaths, in 1882, compare favourably with the corresponding death-rates of all but one of the preceding four years; and that the constitutional diseases death-rate, in 1882, compares favourably with the corresponding death-rates of all the preceding four years.

The 319 deaths from zymotic diseases include 252 by what have been termed the chief zymotics (certain diseases belonging to the miasmatic order), viz., measles 34, scarlatina 17, diphtheria 3, whooping-cough 89, fevers 46, and diarrhoea 63. The remaining 67 are entered to what have been called minor zymotics (diseases less prevalent, less fatal, or less obviously zymotic in character), viz: syphilis 15, rheumatism 10, inanition of infancy 8, alcoholism 8, croup 6, erysipelas 5, dysentery 3, puerperal fever 2, carbuncle 2, purpura 2, thrush 2, worms 2, quinsy 1, and remittent fever 1. The mortality from the chief zymotics in 1882 was equal to a death-rate of 2.9 per 1,000 living. In the twenty-eight cities and boroughs among which Birkenhead is classed this death-rate was 3.5 in 1882; in the fifty large town districts next in importance it was 2.9 in 1882.

The death-rates in respect of the principal and other zymotics, during 1882, are given in the next table. Corresponding rates for each of the four years, 1878-81, have been taken out for comparison. All the calculations are from estimates of the population based on the Census of 1881.

ZYMOTIC DISEASES.	Annual Death-rate per 1,000 Living.				
	1878.	1879.	1880.	1881.	1882.
Measles.....	0.91	0.28	0.18	0.58	0.39
Scarlatina	0.35	1.55	0.90	0.23	0.19
Diphtheria	0.17	0.23	0.13	0.05	0.03
Whooping-cough	1.14	0.17	0.84	0.53	1.02
Fevers	0.61	0.42	0.28	0.28	0.53
Diarrhoea	0.94	0.41	0.93	0.43	0.72
Other Zymotics	0.72	0.73	0.75	0.60	0.77

It is a source of satisfaction to be able to record that another year has passed without any fatality from smallpox, an exemption which has been maintained since 1877, the year when the disease was epidemic in the locality. Indeed so far as the Sanitary Authority have been able to ascertain there has been no case of smallpox in the Borough during 1882. On several occasions information has been received of veritable cases of this malady having appeared, but on the matter being investigated it has been found that the patients were suffering from some disease other than smallpox. Thus on May 23rd a case was reported at Livingstone Street, but it was found that the patient was suffering from a simple form of skin disease. Later on in the same month a case was reported in St. Anne Street, and on June 29th a case was reported in Henry Street, and on July 13th a case was reported at the north end of Brook Street, and all were found to be cases of chicken pox. On September 19th there was again a false alarm, an alleged case of smallpox having been reported at Berry Street. The patient in this instance was suffering from scarlatina.

The 75th Section of the Birkenhead Corporation Act, 1881, which requires householders and medical men in attendance to notify cases of dangerous infectious diseases to the Sanitary Authority, enables us to supplement the statement of the mortality from the zymotic diseases with a statement of cases of sickness due to some of the chief zymotic diseases, month by month, as they

were reported. The diseases the Authority understand by the term "dangerous infectious diseases" are smallpox, measles, scarlatina, diphtheria, fevers and cholera. The cases notified to them appear in the following return. Of the whole number 962 were notified by medical practitioners, and the remaining 25 by the school attendance officers, the occupiers, the relieving officer, the inspectors, and in a very few instances by the registrars.

1882.	Me'sles	Scarlatina.	Diphtheria.	Typhus Fever.	T'phoid Fever.	Fever.	Cholera	Total.
January	29	19	0	9	4	0	0	61
February	5	8	1	3	7	0	0	24
March	2	14	0	7	11	1	0	35
April	6	23	2	4	3	0	0	38
May	14	15	1	6	8	2	0	46
June	40	6	2	4	6	0	0	58
July	68	6	0	19	4	0	0	97
August	48	2	0	15	3	1	0	69
September	39	15	0	16	11	3	1	85
October	158	10	1	11	13	5	0	198
November	149	24	1	4	12	3	0	193
December	57	10	1	1	4	10	0	83
	615	152	9	99	86	25	1	987

It will be seen that the mortality for 1882 from measles, scarlatina and diphtheria was, as regards each disease, exceptionally low—lower than the mean mortality of the four preceding years, lower than the mortality of such a typically healthy year as 1881. Yet measles and scarlatina were present in the district all the year, and measles remarkably prevalent in October and November. Of the 34 deaths ascribed to measles it may be noted that 20 took place during the last quarter of the year. Diarrhoea was more fatal in 1882 than in 1881, but the mortality due to it was less than it averaged in 1878, 1879, and 1880. More than two-thirds of the total number of deaths from this cause occurred in the third quarter, and more than three-fourths of the fatal cases were children under two years old. The death-rates as regards whooping-cough, fevers, and the diseases classed together as other zymotics are in excess of the corresponding rates of 1881 and the corresponding mean rates for recent years. Whooping-cough was almost equally prevalent all over the Borough, the mortality being in excess from May to November. Upwards of two-thirds of the fatal cases were children under two years old.

Of the 46 deaths ascribed to fever, 27 were distinguished as typhus, 16 as typhoid or enteric, and 3 as continued fever. Though the fever death-rate of 1882 is in excess of that obtaining in recent years in the Borough, it is considerably below the mean fever death-rate prevailing in the old Improvement District of Birkenhead from 1864 to 1877. Some particulars of the deaths referred to typhus are subjoined, viz: where each case occurred, the sex, age and destination of each patient, and the date of each death.

Where Case occurred.	Sex and Age of Patient.	Destination.	Date of Death.
12, Berry Street	M 40	Not removed ..	January 14
3, Abbey Terrace	F 38	Ditto ..	" 16
4, Hamilton Lane	F 16	Fever Hospital ..	" 26
1, Blackpool Street	F 26	Not removed ..	February 2
8, Hughes' Buildings	M 46	Ditto ..	" 6
9, Elizabeth Street	M 54	Ditto ..	" 11
42, Thomas Street	M 54	Fever Hospital ..	" 26
17, Wilson Street	M 60	Not removed ..	March 29
15, Cleveland Avenue	F 33	Fever Hospital ..	April 13
6, Bright Street	F 66	Not removed ..	" 16
1, Ivy Bank	M 55	Fever Hospital ..	" 27
9, Back Beckwith Street ..	M 41	Ditto ..	May 17
Ditto	F 17	Ditto ..	" 23
75, Old Bidston Road	F 31	Not removed ..	" 25
9, Fore Street	M 28	Fever Hospital ..	June 13
2, Gillbrook	F 55	Not removed ..	" 18
393, Brook Street	M 19	Fever Hospital ..	July 4
44, Argyle Street	F 29	Not removed ..	" 21
4, Laxey Terrace	M 50	Fever Hospital ..	" 26
33, Queensbury Street	F 34	Not removed ..	August 2
22, Leicester Street	F 52	Fever Hospital ..	" 7
10, Castle Buildings	M 53	Not removed ..	" 7
2, Wilbraham Terrace	F 45	Fever Hospital ..	September 27
Ditto	M 52	Ditto ..	October 11
9, Wilson Street	F 48	Ditto ..	" 11
Wilbraham Terrace	M 20	Ditto ..	" 21
2, Wilson Street	M 25	Ditto ..	December 26

A reference to the table of cases notified will show that the Authority had information of 99 cases in all. Of these 73 were removed into the Fever Hospital—*i.e.*, nearly three-quarters of the whole number. The deaths from typhus in hospital were 15, the deaths among those not removed were 12.

The history of the several importations of typhus into the Borough during the year and the comparative success which has attended the Authority's efforts in limiting the spread of the disease, cannot be told without reference to the information contained in the notifications of private practitioners, and to use this, even for such a purpose, would involve a breach of confidence. We have no

wish to lay ourselves open to such a charge, and we shall therefore only refer to such matters as we have knowledge of from other sources. Private practitioners' communications to the Authority have always been regarded as private, and notifications given under Clause 75 of the Birkenhead Corporation Act, 1881, form no exception to the rule. It is especially desired to draw attention to two facts, viz. :—

- I. That typhus was again and again imported into the district, and,
- II. That as a rule the notification of typhus cases was later than it might have been and should have been, and frequently too late for removal of the infected subject to be attempted.

Some Cases of imported Typhus.—A young man, a bricklayer, who had been living with his friends at Croyden, set out on tramp in search of work about the middle of March, and on the 24th fell in with some mates at Birkenhead who took him to their lodgings in a small street near the railway. He was taken ill in the course of the night and seen by a medical man the next morning. About noon he was removed to hospital. The case proved to be veritable typhus, and the patient was not discharged till May 6th. Though this case was taken from a lodging-house the disease was not communicated.

On April 7th a man showed signs of typhus in a sub-let house in a street off Brook Street. It was found that he had lately come from Chester. He was a journeyman tailor but had not done any work since his arrival. This man was removed to hospital and died on the 27th. The disease was not, so far as is known, communicated.

On July 3rd two young women, whose mother had died of typhus in Fontenoy Street, Liverpool, and who had been going to and fro to her during her illness, were reported by the doctor in attendance as suffering from typhus and removed to hospital. One had been ill since June 25th, the other since June 26th, but there was some uncertainty about the nature of the disease, as in both cases it was complicated with congestion of the lungs. The patients were taken ill in a sub-let house in a court, and the disease having been pronounced "bronchitis" the neighbours came

and went freely for a whole week without thought of harm. The inevitable result followed, and typhus spread from these two unrecognised cases to many others—28 persons eventually being attacked.

On October 2nd again a poor old woman who plied her trade of dealer in old bottles in Liverpool, but lived in a poor lodging house in Birkenhead, manifested signs of the disease and was at once removed to hospital. She was undoubtedly suffering from typhus, but there had been no previous case in her lodging or in the street or locality for upwards of six months. After her removal there was but one subsequent case.

Notification of typhus received too late. One great difficulty in dealing with typhus (and it is true also to some extent of other infectious diseases) is that the notification was later than it need have been, and often so late that removal of the patient was dangerous or impossible. It is easy to cite a few instances. The case of typhus at 12, Berry Street, heading the list of fatal cases, was only reported on January 13th and it terminated fatally on the following day. The case, next on the list, occurring at 3, Abbey Terrace, was not reported till after death had taken place. The Hamilton Lane case, third on the list, was first notified to the Sanitary Authority on January 25th. The relieving officer submitted a certificate from the medical man in attendance certifying that the case was one of fever and that the patient was fit to be removed to Hospital. She was accordingly removed and died the following day. The patient, a young girl, had been ill for upwards of a week, having taken to her bed on the 17th. But, perhaps, the best evidence that can be adduced that notifications of typhus cases are not sufficiently early is afforded by the following summary of notes taken in Hospital. Out of the 73 cases of typhus received in Hospital 37 had been ill longer than two days. That is to say :

3 had been ill 3 days,			
4	„	„	4 „ „
4	„	„	5 „
5	„	„	6 „
7	„	„	7 „
4	„	„	8 „
1	„	„	9 „
1	„	„	10 „

2	had been ill	11	days.
1	"	12	"
8	"	14	"
1	"	15	"
1	"	21	"

Now there is no delay in removing patients after notification. Some of the cases not received into Hospital when notified were already so far advanced that removal was not attempted. Doubtless this late notification is often due to the disease not having been recognised at an early stage, or to no medical man having been called in till the disease was far advanced, but the fact remains that the malady is communicated from one member of a family to another and from one house to another, much of which might be avoided if cases were notified more promptly.

The number of houses in which typhus fever occurred during the year was 53, all of which were cleansed and disinfected on the removal, death, or recovery of the patient.

Having given the death-rate in Birkenhead as far as regards the five classes into which death-causes have been divided, and the principal and other zymotics, we next submit a table showing the death-rates in the Borough so far as regards the orders into which the death-causes belonging to Classes II., III., and IV. have been grouped. Parallel with the columns containing the rates of 1882 are death-rates for the four previous years, based upon estimates derived from the last Census.

Constitutional, Local, and Developmental Diseases.	Annual Death-rate per 1,000 Living.				
	1878.	1879.	1880.	1881.	1882.
Diathetic Diseases	·53	·61	·71	·46	·53
Tubercular Diseases	2·54	1·88	2·57	2·33	1·92
Diseases of Nervous System ..	2·64	2·68	2·41	2·34	2·55
" Organs of Circulation ..	1·20	·88	1·00	·88	1·06
" Respiratory Organs ..	3·36	3·92	3·07	3·09	4·03
" Digestive Organs ..	·94	1·04	1·28	1·04	1·16
" Urinary Organs....	·27	·39	·54	·43	·47
" Organs of Generation ..	·03	·06	·04	·02	·04
" Organs of Locomotion ..	·02	·02	·08	·07	·08
" Integumentary System ..	·07	·13	·07	·14	·06
Developmental Diseases of Children ..	·96	·90	·78	·68	·88
" " Adults ..	·15	·08	·12	·16	·15
" " Old People ..	·82	1·13	·68	·58	·85
Diseases of Nutrition	1·41	1·40	1·28	1·18	1·47

The two orders under which constitutional diseases are arranged have little in common, except that in typical diseases in each order new morbid products are deposited. Diathetic diseases account for 46 deaths, of which 30 were due to cancer, 5 each to gout, anæmia, and mortification, and 1 to dropsy. All but one in this order were deaths of adults. Tubercular diseases account for 167 deaths, of which 132 were due to phthisis pulmonalis, 16 to tabes mesenterica, 14 to hydrocephalus, and 5 to scrofula. Twenty-six of the deaths from phthisis and all but two of the deaths ascribed to the other tubercular diseases were of children and young persons. The diathetic death-rate is below the corresponding local mean rate, and the tubercular death-rate very considerably below the corresponding local mean rate.

Of the eight orders under which local diseases have been arranged, the first four account for an overwhelming proportion of the mortality referable to this class. The deaths from diseases of the brain and nervous system, in 1882, were 221, the deaths from diseases of the heart and bloodvessels were 92, the deaths from diseases of the respiratory organs were 349, and the deaths from diseases of the digestive organs were 101. The deaths entered to diseases under the remaining four orders were 58. Of the whole number of deaths from local diseases, 279 were of infants under five years of age. Nervous diseases, heart disease, and diseases of the respiratory and digestive organs all yield rather higher death-rates than the mean of recent years.

Of the death-causes in Class IV., 77 were ascribed to so-called developmental diseases of children, *i.e.*, premature birth, malformations and teething, 13 to diseases and conditions incidental to tedious or complicated travail, 74 to old age, and 128 to diseases of nutrition, that is atrophy, debility, and marasmus. The death-rates in respect of all these orders of diseases are a little above the mean.

The number of inquests held during the year 1882 was 127; thus 7.2 per cent. of the sum of the deaths in the Borough formed the subject of judicial inquiries. Of these inquests 96 were in the township of Birkenhead, 27 were in Tranmere, 2 were in Claughton,

1 was in Oxton, and 1 was held in the workhouse; 80 were on the bodies of males, and 47 were on the bodies of females.

Not all the death-causes which are classified represent diseases or symptoms observed and certified by medical men in attendance during the last illness, or verdicts following official investigation. A significant proportion of the death-causes were entered in the register on the doubtful testimony of deceased persons' relatives, or friends, or fellow-lodgers. In an analysis of the mortality of a district the number of such deaths should always be noted; the registrars have, therefore, been required to mark in the returns furnished every death not certified by a registered practitioner, or made the subject of a coroner's inquest. In 1882, out of the 1,742 deaths registered 33 (14 males and 19 females) were marked "not certified"—that is 1·8 per cent. Five of these uncertified deaths took place in Tranmere, the remainder in the township of Birkenhead. Only 5 of the deceased were adults at the time of death; 22 were under one year old. The causes of the 33 deaths have been entered in accordance with the statements of persons giving information to the registrar, as follows:—

- 3 to phthisis,
- 4 to convulsions,
- 1 to spinal disease,
- 7 to bronchitis,
- 10 to premature birth,
- 2 to teething,
- 1 to senile decay, and
- 5 to debility.

As under the Registration of Births and Deaths Act, Clause 20, every registered medical practitioner is required to certify as to the cause of death of any person he may have attended during the person's last illness, it is but reasonable to assume that when a cause of death appears in the register as "not certified," the subject of the death has either been without attendance, or committed to the care of some quack or herbalist. The only local practitioner who possessed a registerable qualification, without being on the register, died in January, 1879; the alleged causes of death in the uncertified entries are therefore absolutely valueless, and

must be accepted merely as representing the opinions of nurses or nostrum vendors. Some of the expressions made use of in the above list, as phthisis, spinal disease, and senile decay, are terms that would hardly be employed except by those laying claim, rightly or wrongly, to some knowledge of medicine, and seem to indicate that at least in some instances the information supplied to the registrar has been derived from an irregular practitioner. Fortunately the proportion of these uncertified deaths is not increasing. In 1881, as in 1882, it was 1·8 per cent. of the whole number of deaths, in 1880 it was 2·2 per cent., in 1879 it was 3·3 per cent., and in 1878 it was 2·8 per cent. However, it is a sad reflection that year by year two-thirds or more of the uncertified deaths are deaths of infants. If professional advice is not obtained for an adult when sick, it may be owing to his own default, but if it is not obtained for a sick infant it is obviously referable to the neglect of others. In any case in which the services of a qualified medical practitioner are not procured they are probably not sought, for so manifold are the means of obtaining medical relief in Birkenhead, that no one can plead poverty as an excuse for not doing his duty to his child in this respect. Can it be that a certain class of parents by preference bring their children to charlatans? Certainly the uncertified deaths tend to occur in the same streets. In one short bye-street, for instance, no less than four uncertified deaths of infants occurred during November and December—death in the case of three is ascribed to “general debility” and in the case of one to bronchitis. Then as to the ten deaths attributed to premature birth—what of these? The period of life ranged from a quarter-of-an-hour to twenty-four hours. The question arises: Why was birth premature? Was it owing to enthetic disease contracted by the father, to maternal intemperance, or to the use of abortifacients? It must not be forgotten that there are 39 premature births, so certified by medical men, and the ten are additional, for which there is, so to speak, no voucher; nor must it be forgotten that in this country still-births (far more numerous than premature births) are not registered at all.

Having now fully discussed Tables I., II., and III., in the appendix, we come to Table IV., in which the deaths registered

during 1882 are classified according to the localities in which they occurred. The Street Register is divided into three parts—the part marked “A” including the streets and places in the old Birkenhead Improvement District; the part marked “B” the streets and places in Tranmere and Oxtun; and the part marked “C” the streets and places in the incorporated portion of Bebington. Opposite each street or place is the number of deaths, from all causes and from zymotic diseases, registered as occurring in that street or place during the year. In the headings to the different parts of this table (and in Tables I., II., and III.) we have not placed the names of townships as indicating the locality referred to, but the names of wards. Thus the old Improvement District appears as Cleveland, Claughton, Grange, and Argyle Wards; Tranmere and Oxtun appear as Oxtun, Egerton, Clifton, and Mersey Wards; and the portion of Bebington incorporated appears as Bebington Ward. As we felt that particulars of the number of deaths from all causes, zymotic diseases and causes not certified, in each ward, would prove interesting, and as the Street Register does not afford this information, we have drawn up the table here submitted. A few of the deaths could not be classed, as many of the streets of the Borough run through two or more wards, or form the boundaries between wards, and the person acting as informant to the registrar is occasionally unable to give the number of the house in which the death took place, and many sudden deaths occur at the docks, or the railway extension connected therewith, or in the streets, and the precise locality is never recorded.

WARDS.	Deaths from All Causes		Deaths from Zymotic Diseases.		Deaths from Causes Unspecified.	
	M.	F.	M.	F.	M.	F.
Cleveland	168	131	34	25	6	6
Claughton	12	13	2	1	0	0
Grange	201	204	43	34	4	5
Argyle	187	200	42	32	2	5
(Ward not Specified)	7	4	0	0	0	0
Oxtun	21	19	1	3	0	0
Egerton	67	63	19	7	0	1
Clifton	118	101	23	18	1	0
Mersey	43	51	6	14	1	2
(Ward not Specified)	4	1	1	0	0	0
Bebington	15	11	3	3	0	0

This table will, with the Street Register, furnish all the information that can be required on the subject. It is well to note that the streets opposite which the highest death-totals appear are not the streets in which the mortality was really the highest. In 1882, as in past years, there was more sickness, and more fatal sickness, in the smaller streets and alleys inhabited by the very poor.

The following table shows the relative mortality of the wards during 1882 :—

1882.	Estimated Population at Midsummer	General Death-rate per 1000 Living	Zymotic Death-rate per 1000 Living.
Cleveland Ward	13210	22.63	4.54
Cloughton "	2969	8.42	1.01
Grange "	21968	18.43	3.50
Argyle "	18015	21.48	4.10
Oxton "	3392	11.79	1.17
Egerton "	8264	15.73	3.14
Clifton "	11393	19.22	3.59
Mersey "	5186	18.12	3.85
Bebington "	2185	11.89	2.74
Birkenhead, including deaths not localised, and in Union Premises)	86582	20.11	3.68

The number of deaths in Cleveland Ward is unduly high owing to the deaths in the Borough Hospital and Fever Hospital, and the number of deaths in Grange Ward includes the deaths in the Children's Hospital and Hemingford Lodge. Taking these deaths from the ward totals, and arranging them as far as possible under the wards from which the deceased were derived, the general death-rate of Cleveland, Grange, and Argyle Wards is respectively 19.30, 18.93, and 22.64; the zymotic death-rate is respectively 3.55, 3.68, and 4.49. Thus of the three Birkenhead wards Argyle Ward was in 1882 the most unhealthy. It is the ward containing the principal works and the oldest houses. The difference in the death-rates in the table in the three Tranmere Wards is somewhat remarkable. Egerton Ward, occupying high ground and in many respects resembling a rural district has a low death-rate; Mersey Ward, lying next the foreshore, in immediate contiguity to many acres of unsavoury mud exposed at every low tide, has a rate of nearly two and a half per 1,000 higher; and Clifton Ward, the most densely populated of the three, has a yet higher death-rate. The addresses of those

who died in the hospitals and in Hemingford Lodge are often not given accurately enough to indicate the wards to which they belonged and some were strangers when received; any error, however, arising from this cause will be inconsiderable,

As a supplement to the Street Register it is deemed advisable to add a return of the deaths in the Union Hospital and Workhouse, giving in each case the address of the deceased, when admitted into the Union, and date of admission. The sex, age, occupation, date and cause of death are extracted from the register, and the information in the last column has been supplied by the master of the Workhouse. The return is an important one in many respects, and enables us to submit a summary of the localities from which patients dying in the Union were received.

LOCALITIES FROM WHICH PATIENTS DYING IN UNION WERE RECEIVED.	Year when Admitted to Union.										Total.
	1867 to 1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	
Cleveland Ward	..	..	1	..	1	2	..	1	3	4	12
Grange Ward.....	..	..	..	..	2	..	..	..	5	20	27
Argyle Ward	1	..	..	..	1	..	3	2	5	21	33
Egerton Ward	..	..	..	..	..	..	..	1	1	1	3
Clifton Ward	..	..	..	..	..	..	..	1	1	3	5
Mersey Ward.....	..	..	..	..	..	..	1	..	1	2	4
Birkenhead—Ward not Specified.	3	..	..	..	..	..	..	..	..	..	3
Tranmere—Ward not Specified..	..	..	..	1	..	..	..	..	..	..	1
Seacombe	..	..	..	..	..	..	..	1	..	1	2
Liscard	..	..	..	..	1	..	..	..	..	2	3
Little Brighton	..	..	..	..	..	..	..	..	..	1	1
SS. " Galicia "	..	..	..	..	..	..	..	..	..	1	1
Union Schools	..	..	..	..	..	..	..	..	..	1	1
Born in Workhouse.....	..	..	..	..	..	..	..	..	1	4	5
Total	4	..	1	1	5	2	4	6	17	61	101

It will be seen from this summary that 39·6 per cent. of the deaths which took place in the Union, during 1882, were of inmates who had been received prior to January 1st, 1881, and that about 6 per cent. were derived from outside the municipal boundary. The deaths which took place in the Workhouse have not been added to the total deaths of the wards from which the deceased were drawn. A large proportion of those who died had long been inmates, and of the 50 who were received from the wards in 1882, several were not ill till after admission to the Workhouse.

Table V., in the appendix, shows the general and zymotic mortality, month by month, throughout the year. The general death-rate ranged from 23·2 in December to 17·2 in May. The zymotic death-rate was highest (4·6 and 5·5) in the two months following the middle of July, and lowest (1·9) in April.

The last of the tables appended, Table VI., gives the "description" of all those whose deaths have been registered during the year. The information is furnished in each case by the person registering the death, and is, doubtless, trustworthy. The table may be of some use in supplying the material for a rough estimate of the effects of the year's mortality on the local community: *i.e.*, the loss sustained by the professional and commercial classes, the artisan and labouring classes, and that largest class of all the non-productive. Those also employed in any recognised form of skilled or unskilled labour may here see the number of deaths, in 1882, in the ranks of fellow-workers in the Borough. The number of bread-winners removed by death from the local community, in 1882, is computed thus:—The first two columns of Table VI. are cast and added together, giving 506; and from this is subtracted the sum of those described as annuitants, apprentices, pensioners, gentlemen, retired tradesmen, &c., of no occupation, or whose occupation is "unknown," which leaves 446. The number of bread-winners (estimated in the same manner) dying in 1881 was 428, the number dying in 1880 was 387. It does not, of course, follow that every one described as belonging to a particular trade or calling was necessarily working for a living within a reasonable time of his or her decease, or that everyone described as a son, daughter, wife, or widow, was non-productive, or merely occupied with domestic duties. Still 446 may be regarded as a proximately correct estimate of those among the deceased who were self-supporting and family-supporting, as distinguished from those who were wholly dependent or only partially self-supporting. The number of those who must have been wholly dependent on others may be computed from the figures in the age table.

The sketch map of the Borough, which has been added, shows the boundaries of the wards, and the position of the houses in which deaths from zymotic diseases have occurred. The fatal cases

of zymotic diseases received into the Fever Hospital, Borough Hospital and Workhouse Hospital have, in every instance, been referred to the localities from which they were drawn.

The ordinary sanitary operations of this department have received unremitting attention. House to house inspections of the cottage property in the Borough have been regularly made. Gullies and passage drains have been periodically cleansed, public fountains &c., have been scoured and kept in order, and the systematic removal of ashpit refuse at stated intervals has been carefully superintended.

As the department is not provided with a night-inspector, the regulation of common lodging-houses, and the repression of overcrowding in so-called "tenement houses" presents exceptional difficulties; and it is felt that the lodging accommodation provided for the poor is not under efficient control. A night-inspector would also be of great service in checking the practice of cellar-occupation. This offence cannot be proved without night-inspection, as only a cellar "in which any person passes the night" is occupied as a dwelling according to the Public Health Act.

The summary of nuisances investigated and dealt with during 1881, as usually returned to the Local Government Board on a form supplied, is as follows:—

Number of nuisances reported	2389
Number abated without formal notice.....	47
Number of formal notices given	2342
Number abated after formal notice and without proceedings.....	2380
Number of cases in which proceedings were taken	12
Number abated after proceedings	11

A brief statement of the other measures taken, in 1882, for correcting or getting rid of whatever appeared to be prejudicial to health is subjoined.

Sanitary defects reported by the Inspectors and referred for the action of the Town Surveyor	140
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Houses or parts of houses specially disinfected by sulphurous acid or other disinfectants	294
Notices to whitewash and efficiently cleanse dirty houses given and complied with...	160
Offensive privies ordered for conversion into waterclosets	14
Parcels of infected bedding and clothes dis- infected	135
Parcels of infected bedding and clothes destroyed	6
Carcases of dogs and cats removed from pools or waste land and buried.....	109

The Superintendent of Markets and Abattoir, Mr. Gregory, has furnished the following particulars of the meat, unfit for human food, seized and destroyed :—

Beef.....	18,840 lbs.
Mutton	3,323 „
Lamb	35 „
Veal	562 „
Pork	1,280 „
Salt Beef.....	336 „
Pigs' Feet	119 „

Total of meat seized in 1882..... 24,495 lbs.

A considerable proportion of the beef was seized on the premises in connection with the foreign animals' wharf.

Three Special Reports have been made to the Committee in the course of the year. The first was presented on January 31st, and was an answer to the statements and arguments submitted by a deputation of medical men who waited on the Committee on January 24th, for the purpose of protesting against the 75th and 77th Clauses of the Birkenhead Corporation Act, 1881. The second was presented on September 19th and had reference to the general results attained in respect of compulsory notification of cases of infectious disease in Birkenhead. The third, which bears date December 15th, was "On the accommodation provided for the isolation and treatment of persons suffering from infectious diseases and on the additional accommodation required." As all these

reports have been printed it is not necessary to refer to them at greater length here.

No action has been taken during the year in respect of the Special Report presented three years since on Godfrey's Terrace and the Courts contiguous. On a site covering about 5,350 square yards are seventy separate dwellings and shops grouped round five little courts—32 are back-to-back cottages and nine others have no windows in the rear. Many of the houses are sub-let and some are common lodgings, others are rag stores—three are public houses. So filthy are the habits of many of the inhabitants of this locality that it is practically impossible to keep either courts or houses clean, and overcrowding cannot be effectually checked. Of course it is quite impossible to secure anything like efficient ventilation in such buildings. It would be a real economy, and a gain to the whole town, for the property to be brought under the operation of the Artisans' Dwellings Act; and in the interests of decency, no less than public health this should be done.

In the Report for 1881 we noticed with satisfaction the pulling down of the houses in the five little paved courts between Jackson Street and the railway. The Corporation acquired the property, and no less than 63 houses were entirely removed—58 of this number being back-to-back houses. The whole site was, however, not cleared—six houses in Gresford Terrace and six others back-to-back with these were not pulled down till 1882. The space will be occupied by new buildings for the Corporation Gas Works.

In November the Ammonia Works established for dealing with the gas liquor from the Corporation Works were reported for having caused a nuisance by the discharge of sulphuretted hydrogen. The plant was complete and the arrangements for avoiding a nuisance appeared sufficient, but as the escape of noxious gas continued the Works were closed.

The proposal for dealing with midden refuse by means of cremation has not been lost sight of during the year but it has been impossible to find a perfectly satisfactory site for the destructor. Several sites were visited, and the one selected, between New Chester Road and the Mersey, seemed eminently suited for

the purpose, but the purchase of the land was so strongly opposed it was not proceeded with.

By a resolution of the Committee passed on April 25th the Medical Officer was instructed to report quarterly on the carrying out of the regulations contained in certain Articles of the Animals Order, and reports in accordance with this resolution were submitted in June, September and December.

One of the most pleasing works of the Health Committee, during the year, was the establishing of a public bowling and quoiting ground at Birkenhead Park. It occupies a strip of enclosed land north-west of the main entrance to the Park. Access to it has been provided from Conway-street. Early in the year the land was drained and levelled and prepared with great care; and a neat brick lodge was erected for storing the bowls and quoits, and to serve as an office for the curator. The ground was formally opened by the Mayor on May 6th, and was well attended all through the summer and autumn. In October it was closed for the winter. There is no charge for admittance to the ground, but for the use of the bowls each player is charged threepence, and for the use of the quoits each player is charged one penny. The amount received in respect of bowls was £40 6s. 6d., being the payments of 3,226 players; the amount received in respect of quoits was £16 13s. 8d., being the payments of 4,004 players. Thus there is excellent evidence that the Committee's efforts to provide the means of healthy open-air recreation have been appreciated.

Very little need be said with reference to the working of the 75th Clause of the Birkenhead Corporation Act, 1881, which came in force on January 1st, 1882. The matter, as already stated, has formed the main subject of two Special Reports. The return of the number of notifications received shows that local practitioners have generally complied with the requirements of the Act in this respect. Very few cases of medical men neglecting to notify have come to the knowledge of the Sanitary Authority. In October certain cases of measles, which had not been notified, were reported by one of the district inspectors. No medical man had been called in, and it was deemed expedient to take steps for advising the public that in these

circumstances the obligation to notify to the Authority rested with the occupier of the house in which the disease occurred. Accordingly large posting-bills to the following effect were ordered to be printed and posted throughout the town:—

BOROUGH OF BIRKENHEAD.

INFECTIOUS DISEASES.

The attention of the Public is invited to the following provisions of Section 75 of "The Birkenhead Corporation Act, 1881."

In order to secure that due Notice be given to the Corporation of any inmate of any building used for human habitation, who is suffering from SMALLPOX, FEVER, CHOLERA, OR ANY OTHER DANGEROUS INFECTIOUS DISEASE, the following provisions shall have effect, (that is to say):—

- (I) If any such inmate be suffering from any such disease as aforesaid, the occupier, or person having the management or control of such building, shall, as soon as he becomes aware of the existence in any such inmate of any such disease, forthwith give notice to the Corporation, at the Town Hall, of the existence in such inmate of such disease, unless a duly qualified medical practitioner has been called in.
- (II) If such inmate be not a member of the family of such occupier or person, the head of the family (resident in such building) to which such inmate belongs, or if there be no such head, then such inmate (unless prevented by reason of such disease, or of youth) shall, on becoming aware of the existence in such inmate, or in his own person, as the case may be, of such disease, forthwith give notice thereof to such occupier or person.
- (III) Any person who fails to comply with any of the provisions of this section (unless ignorant thereof, the burden of the proof of which shall be on him) shall for every such offence be liable to a penalty not exceeding FIVE POUNDS, and for a second or any subsequent offence to a penalty not exceeding TEN POUNDS.

By Order,

ALFRED GILL,

TOWN CLERK.

Town Hall, Birkenhead, November, 1882.

The extraordinary allegation that compulsory notification, in places where it exists, has increased the mortality from diseases

required to be notified is certainly not supported by facts in Birkenhead thus far. Witness these figures—the mortality from the diseases required to be notified, during the first quarters of the four years 1878-81, averaged $38\frac{3}{4}$; the mortality from the same during the second quarters of these four years averaged 35; during the third quarter it averaged $23\frac{3}{4}$; and during the fourth quarter it averaged $48\frac{1}{4}$. The corresponding mortality during the four quarters of 1882 was respectively 18, 17, 23 and 43. In brief, the deaths from diseases required to be notified were 101 in 1882, in the four years immediately preceding they averaged upwards of 145. The general mortality was not exceptionally low in 1882—the death-rate was 20·11; in the four preceding years it averaged 19·84. The mortality from zymotic diseases not required to be notified was not exceptionally low in 1882—the death-rate from whooping cough was 1·02, from diarrhoea ·72, and from other zymotics ·77; in the four preceding years the mean death-rates from each of these were ·67, ·67, and ·70 respectively. Is it possible to resist the conclusion that compulsory notification was to some extent instrumental in lowering the mortality from the diseases required to be notified?

The Fever Hospital continues to afford the Sanitary Authority the means of isolating and treating a few subjects of infectious disease. In 1882 the Hospital was indeed more frequently made use of than in any year since 1877. The patients treated in Hospital in the four years 1878-81 were respectively 46, 32, 47 and 37; in 1882 the patients treated numbered 86. It is matter for regret that the accommodation provided was not more extensive. On July 17th, for instance, every bed in the hospital was full and it was found necessary to intimate to the relieving officer and the district inspectors that no more patients could be received. The proposal to extend the Fever Hospital by the addition of four wards at the back (referred to in the Report dated November 22nd, 1881), has not been carried out, and up to the present the Guardians of the Poor have not made any provision for infectious patients, the few beds in the Fever Hospital, therefore, represent the sole accommodation in the district for the accommodation of cases of infectious disease in 1882.

Of the 86 patients treated in the Fever Hospital during the year, two were from shipboard, and the rest from houses situated within the borough boundary. Particulars of the localities from which the patients were derived, and the specific diseases of patients received from each locality, are given in the following table.

LOCALITIES.	Measles—admitted.	Scarlatina—admitted.	Scarlatina—remaining.	Typhus Fever—admitted.	Typhus Fever—remain'g.	Enteric Fever—admitted.
Cleveland Ward	0	0	0	23	0	2
Grange "	0	0	0	20	1	0
Argyle "	0	1	0	24	0	3
Egerton "	0	1	0	1	0	1
Mersey "	0	0	2	0	0	0
Ship "Conway"	1	0	0	0	0	0
Ship "Indefatigable"	0	1	0	0	0	0
Total	1	3	2	73	1	6

Particulars as to results are given in the next table.

DISEASES.	M	F.	Recovered		Died		Remaining	
			M.	F.	M.	F.	M.	F.
Measles—admitted	1	0	1	0	0	0	0	0
Scarlatina "	2	1	1	1	1	0	0	0
" remaining "	2	0	2	0	0	0	0	0
Typhus Fever—admitted	34	39	24	30	9	6	1	3
" remaining "	1	0	1	0	0	0	0	0
Enteric Fever—admitted	5	1	5	1	0	0	0	0
Total	45	41	34	32	10	6	1	3

Thus out of 86 cases of febrile disease treated in 1882, 16 died—a mortality equal to 18·6 per cent. The four remaining at the end of the year were all discharged during the first half of January, 1883.

The Disinfecting House has rendered good service during 1882. Indeed it has been in almost constant use throughout the year, all mattresses, palliasses, beds, pillows, woollen clothing and fabrics from infected rooms being brought here and disinfected by heat. The clothes are fetched and delivered by the Corporation officers in light covered carts provided for the purpose. The

regular service commenced in February, when the carts were obtained. A van-house, for the accommodatian of the vehicles, has been built on land adjoining the disinfecting-house yard.

It has been our usual practice at the close of the Annual Report to notice any measure giving increased facilities for the maintenance of public health, which in the year under review has been added to the Statute Book. The only enactment of last Session coming under this description, of any importance, was an Act to amend the Artisans' and Labourers' Dwellings Act. Unfortunately the primary Act has hitherto in most places remained a dead letter, and Birkenhead forms no exception to the rule in this respect. If the amending Act should merely have the effect of drawing attention to the means available for providing suitable dwellings for working men, it will not have been in vain. A small Act extending the Public Health Act, so as to enable Sanitary Authorities to make bye-laws regulating fruit pickers and their lodgings, may be noticed, but it is of no immediate interest to the inhabitants of this Borough.

FRANCIS VACHER.

Birkenhead, August, 1883.

APPENDIX.

TABLE I.—Deaths registered in the Borough of Birkenhead during the year ending December 31st, 1882, classified according to age..

TABLE II.—Weekly Register of Deaths in the Borough of Birkenhead for the year ending December 31st, 1882.

TABLE III.—Weekly condensed Register of Deaths and Meteorological Results for 1882.

TABLE IV.—Street Register of Deaths —1882.

A. Cleveland, Claughton, Grange, and Argyle Wards.

B. Oxton, Egerton, Clifton and Mersey Wards.

C. Bebington Ward.

SUPPLEMENT TO TABLE IV.—Return of Deaths in Birkenhead Union Hospital and Workhouse, registered in 1882.

TABLE V.—Monthly totals of Deaths from all Causes and Zymotic Diseases, in 1882, with the rates per 1,000 per annum.

TABLE VI.—“Description” of those who died during 1882.

SKETCH MAP of the Borough of Birkenhead, showing the Boundaries of the Wards, and the position of houses in which Deaths from Zymotic Diseases took place in 1882.

TABLE 1.—Deaths Registered in the Borough of Birkenhead during the Year ending December 31st, 1882.

[illegible]

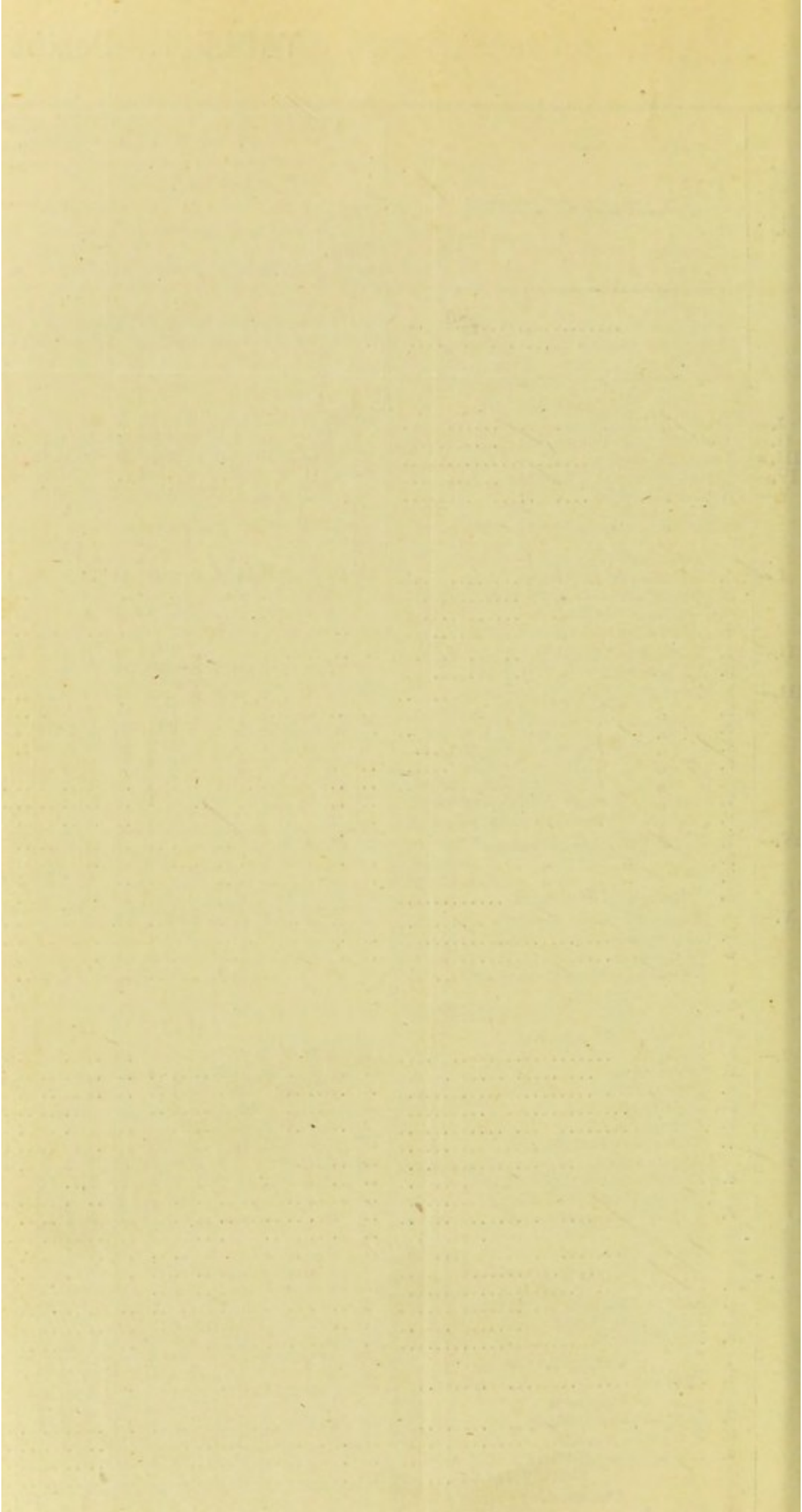


TABLE II.—Weekly Register of Deaths in the Borough of Birkenhead for the Year ending December 31st, 1882.

[illegible]

TABLE II.—Weekly Register of Deaths in the Borough of Birkenhead for the Year ending December 31st, 1882.

[illegible]

DATE OF DEATH

NAME OF DECEASED

RESIDENCE

AGE

SEX

CAUSE OF DEATH

DATE OF BURIAL

NAME OF BURIAL PLACE

NAME OF MINISTER

NAME OF FUNERAL HOME

NAME OF CARRIAGE

NAME OF COFFIN

NAME OF CLOTHES

NAME OF CLOTHES

NAME OF CLOTHES

NAME OF CLOTHES

NAME OF CLOTHES

NAME OF CLOTHES

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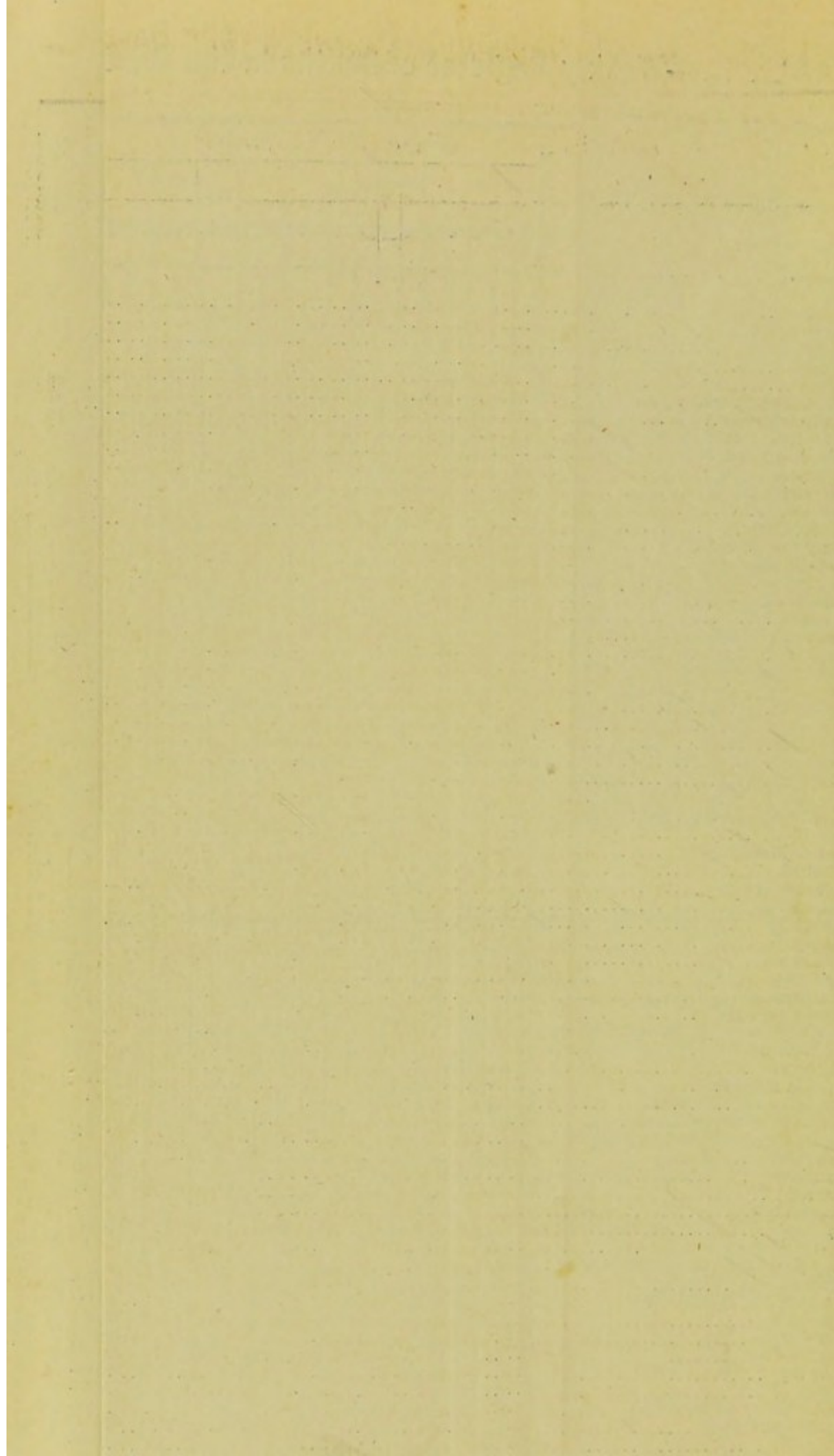


TABLE II.—Weekly Register of Deaths in the Borough of Birkenhead for the Year ending December 31st, 1882.

[illegible]

NOTE.—The weeks end January 7th, 14th, 21st, &c., the last week in the year including one day extra.



1891

1892

1893

1894

1895

1896

1897

1898

1899

1900

1901

1902

1903

1904

1905

1906

1907

1908

1909

1910

1911

1912

1913

1914

1915

1916

1917

1918

1919